# Assessment on the Effectiveness of the Community Participation on Waste Management in Moshi Municipal, Tanzania, Africa

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### ABSTRACT

This study focuses on the assessment of the effectiveness of the community participation on the waste management in Moshi municipal council in Kilimanjaro, Tanzania. The general objective was to examine the effectiveness of community participation in waste management in Moshi municipal council. Study identified the role played and the factors that affect community participation in the management of waste together with the impact of community participation in the management of waste at Moshi municipal, Kilimanjaro, Tanzania. The cross sectional design was used to gather data on relatively large number of people at the same time. The study used 99 respondents for instance, questionnaires was used to obtain data from ten people. The study respondents were WEOs, household members, district environmental officers, executive officer, ward environmental officers and street executive officer. Both primary and secondary data were collected where questionnaire, interviewing key informants and observation method was used in data collection. SPSS and content analysis were used for data collection where information was summarized in frequency, percentage narratives and presented in table and figures.

Keywords: Management services; Environment; Obesity; Executive officer; Community; Soil pollution

# INTRODUCTION

It was considered that, nearly half of the world's population (47 percent) lives in urban areas. United nations development programme. The concentration of people, their consumption patterns, travel behavior, and their urban economic activities have a large impact on the environment in terms of resource consumption and waste discharges. These have lead into environmental problems such as air pollution, soil pollution and water pollution in many parts of developing countries and create a great challenge for them. This is especially witnessed in the section of waste management in different countries of the region.

While the quantity of waste produced in cities continues to increase daily, the effectiveness of the means of handling waste in terms of collection and disposal in developing countries remains low. The evidence of this has been given by the World Bank which asserts that, middle income developing country collection of urban waste is 60 percent while its safe disposal is 30 percent and in low income developing countries the collection is 40 percent and safe disposal is 5 percent [1].

Traditionally, waste management in Tanzania has been dealt with public health regulation which includes a joint command and control approach. In particular, human existence is dependent on the use of material resources which finally produces wastes. Increase in population and expansion of towns has increases production of wastes [2]. Since the year 2000, Tanzania has experienced rapid expansion of cities which have been accompanied with an increase in economic activities and populations.

In Tanzania, it has been estimated that only 20 percent-30 percent of the urban waste generated is collected and deposited off. The evidence is shown by who pointed out that the average waste collection percentages in Dar Es Salaam and Arusha are observed to be below 50 percent. The uncollected waste are said to accumulate in various places such as in the house compound or open spaces, on streets thrown in ditches. This show that there is lots of waste that remain scattered in the cities without

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#### Syonga E

being collected, the evidence for this is the increasing dumping sites and abandoned waste deposit along city streets and open places in residential areas [3].

Tanzania local government act (urban authorities) no. 8 of 1982 required the local government authorities to conduct waste management services in their local authorities and allowed them to charge the community the solid waste fees. This act has given the councils the mandate to outsource these services of collection and solid waste fees Tanzania national audit office [4].

With all efforts, wastes are found scattered and most of it remaining uncollected for a long period hence posing environmental and health risks to the public. In 2000 Moshi municipal introduced the community approach so as to help them in the management of solid wastes. Waste management at household and street levels as per my study means handling of solid waste at source by separating them, store it in bins or bags and then collect them to the required place for final collection to the dump sites by the municipal authorities [5].

#### Objective of the study

**General objective:** The overall objective of this study is to examine the effectiveness of community participation in waste management in Moshi municipal council, Tanzania.

#### Specific objectives:

To identify the role played by the community in the management of waste at Moshi council, Tanzania.

To identify the factors that affect community participation in the management of waste at Moshi council, Tanzania

To reveal the impact of community involvement in the management of waste at Moshi council, Tanzania.

#### **Research** questions

What roles played by the community in the management of waste at Moshi council, Tanzania?

What are the factors affecting community participation in the management of waste at Moshi council, Tanzania?

 Table 1: Shows empirical review.

What are the impacts of the community involvement in the management of waste at

Moshi council, Tanzania?

## LITERATURE REVIEW

#### Introduction

This chapter involves the literature review of the research report, empirical study, and definition of the key terms and the conceptual frame work of the study [6].

