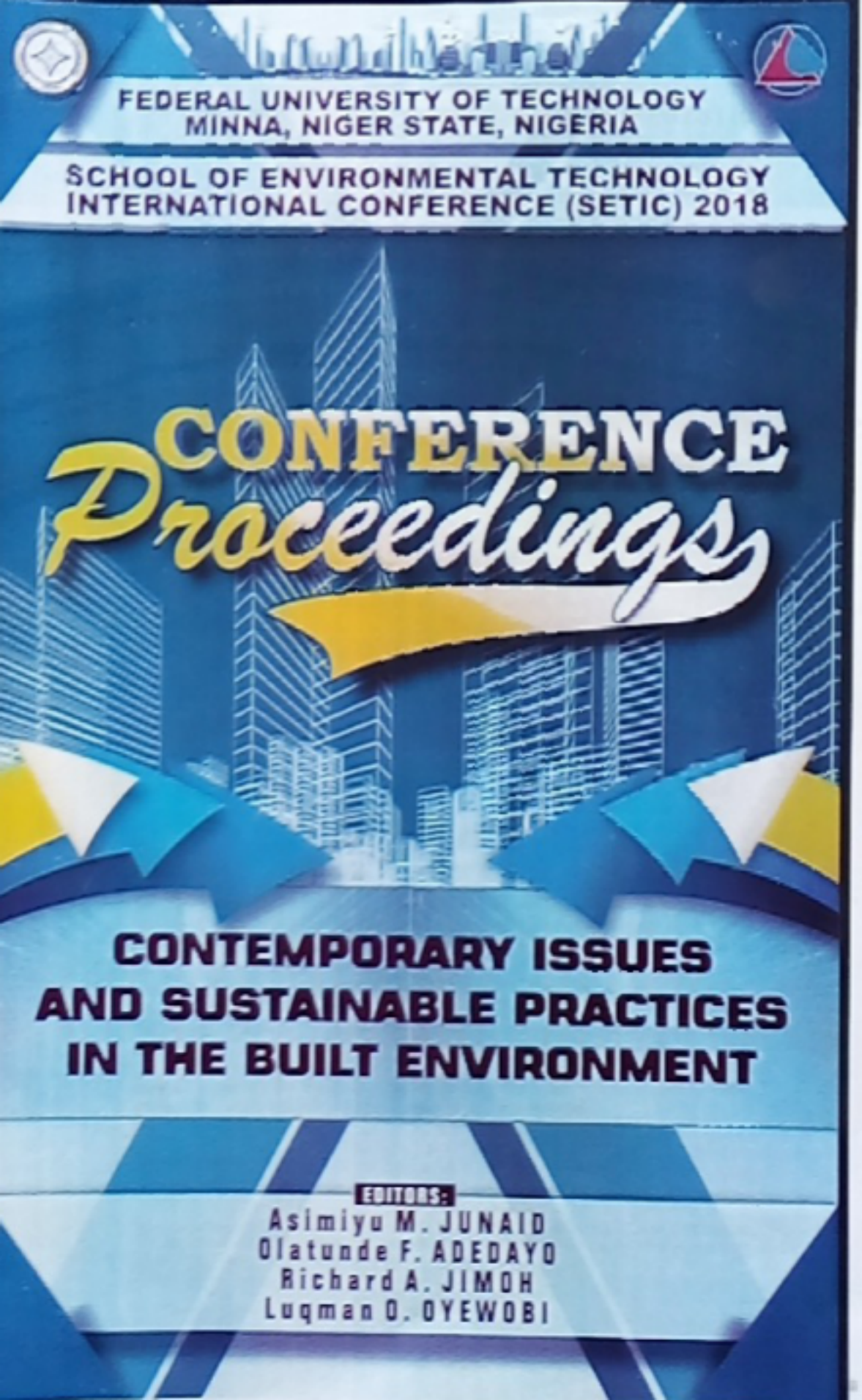
FEDERAL UNIVERSITY OF TECHNOLOGY
MINNA, NIGER STATE, NIGERIA
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
INTERNATIONAL CONFERENCE (SETIC) 2018
CONFERENCE
Proceedings
CONTEMPORARY ISSUES
AND SUSTAINABLE PRACTICES
IN THE BUILT ENVIRONMENT
EDITORS:
Asimiyu M. JUNAID
Olatunde F. ADEDAYO
Richard A. JIMOH
Luqman O. OYEWOBI

