EXAMINATION OF THE IMPACT OF COMMUNITY PARTICIPATION ON MUNICIPAL SOLID WASTES MANAGEMENT IN ILALA MUNICIPAL: CASE STUDY OF KIPAWA AND ILALA WARDS

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER IN PROJECT MANAGEMENT OF THE OPEN UNIVERSITY OF TANZANIA

2019

CERTIFICATION

The undersigned certifies that she has read and hereby recommends for acceptance by the Open University of Tanzania a dissertation entitled; ñExamination of the Impact of Community Participation on Municipal Solid Wastes Management in Ilala Municipal: Case Study of Kipawa And Ilala Wardsò in partial fulfilment of the requirements for the degree of Master in Project management of the Open University of Tanzania.

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DECLARATION

I, Korosso, Samwel Gikaro, do hereby declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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Signature

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Date

DEDICATION

This work is dedicated to my beloved family (the late Gikaro Korosso Marwa, my lovely wife Mrs. Happy Korosso, and my begotten daughters Glory and Giovanna), for their dedicated support both financially and spiritually during my entire studies.

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Thank you and May God keep on blessing you all abundantly!

ABSTRACT

Solid waste management is considered to be one of the most serious environmental problems confronting most urban areas around the globe. If not properly managed, solid waste creates favorable breeding ground for vermin and insects and causes a serious risk of communicable diseases which may result to total destruction of environment and even result to death of living organisms including human beings. The purpose of this study was to examine the impact of community participation on municipal solid wastes management in Ilala Municipal, Tanzania. The study was guided by the following specific objectives: (i) To assess the impact community involvement on solid wastes management, (ii) To examine the roles of community in solid wastes management, (iii) To examine approaches used in managing solid wastes by both local government and community. The study used a case study design which incorporated both quantitative and qualitative approaches. The study surveyed 100 respondents, 50 respondents were the street chairpersons of the local government, 10 respondents were City council environmental officers, 10 respondents were the municipal council environmental officers, and lastly, 30 respondents were the wards environmental officers both from Ilala district (municipal). The study used self-administered questionnaire and it also interviewed selected employees. The data was analyzed with use of descriptive statistics (SPSS Version 21) and data presented as frequency distribution tables. The study recommended that there is a higher need of government to enact or establish an organ apart from NEMC that is overdosed according to many respondentsô views in the study. The organ would only deal with managing wastes particularly solid wastes and providing environmental education to people in the society.

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LIST OF ABBREVIATION

CBOs	Community Based Organizations
NGO	Non- Governmental Organization
SPSS	Statistical Package for Social Sciences
SWM	Solid Waste Management
UNEP	United Nations Environmental Program
RWAS	Royal Welsh Agricultural Society
ISWM	Integrated Solid Waste Management
DCC	Dar es Salaam City Council
IMC	Ilala Municipal Council
KMC	Kinondoni Municipal Council
TMC	Temeke Municipal Council
DLA	Dar es Salaam Local Authorities
EMCA	Environmental Management and Co-ordination Act
EMA	Environmental Management Act
PPP	Public Private Partnership
RCC	Refusal Collecting Charge
NEMC	National Environmental Management Council
CPSWM	Community Participation on Solid Wastes Managements

CHAPTER ONE

INTRODUCTION

1.1 Background of the Problem

Dar es Salaam is the countryôs largest industrial and commercial centre with an estimated population of more than 4 million in 2012 and a population growth rate of 4.3 percent. The total land area is about 1,500 km² with a population density of around 2,700 persons per km². More than seventy percent of the populations live in unplanned and under-serviced areas of the city. The Dar es Salaam municipal government is composed of the Dar es Salaam City Council (DCC) and five contiguous Municipal Councils: Kinondoni (KMC) to the north, Ilala Municipal Council (IMC) in the center, Temeke Municipal Council (TMC) to the south, Ubungo Municipal Coucil (UMC) to the south west and Kigamboni Municipal Council (KMC) to the north east.

Together, the six local governments are commonly referred to as the Dar es Salaam Local Authorities (DLAs) according to (Breeze, 2012) in his report to World Bank. Solid waste management can be defined as a discipline associated with control of generation, storage, collection, transfer, processing and disposal of municipal solid waste in a way governed by the best principles of public health, economics, engineering, aesthetics and other environmental considerations Daskalopoulos, (1999).

In developing countries, solid waste management is considered to be one of the most serious environmental problems confronting most urban areas (Sinha & Enayetullah, 2000a). In most African countries, management of solid waste is the responsibility of

local authorities which have low capacity in terms of financial, operational, institutional 1 structure, management and inappropriate technologies which affect the availability or sustainability of solid waste management services. Recent events in major urban centers in Africa have shown that the problem of waste management has become serious that has aborted most efforts by city authorities to collect and dispose the generated solid wastes (Onibokun, 1999).

The problem is compounded as these countries continue to urbanize rapidly. The population increase inserts the pressure on local authorities on the management of solid wastes. It is estimated that most municipal authorities can collect and dispose of 20 ï 30% of the generated solid waste. Like in many other countries, waste management is a problem of major concern in most municipalities in Tanzania. For example, about 200 metric tons of solid waste is generated daily in Morogoro municipality, but the municipal authorities can only collect and dispose less than 35% of the generated waste. Of the uncollected waste, 35% is disposed in refuse pits while 30% is dumped in streets, streams and rivers (SUMO, 2003a).

If not properly managed, solid waste creates favorable breeding ground for vermin and insects and causes a serious risk of communicable diseases. In addition, solid waste in waterways causes pollution of the water as well as blocking the flow of water causing flooding during heavy rains. Hospital wastes are separated and partly incinerated at the hospital, but some other health facilities still mix hospital waste with other solid wastes, other types of solid wastes are usually not separated. Most common solid waste management practices in Tanzania includes incineration, land fill (dumpsites), left uncollected in housing compounds or in open spaces, on streets

and in drains contributing to flooding, health and environmental problems (Zerbock, 2003). Solid waste management problem in most cities and towns in Tanzania relates to handling at source, collection, transportation, disposal, financing as well as capacity of the City. At the household level there is no mechanism for waste sorting which make it difficult to minimize waste through recycling and safe disposal of waste including the hazardous ones. Despite several researches has been done to count down the problem, still existing elements toward failure to manage the solid wastes in municipal is greater.

1.2 Statement of the Problem

The growth of science and technology, population increase especially in towns and mushrooming of the industries in the world today has completely changed the life style among people in the world. Demands of goods and marketing at large has been the prime factors which cause the industries both major and minor to produce varieties of wastes including solid wastes which is now a big problem in towns and cities especially in developing countries like Tanzania. However, different scholars discussed the concern and come up with some solutions to a problem one being community involvement in mitigating if not eradicating the impacts brought by the circumstance.

For example, Da Zhuh, *et al*. (2008) found that, in order to achieve the principles of reducing and recycling wastes to reduces littering of waste at source, segregated as biodegradable and non-biogradable so that hazardous waste and infected waste are kept separate, involvement of the community is inevitable. Since the community would arrange the primary activities in collection of waste through RWAS, self help

groups, NGOs, or individual waste collectors by paying the service provided. Moreover, (Da Zhuh, *et al,* 2008:160) added that, the community involvement on solid wastes management provides SWM service for low income population, whereby they can be able to obtain their dairy bread by being paid from their dues. Other scholars such as, Mohee (2015) added that, wastes management is a behavior or psychological change where by a community need to be impacted with psychological knowledge before taking any physical action.

In this case Mohee (2015) proves that community participation in SWM will gradually lead to behavioral changes in the city population regarding sustainable waste management, eventually leading to a cleaner city. In Tanzania however, many studies have been done to investigate how the community participation is of its impact in managing solid wastes. For example, Jonathan (2015:60) found that, it is only through provision of education to community base based on solid wastes management is where the problem would be solved. Jonathan (2015) here means that, the problem is still large and the only solution to it is provision of knowledge patterning the problem.

Not only the general overviews from different scholars mentioned in this case study, but the inert concern of the researcher to have undergone more investigations on the problem, since, the researcher is a witness and a victim of the prevailing situation in the community. Thus, was looking forward to find out the proper practical methods or solutions to mitigate if not to eradicate the scale of the problem especially in Ilala municipality where empirical data as per DCC (2012), denoted that 39% of solid wastes produced only in Ilala municipality. This means that, the amount of solid

wastes produced is greater even more compared to other municipalities such as Temeke. Moreover, the studies showed that, only 42% of solid wasted produced were taken into dump where others remained uncontrolled.

1.3 Objectives of the Study

1.3.1 General Objective

To examine the impact of community participation on municipal solid wastes management in Ilala Municipal.

1.3.2 Specific Objective

i. To assess the impact of community involvement on solid wastes management in Ilala municipal.
ii. To examine the roles of community in solid wastes management in Ilala municipal.
iii. To examine approaches used in managing solid wastes by both local government and community in Ilala municipal at large.

1.4 Research Questions

The prime question under this study was what is the impact of community participations in solid waste management in Ilala municipality? From this point, various questions were asked as following;

i. What is the impact of community involvement on solid wastes management in Ilala municipal?
ii. What is the role of community in solid wastes management in Ilala municipal?
iii. What are the approaches used in managing solid wastes by both local government and community in Ilala municipal at large?