#### Definition of the Key term

**Community:** Different author has defined the term community in different perspectives as follows,

Hoffman and Muller, et al., defined the term 'community' as the whole population of a city; a section of the city; or an ethnic or social group within the city. The term community has also referred to a group of people or households living in a settlement or part of it, who share common problems and responsibilities in addressing matters concerning their own lives and development.

**Community approach:** Community approach refers to an approach or process which mobilizes people in the community in self help and organizing effort towards problem solving and establishing opportunities for development. It involves community participation which concerned with the engagement of individuals and communities in decisions about things that affects their lives. This means that communities are playing an active part and have a significant degree of power and influence [7].

**Waste management:** Waste management can be defined as a systematic administration of activities that provided for the source separation, storage, collection, transportation, transfer, processing, treatment, and disposal of solid wastes (Table 1).

#### Summary of the empirical review

Author	Content	Strength	Weakness	Gap	
Chriss, 2018 improving the municipal waste management	The Center for Environmental Education (CEE) is working on a project focused on solid waste management in eight schools. The students are made aware of the prevailing waste scenario.	The formulation of the action plans in reducing the waste in the different areas such as schools and street areas.	Failed to show the different roles which have been played by the community in the reduction and control of the waste management.	To identify the role played by the community in the management of waste at Moshi municipal council.	
Clairvair, 2016 public participation in waste management in small island in developing states	The private sector participation has been mainly in waste collection and transportation on to the disposal site as well as	Quality of life has improved in a formerly neglected community and the waste management has been improved.	Failed to show the impact of the community participation in waste management.	To reveal the impact of community involvement in the management of waste at Moshi municipal council.	

	recycling. Apart for indoor and outdoor storage, some of communities facilitate the collection process by placing waste out at curbside for collection.			
Mazinyo, 2019 community participation in waste management in high density low income areas.	Noted that 63 percent of the interviewed households were unaware of the presence of municipal persuasive instruments geared towards waste minimization and management.	Through the environmental education the respondents showed that the control and the management can be done.	Failed to show the community participatory in the waste management system.	To identify the factors that affect community participation in the management of waste at Moshi municipal council

#### Theoretical review

Waste hierarchy theory: The concept of the waste hierarchy is the basis for waste minimization strategies and refers to the 3Rs which are reducing, reuse and recycle. According to a more environmentally friendly and sustainable solid waste management strategies emphasizes on activities in relation to reduction, reuse and recycling [8]. The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste. The proper application of the waste hierarchy can have several benefits. It can help prevent emissions of greenhouse gases, reduces pollutants, save energy, conserves resources, create jobs and stimulate the development of green technologies.

In the evaluation of processes that protects the environment alongside resource and energy consumption from most favorable to least favorable actions. The hierarchy establishes preferred program priorities based on sustainability [9]. To be sustainable, waste management cannot be solved only with technical end of pipe solutions and an integrated approach is necessary.

Strength of the theory: Reduction is aimed at reducing the amount of waste produced by adopting or optimizing the production process of manufacturers and industries. As a result, natural resources will be saved. Reuse does not involve reprocessing or transforming from one type of material into another. Rather reuse occurs when one material served its original purpose and reused for another purpose rather than being thrown away. Recycling, is all about transforming, or reprocessing of materials that served the original function into new products. Otherwise, those products that served the original function will be considered as waste. Recycling also involves organic materials for the production of compost [10].

Weaknesses of the theory: The concept of the waste hierarchy is the basis for waste minimization strategies and refers to the 3Rs which are reducing, reuse and recycle. According to Baud, more environmentally friendly and sustainable solid waste management strategies emphasizes on activities in relation to reduction, reuse and recycling. The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste. The proper application of the waste hierarchy can have several benefits. It can help prevent emissions of greenhouse gases, reduces pollutants, save energy, conserves resources, create jobs and stimulate the development of green technologies [11].

In the evaluation of processes that protects the environment alongside resource and energy consumption from most favorable to least favorable actions. The hierarchy establishes preferred program priorities based on sustainability. To be sustainable, waste management cannot be solved only with technical end of pipe solutions and an integrated approach is necessary [12].

Strengths of the theory: Reduction is aimed at reducing the amount of waste produced by adopting or optimizing the production process of manufacturers and industries. As a result, natural resources will be saved. Reuse does not involve reprocessing or transforming from one type of material into another. Rather reuse occurs when one material served its original purpose and reused for another purpose rather than being thrown away. Recycling, is all about transforming, or reprocessing of materials that served the original function into new products. Otherwise, those products that served the original function will be considered as waste. Recycling also involves organic materials for the production of compost.

