

## **STRATEGIES, CHALLENGES AND RECOMMENDATIONS OF PROMOTING COMMUNITY PARTICIPATORY APPROACH TO SOLID WASTE MANAGEMENT**

**Jonathan Galukande-Kiganda**

Research Fellow, Uganda Management Institute, Kampala, Uganda

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**Abstract:** The paper assesses the factors constraining community participation in solid waste management and provides a way for enhancing participatory management of solid waste. The paper leverage on findings from empirical data of key stakeholders in solid waste management in Lwengo Town Council, Uganda. Methodologically, the study adopted a case study design with a mix of qualitative and quantitative data. The analysis first utilized descriptive statistics to describe the public participation practices as well as solid waste management. Qualitative data was analyzed using content analysis. Findings indicated that community mobilization, sensitization and information dissemination were inadequately or inappropriately done. The community members lacked a sense of responsibility for waste management among community members and lacked clarity on the roles and responsibilities. The town council staff lacked skills for effective mobilization, sensitization and information dissemination. The town council had limited funding among other challenges. The study recommends management and leadership of urban authorities strengthen awareness and knowledge about solid waste management through intensive mobilization, sensitization and information dissemination to the communities. In addition, the community should be trained on sustainable management of solid waste management strategies such as recycling waste for use to pull interest of the community in waste management due to associated economic gains.

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**Keywords:** Community participation, solid waste management, Challenges

### **Introduction**

The issue of Solid Waste Management (SWM) has been of concern since the stone age when people generated garbage in various forms of peel offs, black smith products and others in their mode of production process. But given that man was undeveloped, operating in a wider environment and the ratio of the population being low in relation to the acreage, garbage management was left for nature (Ackerman, 2000). Today SWM remains a global concern for sustainable development and urban councils remain hotspots for consumption and generation of solid waste generation all over the world. In fact, urban councils consume as they produce (UN Report, 1990). This partly because they use over 75% of world's resources and releases a similar proportion of waste (UN, 1990). In development countries, Africa for instance, solid waste management is a big constraint in urban centres because its where more than half of its populations live. People generate solid wastes throughout their daily activities. Solid waste generation increases especially in urban areas increases as the population surges (UNHabitat, 2003, as cited in Kayanda, 2014)

The United Nations Educational Scientific and Cultural Organization, Report of 2007 reveals that international committees and organization recognize that waste is a global concern requiring urgent attention. Many United Nations Conferences on Environment and Development in Rio-De Jenairio, the Global Conference on

Sustainable Development of small islands and developing states held in Barbados in 1994 and the World Conference of Disaster Deduction held in Yokoshania in 1994 resolved the need for better strategies to reduce the volume of waste through effective disposal of waste and waste management. Conversely, poor solid waste collection and disposal is a threat to public health and reduces the quality of life for urban residents especially in unplanned settlement. Lwengo Town Council is one of the typical examples of unplanned settlement.

Community participation in waste disposal is a catalyst in public development work, because it gives residents a feeling of self-esteem and minimizes cost burden to government due to part utilization of community resources (United Nations Centre for Human Settlements, 1989). Lwengo Town Council is one of the urban authorities struggling with the problem of solid waste management in Uganda. In abid to effectively manage solid waste and guided by the Sanitation policy, the town council authorities instituted measures including; establishment of health and environment committees and periodic community work popularly known as “Bulungi-Bwansi” In addition, the TC has a designated health inspector who supervises four refuse gangs that collect garbage from the Town and market at least four times per week (Lwengo TC Health Department Report, 2020). The TC makes an annual allocation of financial resources to a tune of UGX 20,280,000 for solid waste management. Individuals are expected to use wheelbarrows to ferry garbage to bins and residents are encouraged to always dispose waste correctly and separating waste that can decompose, burning polythene, and disposing glass in pits (Muramira Personal Communication, 2020; Kayanda, 2014).

Despite the initiatives in place to manage waste, Lwengo TC remains with a big challenge. The public still litter waste while the truck of garbage collectors only take waste for people who provides the trash bins, and garbage is left besides the roads at night and the dogs are seen to spread garbage as they feed from uncollected waste. In most township areas, heaps of garbage awaits collection since the few workers are involved in the cleaning (New Vision, 2019). Infact, theTC remains one of the dirtiest town council in the entire district (DTPC Meeting, 2020).The problem of solid waste is compounded by rural-urban migration, poor planning and low capacity in local authorities to manage the waste. This problem is a threat to community health and environmental degradation. Although theoretical perspectives (Arnstein, 1969), and empirical studies potential hinderances to effective community participation in solid waste management, more empirical evidence is needed in specific solid waste management contexts. Taking on a case of Lwengo Town Council, this paper therefore assesses community participation in solid waste management, identifies the factors affecting participation and finally forges a way forward to strengthening community participation and management of solid waste.