1.5 Significances of the Study

The findings of this research intended to buildup knowledge which show that, without community participation on solid wastes management it is difficult to have sustainable solid waste management in Dar es Salaam municipalities and other urban areas in general. Also, the study results will raise awareness of managing solid wastes among the community by applying varieties of modernized methods (strategies) discussed by different scholars. Moreover, the study is useful to decision-makers, ractioners, academicians, industries, health officers, the private sectors and other beneficiaries on the reference toward community participation on municipal solid waste management.

1.6 Scope of the Study

In recent years, municipal solid wastes management and community participation on municipal solid waste management has become a major talk in many developing countries especially in growing urban and cities like Nairobi, Kampala, Mwanza and other many urban and cities. There are mushrooming of CBOôs, NGOôs and PPP which are acting on it but still the problem is on the peak. Therefore, this research was conducted in Ilala municipal in Dar es salaam region particularly in nine (9) wards out of 36 wards in Ilala Municipal. Few wards are, Kipawa, Kitunda, Kivule, Msongola, Buguruni, kariakoo, Kinyerezi,

Ilala and Vingunguti. The reason why the researcher selected the area for study is due to the fact that, Ilala municipal parse comprises of a high population of 1,220,611 according to 2012 national census; hence the area likely to produce high quantities of solid wastes. Poor housing and sewage system, industries are greater

found in Ilala municipal. Hence, a researcher expected to get accurate data and information due to the potentialities of an area.

1.7 Organization of the Work

The work is organized into five chapters, here as chapter one covers various items such as, the background of the research problem of community participation on municipal solid waste management, the statement of the research problem, outlines of the research objectives which are the general and specific one, significances of the study and the scope of the study. Chapter two, covers several aspects like, conceptual definitions such as waste, solid wastes, solid waste management, and several others, theoretical literature review, empirical literature review, policy review and lastly, a conceptual and theoretical frame work that guide the study.

Chapter three comprises of research philosophy (paradigm and strategies), survey population and area of the research, which is (Ilala municipality in Dar es salaam), sampling design and procedures, variables and measurement procedures, methods of data collection and finally, the data processing and analysis using the special computer software called SPSS. The researcher understands that, chapter four is a core value of the study, in this case the chapter comprises of the findings and the presentation which the researcher investigated from the research field. Here including the answers brought from questionnaire and interview method which were the prime methods in collecting the finding out.

Lastly, chapter five is made up of the recommendations and suggestions by the researcher pertaining the researched case study. The chapter has talked about the

way forward to be done by either the central government, local, institutions such as NGOôs, companies or local personnel in general toward calming down the mentioned problem. Moreover, the chapter has included pages for references of the study, study budget, appendixes which comprises of research timetable, questionnaires guide and interview guides.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1Introduction

This chapter explores the relevant literature in order to identify and assess the issue and challenges pertaining to community participation toward municipal solid waste management in Ilala municipality in Dar es Salaam city, Tanzania specifically. The following issues addressed in the chapter; conceptual definitions, theoretical literature review, Empirical literature review practice at global, regional, and national levels, policy review, policy review and lastly, conceptual frame work.

2.2 Conceptual Definition

2.2.1 Solid Wastes

David and Liptak (2000;7) defines solid waste as any discarded materials that is not specifically excluded by the regulation or excluded by granting of a special variance by regulatory agency. Solid waste are the materials not exclude from regulations which is disposed of, abandoned, recycled, or considered ñinherently waste-likeò. Andy (2006) continue saying that, solid wastes will remain hazardous as long as it continues to exhibit the hazard characteristic, however waste can be rendered non hazardous through treatment of waste so that it no longer exhibits the hazardous characteristics.

2.2.2 Community

Different author define the term ñ communityò in different perspectives as follows, Hoffman and Muller (2001) defined the term ócommunityô 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 (UNDP, 1997 cited in Kaluwani, 2009).

2.2.3 Municipal Solid Waste

Akkucuk (2016:42) defined MSW as unwanted by-product, demand, defective, or superfluous materials discarded in the urban areas for which municipalities are usually held responsible for collection, transport, treatment and final disposal.

2.2.4 Municipal Solid Wastes Management

Akkucuk (2016) defines Municipal solid waste management as the collection, transfer, resource recovery, recycling, and treatment of waste aiming at protecting the population health, promoting environmental quality, developing sustainability and provide support to economic productivity.

2.3 Theoretical Literature Review

2.3.1 The Waste Hierarchy Theory

The waste management hierarchy theory can be traced back to the 1970s, when the environment movement started to critique the practice of disposal-based waste management. Rather than regarding ‘rubbish’ as a homogenous mass that should be buried, they argued that it was made up of different materials that should be treated differently ï some shouldn’t be produced, some should be reused, some recycled or composted, some should be burnt and others buried (Schall 1992). As a concept or principal, the hierarchy makes sense in a way that is difficult to oppose. It echoes

approaches that are widespread in human health and medicine, i.e. prevention is better than cure. Most would agree that it is more effective to avoid problems from the outset, than to invest in reactive solutions once the problem has presented. The parallels in human health and environmental protection are similar and supported by considerable scientific evidence and knowledge.

Figure 2.1: The Waste Hierarchy Model to show Solid Waste Management

Source: Gertsakis J., and Lewis, H., (2003).

Significances of Waste Hierarchy Theory: Gertsakis and Lewis (2003:9) found that, the waste hierarchy is extensively used by governments, industry, educators and environment groups as a guiding principle for waste policy and programs. Interpretations of the hierarchy vary, with some governments and NGOs interpreting it strictly as a ómost preferred to least preferredô hierarchy, while others in government and industry would prefer an integrated approach that includes a range of waste management options without a constraining hierarchy definition.

Weakness of the Waste Hierarchy Theory: A barrier to implementation of the hierarchy is that solid waste managers in government and industry have little control over production decisions that influence waste generation, particularly in the absence of regulation. There is increasing recognition internationally of the need to focus more intensively on preventative strategies rather than waste reduction or recovery. Most of the current effort is still on recycling programs, which are important but not as effective as prevention or reduction strategies in achieving sustainability. Moreover, (Hawkins & Shaw, 2004) found that,

> *Despite waste minimization being at the top of the waste hierarchy, most of the statutory targets have been for recycling as the means of tackling the rising waste tonnage"*

They add that, waste costs money through decrease productivity, more raw materials transportation. Moreover, rising of economic prosperity in the last of 20th century has increased wastes generation due to mushrooming of industries in the world.

2.3.2 Solid Waste Management Theory

SWM has been identified as a priority area to be addressed as part of the sustainable development plan. Comprehensive SWM systems are being developed with an overall goal of pollution prevention and control and maximization of the waste as a resource (Claivair, 2006). Now SWM is considered as a major public health and environmental concern in urban areas of many developing countries. The situation in Africa is particularly in the capital cities is severe. The public sector in many countries is unable to deliver services effectively, regulation of the private sector is limited, and illegal dumping of domestic and industrial waste is common practice. In

general SWM is given a very low priority in these countries. As a result, very limited funds are provided to the SWM sector by the governments and the levels of services required for protections of public health and the environment are not attained.

The problem is most acute at the local government level where the local taxation system is adequately developed and therefore, the financial basis for public services including solid waste management is weak (UNEP, 2005). Due to this SWM requires an integrated approach, and a number of African countries have been implementing integrated solid waste management (ISWM), which refer to the complementary use of a variety of practices to safety and effectively handling. It may include source reduction, recycling, composting, combustion, and land filling. In order to understand solid waste management systems. The Integrated Solid Waste Management Framework (ISWM) below details.

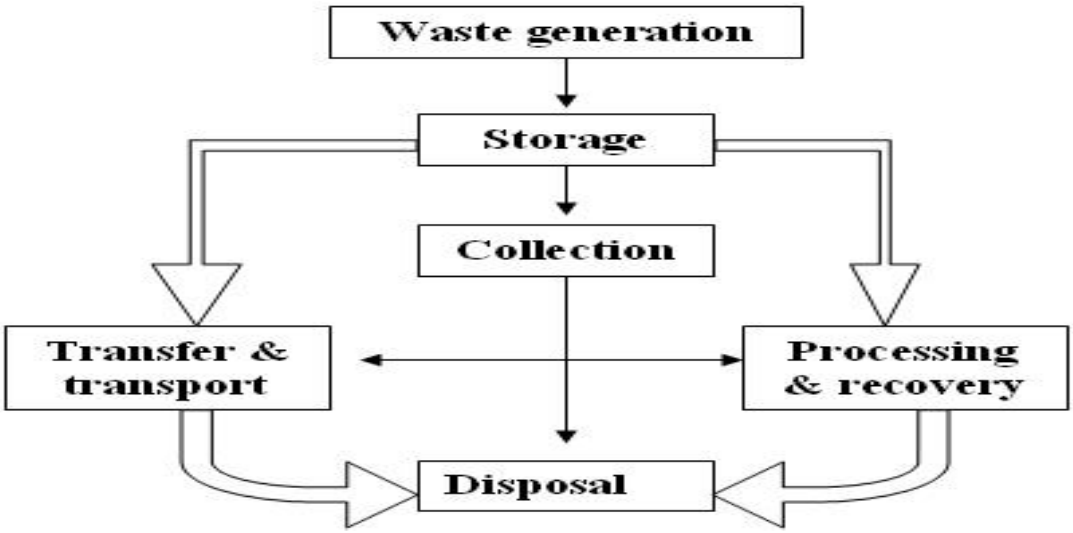

Figure 2.2: The Integrated Solid Waste Management Framework
Source: White et al (1995)

Significances of Solid Waste Management (SWM) Theory: Oteng-Ababio, (2011) found that, the SWM theory is a multi-dimensional issue, since is not only based in

technological solutions but also environmental, socio-cultural, legal, institutional and economic linkages that should be present to enable the overall system to function. The model acknowledges the importance of multiple dimensions when analyzing, developing or changing a waste management system.