APPRAISAL OF EU FINANCED RURAL WATER SUPPLY PROJECT IN SELECTED COMMUNITIES IN AKWA IBOM NORTH SENATORIAL DISTRICT, NIGERIA

Edem, E. Essien, Mohammed B. Banki & Obadugba, C. B
Department of Urban and Regional Planning, Federal University of Technology, Minna

Access to safe drinking water has been a subject of discussion among policy makers and academia due to its social, economic and health significance. Thus, the European Union under the European Union Micro Projects Programme Six (EU-MPP6) carried out a number of micro development projects in some rural communities in the Niger Delta with the broad aim of reducing militancy and improving the quality of life in the rural communities. One of such project was the provision of safe drinking water. The main objective of this study is to evaluate the performance of the EU financed rural water supply projects in selected communities in Akwa Ibom North Senatorial District. Data were collected through administration of questionnaire, a total of 382 questionnaires were administered while 360 questionnaires were received and analyzed using descriptive and regression analysis via SPSS version 20. The result of the analysis revealed that EU financed rural water supply projects as increased the access to safe drinking water in the benefiting communities. The three independent variables of training, local management practice and community participation account for 52.0% of the performance of the EU water project. Only training of the community water committee is statistically significant (P-value=.000). The study recommended the continuous training of the community water management committee as it has a significant influence on the performance of water facilities and to improve on the level of community participation in the design, planning, implementation and monitoring of rural water projects. Finally, rural water projects should adopt local technology, for ease of management and maintenance through local maintenance practices.

INTRODUCTION

The level of development of a country has been measured via various parameters which include their access to safe drinking water. Studies have shown that basic infrastructure for safe drinking water are lacking in most rural areas of Nigeria (Nkwocha, 2009). Thus, the government has partnered with various NGOs and development partners, under various development programmes to address the inadequacy of safe drinking water mostly in rural areas. In order to address the inadequate access to safe drinking water, previous governments have adopted a top-down approach in which the level of community participation was very low. This has resulted in failure of more than 80% of public water projects in Nigeria after four years of implementation (Akpojaro and Ifiesiene, 2015). The benefiting communities do not see the project as their own thereby taking full responsibility of its management and maintenance.

The European Union-Micro Project Programme (EU-MPP) in the Niger Delta was aimed at improving the condition of the rural communities by embarking on micro projects thereby reducing the rate of militancy and giving the rural dwellers improved access to basic amenities including safe drinking water (Onyekwewe and Emmanuella, 2014). The EU-MPP was implemented in three phases; the first three states were Delta, Rivers and Bayelsa that is EU-MPP3, followed by Akwa Ibom, Cross River, Imo, Ondo and Edo (EU-MPP6) while the third phase was the combination of phase one and two to form the EU-MPP9 (Onyekwewe and Emmanuella, 2014).

eeessien04@gmail.com

Essien, et al., (2018). APPRAISAL OF EU FINANCED RURAL WATER SUPPLY PROJECT IN SELECTED COMMUNITIES IN AKWA IBOM NORTH SENATORIAL DISTRICT, NIGERIA. Contemporary Issues and Sustainable Practices in the Built Environment. School of Environmental Technology Conference, SETIC, 2018

The EU-MPP6 Programme was community centered as the Programme was designed to be community driven (Onyekwere and Emmanuella, 2014) as benefiting communities were fully involved from the conception, planning, design, implementation and finally the monitoring and maintenance of the project. In addition to this, there was high level of sensitization and training of community representatives that formed the 'Community Water Management Committee' (CWMC). This committee interface between the community and the officials of the EU-MPP6 Programme. The EU through the EU-MPP has financed a total of Three Thousand, Nine Hundred and Seventy Nine (3,979) rural projects with a total sum of €40.6 million Euros from 2001 to 2012 (EU-Country Level Evaluation Report, 2012; Nnadi, et. al., 2012).