- Assess the extent of community participation in solid waste management
- Assess the factors affecting community participation in solid waste management
- Propose a way forward for strengthening community participation in solid waste management

## **LITERATURE**

The significance of community participation to effective management of solid waste has been underscored in many studies such as; Abeyewickreme, et al. (2013) in Gampaha District of Sri Lanka, Nshimiyimana (2015) in the context of Municipal solid waste management practices in Rwanda, Obi (2018). Community participation is considered a means of providing private individuals an opportunity to influence public decisions thus seen as a democratic decision-making process (Bryson, Crosby and Bloomberg, 2014). The community is expected to participate in waste collection, its sorting/separation, its composting, its movement/ transportation and recycling (ManiraGotame, 2012)

Despite its significance, the studies identify limited community participation in solid waste management. Among the challenges raised for limited participation include; inadequate awareness about solid waste management Gana (2014), inadequate capacity in terms of equipment; funds resources; and municipal policies(Manira, 2012; Gana, 2014). Limited community participation in solid waste management was also attributed to the perception among community members that solid waste management was not their role Jonathan (2015). Limited community participation in solid waste management has also been attributed to limited awareness about solid waste management Jonathan (2015) consistently; Gana (2014) observes that

creating community awareness about solid waste is critical for effective participation of the community on solid waste management. Nolasco et al.(2019) in a study on SWM system in Naga City indicated that households were less aware of the diverse solid waste programs. Dhokhikahacet al.(2015)recommended for training, information dissemination among the strategies to support the community participation on HSW reduction in eastern Surabaya

## **METHODOLOGY**

Methodologically, a cross sectional survey was employed with a triangulation of quantitative and qualitative research approaches to describe community participation as well as obtain in-depth understanding of the participation challenges. Primary data was collected from a statistically representative sample size of 340market vendors and residents around Mbirizi-Matooke market in Lwengo town council. In addition, key informant interviews were conducted on the Town Council technical staff and opinion leaders. Quantitative data was analyzed using descriptive statistics specifically percentage distributions to draw general trends in responds' opinion regarding solid waste management as well as community participation and measures for enhancing participation. Qualitative data was analyzed using content analysis as recommended by Creswell well (2014).

## **FINDINGS**

### **Community participation strategies in solid waste management**

Appendix 1provides the percentage distribution of respondents' opinion on community mobilization, sensitization and information dissemination. The majority (66%) of respondents further indicated that they had never participated in any means/level in solid waste management in your Town Council. For the few who had participated in solid waste management, the majority had participated in collection and storage of solid waste. Very few of the surveyed respondents had participated in transportation and final disposal of solid waste or separation and re-use/recycling. The majority of respondents further indicated that they were not satisfied with the type of participation. The majority (73.5%) of respondents indicated to have never attended any seminar, training/workshop, awareness creation on issues related to solid waste management. This means most market vendors and residents did not have an opportunity to expose themselves to the knowledge and best practices in solid waste management that could help them build capacity to better manage solid waste.

“The truth is that many of the people in the people have not participated in waste management meetings. I don't even think there are frequently organized. In terms of waste management, our participation is by collecting the waste and taking it to the collection centers. There is nothing much we can do with the waste. We do not know to process waste into things like manure and we do have burning facilities what may be you are calling incineration”

### **Community mobilization for participation in solid waste management**

The majority (66%) of respondents indicated that they were not mobilized by their local leaders for SWM. Although the leaders participate in planning for solid waste management, they never consult the community members on issues to do with littering waste including plastic bottles, food wastes and polythene bags. They never go to the grassroots or the village level to mobilize the community and discuss with them the issues pertaining to SWM. In addition, the local leaders never organize individuals and groups to collect garbage from their premises. They also never encourage the community to subscribe to waste collections. To affirm this one of the respondents had this to say;

Lwengo Town Council (LTC) encourages community participation where community leaders particularly the councilors are encouraged to come, attend a number of set meetings and participate equally through sharing and exchanging of ideas in the development of the municipality hence intended to better the effective management of Solid waste hence staying in a health environment. Their views and ideas are incorporated in setting goal, objectives and strategies of SWM. However, the Councilors rarely mobilize the community to solicit their ideas for input into the plans”

### **Community sensitization on solid waste management**

Regarding community sensitization, the majority of respondents indicated that they have never attended any seminar, training/workshop, awareness creation on issues related to solid waste management. The majority did not know the concept of composting. The majority indicated that they dispose wastes after collection/storage at communal centers/ collection points as opposed to incineration. The majority transport waste from the household to the communal collection center by head or bicycle. A few transport waste to collection points by wheelbarrow. The majority of respondents further indicated that they never separate solid waste into organic and inorganic components.