The SWM theory allows, the selection and application of suitable techniques, technologies and management programs to achieve specific goals and objectives including environmental and health regulations, economic reliability, and social acceptability It takes into account local conditions and the selection of a proper mix of alternatives and technologies to meet changing local challenges without compromising on legislative demands. The decision making process is informed by environmental, economic, and social considerations. In order to protect the environment and society, SWM requires multifaceted methods of handling and disposal, tailored to each communityôs needs. The ISWMS can be adopted as a sustainable approach to SWM in any region in the world. It can be applied in both developed and developing countries.

Weakness of the Solid Waste Management Theory: Although, the SWMS theory appears to be the most effective and sustainable option in handling the mounting solid waste issues of the developing world. However, this approach takes great planning and restructuring in order to achieve its goals, and developing countries need to understand all the dimensions associated with waste management and how these can be effectively incorporated into their own countriesô needs. White et al (1995:21) found that, the approach does not predict what would be the ñbestò system. There is no universal best system, the theory did not consider the

geographical differences in availability of some disposal options such as, landfill and in the size of markets for products delivered from waste management.

2.3: Empirical Literature Review

Empirically, there are several influential studies that provide the useful framework for the purpose of analyzing the relational ship between applications of Community participation on solid wastes management. The following are some of empirical reviews from different scholars;

2.3.1 The Impact of Community Involvement on Solid Wastes Management

Da Zhuh et al (2008) found that, the reason why community should be involvement in municipal solid waste management is due to the fact that; to achieve the principles of reducing and recycling wastes. It reduces littering of waste at source, segregated as biodegradable and non-biogradable so that hazardous waste and infected waste are kept separate. The involvement of community in solid waste management also would, result in arrangement for primary collection of waste through RWAS, self help groups, NGOs, or individual waste collectors by paying the service provided.

Moreover, (Da Zhuh et al, 2008:160) added that, the community involvement on solid wastes management provides SWM service for low income population, whereby they can be able to obtain their dairy bread by being paid from their dues. Mohee (2015) adds that, community participation in SWM will gradually lead to behavioral changes in the city population regarding sustainable waste management, eventually leading to a cleaner city. Pires and Bin Chang (2015:506) adds that;

"It helps to urban setting planning and encourages higher economic growth potential"

Community-based urban waste management involves neighborhood communities, households, community based organizations and small, informal enterprises engaged in collection and disposal, re-use and recycling of waste materials. Women and men, girls and boys are involved in different waste- related activities, partly because of cultural traditions and conventions, partly because of practical interests, such as earning income and maintaining a healthy living environment and partly because of the wish to gain recognition as a worthy community member. Such waste activities range from managing the resources within the household or family to the more formal municipal activities of collection. They include disposal, re-use and recycling; as well comprising community decision making and management and the ways in which individuals, communities and governments arrange and negotiate the diverse interests of the public and private sectors (Kreith, 1994).

Recent research on urban solid waste management in developing countries shows that community participation in waste management yields several benefits, including health and social benefits such as: proper disposal of waste in special bins outside the homes; reduction in the quantity of refuse dumped in rivers, on streets or burned; and reduction of odour generated from uncontrolled dumping of refuse in the neighborhood. Other benefits include empowerment of residents for active participation in municipal affairs, noticeable decline in childhood diseases, increased use of toilets and public lavatories, and a drop in the number of children begging near clump sites.

Community participation in urban waste disposal means involving key institutional

actors in the process, such as district committees, nongovernmental organizations (NGOs), local authorities and market women .associations. Others are traditional rulers, district heads, religious leaders, teachers, politicians and youths. Syagga (1992) supports the involvement of the community sector as an effective way of increasing access of the poor to urban services, including waste management. Indeed Karanja (2005) led credence to this, when he observed that in Nairobi, organizations in the community sector, such as charitable organizations, ethnic associations, professional "support" NGOs, welfare societies, village committees, self-help groups, and security committees are already providing many of these services. Zerbock (2003) further supports this; any potential change to the waste disposal framework must take into account the urban poor, many of whom dependent on waste scavenging for their entire subsistence.

These factors, according to the report, frustrated the waste management efforts of municipal authorities in Asia and made it difficult for them to keep their city environments clean and safe for the populations. After studying the solid waste problem in Tanzania, Kironde (1999) has also attributed the abysmal performance of the waste sector to resource constraints including the scarcity of financial, physical, human and technical resources for the organization of waste management operations.

JICA (1998) identified several causes of the waste problem including the lack of dumping sites, ignorance of the masses about the need for proper waste disposal, inefficient collection methods, and poor government attitude towards waste management, poverty of the people, corruption among public officials and lack of trained personnel for waste management. Similarly, Mungai (1998) points out that

the solid waste has become a problem in Nairobi, due to increasing urbanization without adequate disposal sites and transportation. These have posed serious constraints to the waste sector and dampened efforts towards solid waste management in the city. Many other writers have elaborated on how the factors cited above (plus others) interact to aggravate the solid waste problem in poor country cities.

Technology in Solid Waste Management: Given the large number of individual issues and specific problems in various municipal solid waste management systems, it would seem tempting to address individual issues as they arise and apply local fixes, so as to keep collection and disposal services operating continuously as efficiently as possible. Indeed, in the short term, this is likely to be a good approach. In considering the long term, however, it is apparent from the scope of problems and the external factors brought to bear upon municipalities that a broader, more integrated set of solutions will be necessary in order to adequately address municipal solid waste system (MSWM) in the future.

Sound practice is a management system that embodies a reasonable balance of feasible, cost-effective, sustainable, environmentally beneficial, and socially sensitive solutions to SWM problems (UNEP, 1996). In other words, sound practices function together to achieve defined solid waste policy goals while appropriately responding to the entire set of conditions that constrain the choices available in specific MSWM decisions (UNEP, 1996). Therefore, if solid waste management is to be accomplished in an efficient and orderly manner, the fundamental aspects and relationships involved must be identified and understood clearly (Tchobanoglous et

al, 1993). On the basis of this solid waste management incorporates the following: source separation, storage, collection, transportation and disposal of solid waste in an environmentally sustainable manner.

2.3.2 The Actors Involved in Solid Waste Management

Baud Isa, Post .J et al (2004) found that, the SWM is no longer a local government monopoly, but a domain in open to various models of public private co-operation, this is due to the fact that, public serving fail due to excessive number of workers, low labor productivity, few incentives for better performance, poor cost recovery, low level of investment, poor maintenance of vehicles and services equipment. Furthermore, the authorities ignore the serving of informal areas, hence privatization are suggested for achieving greater services efficiency and effectiveness. Households and other local actors in a primary phrases are recognized and given the role in waste chain in such away their activities are complementary to and supported by the activities of the institutional actors in the secondary phrase of the waste chain and network, according to Bas Van Vliet, et al (2014:52).

2.3.3 The Roles of the Actors in solid Waste Management

Asia (2011) when writing on what are the roles of the actors in solid waste management found that, solid waste management, decision making primarily lies in the hand of women, since about 80% of household wastes to public bins are moved by children. Again he adds that;

> *"The roles of actors in SWM is all about intra-household activities and routines comprises of storage, and no separation of domestic wastes"*

In this case he analyzed the following role of the actors in solid wastes management

in municipality; first, the actors are responsible in waste storage, where by wastes can be stored in different types of containers, such as dustbins, basket, plastic containers and boxes, plastic bags. Second, the actors are responsible in burning wastes parse if are likely to be burnt. Third, actors are responsible in waste separation, under this juncture, not all wastes are separated only wastes such as plastic and glass wastes that are to be put apart (aside) for re-use, sale, or gift or recycled. Finally, the actors are responsible in preparing the waste for being transferred to dumping sites.

2.3.4 The Approaches used in Managing Solid Waste by Local Government and Community

Chandrappa and Diganta (2012) analyses five important tips (strategies) to manage solid waste by the local government, but first, they found that, in order to manage the solid wastes they said that, one need to characterize the source of the wastes, generation rates, types of wastes produced, and composition. These will help to monitor and control prevailing waste management system while improving the existing system. In characterizing the wastes one need to determine the physical, chemical and biological characteristics before management, for example, physical characterization can be measuring the waste size, density, moisture content, color, void, shape of components, optical property, magmatic properties of the solid wastes. Thereafter, Chandrappa and Diganta (2012) analyzed the following strategies for solid wastes management;

First, collection and storage, collection can be done primarily or secondary. It is said to be primarily if the wastes are collected into the containers within the household.

And it s said to be secondary only when the wastes are collected away the household by different means such as vehicles. On other hand, storage is is made before final deposited or recycle /reuse. In this case storage can be onsite storage, before are transported equipments such as dumpster, Rubbish skip are used. Offset storage is when wastes are stored when serrated paper waste ready to be dispatched for recycling.