Weaknesses of the theory: Local and regional authorities can be particularly challenged by the following issues when applying the waste hierarchy approach. A coherent waste management strategy must be set up separate collection and sorting systems for many different waste streams need to be established. Adequate treatment and disposal facilities must be established [13].

An effective horizontal co-operation between local authorities and municipalities and a vertical co-operation between the different levels of government, local to regional and when beneficial, also at the national level need to established. Finding financing for the establishing or upgrading of expensive sustainable waste management infrastructure to address the needs of managing waste.

Lack of data available on waste management strategies must be overcome and monitoring requirements must be met to implement the waste programs. The enforcement and control of business plans and practices be established and applied to maximize benefits to the environment and human health [14]. **Environmental education theory:** Community based education is widely accepted as a room in social construction to form better community institutions and active participation in local initiatives. Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues".

**Strengths of the theory:** Education is the most effective means that society possesses for confronting the challenges of the future. Indeed, education will shape the world of tomorrow. Progress increasingly depends upon the products of educated minds: upon research, invention, innovation, and adaptation. Of course, educated minds and instincts are needed not only in laboratories and research institutes, but in every walk of life. Indeed, access to education is the sine qua non for effective participation in the life of the modern world at all levels.

Education, to be certain, is not the whole answer to every problem. But education, in its broadest sense, must be a vital part of all efforts to imagine and create new relations among people and to foster greater respect for the needs of the environment".

Weaknesses of the theory: Education can take many forms and the widespread idea that people get knowledge only at schools is a mistake. Learning is a continuous process that occurs during a person's lifetime. Simple things and action can sometimes teach valuable lessons.

Various techniques can be used as a means of education: lectures, plays, flyers, news, songs, etc. But the education method itself will be ineffective if the target group is not taken into consideration. An example of a good education method used ineffectively would be the distribution of pamphlets with written information to a group of illiterate people.

Environmental education needs to be given to the community so that to let them understand the importance of managing their environment as well as the impact of improper management of the environment. Public awareness and understanding of the importance of waste management and its benefits are consequences of education and awareness raising campaigns. These campaigns are also responsible for more involvement and participation of the public.

#### Conceptual framework

The conceptual framework is an assembled set of research concepts cum variables together with their logical relationships often represented in the form of diagrams, charts, graphs, pictographs, flowcharts, mathematical equations. The Figure 1, assume that if the community will have environmental education, they will increase their level of awareness on the problem of improper management of the waste and change their cultural attitudes towards waste management. Good institutional framework, allocation of waste collection points and enforcement of bylaws will lead into the community to keep the waste in containers, paying for waste collection fee and sending of the waste to the collection points timely. Therefore the study will look on the community participation on waste management Moshi municipal (Figure 1).



# Research design and methodologies

**Introduction:** This chapter presents the research design and methodology comprising of the research design, target population, description of sample and sampling size. Furthermore the chapter present description of data collection tools, description of data analysis procedure and ethical consideration.

**Research design:** The research design refers to the overall strategy that is chooses to integrate different components of the study in a coherent and logical way, thereby, ensure effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data. The function of a research design is to ensure that the evidence obtained enables to answer the initial question as unambiguously as possible. The research design involve both qualitative and quantitative research design where employed to evaluate the assessment of the community participation in waste management.

#### Description of the study area

**Location of the study area:** This study conducted at Moshi Kilimanjaro. The wards which the study conducted are Pasua ward, majengo ward and kaloleni (Figure 2).



Figure 2: Diagram showing the map of Moshi municipality and its wards.

**Ethnicity:** There is one main ethnic group in Moshi district, which is chagga. There are other small ethnic groups which reside in the district which are Pare, and masai.

**Target population:** The target population is the entire group a researcher is interested in, the group about which the researcher wishes to draw conclusion for example, suppose take a group of men aged 18-40 who have suffered an initial heart attack, the purpose of the study could be to compare the effectiveness of two drugs regimes for delaying or preventing further attack therefore target population here would be all men meeting the same general conditions as those actually include in the study. The targeted population in this study was the environmental officers such specifically in Moshi district, WEOs, household and district environmental officers. The reason for selecting the sampling frame is to the fact that the environmental officers will be aware of the extent which community participation is either low or high in waste management.