### **Information dissemination about solid waste management**

Regarding information dissemination, the majority of respondents indicated that they came to know about solid waste management through fellow public members. The smallest proportion of respondents got to know about solid waste management workshops, seminars, training and guidelines or through ward development committee awareness campaigns. In addition, the majority of respondents indicated that Lwengo Town Council never provides training, guidelines or awareness on public participation in solid waste management. To emphasize the point of limited information about solid waste, some key informant had this to say;

“Information about solid waste management is very limited. You rarely here authorities talk about solid waste management. I have not had of any complain about solid waste management in this town council. Meetings are also rarely organized about solid waste management. We hear about solid waste from our fellow market vendors or market leaders who emphasize good sanitation and always ask us to dispose waste properly”

The majority (40.8%) of solid waste was transported to the collection centers on head. Some residents or mace vendors transported solid waste by wheel barrow. A very small proportion of respondents used a truck or bicycle to transport the solid waste. Carrying of solid waste on head is very dangerous and against the principles of solid waste management. It exposes the community to diseases caused by hazardous waste. Besides, it is irritating that many community members would not want to dispose of waste to collection centers.

The majority of respondents indicated that they were not adequately knowledgeable about solid waste practices. They were only aware about the need to dispose waste by dumping to the collection centers. They were not knowledgeable about recycling of wastes. The majority of respondents indicated that they rarely get information about solid waste management. This is because most communication channels by the town council are insufficient to allow massive dissemination of solid waste messages as most of them were informal in nature as compared to the formal means

Moreover, the majority of respondents understand solid waste management as the collection of solid waste by local authority, collection of garbage in open places or dumping wastes in the landfill. Few of the surveyed respondents understood solid waste management as proper collection, recycling and disposal of solid waste or incineration of solid waste. They were aware of the dangers associated with poor management of solid waste ranging from air pollution originating from rotten vegetable, leftovers, dust, animal wastes and others. The community is aware of the breeding places from rodents. All these are threat to community health as they pave way for diseases such as diarrhea, cholera among others

The majority of respondents further indicated that a private company has the primary responsibility for collecting solid waste once it is brought to the transfer point. This was followed by the proportion of respondents who indicated that Lwengo Town Council has the primary responsibility for collecting solid waste once it is brought to the transfer point. The majority further indicated that a solid waste has contributed to Diarrhea to the public after being dumped in improperly. Improper dumping of solid waste attracts flies and scavenging animals.

## **COMMUNITY PARTICIPATION CHALLENGES**

### **Inadequate community mobilization about waste management**

Despite efforts by LTC authorities to mobilize the community, several gaps were identified. First, the study revealed that mobilization of the community is constrained by limited funding in terms of budget allocations

to the town council. This limits the extent to which the town council can implement the mobilization activities in the waste management plans. Secondly, there was misunderstanding of the aim in participating in solid waste management. The community was always expecting to receive material benefits as a result of their participation. There is a common thinking within the community that they should attend meetings with monetary benefits. This is the case for meetings organized by most NGOs under funded projects which give transport allowance, and lunch. Unlike these projects which have budget lines for such monetary benefits, the Local Government funded activities under waste management do not have such budget provisions due to resource constraints. Hence community members are reluctant to attend the meetings. Ownership” of the waste management interventions:

There was a general feeling among community members that waste management is a responsibility of the town council authorizes. Hence, even the minimal efforts towards community mobilization would not yield results. Similarly, Whitehead, Anita & Linda (2005) identified misunderstanding of project aims and community and group expectations and lack of community ownership as key challenges to mobilization of the community in the context of youth project conducted in a rural community in KwaZulu-Natal, South Africa. Another important constraint to effective community mobilization identified in this study was lack of clarity on the roles and responsibilities among government and NGO staff, and community leading to free riding. Other challenges identified include; fixing a meeting date and time that suited most villagers was also quite challenging. In addition, logistical constraints were faced in bringing together villagers of different castes to the meeting venue and facilitating the discussion especially engaging all in the discussion. These challenges were consistent with those reported to face community mobilization in other contexts such as mobilization for latrine promotion under Nirmal Bharat Abhiyan in rural Odisha, India (Routray& Jenkins, 2017).