Second. Transfer and transport, transfer may be done either, directly from smaller vehicles to large vehicles, transfer wastes dumped by small vehicles on open space, transfer of wastes through infrastructure accompanied by some removal, separation, compactions, shredding etc. Third, recovery and recycle, after transfer and transport, the materials that deserve to be recovered are recovered and these deserve to be recycled such as plastic or bottles are recycled.

Fourth, Segregation, this is done parse when the wastes differ in size, color, density or even composition. In this case, solid wastes can be separated by, hand sorting, screens, magnetic separation, and eddy current separation; where by nonferrous metal from non-metallic fractions are separated. Shredding either the wastes are reduced in size. Other methods include crushing. Finally, reuse and recycling. Materials such as food staffs wastes, newspapers, coal can be reused to manufacture gypsum board, all these wastes can be used to generate other usable goods in other way, the food staffs can be given to animals, or being decomposed into another form without being destroyed.

2.4 Policy Review

2.4.1 Policy Review in Kenya

The Kenyan policy and regulations under the Environmental Management and Co-ordination Act (EMCA) No. 8 of 1999 provide the framework for management of the environment and for the matter concern and individual thereto. For example, the section 87 of this act prohibits against dangerous handling and disposal of solid wastes, as encapsulated in section 87(4); ñEvery person whose activities generate waste shall employ measures essential to minimize waste through practice such as, waste treatment, reclamation and recyclingò. The subsection (5) of the same section observe that;-

> ñ*Any person who contravenes this provision shall be quilt of an offence and liable to imprisonment for a term of not more than two years or to a fine of not more than ten million shillings or to both such imprisonment and fine"*

However, the act of the policy is not clear, about the segregation of solid wastes. In addition to that, section 87(2), paragraph (a) and (b) of EMCA provides that;

> ñ*No person shall transport any waste other than-in accordance with a valid license to transport waste issued by the authority".*

In this case the community participation on municipal solid management is by observing the law and by-laws of the country, for instance in collecting, treating and recycle solid wastes around the areas producing the wastes. Again, through paying of refusal fine is where community participates in solid wastes management in Kenya.

2.4.2 Policy Review in Tanzania

The Environmental Management Act (EMA) No. 20 of 2004 is the core legislation for all environmental issues in the country. EMA (2004) provides the legal and

institutional framework for sustainable management of the environment. It also provides principles for environmental management, impact and risk assessments, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement. The Act provides a basis for the implementation of the National Environment Policy (1997) and the implementation of international instruments on environment including establishment of national offices and focal points for the implementation of international agreements on environment.

The Act stipulates the role of the local government in management and control of solid waste such as minimization, segregation, collection, transportation, storage, treatment and disposal of solid waste from various producers in both urban and rural area. The Act also includes provisions for handling hazardous waste. The Environmental (Solid Waste Management) regulations of 2009 give further elaborations on the provisions of EMA (2004) pertaining to solid waste management while the Environmental Management (Hazardous Waste Control), 2009 elaborates on the provisions related to hazardous waste management.

For instance, under solid waste management, the Environmental (Solid Waste Management) regulations of 2009 prohibits any person to deposit certain solid waste such as electrical and electronic waste unless the receptacle has been approved in accordance with the Environmental Management (Hazardous Waste Control) regulations, 2009. Other related e-waste legislation include the Occupational Safety and Health Act (2003); Tanzania Bureau of Standards Act, 1975 (Act No. 3 of 1975); Fair Competition Act, 2003; Merchandise Marks Act (1963); Water

Resources Management Act No.11 (2009); and the Local Government (Urban Authorities) Act No. 8 (1982) and Local Government (District Authorities) Act No. 7 (1982).

Since it is safe to say that, in Tanzania there varieties of policies that focus on the major items that is environmental management including solid wastes management since nearby all sectors interrelate together. However, the community is involved informally from minimization, segregation, collecting, transporting, storage and treatment. Moreover, by-laws such as, the Refusal Collecting Charge (RCC) adopted in cities and town like Dar es salaam in1993 and effectively acted in 1994, the law established to penalty the generator of solid wastes.

2.5 Research Gap

The reviewed literature has revealed that in developing countries, most of the cities its local authorities have low capacity of collecting the waste generated by 100 percent, Tanzania being one of them. The studies also show how community approach is essential in order to help solid waste management to be sustainable. Poor institutional coordination between the community and local authorities hinder the sustainability of solid waste management (TNUP, 2009). This study filled the gap by evaluating the effectiveness of the community approach in solid waste management in Ilala Municipal Council.

2.6 Conceptual Framework

Damon et al (2011) defined a conceptual framework as a novel framework developed by a researcher that links concepts from the literature. They added that, in

order to develop a novel conceptual framework for a particular study, a researcher must address a number of consideration. According to Kombo and Tromp (2006), a conceptual framework must explain the relationship among interlinked concepts and also they explain the possible connection between the variables and answers the why question.

This study was guided by the conceptual framework (see figure, 2.3) below, the real assumption is that, in order to attain the so called, community participation in municipal solid waste management, two dimensions must be put into function, firstly, the technological dimension, this dimension include scale of technology where by a technology is not put aside in ensuring community participation, the use of tractors, lories, wheelbarrow and any other machineries must be put into use especially during collection, transport and disposal of solid wastes.

Scale of management, on other hand is not ignored, scale of management, it is a body of managing the act, it include enacted laws and by-laws a municipal reinforce to her people so as to ensure community participation in municipal solid waste management, a good example of law under this scale is that of Refuse collection and Disposal by-law article 4 and 5 that requires every landlords/tenants to have dustbins for storing of waste before disposal. Moreover, scale of management has to do with ways of financing and service cost, where by the central government is responsible in funding local government all financials responsible with solid waste management using different donors, both private partners and international organs like UNEP, ILO and so forth.

Secondly, social dimension is another important dimension or organ toward community participation in municipal solid wastes management. A society is there to give full participation in either collecting, prevention, re-use, re-cycle recovery and dispose some of the non hazardous solid wastes such as papers, wastes from kitchen, grasses and so forth. Under this juncture, community participation is through public private partnership (PPP) and social trust (ST) whereby community herself should volunteer for satisfactory in ensuring community participation municipal solid waste management is sustainable achieved. Therefore, municipal solid wastes management is not a task for one man self, instead is a chain of network comprise from city council, municipality council, ward authorities, street or village government. In other hand technological support should be provided by city or municipality authorities, while social motives should be done by community, NGOs, Private sectors etc

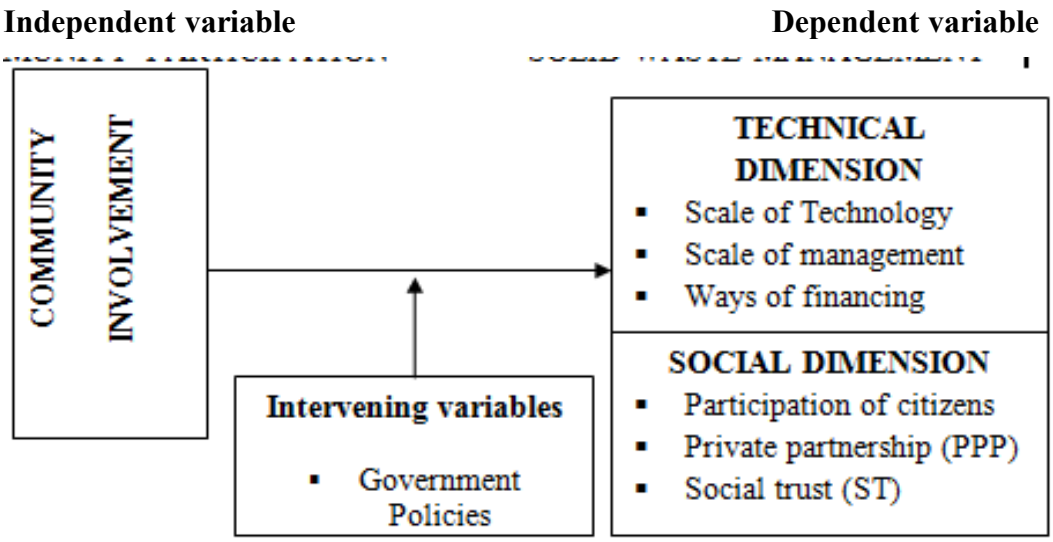

Figure 2.3: Conceptual Framework
Source: Researcher, (2019)

From figure 2.3 the relationship between the independent variable and dependent

variable is indicated. The figure shows the independent variable (community participation) conceptualized as community involvement while the dependent variable consists of two major items which are technical dimension which involves scale of technology; scale of management; ways of financing and service coast. Another item is social dimension which consist of participation of citizens, private partnership and social trust.

2.7 Theoretical Framework

Magigi (2015:99) defines theoretical frame work as the theory that a researcher chooses to guide him or her in his or her research and that, a theoretical frame work is an application of the theory or set of the concepts drawn from one and the same theory to offer explanations of an event. Under this circumstance, a researcher is aware that Solid Waste Management (SWM) Theory is a theory that defines more on six aspects which are waste generation, storage, collection, transfer and transport, processing and recovery and lastly disposal. These six aspects of the theory are the prime function of the researched problem.

