

PAPER 73 – COMMUNITY PARTICIPATION AND SUSTAINABLE OF WATER AND SANITATION SERVICES IN MUSANZE DISTRICT, NORTHERN PROVINCE OF RWANDA.

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ABSTRACT

Water-related diseases are closely linked to poverty and disproportionately affect vulnerable communities mainly in developing countries including Rwanda. Most development projects highlight community participation as one of the prerequisites for the improved performance of water and sanitation services. Three rural villages in Musanze District (Gataraga, Gitega, Rwinuma) in Rwanda were taken as a case study. Data were collected using questionnaires and analyzed using Statistical Package for the Social Sciences (SPSS). A total of 192 participants responded to the questionnaires of whom 189 were water and sanitation services beneficiaries. In addition, water and sanitation district and sectors officials were also interviewed. Our findings showed that sustainability issues were inadequately addressed at the planning and design stages, communities had no capacity to maintain the water and sanitation services and no sense of ownership. The study recommends the adoption and incorporation of the user centered design methodology at the initial stages of water and sanitation development programmes in order to produce interventions that fully solve community problems and to prioritize capacity building for operators and technical support at all levels for all other groups engaged in planning, implementation and maintenance of water and sanitation services.

Key words: Sustainability, Community Participation, User Centered Designs, user association, operation and maintenance

1 INTRODUCTION

In 2015, over 2.3 billion people all over the world still lacked basic sanitation service, 844 million people still lacked basic drinking water while only two out of five people using safely managed sanitation services (1.2 billion) lived in rural areas (UNICEF, 2017). This explains the need for SDG's 6 on ensuring availability and sustainable management of water and sanitation for all. Goal 6 includes the target of achieving universal and equitable access to safe and affordable drinking water for all and achieving access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by 2030 (UN News Centre, 2015). In line with that, the Africa water vision aspires sustainable access to safe and adequate water supply and sanitation to meet the basic needs of all by 2025 (African Union, African Development Bank, & Economic Commission for Africa, 2009). In Africa, a considerable percentage of the population still lacks the basic need of safe drinking water. 89% of people have at least one basic water service globally, which mean an improved drinking-water source within a 30-minute round trip. In Africa, only six countries are above that threshold: Algeria, Tunisia, Seychelles, Libya, Egypt and Mauritius. Many countries are still far below the line; only 19.3 % of the population of Eritrea has access to a basic water service, followed by Uganda and Ethiopia, both with 39%. Nearly 40% of African countries currently provide basic drinking services to less two thirds of their people. Regarding sanitation, Africa has the lowest levels of basic sanitation services amongst world regions, although North African countries, Equatorial Guinea, and South Africa have coverage levels comparable to other regions. The proportion of the population with access to at least basic sanitation services in Africa increased from 25% in 2000 to 28% in 2015 (AU, ECA, AfDB, 2018) .

According to World Health Organization, around 3.4 million people die annually from water-related diseases (UNICEF, 2017). Waterborne diseases are a global issue which is affecting countries at different magnitude. The Rwanda Biomedical Center in 2016 confirmed outbreak of non-bloody diarrhea, typhoid, shigellosis and cholera cases in Rwanda. In 2008, Musanze district was among the least served districts in the country in terms of water, sanitation and hygiene (WASH) services (Murtaza et al., 2017). According to (MININFRA, 2017), Rwanda's main challenge to achieve its 2030 target of 100% access to basic water supply and sanitation is the funding gap

for WASH services in scattered settlements in difficult and hilly terrain. Most development projects donors identify community participation as one of the prerequisite for the improved performance of water and sanitation sector (Mdendemi, 2013). This puts into question the role of community participation in planning, implementing and maintaining water and sanitation services in rural areas of Rwanda to ensure their sustainability.

While assessing the effect of community participation on sustainability of rural water projects in Delta Central agricultural zone of Delta State, Nigeria, (Ofuoku, 2011) found a significant relationship between participation and sustainability of water projects and recommended that the level of participation should be increased, emphasizing on regular conference and institution of sanctions/rewards to encourage citizens to participate in development projects. Haq, et al., (2014) examined the relationship between the level of community participation and sustainability of the rural water supply programs in the rural area of Faisalabd district in Pakistan and their findings clearly demonstrated that community participation at all stages played a positive role in the ownership and sustainability of the rural water supply programs. The results also showed that there is a need of increased community participation in operation and maintenance of water supply projects in order to ensure the quality assurance of the programs. The study further suggested that local people should be involved before launching any development projects in communities.