Since the completion of the EU-MPP6 programme in 2012, there has not been any study to appraise the performance of the EU financed rural water scheme. Against this backdrop, this research seeks to evaluate of the European Union-Micro Project Programme, aimed at appraising the level of performance of the EU financed rural water supply scheme in selected communities in Akwa Ibom north senatorial district, Akwa Ibom State.

Akpojaro and Ibunjeme (2015), observed that over 80% of public water facilities breakdown, abandoned or dysfunctional after four years of their completion. This makes public water facilities unsustainable. Poor access to safe drinking water contributes to the poor health statistics in Nigeria. Over 40% of child mortality in Nigeria is caused by water borne diseases such as diarrhea (UNICEF, 2010; Amer and Akpan, 2010).

Majority of water projects have failed or are abandoned bearing the posters of different government agencies or political representatives eg constituency water projects of different LGAs, the River Basin Development Agency, Niger Delta Development Commission, Petroleum Trust Funds, Inter-Ministerial Direct Labour as well as boreholes provided by Akwa Ibom Water Company Ltd and Akwa Ibom Rural Water and Sanitation Agency. There is no concrete effort to determine the present status of many of this water projects. Whereas, completion certificate has been issued and funds has been released for the payment of the contractors.

There insufficient empirical studies on these various water projects to determine if the projects meets it objective and how sustainable is the projects. Many of these projects are being evaluated immediately after their completion. Four years after the completion of the EU financed rural water project, this study seeks to appraise the performance of the project vis-à-vis its objective.

The broad objective of this study is to evaluate the performance of EU financed rural water supply facilities in selected communities in Akwa Ibom North senatorial district. The specific objectives include:

i. To determine the socio-economic impact of the EU financed rural water projects.

ii. To examine the relationship between community participation and the performance of the EU financed rural water supply project in the selected communities.

iii. To examine the impact of training of community water project management committee on the performance of the EU financed rural water supply project in selected communities.

The study hypothesized that, there is no significant relationship between community participation, local project maintenance practice, training of community water committee members and the performance of the rural water supply project.

The Study Area

Akwa Ibom State is one of the oil rich states in the Niger Delta Region of Nigeria. Located in the southeastern coast of Nigeria, Akwa Ibom State was created on September 23, 1987 from the former Cross River State of Nigeria. The State is wedged in between Rivers, Abia and Cross river States and the Republic of Cameroon to the Southwest, North, East and Southeast respectively while the Bight of Bonny bordered the State to the South.

Akwa Ibom state lies between longitudes 7°28' and 8°25' East of the Greenwich Meridian and latitudes 4°32' and 5°32' North of the Equator. According to NPC, Akwa Ibom State has a total land area of 6,187 km2, which represents 0.67% of the total land mass of Nigeria and a population of 3,920,208 while Akwa Ibom North senatorial district consisting of nine local

government areas has a total population of 1,249,209 (NPC, 2006). This population was projected to 2017 using 2.7% as growth rate, making the population of the study to stand at 1,674,396.

RESEARCH METHODOLOGY

The study adopted quantitative research paradigm in which field survey was conducted using questionnaire as the main instrument for data gathering. The sample size for this study was derived using Sample size calculator. The sample size of 382 respondents was arrived at using a household population of 69,913 (NPC, 2006) residing in various communities in the study area at 95% confidence level and 5% confidence interval using sample size calculator.

The study adopted systematic sampling approach in selecting subjects for the study. This entails systematically selecting 8 household heads from each community of the 47 selected communities. 8 questionnaires were administered in each community making a total of 376 and 6 questionnaires were reserved for the 6 communities with clan heads. 360 questionnaires were completed and returned.

Both primary and secondary sources of data were used in this study. The primary source includes questionnaire administration and field observation while secondary source include EU-MPP6 publications, etc. The data gathered were analyzed using simple descriptive tools while Regression analysis was used to test the hypothesis via SPSS version 20.

The breakdown of the population and sample size is presented in table 1.1 below.