The theory is open to the extent that, one cannot dare to talk about solid wastes management without breaking down the aspects like what spoken above. The researchô questions and objectives parse focused on mentioned paradigm as the nucleus of the research. The researcher believe that the solid waste management theory (SWM) is the right theory which guarantee all tips to do with solid wastes management from all level from the level of production and disposal.

2.7.1 Solid Waste Management (SWM) Theory

SWM has been identified as a priority area to be addressed as part of the sustainable development plan. Comprehensive SWM systems are being developed with an overall goal of pollution prevention and control and maximization of the waste as a resource (Claivair, 2006). Now SWM is considered as a major public health and environmental concern in urban areas of many developing countries. The situation in Africa is particularly in the capital cities is severe. The public sector in many countries is unable to deliver services effectively, regulation of the private sector is limited, and illegal dumping of domestic and industrial waste is common practice. In general SWM is given a very low priority in these countries. As a result, very limited funds are provided to the SWM sector by the governments and the levels of services required for protections of public health and the environment are not attained.

The problem is most acute at the local government level where the local taxation system is adequately developed and therefore, the financial basis for public services including solid waste management is weak (UNEP, 2005). Due to this SWM requires an integrated approach, and a number of African countries have been implementing integrated solid waste management (ISWM), which refer to the complementary use of a variety of practices to safety and effectively handling. It may include source reduction, recycling, composting, combustion, and land filling.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The chapter discusses the methodology that the researcher used in conducting research. It covers the research philosophy or paradigm that guided the entire research, explanation on the survey population, area of study, sampling design and procedures, variables and measurement procedures, methods of data collection and lastly the data processing and analysis

3.2 Research Philosophy

The research used positivism research philosophy as a guiding paradigm. Sunders (2009) quoted Remenyi et al (1998) that, ñPositivism prefers working with an observable social reality and the end product of such research can be law-like generation similar to those produced by the physical and natural scientistò. The philosophy of positivism stands on the idea that, only phenomena that you can observe lead to the production of the realistic information. Saunders (2009) put forward that, to generate a research strategies to collect data, one should use or apply the existing theory to develop hypothesis, which later was tested and confirmed in whole or refuted leading to the further development of theory and research. In the light of Saunders ideas, the study used ñparticipatory theoryò and the ñtheory of changeò in generating hypotheses of the research because through the guidance of these theories it was much easily to produce the plausible data.

3.3 Research Design and Strategies

According to Magigi (2015:111), research design is the logical sequence that

connects the empirical data of the research questions to its conclusions. It is the plan that guides the investigator in the process of collecting, analyzing and interpreting data. Again, Kothari (2004:31) adds that, a research design is an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. The researcher understands variety kinds of research designs as according to Magigi (2015:112-119) research designs are such as; case study research design, cross-sectional design, experimental, archival and longitudinal.

Followed by the number of reasons, the researcher employed a case study design as a prime case, since it was often used to narrow down a very broad field of research into one or few easily researchable examples. It also useful for testing whether a specific theory and model actually applies to phenomena in the real world, moreover, the case study strategy has considerable ability to generate answers to the question ñwhy?ò as well as the ñwhat?ò and ñhow?ò questions, although ñwhat?ò and ñhow?ò questions tend to be more the concern of survey strategy. Due to these reasons, case study suited the process since related with the study phenomena.

3.4 Area of the Research Study

The researcher selected Ilala Municipal, found in Dar es Salaam region as the area of study showing the Community participation in Municipal Solid Waste management. Ilala were one of the districts (municipal) in Dar es Salaam region with a nature of urban setting and deliberately faces the problem of poor solid wastes management, which was caused by a high population increase in relation to poor management of solid wastes produced every day in both market, home, hospitals and in industrial

areas. Another reason is that, Ilala is a place where the researcher lives permanently, by selecting Ilala being a case study of the study; a researcher was in a position to collect more information followed by a greater familiarization of a place.

3.5 Survey Population

The study on the CPSWM in Ilala Municipal involved 100 responds who comprised of, 10 city council environmental officers, 10 Municipal (district) environmental officers, 30 ward environmental officers and 50 street chairpersons.

3.6 Sampling Techniques and Procedures

Magigi (2015) defines sampling procedures as the process of selecting some elements from a population to represent that population. Kothari (2004:55) also defined as the definite plan for obtaining a sample from a given population. There various types of sampling techniques that one may decide to use in the study these are such as; simple random sampling, systematic sampling, stratified random sampling purposive sampling, snowball sampling, convenience sampling and other many (Magigi, 2015). At this juncture, a researcher used simple random and purposive sampling techniques;-

3.6.1 Simple Random Sampling

This study employed the so called, simple random sampling technique since all respondents within the research population could have an equal and independent chance (opportunity) of being selected and being representative and minimizing sampling bias during interview. The application criterion for these techniques were because the study wished to explain the predictable or generalized results of the

whole research population involved in the field. In addition to that, the key respondents identified include the street chairpersons of the local government (LG), the wards environmental officers, municipal environmental officers, city council environmental officers.

3.6.2 Purposive Sampling

The study also employed a purposive sampling method to identify the CPSWM as a case study to be investigated. The reason why the researcher decided to employ this technique was due to the fact that, both respondents selected in a case study are directly involved in Community participation in Municipal Solid Waste management in so doing, a researcher expected to get the technical information from the respondents identified. Moreover, the technique simplified the research question despondence since the respondents were familiar with the problem.

3.7 Sample Size

Normally, the size of the sample was neither excessive large nor too small as it should be optimum. (Magigi, 2015) found that, an optimum sample is the one which fulfils the requirements of efficiency representativeness, reliability and flexibility. In order to get the numerous perspectives in the area of study the researcher targeted 100 respondents comprises of city council environmental officers, the municipal council environmental officers, the district council environmental officers, ward and street chair persons. In addition to that, a Sloveneôs formula was used to calculate the appropriate sample of the study which was optimal used. Therefore, the Sloveneôs formula was explained as following;

$n = N/(1+Ne^2)$

Where by:

n = number of sample, N=Total population, e = Level of precision error

n = 311,740 people, e = 10%, n =?

From the formula:

$n = 311,740/(1+311,740*0.1^2) = 99.9679323$(since you canôt sample a fraction of person or thing)

Therefore: n =100

In archiving the selected sample that is 100 respondents, 50 respondents were the street chairpersons of the local government, 10 respondents were City council environmental officers, 10 respondents were the municipal council environmental officers, and lastly, 30 respondents were the wards environmental officers both from Ilala district (municipal). All these respondents were used as the key factors in attempting the study on Community participation in Municipal Solid Waste management. Moreover, the table 3.1 shows the sample size for the study;

Table 3.1: The Sample Size for the Study in Ilala District in Dar es Salaam

NO.	Respondents	Number of Respondents
1.	Street chairpersons	50
2.	The city council environmental officers	10
3.	The municipality environmental officers	10
4.	The wards environmental officers	30
Total		**100**

Source: Research Findings, 2019

3.8 Variable and Measurement Procedures

The researcher collected both qualitative and quantitative information that was gathered through semi-structured interviews, questionnaires, documentary reviews,

and reflective journals. The reason why a researcher interested to use these kinds of data was that, a qualitative research were advantageous due to the fact that it measures quantities, on other hand a qualitative measures aim at discovering the underlying motives and desires, using a depth interviews for purpose. It also find out how people feel or what they think about a particular subject or institution (Kothari, 2004:3).

Questions were prepared and distributed to every respondent during interview. The variable was measured by observing the results and participation of the respondents. Basing on validity and reliability of information, a researcher made sure that, what were collected and presented were valid and reliable followed by the repetition and the consistency of methodologies that used. Magigi (2015:147) added that, a valid and reliable study is the one which is consistency over time, deployed scientific methodology and accuracy in terms of encoding and decoding. Since the researcher used the professional personnel in investigating the CPSWM such as the district environmental officers (DEO) and city council environmental officers, therefore, a study was valid and reliable.

3.9 Methods of Data Collection

The study employed two kinds of data, namely primary data and secondary data both being qualitative and quantitative systematically collected.

3.9.1 Primary Data

The primary data are those which are collected afresh and for the first time, and thus happen to be original in character (Kothari, 2004). Primary data are the original

information collected direct from the respondents. These data were collected directly using interview and questionnaire. The reason why the researcher decided to use this kind of data was due to the fact that, primary data are more accuracy since they involve physical interaction with the respondents in the field in this case a researcher was of great sure that the data collected were consistency.

3.9.2 Secondary Data

Secondary data refers to the statistics that already exist, Churchill & Lucobucci (2002). The secondary data in this study obtained from different sources including reports on Community Participation on Solid wastes managements (CPSWM), reports from governmental organization responsible for Solid Wastes Management that were National Environmental Management Council (NEMC) and other stakeholders in Ilala district. Other personnel include reports from local government on waste management, internet and magazines.

3.10 Data Collection Techniques

The researcher understands different types of data collection techniques such as; field observation, documentary, measurement, interview and questionnaire. In this case the researcher employed only two techniques namely, questionnaire and interview as explained below;

3.10.1 Questionnaires

The study employed two types of questionnaires namely; close ended and open ended questionnaires. The close ended questionnaire requires respondents to provide fixed answers by selecting or choosing the right or appropriate answer among listed.