These two studies have highlighted the importance of community involvement at the different stages of water and sanitation projects. The different stages include planning, design, construction, operation, maintenance and administration.

2. MATERIALS AND METHODS

2.1. Study Area

This research was conducted in Rwanda. Geographically located in Central Africa between 1°04' and 2°51' south latitude, and between 28°45' and 31°15' East longitude, Rwanda is a land-locked country, bordered by Burundi in the South; Tanzania in the East; Uganda in the North, and the Democratic Republic of Congo in the West. The borders of Rwanda stretched up to 900 kilometers. The country's administrative division comprises of five provinces: Northern Province, Western Province, Southern Province, Eastern Province and the City of Kigali (MIDIMAR, 2015). Musanze district as the study focus is one of the 30 districts.. The district has an area of 530 km² and accounts for about 16% of the Northern Province of Rwanda (NISR, 2013). Based on the 2012 Census, the population of Rwanda was 10,515,973 comprising of which 52% female and 48% male. Since the 2002 Census, the population has increased by 2.4 million, which has represented an average annual growth rate of 2.6%. The population of Rwanda is still largely rural, with 83% living in rural areas (MIDIMAR, 2015).

2.2 Research Design

Primary data were obtained from the respondents directly in the study area of the three selected villages whose people are using public water and sanitation project of the village centre. Tools used in this group of respondents were filling questionnaires, interview and personal observation. Also other primary data sources were obtained from District water and sanitation officer and sectors' land managers in charge of monitoring water and sanitation projects. Secondary data were obtained from different sources both published and unpublished documents and relevant literatures such as reports, journals, pamphlets, newspapers, publications and internet sources. These documents were obtained from libraries, different governmental and non- governmental institutions and offices.

The population of this study considered the respondents from the three selected villages in the rural area of Musanze (Gataraga, Gitega and Rwinuma). The respondents are residents of those villages, using public and water sanitation facilities that were visited. The exact location of conducting interviews were purposely chosen, near public water and/or sanitation facilities in order to give a sense to questions that were asked. Also, purposive sampling method was used for water and sanitation department official(s) and includes land managers in charge of monitoring the villages' water and sanitation projects. Random sampling method was used to pick respondents at the village level.

2.3 Data Processing and Analysis

The collected data were edited, coded and processed by using Statistical Packages for Social Sciences (SPSS) Version 21.0. Under this, codes were developed and templates created (variables were designed and given labels). Editing and coding of the questionnaires was done and data were entered following the developed codes. Data analysis was done using Statistical Package for Social Science (SPSS) Version 21.0 and results are presented using percentages, tables, graphs and charts.

3. RESULTS INTERPRETATION AND DISCUSSION

3.1 Socio-Economic and Demographic Characteristics of Respondents

Respondents were both men (56.6%) and women (43.4%). Men and women were considered due to the fact that they are both involved in the different socio-economic activities that need water and sanitation facilities and are required to support water and sanitation schemes for their sustainability. In particular, women are the most affected by water and sanitation related problems in their areas. The majority (36.5%) of the respondents presented had secondary school level education (i.e. twelve years of basic education), (33.9%) had attained primary school education, 26.5% had not been to school while only 3.2% had attended a university. Thus, most of the respondents have basic knowledge of writing and reading, therefore can be selected for training on water and sanitation projects management. The major economic activity carried out in the study area is on farming (29.1%). Other economic activities include small scale businesses (10.6%), students (24.3%), Office workers (1.1%) while (34.9%) are unemployed or fully engaged in daily household activities. It should be highlighted that the collection of data was conducted in areas surrounding the water and sanitation facilities, which might explain the percentages of respondents' occupations.