Table 1.1 Sample Size

LGA	No of Community selected	Projected Population (2017)	No. of House hold	Sample Size
Ukum	15	143,550	22,925(34.1%)	133
[illegible]	11	102,401	17,061(24.4%)	93
[illegible]	21	173,523	28,921(41.4%)	158
Total	47	419,474	69,913	382

Source: Nigerianpostcodes.com (accessed June, 2017); EU-MPP6 office [illegible] (2017); NPC, (2006)

RESULTS

From the data gathered by the researcher, 203 (56.39%) of the respondents were female while 157 (43.61%) were male. Also, 173 (48.05%) of the respondents were within the ages of 48 and above. 115 (31.94%) of the respondents indicated they have a household size of 3 – 4, while 108 (30% and 98 (27.22%) have a household size of 5 – 6, and 7 and above. The most common occupation in the study area was trading and agriculture 124 (34.44%) and 107 (29.72%) respectively.

Socio-Economic Impact of Rural Water Supply Project

Table 2.1 below presents the socio-economic impact of the EU financed rural water supply project on the benefiting communities. 456 (36.48%) and 410 (32.8%) of the respondents agreed and strongly agreed respectively that the project has greatly increased their access to safe drinking water with a mean value of 3.47. This is closely followed by improved community participation with mean score of 3.33. This implies that the design of the EU-MPP6 programme has encouraged community participation. 209 (58.06%) of the members of the benefiting communities were aware of the project while 183 (50.83%) of the respondents participated in the implementation. Other areas the project has impacted on the socio-economic activities include improving social relationships. People interact when they meet at public places, in this case at the water facility point.

The project also reduce time spent by various households in fetching water with a mean score of 3.23, thereby reducing lateness to school, absenteeism, and other risk associated with trekking a long distance to fetch water. The project has also increased the quantity and quality of water with a mean score of 3.19, thereby improving personal hygiene. Access to safe drinking water is important in the fight against water borne diseases and personal hygiene. Others include secondary job creation 2.96, such as water vendor, food processing, irrigation farming mostly for vegetables etc., improved sanitation 2.71, improved managerial skills 2.50 and reduction in travel distance to fetch water 2.05.

Table 2.1 Socio-Economic Impact of Rural Water Supply Project

Impacts of EU water supply project	SD (1)	D (2)	U (3)	A (4)	SA (5)	Total	Mean	Rank
Increased access to safe drinking water	23	124	237	456	410	1250	3.47	1st
Improved Community Participation	44	116	193	484	360	1199	3.33	2nd
Improved social interaction among members of the community	34	132	258	396	325	1165	3.24	3rd
Reduction of time spent on fetching water	43	196	216	284	455	1164	3.23	4th
Increase in the quantity and quality of water consumed per capita per day	53	138	294	352	310	1147	3.19	5th
Improved personal income	68	168	168	352	320	1076	2.99	6th
Secondary Job creation	58	176	237	324	270	1065	2.96	7th
Improved sanitation	88	196	185	332	225	926	2.71	8th
Developed technical and managerial potentials of the people	74	268	172	152	263	899	2.50	9th
Reduction in travel distance to farm units	11	88	69	168	560	337	2.05	10th

Source: Field survey, (2017)

Community Participation in Planning and Implementation

Table 2.2below presents the opinion of respondents on the level of community participation during the EU financed rural water supply project. 31 (8.61%) of the respondents indicated that the community participation was very low, 68 (18.89%) of the sampled respondents indicated that the level of community participation was rather low. This means that about 26% of the surveyed respondents rated the level of community participation below average. On the other hand, 122 (33.89%), 125 (34.72%) and 14 (3.89%) of the sampled respondents are of the opinion that the level of community participation was medium, high and very high respectively. These sets of respondents are of the view that community participation was above average.