The open ended questionnaires on the other hand allow the respondents to give any answer. The researcher has chosen these questionnaires so as to offer the wide chance of pace and help respondents to establish rapport in providing genuine or accurate information. In this case 100 copies of questions were distributed as analyzed in table 3:1. However some questionnaires were put into Swahili language so as to allow comprehended to the low education personnel, these are not others but the street chairperson of the local government and wards environmental officers.

3.10.2 Interview

Gillham (2004:1) defined an interview as, a conversation, usually between two people but it is a conversation where one person, the interviewer is seeking response for a particular purpose from the other person; the interviewee. The researcher understands two types of interview namely, open and closed interview. The researcher employed both of them in order to give a wide room for the interviewees to express their opinions freely. Crabtree (2006) supports that, open ended interviews are popular because they allow the interview to express views in their own way, and they also provide reliable comparable information. However, the interviews were conducted to 10 municipal environmental officers, 50 street chairpersons and other respondents depend to the prevailing circumstance.

3.11 Reliability and Validity of the Data

Magigi (2015:146) defined reliability as the extents to which results are consistent over time and an accurate representation of the total population under study, while validity define as the extent to which a measurement does what itôs supposed to. By considering these concepts, in order to ensure validity and reliability of the data that

were collected during the study, strategies such as multiple sources of evidence, documentary review, interview and questionnaire were employed which normally provide convergence of facts during the data collection. In addition to that, the sample (respondents) of the study selected were knowledgeable enough to provide accurate and measurable data or the information. In some cases the questionnaire prepared by the researcher were translated into Swahili language in order to increase comprehension between the researcher and the respondents especially that were not familiar with questionnaires in English language. This was expected to minimize the subjectivity bias during data collection in the field.

3.12 Data Processing and Analysis

Data were analyzed using descriptive analysis technique, after data collection, data processing were recorded in a special software program called Statistical Package for Social Science (SPSS version 21). But this was only for quantitative and qualitative data, as the researcher introduced above, quantitative and qualitative data were deployed in this study, this was due to the fact that, these kind of methodology were simple to use and interpret. Moreover, data assembling and recording were designed into the matrix form, providing the framework for analysis and interpretation in chapter four.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.1 Introduction

This chapter comprises of components such as analysis and implementation of the research data on community participation on solid wastes management which was conducted in 15 wards found in Ilala municipal (Dar es Salaam). The results were obtained from both local consultants and professionals at large. However, this chapter contains varieties of information from the respondents who were involved in the study, such as respondentsô characteristics in terms of gender, age, education level and status.

The chapter also demonstrates different charts that were modified from the respondentsô responses in the field of study regarding the objectives of the study which were; (i) To assess the impact of community involvement on solid wastes management in Ilala municipal (ii) To examine the roles of community in solid wastes management in Ilala municipal and (iii) To examine the approaches used in managing solid wastes by the local government and the community in Ilala municipal.

4.2 Respondents Characteristics

The researcher categorized the respondents in terms of their traits such as; age, education level, gender, their status either if were employed or not. The researcher also maintained the sex balance to the respondents that means both female and male were engaged in the study as the respondents so as to avoid the information flow from a single sex parse. In this case, 45 female were involved in the study and 55

male were involved in the study as the respondents. On other hands, female were seemed to be few due to some roles and family chores seemed to face them as the female (women) in most of African societies. The table 4.1 details on the respondents characteristics.

Table 4.1: Respondents Characteristics

Description	**Frequency**	**Percentages**
Age of respondents		
20-29	32	32%
30-39	41	41%
40-49	16	16%
50-59	8	8%
60+	3	3%
Total	**100**	**100%**
Gender of respondents		
Male	55	55%
Female	45	45%
Total	**100**	**100%**
Education level of respondents		
Illiteracy	8	8%
Certificate	56	56%
Diploma	12	12%
Degree	22	22%
Masters degree	2	2%
PhD	0	0%
Total	**100**	**100%**
Employment status of respondents		
Working in public sector	37	37%
Working in private sector	30	30%
Self-employed	19	19%
Not working	14	14%

Source: Field Data (2019)

Regarding age of respondents, table 4.1 above indicate that respondents aged 20-29 were 32(32%), respondents aged 30-39 were 41(41%), respondents aged 40-49 were 16(16%), those aged 50-59 were 8(8%) and finally respondents aged 60 and above were 3(3%). Hence, the researcher observed that most of respondents were

cumulatively 49 years of age and below, which symbolize that their opinions dominated the findings of this study by 73%. However, those aged 50 and above had important contribution to the study because most of them are matured and experienced enough to possess solid information regarding community participation and solid waste management in Ilala municipal.

Regarding education level of respondents, table 4.1 above indicate that illiterate were 8(8%), those who hold certificate level were 56(56%), diploma were 12(12%), those with degree were 22(22%), masters holders were 2(22%) and none of the respondents possessed a PhD. Hence, the majority of respondents were educated because only 8% were illiterate. Therefore, the contribution from those who are educated from certificate to masters mattered because they possessed technical information that the researcher was looking for. However, those who were illiterate also contributed much to the study because their life experience provided rich information that the researcher wanted.

Regarding employment status of respondents, table 4.1 above indicated that, respondents working in public sector were 37(37%), those working in private sector were 30(30%), respondents who were self employed were 19(19%) and those who were not working 14(14%). Hence, the researcher observed that most of respondents cumulatively 86% were working in different sectors and this helped the researcher to get their work experience linked with the study at hand. Their contributions regarding solid waste management were rich as they were able to identify what the working community does and their involvement in that process.

4.3 The Impact of Community Involvement on Solid Wastes Management in Ilala Municipality

This section presents the findings for the first objective of the study which was (To assess the impact of community involvement on solid wastes management in Ilala municipal). The question aimed at seeking to know, what is the impact of community involvement on solid wastes management in Ilala municipality, simply by either saying at excellent, very good, good or poor? However, 100 respondents who answered the question intervened as follows; only 3 respondents which is equal to 3% of the total respondents said at excellent, 7 said at very good extent, 16 respondents who comprised about 16% of the whole respondent said at good extent while 74 respondents which is equivalent to 74% of all respondents said at poor extent. The table 4.2 gives more clarifications;

Table 4.2: To Show Respondents Report on Community Involvement Solid Wastes Management in Ilala Municipality

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
	Excellent	3	3.0	3.0	3.0
	Very good	7	7.0	7.0	10.0
	Good	16	16.0	16.0	26.0
	Poor	74	74.0	74.0	100.0
	Total	100	100.0	100.0	

Source: Field Data (2019)

4.3.1 Kind of Wastes Collected Mostly

There various kinds of solid wastes taken by the researcher as the sample spaces during the study, wastes such as; plastic wastes, glass wastes, bottles wastes, cloth wastes, wooden wastes, kitchen wastes, papers wastes. However, the study revealed

that; 21 respondents said plastic wastes are commonly. 2 respondents said glass wastes, 38 said bottles, 4 said cloth wastes, 4 respondents said wooden wastes, 6 respondents said kitchen wastes, and 25 respondents said papers wastes.

Table 4.3: Kind of Wastes Collected Mostly in Community

Variable	**Frequency (F)**	**Percentage %**
Plastic wastes	21	21
Glass wastes	2	2
Bottles wastes	38	38
Cloth wastes	4	4
Wooden wastes	4	4
Kitchen wastes	6	6
Papers wastes	25	25
Mean	**14.28**	
Total	**100**	**100%**

Source: Field Data (2019)

4.3.2 The Tools Used in Collecting Solid Waste in Ilala Municipality

The question aimed at evaluating the kind of tools used in collecting solid wastes in Ilala municipal, however the following facts were revealed as shown in table 4.4 and in figure 4.6

Table 4.4: Showing the Tools Used in Collecting Solid Wastes in Ilala Municipality

Variables	**Frequency**	**Percentages %**
Tractors	3	3
Bulldozers	1	1
Private cars & lories	3	3
Dumpers	0	0
Sacks	22	22
Wheleballows	15	15
Folk(sepetu)	10	10
Gloves	2	2
Baskets	19	19
Buckets	25	25

Source: Field Data (2019)

4.4 The Roles of Community in Solid Wastes Management

This section presents findings on the second objective of the study which was (To examine the roles of community on solid wastes management in Ilala municipal). Findings for this objective are presented in table 4.5 to table 4.6.

4.4.1 The Actors Involved in Solid Waste Management in Ilala Municipality and their Roles

The question objective was to determine the actors involved and their roles in solid wastes management in Ilala municipality. 100 respondents as the sample were involved in this question; however the results found were as indicated bellow:

4.4.1The Groups of People Responsible in Solid Management in Ilala Municipality

The table 4.5 details on the group of people (actors) responsible in solid wastes management in Ilala municipality

Table 4.5: To Show the Groups of People Responsible in Solid Wastes Management in Ilala Municipality

Variables	Frequency
House hold/tenants	34
Community at large	5
NGOs	2
Individuals	10
Groups of individuals	2
Municipal council	20
Private paid actors	7
City council	16
Local government	4

Source: Field Data (2019)

Contrary to the perception of many people who think that the responsibility for solid waste management rests on the shoulders of the government, this study through the

findings from table 4.5 above indicate that actors involved in solid waste management in Ilala municipal are many as they involve the government and non-government actors. These findings are supported by the findings of Baud Isa, Post .J et al (2004) who found that, the SWM is no longer a local government monopoly, but a domain in open to various models of public private co-operation.