#### Description of sample and sampling procedure

The simple random sampling used to sample study wards found in the district. The purposive sampling consists of WEOs, household in which they represent members of the whole population.

**Sample size:** Sample size is the act of choosing the number of observation or replicates to include in a statistical sample. The sample size is an important feature of any empirical study in which the goal is to make in reference about a population from a sample.

$$n = \frac{N}{1 + N(e)^2}$$

Where by n=Sample size N=Total population e=Percentage of the error rate 100-90=10



10/100=0.1



Sample size in wards

$$n = \frac{\text{population in a ward}}{\text{sumof population} \times 99}$$

Kaloleni ward

n= 
$$\frac{10709}{28654 \times 99} = 37$$

Pasua ward

$$n = \frac{13460}{28654 \times 99} = 47$$

Majengo ward

$$n = \frac{4485}{28654 \times 99} = 15$$

n=37+47+15=99

#### Data collection tools

The research put emphasis on collecting data from household and involves the collection of both primary and secondary data through observation, interview and questionnaire.

#### Sources of data

**Primary data:** In the collection of primary data method which used to generate information are observation, questionnaire, and interview and focused group discussion. Generally primary data involves the collection of raw data from the field area also through the involvement of participant linked with the proposed topic.

Secondary data: Are collected on the basis of previous data or research is included under the secondary data collection method. Several types of approaches can be used such as case study, document review, articles and projects. In the case study approach of secondary data collection method, researcher collects the data from annual reports analyzed information which is available on the websites of the particular organization. For collecting information under secondary collection method, published and unpublished sources are used by a researcher. The published sources are such as reports of the firm, government publications, newspapers, journals, are used to gather information. Researcher's findings unpublished materials, unpublished findings of certain inquiry committees are used under the unpublished sources of collection. Secondary data in this study obtained from both published and unpublished sources.

## DISCUSSION

#### Introduction

This chapter reports mainly the findings and discussion after analyzing the data which were collected through in depth interviews, direct observation and questionnaires. Furthermore, the chapter continues to present findings by describing the waste management systems deployed by Moshi municipal council, to assess the extent to which waste management systems enhance the management of waste in the municipality, identify the challenges which impact on the effectiveness of the waste management systems in the municipality as well as to determine the ways the municipality can deploy to minimize the impact of

Table 2: Gender has been categorized into two categories.

the challenges towards the effectiveness of waste management systems.

#### Demographic information

The demographic information of the respondent involves gender, age, education level, number of years in the resident area and number of people in the household, all this demographic information is important for the researcher to get different view on waste management in Moshi municipal, Tanzania.

**Gender:** Gender this is the social relationship between man and women in the community, in this gender has been categorized into two categories which are male and female as shown in the below Table 2.

Gender	Frequency	Percent
Male	62	62.6
Female	37	37.4
Total	99	100

In the study the findings shows that 62 (62.6%) of the respondents were male while 37 (37.4%) of the respondents. In the study both male and female were given equal chance. This implies that men were volunteered more than women and both were participating in waste management in their community. The findings is supported by kendrick in his study he argued about the social relation in the community he concluded by identifying the man power were he argued the age group between 35 to 45 is the productive and is very important for production in the community. Also the age beyond 60 is dependent age in the community.

Age: The results showed that the majority of respondents were aged between 24 years-39 years representing 40 (40.4%) of them, followed by 18-23 age groups which represent 30 of the total population. The next age group was respondents above 50 years which accounted for 7.1 percent. Finally, the age group that ranger between 39 years-49 years accounted for 3.1 percent. This implies that majority of adults participated in waste management in their areas (Figure 3).



Figure 3: Age groups of the respondents.

The findings is supported by Chopik in his study he argued about the social relation in the community he concluded by identifying the man power were he argued the age group between 35 to 45 is the productive and is very important for production in the community. Also the age beyond 60 is dependent age in the community.

Marital status: According to this study, the marital status was classified into four categories namely single, married, widow, separated and widower (Figure 4).

The findings showed that 44 (44.4%) of the total sample sizes were single, 50 (50.5%) of them were married, 4 (4%) of the respondents were divorced, 1 of the respondents widowed.