The researcher further adapted the Arnstein's Ladder of Participation to examine the level of community participation in the EU financed rural water supply project. The Ladder has 8 rungs but the researcher re-arrange the ranks to have 5 rungs which are

i. Citizen Control 4.5 – 5.0
ii. Delegated Power 4.0 – 4.49
iii. Partnership/Placation 3.0 – 3.99
iv. Consultation/Informing 2.0 – 2.99
v. Therapy/Manipulation 1.0 – 1.99

Applying the Arnstein's ladder of participation, the mean value of the distribution is calculated to be 3.06. This means that the level of community participation could be said to be placed at the rung of partnership/placation which Arnstein described as tokenism. The study revealed that people were appointed as representatives of the community on advisory groups or decision-making bodies, however, these groups were highly influenced by the decisions of powerful and persuasive elite.

Table 2.2 Level of Community Participation in Planning and Implementation

Response	Frequency	Percentage
Very Low	31	8.61
Low	68	18.89
Medium	122	33.89
High	125	34.72
Very High	14	3.89
Total	360	100

Source: Field survey, (2017)

Factors Limiting Community Participation

The respondents were further asked of the hindrances to community participation in rural development projects as presented in table 2.3 below. Majority of the respondents indicated that poor funding of community meetings was the main hindrance to community participation. As funny as this may sound, rural dwellers are easily bought by incentives such as food, money among others. If they attend community meeting and food is not sheared, they will never attend such meeting again no matter how beneficial the outcome of the project will be. 70 (19.44%) of the respondents said poor information dissemination posed a clog in the wheel. This factor cannot be independent of the former. When people don't attend meeting they can't get firsthand information. Other factors were political pressure (18.6%), cultural factor (13.61%), others includes the patriarchy nature of our society, poor attitude toward developmental programmes due to many failed past

programmes, the ever busy nature of rural dwellers as people finds it difficult to leave their farm to attend community development meetings.

The participatory process, designed to promote community engagement in the planning process of the EU rural water project, prospectively was expected to improve the feedback and accountability mechanisms available to benefiting communities. However, the composition of community participation and the danger of local elite capture of the participatory process are important qualifications to the supposed correlation between service delivery and accountability.

Table 2.3 Major Hindrances to Community Participation

Factors	Frequency	Percentage
Political Pressure	67	18.61
Cultural factors	49	13.61
Poor funding of community activities	131	36.39
Poor information dissemination	70	19.44
Others	43	11.94
Total	360	100

Source: Field survey, (2017)

Community Training and Project Performance

The study sought to establish the influence of the training of community water committee training on the performance of the water project. 166 (46.12%) of the respondents indicated that training affected community ownership of the water project in their community while majority (53.9%) stated that training had no effect on ownership of the project. 76.9% of the respondents indicated that members of water committees were trained on operation and maintenance of water projects while 23% respondents indicated that training wasn't received. The table also shows that 91% of the respondents felt that the trainings offered were sufficient while 8.9% indicated that training wasn't sufficient.

Table 2.4 Community Training and Project Performance

Impact of Training of community water management committee	Yes (%)	No (%)
Water management committee members have been trained on operation and maintenance and management of water systems	76.94 (277)	23.0 (83)
Trainings offered were sufficient and useful for water project management	91.1 (328)	8.88 (32)
The training stimulates community ownership of EU financed water supply project	46.12 (166)	53.88 (194)

Source: Field survey, (2017)

Test of Research Hypothesis

Ho: There is no significant relationship between community participation, local project maintenance practice, training of community water committee members and the performance of the rural water supply project.

Regression Analysis

Regression analysis was used to determine the relationship between the factors influencing performance of the rural water project and the level performance of the rural water project.

Table 3.1 below shows that the coefficient of determination R^2 square is 0.520 and R is 0.721 at 0.05 significant level this is further attested to by the 0.00 significant level as shown in table 3.2 below. The R value represents the simple correlation and is 0.721 which indicates a high degree of correlation. The coefficient of determination indicates that 52% of the variation in the factors is explained by the independent variables (Community participation, project management practices and community training.).

Table 3.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721[a]	.520	.497	.331

a. Predictors: (Constant), Training , Mgt Practice , Community Participation

As highlighted in table 3.2 below, it can be observed that the independent variables have positive relationship with the dependent variable, as the performance of the EU financed water projects would be constant at 1.002.