4.4.2 The Clients, Periods and Means of Transport used to reach the Clients in Collecting Solid Wastes in Ilala Municipality

Under this context there were three questions a researcher wanted to evaluate. Firstly, who are the clients involved in solid wastes management. Secondly, which period is used by the actors in collecting solid wastes in Ilala Municipality? Lastly, this means of transport used in collecting the solid wastes. The table 4.6 and figures 4.7, 4.8 and 4.9 show the results obtained by the researcher in the field.

Table 4.6: The Main Clients in Solid Wastes Production

The main clients in solid wastes production	
Variables	**Frequency**
Residential areas	29
Commercial	34
Institutions	11
Café and restaurants	18
Health centers	8
Periods used to collect solid wastes	
Variables	**Frequency**
Every day	23
Two days per week	47
Once per week	24
Once per month	5
Once per year	1
Not at all	0
Means of transport used to collect solid wastes	
Variables	**Frequency**
Motorcycles	5
Bicycles	9
Lories	54
On foot	32

Source: Field data (2019)

4.5 Approaches Used In Managing Solid Wastes in Ilala Municipal

This section presents findings for the third objective of the study which was (To examine approaches used in managing solid wastes by local government and community in Ilala municipal). The question aimed at evaluating how solid wastes are managed or what strategies are being used by the people in managing the solid wastes parse in Ilala municipality, the researcher divided the question into other three sub questions which all at large aimed at evaluating how solid wastes are managed in Ilala municipality as it is being explained in 4.5.1, 4.5.2 and 4.5.3 as supportive questions under this perspective. From the research findings, the following were the results found when the researcher questioned on how the solid wastes are being managed in Ilala municipality;

Findings indicated that solid wastes are managed by burning, nearby all the respondents answering the question found burning of the solid wastes especially those which are dried one were said to be burnt into ashes hence simply management and prevent other costs which are not necessary to be taken. Wastes such as boxes materials, wooden and building materials which are easy to be burnt were said to be burnt. Burning of the solid wastes as one of the methodologies of managing solid wastes were found to be common in areas such as Buguruni, Vigungunti, Buguruni kwamnyamani, Segerea, Tabata and Ilala.

Managing solid wastes through disposing in the dump sites, the findings denote that, there about 7 big dump sites in Ilala municipal, these sites are capable of saving about 300,000 people per day. The findings denote that, the population of Ilala municipal is growing geometrically in the way that the dump sites are not enough to

accommodate the estimated population of about 1.2 millions of people in Ilala municipality. In this case many of district dwellers do commonly like to dispose solid wastes rather than using other methodologies or means of managing solid wastes.

Recycling method is one of common methods being used by the district dwellers in Ilala municipal, wastes such as plastic materials like, used bottles, buckets, and other of such kind were said to be recycled into other products. The method is seemed to be not common in different areas of Ilala municipal in exception of areas such as Buguruni Malapa, Tabata changôombe, Buguruni Chama and Vingunguti where some people do collect the wastes and forward them to some companies which process them into new usable goods. Although the method is not common due to lack of some machinery and limited funds to community at large.

4.5.1 Kilograms Estimated to be Produced by each Family Hold Per each Collection a Day in Ilala

The question wanted to examine, how many kilograms per day are likely to be produced by each family per each collection a day in Ilala municipal. Different variables were provided to simplify examination of the context; the table 4.7 and the figure 4.10 denote the results revealed in the study.

Table 4.7: To Show How Many Kilograms are Produced a Day by each House Hold in Ilala Municipality

		Frequency	Percent	Valid Percent	Cumulative Percent
	1-2	13	13.0	13.0	13.0
	3-4	17	17.0	17.0	30.0
	5-7	47	47.0	47.0	77.0
	10 and above	23	23.0	23.0	100.0
	Total	100	100.0	100.0	

Source: Field Data (2019)

4.5.2 How does Community Participate in Solid Wastes Management in Ilala Municipal

The question objective was to find out how the community is involved in solid wastes management in Ilala municipal, some common issues were provided to evaluate how the participate in managing the solid wastes, on other hands, the question wanted the respondents to give their roles done by the community in managing solid wastes. And the results revealed were as following;

Table 4.8: Showing how does Community Participate in Solid Wastes Management in Ilala Municipal

Variables	No: respondents	Percentage
Collecting the wastes	21	21%
Burning the wastes	12	12%
Participating in disposing wastes in the dump sites	09	09%
Cleaning the re-habited areas around	40	40%
Preventing an extra environmental destruction for sustainability utilization of environment	05	05%
Influence environmental care and prevention	06	06%
Intervention in environmental laws, bylaws and regulation reinforcement	07	07%

Source: Field Data (2019)

From the table 4.8, it is found that, most of the respondents who are the community members do relay on Cleaning the re habited areas around, the prime reasons given by the respondents were due to lack of cooperative and collective administration force that could promote or push together the community to perform the common task such as participating in wastes disposing, recycling using modern methods. In addition to that, issues such as lack of equipments or tools for cleaning and environmental education made many of people to concentrate in minor tasks like cleaning parse.

The results also denote that, there is a low participation and awareness on prevention of environment for sustainable utilization in the community, since only 05% of the respondents were seemed to have engaged in the activity, this denote that there is still a big burden to be done to provide environmental education to many people in the community particularly Ilala Municipal that was the case study of the researcher. Moreover, solid wastes management which was seemed to be a problematic in Ilala municipality in Dar es Salaam could be managed via different ways such as providing environmental education to the stakeholders who are mostly the local people who their daily activities seemed to be inevitable in producing solid wastes. Said Khalfan Jumanne Khalfan the Street chairperson Buguruni Malapa.

> *"The community at large should not think that, making the environment safe through sorting out or collecting solid wastes is the local government or other stakeholders such as NGO's or external agencies, rather than it is a task that every community member including LP, should effectively participate in keeping the city or streets clean…."*

Suggested Mama Hamza Mrey the business women in Bugurunisheri. In the supportive of the above findings, the study of Da Zhuh et al, (2008) added that, the community participation on solid wastes management is important to everyone especially the low income people who can even get their daily bread through their participation in solid waste management.

4.6 What to be done to Ensure Community Participation in Solid Wastes Management

The question aimed at evaluating the respondentsô general overview on what to be done by the community at large to ensure full community participation in solid wastes management in general. More than 55% of the respondents out of 100%

wanted the local government to give frequently seminars and workshops concern preservation and utilization of the solid wastes in a proper and scientific ways rather than monitoring and managing locally. The table 4:9 denotes the general results reveled in the study.

Table 4.9: To Show Respondents Interaction to Ensure Community Participation in Solid Wastes Management in Ilala Municipal

Variables	Frequency	Percentages
To provide environmental seminars and workshop that arise awareness or consciousness on environmental issues including solid wastes management.	55:100	55%
To organize cleanliness competition that would base zone to zone and inspire the winners by gifts in terms of cash etc.	13:100	13%
Strong to reinforce laws and bylaws against the environment pollutants agents.	9:100	9%
The government to put high rate of fine to all law or by laws brokers	4:100	4%
Creation of job opportunities in terms of market to all street venders who deal with collections of all kinds of solid wastes such bottles, plastics etc.	11:100	11%
Local governments to point a special day for cleanliness	8:100	8%

4.7 Discussion of the Findings

This study examined the impact of community participation on municipal solid wastes management in Ilala Municipal, Tanzania. The findings revealed that actors involved in solid waste management in Ilala municipal are many as they involve the government and non-government actors. These findings are supported by the findings of Baud Isa, Post .J et al (2004) who found that, the SWM is no longer a local government monopoly, but a domain in open to various models of public private co-operation.

In the question of how solid waste are managed findings indicated that solid wastes are managed by burning, nearby all the respondents answering the question found

burning of the solid wastes especially those which are dried one were said to be burnt into ashes hence simply management and prevent other costs which are not necessary to be taken. Wastes such as boxes materials, wooden and building materials which are easy to be burnt were said to be burnt. The findings further denote that, rrecycling method is one of common methods being used by the district dwellers in Ilala municipal, wastes such as plastic materials like, used bottles, buckets, and other of such kind were said to be recycled into other products. Such findings are supported by Tchobanoglous *et al,* (1993) who explain that if solid waste management is to be accomplished in an efficient and orderly manner, the fundamental aspects and relationships involved must be identified and understood clearly.

In response to the question of how does community participate in solid wastes management in Ilala Municipal, findings revealed that most of the respondents who are the community members do relay on cleaning the re-habited areas around, the prime reasons given by the respondents were due to lack of cooperative and collective administration force that could promote or push together the community to perform the common task such as participating in wastes disposing, recycling using modern methods. In addition to that, issues such as lack of equipments or tools for cleaning and environmental education made many of people to concentrate in minor tasks like cleaning parse.

The results also denote that, there is a low participation and awareness on prevention of environment for sustainable utilization in the community, since only 05% of the respondents were seemed to have engaged in the activity. This is due to several

reasons as explained by JICA, (1998) who identified several causes of the waste problem including the lack of dumping sites, ignorance of the masses about the need for proper waste disposal, inefficient collection methods, poor government attitude towards waste management, poverty of the people, corruption among public officials and lack of trained personnel for waste management.