The findings supported by Robards, found out that group of people who are married are positive in waste management

# compare to other marital status which are negatively support management of waste (Figure 4).



**Educational level:** Education is the transfer of knowledge from one person to another or from one generation to another, in the study the finding shows that 3 (3.0%) of the respondent had no formal education, 3 (3.0%) of the respondents had primary education, 11 (11.1%) of the respondents had secondary education and 48 (48.5%) of the respondents had university and college education lastly 34 (34.3%) had other level of education, this implies that larger number of the people had enough education that can be used in combating waste in the community and save the environment as shown in the Table 3.

shown that lack of awareness is one of the barriers to effective

community participation. The level of awareness of the on waste

management does vary from one person to another depending

on the seriousness on the community, in the study the findings

as summarized in the below Table 4.

Table 3: Education level frequency and percentage.

Education level	Frequency	Percent
No formal education	3	3
Primary education	3	3
Secondary education	11	11.1
University/college education	48	48.5
Other	34	34.3

According to Taneja, viewed that education can help the realization of population control, through the use and dissemination of information and contraception and also through environmental education and awareness programs.

#### Role played by community in waste management

Awareness is a critical success factor for effective participation and implementation of community activities. Studies have

 Table 4: Role played by community in waste management.

	Strongly	agree	Agree	Undecic	led		Disagree	2	Strongly dis	agree
_	F	%	F	%	F	%	F	%	F	%
Do you know public health problem associated with poor waste management	31	31.30%	49	49.50%	14	14.10%	5	5.10%	0	0.00%
Municipal council have the capacity of providing waste	25	25.30%	45	45.50%	27	27.30%	2	2.00%	0	0.00%

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management services										
Law and regulations for waste management are really imposed to those who not act in accordance	18	18.20%	34	34.30%	38	38.40%	6	6.10%	3	3.00%
Community are well educated and informed on waste management in their respective areas	9	9.10%	31	31.30%	45	45.50%	9	9.10%	5	5.10%
Are there any micro and macro enterprises that collect waste via door to door in the area	11	11.10%	18	18.20%	41	41.40%	28	28.30%	1	1.00%
Do you think that the location of your house can be contribute in preventing smooth provision of collection of waste door to door	25	25.30%	51	51.50%	15	15.20%	4	4.00%	4	4.00%

The finding from the study shows that, in the study 49 (49.5%) of the respondents were aware on the health problem associated with poor waste management, due to that large number of respondents were aware on the impacts of waste management, 45 (45.2%) of the respondents were agree with municipal capacity of providing waste management service in the community, also in the study the enacted laws and regulation in the community are not acts in accordance where the implementation of those by laws is poor implemented were the respondents were neutral either operating well or not, as well as education and information's on waste management in their areas.

Also in the study 41 (41.4%) of the respondents were neutral on the micro and macro enterprises that collect waste *via* door to door in the area this shows that the available enterprises that collect sold waste management are not operating good on door to door in the area, lastly in the study the 51 (51.5%) of the respondents were agreed that house can contribute in preventing smooth provision of collection of waste on door to door.

Efforts are required so as to have sustainable waste management systems all the time in local government authorities especially in Moshi municipal council. If the prerequisites cannot be considered important for the whole time then the areas which perform well in cleanness can fail to maintain the status hence poor waste management systems. Also, CSIR, in the book entitled "municipal waste management good practices" attempted to investigate good practices in each of the stages of waste management, from the point of collection through transport, storage and treatment to final disposa.

#### Storage of waste

The level of awareness of the on storage of waste management does vary from one person to another depending on the seriousness on the community and the economic ability of the people, in the study the findings shows how storage of waste before being and after being disposed (Table 5).

	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
I keep the waste at home until the collectors come by using other storage material	62	62.60%	27	27.30%	4	4.00%	5	5.10%	1	1.00%
I burn it the back of my home	8	8.10%	38	38.40%	32	32.30%	19	19.20%	2	2.00%
I dump it in sewerage system	4	4.00%	3	3.00%	11	11.10%	38	38.40%	43	43.40%
I dig a hole around the house and burn it	94	94.10%	0	0%	1	1.20%	2	2.20%	2	2.30%

The findings shows that 62 (62.5%) of the respondent were strongly agreed that they are keeping waste home until the collector come by using storage material, 38 (38.4%) of the respondents are burning their waste at home since they are not able to pay for the fee of collecting waste, while 38 (38.4%) of the respondent were disagree on dumping waste on the sewage system since they are not able to access the service in their areas, while the majority are digging hole and bury their waste were 94 (94.1%) of the respondents were strongly agreed.