Although, the three predictors (Training of community water committee, community participation and local management practices) contributed significantly to the performance

of the water project, training of the community water committee contributed more to the performance of the EU water project. This is in line with the findings of Williams (2013) who concluded that the functionality of rural water project depends on adequate technical knowledge of operation and maintenance.

Table 2.2: Coefficient results showing the relationship between the combined factors and performance of water projects

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.062	.330		3.218	.004
	Local Mgt Practice	.116	.068	.191	1.722	.092
	Community Participation	.083	.063	.183	1.329	.133
	Training	.588	.129	.561	4.558	.000

a. Dependent Variable: Project Performance
P*= 0.05 Moderately Significant;
P**<0.01 Fairly Significant;
P***<0.001 Highly Significant

DISCUSSION OF FINDINGS

The study revealed that the EU financed rural water supply project has impacted positively on the socio-economic activities of the selected communities. As indicated in table 2.1, the project has increased the access to safe drinking water in the communities with a mean value of 3.47. This finding is supported by Onyekwewe and Emmanuella (2014). In addition to this, other areas of positive impact are reduction in the time spent in fetching water for household consumption. Prior to the EU water projects, women and children spent up to 5 hours daily in fetching water from the stream. But with the EU water project, they spent between 30 minutes to 1 hour to fetch water needed by the entire household. This will reduce lateness to school and absenteeism from school among others. Also, women now have time to invest in other economic activities rather that spending the whole day fetching water. The EU rural water project has reduced the travel distance in fetching water, improve personal hygiene and sanitation as the rural dwellers now have more water to use for their domestic activities. Gatari, Jaya and Mbabazi, (2016) argued that without adequate water supply, it will be difficult to achieve personal hygiene and improved sanitation.

In terms of community participation, the study revealed that there has been a paradigm shift from the traditional top-bottom approach commonly used in government cycle. The EU water programme was designed to be a community driven project. The communities play a significant role in the design, planning and implementation of the water project. Communities were given the free-hand to choose their project, the location of the project, the unskilled laborers were hired from the community while the community provides the land and takes charge of the safety and security of the working materials. This approach gave the community members a sense of belonging and ownership of the project. The community leaders are at liberty to choose any management style they want. The field survey revealed that three management styles were common among the sampled communities. These are; where the water facility is solely managed by the community leaders, that is the village head and his chiefs. The second management style is where the water facility is managed by the EU water committee members that were set up during the implementation phase and thirdly is where the water facility is managed by an individual or group who reports to the village head.

The study revealed that the water facility that were managed by the community heads were not functional as at the time of this study. This poor performance can be attributed to the fact that the community heads has no managerial knowledge and financial records are not kept. The water facilities were operated without financial records which make it difficult to carry out major repairs.

The study also revealed that local project management practices also influenced the performance of the water projects. Local project management practices like project monitoring and evaluation, establishing skilled project team and ensuring effective communication structures routine maintenance and minor repairs. Atser and Akpan, (2010) argued that community ownership of water projects enhance local maintenance of such projects as they can easily access spear parts within their local markets. In the same vain, Obeta, (2016) argued that if local water supply projects should consider local technology

during the design phase rather than foreign and complicated designs. This will ensure ease of maintenance and repairs.

Training of community members especially those responsible for operation and technical maintenance of water projects influences the performance of water projects. Trained operators are more efficient while operating the water facility thus minimizes any breakdowns during malfunctions or operation. In cases of breakdowns, availability of trained community members on maintenance ensures that maintenance are done more promptly and cheaply as opposed to when community members have to depend on hired skilled labor. The water systems and technologies established should be those that do not need heavy financial investments during operation and maintenance that may be beyond the capacity of the community members. If the operation costs are higher than the community's capacity to meet, then such water project can easily fail (Onyekwere and Emmanuella, 2014). Also William A.K (2013) opined that training on issues like operation and maintenance empower communities to look after water supply systems thus aiding sustainability. Ademiluyi and Odugbesan (2008) identified lack of community education as one of the important factors which could lead to breakdown and poor performance of water supply projects in rural communities.