#### **Inadequate community sensitization**

Findings from the study revealed some critical gaps in public sanitization which undermine solid waste management in LTC. Generally, findings have indicated that LTC has not done adequate sensitization of the community on solid waste management and identify the underlying challenges to this. These challenges are similar to those identified in other studies. For example, EPA (2020) observes that limited or lack of communications with relevant stakeholders, including residents, can lead to illegal dumping, misuse and damage of containers, resistance to service fees, improper waste segregation, among other things. Coordinated communications and outreach campaigns can help ensure that relevant stakeholder groups are informed and equipped to comply with local solid waste management requirements, management depends on the perception of the people and how they give value to it. Waste is part of life and should not be viewed as a problem that ceases to be once it has been removed. In Asia, lack of environmental ethics and awareness contribute to the failure of solid waste management plans. Education and instilling awareness on environmental issues will go a long way. Social media has a big impact to our young generation and with proper teaching and fostering of environmental-consciousness, we have a chance to improve the present day situation of waste management (Benedikt, Detubio, and Ronna, 2016).

Attendance during community sensitization: The study revealed that many community members are often absent during the waste management sensitization meetings notwithstanding the fact that the meetings were limited due to budget constraints. Consequently, those who miss the sensitization activities lacked awareness and knowledge about some critical waste management issues. People missed sensitization activities due to mainly lack of interest and failure to prioritize waste management in the community. Consistently, failure to engage in sensitization events was reported as a key hindrance in a study on assessment of the relevance of community sensitization for individual decision-making in research participation in rural Gambia (Suzan et al., 2018)

#### **Limited community awareness and knowledge about solid waste management**

The majority (over 50%) of respondents did not know the concept of decomposing waste and mainly used communal centers/collection points to dispose waste. Notwithstanding, the equipment challenges, limited use of incineration method and decomposing could be due to lack of training and exposure to such modes of waste

management. Similarly, Slum residents' practices, concerns, and attitudes indicated lack of sufficient knowledge about good waste practices, their responsibilities, and consequences of poor waste management (Trasias, et al., 2016). Secondly, information dissemination activities including awareness meetings, behaviour change triggering messages, radio talk shows, and other activities to generate demand among community members require experience and facilitation skills, which were found to be lacking among the mobilisers admitted to be lacking. Consequently, information dissemination was deficient of innovative messages which can change the mindset of the community towards waste management. Similar findings were reported in the context of mobilizing the communities for engagement in sanitation projects in studies such as Car (2008) and Chambers (2009).

## **CONCLUSION**

The paper has assessed community participation in solid waste management, identifies the factors affecting participation and finally forges a way forward to strengthening community participation and management of solid waste. Based on the descriptive analysis and in-depth analysis of key informant views, the study concludes that community participation in solid waste management is constrained by inadequate community awareness and knowledge about solid waste management which is compounded by inadequate mobilization and sensitization of community about solid waste management. In other words, scaling up mobilization, sensitization and dissemination of information using appropriate means would significantly contribute to improved waste management through improved awareness and knowledge about solid waste management.

## **WAY FOWARD**

The management and leadership of local government authorities need to boost knowledge about solid waste management among the authorities and community members. Consequently, they would be able to develop and innovative messages and approaches to effectively mobilize, sensitize and disseminate information about solid waste management in the community. The management and leadership also need to scale up mobilization, sensitization and information dissemination activities about solid waste management. This will however necessitate lobbying for priotization of solid waste management and increased allocation of resources to finance the necessary facilities, tools and equipment to effectively manage solid waste in the town council. The management and leadership should also sensitize the community on the roles of the different stakeholders in solid waste management and well as the strategies for sustainable management of solid waste besides, dumping. This will help to change the mid-set of the community about their role in waste management. Empowering the community on methods of sustainable management of solid waste such recycling waste for use will build the interest of the community in waste management due to economic gains that will be realized.

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### **Appendix 1: Percentage distribution of respondents' opinion on community participation in Lwengo TC.**

Variable	Percentage of respondents (n=123)
<b>Public participation in solid waste management</b>	
<b>Community mobilization</b>	
Mobilized by local leaders to participate in SWM Yes	44
No	66
Exist organizations/groups for solid waste management Yes	17
No	83
<b>Sensitization</b>	
<i>attended any seminar, training/workshop, awareness creation on issues related to solid waste management</i>	
Yes	26.5
No	73.5
<i>know the concept of composing</i> Yes	44.9
No	55.1

*Mode of waste disposal after collection/storage*

## Incineration

Communal centers/collection points	46.8
	53.2

## Means of transporting solid waste from the household By wheel

barrow	26.5
On head	40.8
By bicycle	14.3
By truck	18.4

**Information dissemination***LTC has adequately disseminated information about SWM Yes*

	25
No	75

*I have access to enough information on SWM Yes*

	21.8
No	78.2

*I am adequately knowledgeable about SWM Yes*

	26.7
No	71.3

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