Most of the municipal authorities have very low capacities of waste collection and disposal. Recent studies in major urban center in Africa have shown that the problem of waste management has become serious that has terminated most efforts by city authorities to collect and dispose the generated solid wastes. The problem is composited as these countries continue to urbanize rapidly. The population increase, inserts the pressure on local authorities on the management of solid wastes.

#### Major waste management limitations

The significant role played by community in waste management at household level has been discussed earlier. The major limitations associated with waste management at household and the community levels were explained to interview; indicated that, the major limitations associated with WM were; lack of collection and storage bins, lack of separation techniques, lack of by laws enforcement, lack of transport facilities and lack of collection centers.

According to Blight and Mbande observed that most cities in developing countries are facing problems of waste management which is largely caused by low capacity of municipal authorities. Collection, storage facilities are in most cases not adequate leading to the possibility of environmental and health problems.

# Suggestions for improvement of community participation in waste management

The interviews were conducted in which respondents were asked to give proposals for improvement of community participation in solid waste management. Results in table above indicated that the provision of community education and awareness creation ranked highest followed by provision of collection containers and allocation of adequate funds to municipal for purposes of building their capacity in WM. Enforcement of existing by laws ranked forth. These results suggest that if communities are made aware and educated on issues such as their role in WM and formation of site specific groups which could address issues like compost making, participation in WM will be enhanced. The interview indicated that compost making could be an entry point for increased participation. Previous studies by Akinmoladun and Adejumo indicated that about 70%-80% of the generated solid waste in urban areas is of organic nature which can be turned into organic fertilizer and source of income if well planned and organized.

# Factors that affect the community participation on waste management

Under this objective the researcher wanted to identify the roles played by the community in solid waste management at household and street level. The findings presented in below Table 6.

Table 6: Factors that affect the community participation on waste management.

Factors that affect the community participation	Frequency	Percent (%)	
Packing in bins and send waste to collection points	48	80	
Separate recyclable from organic waste	10	16.7	
Paying for waste collection fee	12	20	
No response	9	15	

Table 7 that, 48 (80%) respondents were packing in bins and send their waste to the collection points, 10 (16.7%) were separating the recyclable waste from organic waste while 12 (20%) were paying for solid waste collection fee. The findings imply that most members of the community at household and street level are participating much in sending the solid waste in the collection points rather than in paying for solid waste fee.

According to an interview with the city waste manager, community members were not cooperative in paying for waste collection fee, this hinder the effective provision of solid waste management services by the city council resulting into delayed collection of waste at the collection points at the street level.

According to zender, in order for the community to play their role effectively, critical waste issues should be diagnosis by themselves. The communities have to be informed, educated, and empowered about those critical issues. Then let the community identify and solve waste problems instead of introducing the solution for their problems.

# The impact of community involvement in waste management at household and street levels

In this objective the researcher wanted to find out if since 2000 when Moshi municipal council introduced the community approach strategy in waste management there had been any improvement so far. Data for this information was presented in Table 7.

Table 7: Distribution respondents on the impact of community approach in waste management.

Is there an impact of community approach in WM	Number	Percent (%)
Yes	93	93.3
No	6	6.7
Total	99	100

### CONCLUSION

Explains how the respondents gave their views about the impact of been involved in WM. It shows that, 93 (93.3%) respondents said that, involvement of the community in the management of solid waste has brought more positive impacts due to the fact that now their environment is clean, the outbreak of diseases such as cholera, diarrhea has been reduced. They have learnt to use the waste bins, also in the street especially in markets and bus stands now days there are waste bins for collecting solid waste. 6 (6.7%) respondents said the situation is still the same may be if more knowledge will be given to the community things will change.

On an interview with the ward leaders they said, "still there are few people who are still ignorant concerning the management of

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solid waste, others are still dumping solid waste in holes situated in front of their houses while in the street people may throw solid waste on the ground while the waste bins are there".

This shows that knowledge of waste management has to continue given to the community now and then so that the community will be aware that if they don't manage their waste, they are the ones who are going to suffer their consequences.

In order to have a continuing impact in waste management, community should be involved at different stages and degrees of intensity in the waste management system. Example community member can be involved in awareness raising activities, participate in meetings which is essential to generate a broad based understanding of waste issues among community members.

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