CONCLUSION

Rural water project has a positive impact on the social and economic life of the benefiting communities. There has been an increase in the access to safe drinking water, reduction in travel time and travel distance to fetch water which has resulted in reduction in lateness and absenteeism from school among students. Also, there is ease in doing business that needs water such as cassava processing, oil palm processing vegetable farms, local construction etc. The EU financed rural water supply project experienced a high rate of community engagement. In other words, the project adopted bottom – top approach which allowed the benefiting communities to be involved from the planning stage, the design and the implementation of the project. The study concludes that community participation in the planning, design and implementation phase of rural water projects, the training of community members especially those responsible for operation and management of the water projects and the local maintenance practice by the benefiting communities has a positive impact on the performance of the rural water project.

RECOMMENDATIONS

The following recommendations were arrived at based on the findings of the study;

i. There is need to sustain the training of community water management committee as it has a significant influence on the performance of water facilities.

ii. There is need to improve on the level of community participation in the design, planning, implementation and monitoring of rural water projects.

iii. Further rural water projects should adopt local technology, for ease of management and maintenance through local maintenance practices.

REFERENCES

Ademiluyi and Odugbesan (2009). Sustainability and Impact of Community Water Supply and Sanitation Programmes in Nigeria: An Overview. In Kevin E. C. (2015) Water Supply Management Policy in Nigeria: Challenges in the Wetland Area of Niger Delta. European Science Journal, Vol. 11

Akpojaro J. and Ibeniene, C. U. (2015). An Empirical Study of Factors Affecting the Effectiveness of International Aids in the Niger Delta Rural Communities. Australian Journal of Business and Management Research New South Wales Research Centre Australia (NSWRCA) Vol. 4, No. 11

Arnstein, Sherry R.(1969) 'A Ladder Of Citizen Participation', Journal of the American Planning Association, 35: 4, 216 — 224 URL:http://dx.doi.org/10.1080/01944366908977225

Atser and Akpan, (2010). Accessibility levels to potable Water Supply in Rural Areas of Akwa Ibom State, Nigeria. Ethiopian Journal of Environmental Studies and Management Vol.3 No.2 (Accessed October, 2016)

EU-Country Level Evaluation Report, (2012): Evaluation carried out on behalf of the European Commission Final Report. Volume I (Accessed October, 2017)

Gatari S., Jaya S. and Mbabazi M. (2016) Evaluation of Factors Influencing Sustainability of Water Projects in Gahondo: A case of Water Projects in Muhanga District, Rwanda. European Journal of Business and Social Sciences, Vol.5, No. 01, ISSN: 2235 -767X

Nigeriaripoodo com (accessed June, 2017).

Nkwocha, Edmund E. (2009), Impact of European Union Micro-Projects Programme in Water and Sanitation on Rural Communities of the Niger Delta Region of Nigeria. An International Multi-Disciplinary Journal, Ethiopia Vol. 3 (5), (Accessed October, 2016)

Nnadi F.N, Nnadi C. D., Chikaire J, Aja O. O. and Okafor O. E., (2012) Effects of the European Union Micro Projects Programme (MPPR) on Rural Livelihoods in Owerri West, Imo State, Nigeria. International Journal of Agric. and Rural Development. (Accessed October, 2016).

NPC. (2006). National Population Commission-Data for National Planning. https:population.gov.ng

Ohetu, M. C. (2016) Community Participation in the Rural Water Sector of Enugu State, Nigeria American Journal of Water Resources, Vol. 4, No3.

Onyekuwewe N. E. and Emmanuella C. O (2014) Planning and Execution of the European Union Assisted Water Supply and Sanitation Projects in Imo State, Nigeria: Constraints, Lessons and Success Factor. British Journal of Applied Science & Technology 4(5): 764-774. (Accessed October, 2016)

UNICEF, 2010: Annual Report UNICEF Publications. https:www.unicef.org

William A.K (2013) Determinants of Rural Water Project Sustainability: A case of Rufiji District, Pwani Region, Tanzania. University of Agriculture Morogoro, Tanzania. www.suaire.sua.ac.tz