3.2. Addressing sustainability during project planning

Districts and sectors water and sanitation officials revealed that community mobilization at initial planning is done to ensure that the people understand and accept the project while committing to safeguard it. Also, according to the policy of Government of Rwanda, (2016), the districts play an important role as asset managers and contract managers of water projects. They handle projects extensions, major repairs and rehabilitations, and manage project funds. Districts act as the contracting party for management contracts with private operators and ensure day-to-day supervision of contract compliance. Each district has a District Water Board in charge of those tasks and act as the same time as the contact point for water user committees, as the consumers' voice, as well as for reports and complaints received at village to sector level. The survey however, found that the totality of the respondents in the three villages claimed not to have participated in the initial stages of water supply and sanitation projects planning including design. Though, 98% responded positively that community participation in planning, implementation and management of water project can lead to the effective and sustainable of water and sanitation services.

3.3 Water Users Association

Concerning any water or sanitation user committee in the villages, only 38% of the respondents claimed they were of such committee while 62% of them did not know about user committees. Furthermore, among those who admitted to know of user committees, only 11% believed the committees work effectively, 21% did not think that the committees are working well while 58% did not have any idea of how the user committees work.

3.4 Water Quantity and Sanitation

On the quantity water available 96.5% said that the quantity of water at the public water pipes have reduced with time and that there were several times when water is completely off. On the public sanitation facilities 86% of the respondents said that the facilities are no longer as effective as they were, due to poor maintenance. The findings show that only 21.8% of the respondents said that they get enough water for their households from the water projects in the three villages, while for 78.2% of the respondents do not get enough water for their households. Among the reasons they gave included temporal water shortages, delays in maintenance in case of system failure, alternatives of free water sources, etc. Regarding sanitation facilities, 34, 7% of respondents said they were satisfied with the public sanitation facilities while 65.3% were not satisfied; the main reason was that the public toilets are no longer well maintained, therefore they are usually not clean.

3.5 Operations and Maintenance Cost

According to the National Sanitation Policy of Rwanda (MININFRA, 2016), in order to ensure cost recovery and financial sustainability; operation and maintenance costs of sanitation infrastructure shall be borne by the users. In addition, affordability shall be addressed by the choice of appropriate technologies and by enhancing efficiency, not only by granting subsidies. However, the polluter-pays and user-pays principles are to be applied in sewerage and waste management. Among the respondents, 19% revealed to have at least contributed to the maintenance of the projects, through labor work volunteerism or through collective community labor works "umuganda" which take place once every month. Moreover, in order to ensure cost recovery and financial sustainability, operation and maintenance costs of the water and sanitation infrastructure that were visited, the respondents affirmed that they pay a fee in order to use the services. For the public water station; a fee of 25 Rwandan Francs (approximately

USD 0.027) per 20 liters of water is paid, while for the public toilets a fee 50 Rwandan Francs (approximately USD 0.055) is paid to use the facility. The fee is collected by a member of the village who has a contract with the operator. Apart from collecting the user fees, the person also communicates to the operator in case of any unusual water shortage or pipe failure.

3.6 Capacity Building and Community Meetings.

According to Districts and Sectors' water and sanitation officers, only one capacity building workshop was conducted during the year in the sectors for water board members and water users' committee members on their roles and responsibilities in helping to manage community water and sanitation projects. It was found that 24% of the respondents regularly attend monthly community meetings and they stated that water and sanitation issues are among the issues discussed during the meetings. However, they revealed that the decisions on water and sanitation issues are just information to the community on actions taken to maintain services in the villages.

4 CONCLUSION

The failure of many development projects including that of water and sanitation is due to ineffective participation of key stakeholders including users, low capacity of the communities in operation and maintenance of water and sanitation systems as well as management of the resources. It has been highlighted that participation must take place at all stages of development of the water and sanitation schemes, from the planning stage, to implementation and management. Our findings showed that sustainability issues were inadequately addressed during initial stage of project development. This is corroborated by results from field observations and respondents claim of regular water systems breakdown caused by technical flaws in the designs and implementation, low technical capacities of water attendants and uncleanness of the public toilets due to poor designs and maintenance. Communities have no capacity to maintain the water and sanitation services and no sense of ownership. Community involvement in every step of the project is key because sustainability improves with greater community participation in all cycles.

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