The study further established that in order to ensure community participation in solid wastes management, the following factors needs to be considered; to provide environmental seminars and workshop that arise awareness or consciousness on environmental issues including solid wastes management; to organize cleanliness competition that would base zone to zone and inspire the winners by gifts in terms of cash etc.; strong to reinforce laws and bylaws against the environment pollutants agents; the government to put high rate of fine to all law or by laws brokers; creation of job opportunities in terms of market to all street venders who deal with collections of all kinds of solid wastes such bottles, plastics etc.; and local governments to point a special day for cleanliness. Generally, the above findings are supported by Syagga (1992) who supports the involvement of the community sector as an effective way of increasing access of the poor to urban services, including waste management.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Geographically, Ilala district is one of five districts in Dar es Salaam region, it is westward bounded by Indian ocean, northern ward bounded with Ubungo district, southern by Temeke and other districts that bound it include Kigamboni. It is one of the most populated district in Dar es Salaam city with the population estimated. The population composed of both little earning and higher earning economically, most of little earning inhabitants or people live in areas such as Myamani, Vigunguti, Buguruni, Amana etc. due to the big number of people that is increasing day to day, the rate of producing wastes particularly solid wastes is high compare to other district, and this is the keen reason why the researcher decided to make a study in the area. However this chapter contain of the summary of findings from the research, implications of the findings, conclusion, recommendations and areas of further research where more study can be done in details.

5.2 Summary of Findings

To sum up, the study focused on four major questions that are; what is the community involvement on solid wastes management? Who are the actors involved in solid waste management in Ilala municipality and their roles? What are the strategies used in managing solid waste by local government and community at large and lastly, what are the constraints and potential of community participation on solid wastes management in Ilala municipality? All questions answered accordingly and below are summary of findings in each question.

5.2.1 What is the Community Involvement on Solid Wastes Management?

The question objective were to find out how the community is get involved on solid wastes management, the respondents were required to evaluate if is at excellent, very good, good or poorly. The finding outs show that, only 3% out of 100% which denote the total number of the respondents in the study agreed that the community is involved, this is due to little effort that are been given or shown by the environmental stakeholders who provide little education on management of solid wastes in areas such as Buguruni sheli and other areas which are seen to be of great important due to its nature.

Again, the table 4.2 denotes that 74% of the respondents could evaluate that, the community involvement on solid wastes management is poor due to the number of reasons such as, inadequate of proper environmental education to the community, poor tools being used for cleanliness, unimplimentable environmental policy, lack or the organ that could be a linking factor to environmental issues and solid wastes management at large. Henry Mabumo (36) was quoted said.

> *".....of course there is an organ which manage environmental issues and this is nevertheless than NEMC, NEMC is overloaded, is overloaded, it has a lot to perform as the results some gaps if not faults as revealed everywhere including in managing solid wastes, the local government should be given authorities to manage problems of their own include creating their own organ to manage not only solid wastes but also all issues to do with environment management"*

On other hands, when the researcher wanted to know which kind of wastes is mostly collected in Ilala municipal, the table 4.3 denotes that, bottle wastes such as soft drinks or beverage bottles were highly produced and collected per 38% out of all kind of wastes collected in Ilala. On other hands, glass materials or wastes are the

minimally collected and produced in the community, this is due to the facts that glass products are less produced compare to other materials.

5.2.2: The Tools Used in Collecting Solid Waste in Ilala Municipality

The table 4.4 reveals that, the high technology tool for collecting wastes such as bulldozers, tractors and dumpers are neither present nor used in collecting solid wastes in Ilala Municipal, it is only occupies about 3% of all equipments. The researcher when wanted to know why is this? The respondent simply said, it is so cost to buy or loan these tools for a single collecting, in such way only few well-off economically people can afford it and not normal citizens.

The statistics also denotes that, equipments such as baskets, buckets, sacks and wheal bellows are commonly used in collecting SW in Ilala municipality. When the researcher asked why is it so? The respondents claimed that, the equipments mentioned are cheap, available and easy to use compare to technological one. In other scale, the use of sacks in collecting SW were seemed to be common among Ilala municipal dwellers, it is only occupy 52% of all equipments or tools used in Solid wastes management. The reason why is this? Is due t facts that; sacks are available everywhere, they are less expensive and easy to carry to dump sites.

5.2.3 The Actors involved in Solid Waste Management in Ilala Municipality and their Roles

The statistics in 4.5 denote that; 34% of the actors involved in SWM in Ilala Municipal were household and tenants. This is due to the facts that, householders and tenants are the one involved in producing the wastes where by most of the

wastes come from kitchen and dwell red houses in general where by households and tenants do live. In this case they were the one responsible in collecting and depositing the SW. The local government on its way forward plays a part per 4% especially in emphasizing people in cleaning and collecting their wastes after the arranged time interval. NGOôs and Individual groups only contributed at a total of 4% this is due to the fact that NGOôs and individual groups are part and parcel of the society or community, where the society is get involved also are involved as the result their functions remain on giving education and inspiring society in managing SW.

5.2.4 The Clients, Periods and Means of Transport Used to Reach the Clients in Collecting Solid Wastes in Ilala Municipality

The table 4.7 denotes that, the commercial areas were said to be the major producer or client in producing the Solid wastes with 34% out of 8% produced from health centers. In another way, when the researcher wanted to know how many times SW are collected in Ilala municipal, 47 respondents out of 100 said, is done two times a week. However in some areas 24 respondents said, is done per once a week. Again, 54 respondents said roles are the common transport used in collecting and transporting the SW.

5.2.5 How Solid Wastes are Managed in Ilala Municipal

The results in chapter four above denoted that, solid wastes in Ilala municipal is managed through different ways, including burning which was found to be keen methods in managing the solid wastes. The finding outs found that burning was preferred due to the facts that, it is easy, does not cost much money, it is flexible and

simple to manage. Solid wastes which are the one get involved in management are easy to burn compare to other materials such as glass.

Burning as the method of managing solid wastes were found common in Buguruni, Vigungunti, Vigunguti kwa Mnyamani, Segerea, Tabata and Ilala since these areas located with no any big dump site as the result people manage by simply burning the materials. Moreover, the statistics show that, 7 people out of 10 burn the solid wastes instead of disposing or any other methods NEMC report on environmental state in Town and cites in Tanzania (2012). On other hand disposal as the method of managing the solid wastes were found to be prominent in areas such as vigunguti where animal solid wastes are disposed to reduce toxic in the environment. Recycling were also common in Buguruni especially in small beverage factories such as Azam beverage factories.

The local personnel were responsible in collecting and transporting the solid wastes such as bottles and other plastic materials for recycling. Other tasks that were seen to be done by the respondents around their areas included; cleaning where by the table 4.8 denote that about 40% of people were involved in cleaning their surroundings, and Preventing an extra environmental destruction for sustainability utilization of environment which occupied about 5% of the total task done by the respondents. In other ways, preventing environmental destruction for sustainability utilization of the environment was seemed to be of poor involvement or performed, due to the following facts given by the respondents;

i. Inadequate education on how to prevent environment for sustainable utilization. They claimed that no education is given to them on how to work

on preventing environment and its resources for sustainable utilization rather than little education on general cleanliness.

ii. Lack of coordination and influence to be provided by the environmental stakeholders such as district council, municipal and even the city council, all these were said to be less cooperative to citizens as the results no greater role could be performed.

iii. Inequality in law and bylaws reinforcement, the laws and bylaws are hash to poor people and not well off economically people. This brought about unfair treatment in utilizing resources for sustainability

5.2.6 What to be done to Ensure Community Participation in Solid Wastes Management

The tables 4.9 denote different evaluation given by the respondents on the question what to be done to ensure community participation in solid wastes management. 55% of the respondents proposed the provision of seminars and workshops so as to;

i. To raise awareness or consciousness to majority of people on managing solid wastes and environment at large.

ii. To enable the community to get familiar with the laws and bylaws bordering utilization, and management of solid wastes at large, since many respondents were not familiar with different bylaws and laws that governing environment management.

iii. To give the people a wider room to get involved in solid wastes management and environment at large as the results to increase effectiveness in environmental issues and live in a safe and harmony environment.

iv. Other suggestions given by the respondents were, the district or municipal council to organize cleanliness competition at least once per year base zone to zone and inspire the winners by gifts in terms of cash etc. Strong to reinforce laws and bylaws against the environment pollutants agents. The government to put high rate of fine to all law or by laws brokers. Creation of job opportunities in terms of market to all street venders who deal with collections of all kinds of solid wastes such bottles, plastics and all papers wastes.

5.3 Conclusion

Completely, there is no any society would dare to run its life in a polluted areas especially the area that is filled up with solid wastes come from different discipline or localities such as industry, homestead, hospitals, even in agricultural sector. This means that, managing wastes and particularly solid wastes is of so significance than any more. Living in polluted area may result into spread of communicable diseases such as diarrhea, cholera and many other, what to take into note is that managing solid wastes is the responsibility of every one as long as youôre living. It is not a task of municipal council or city or district council it is everyoneôs task.

To see the significance of this carrier a researcher decided to work on it and see how society if not community at large is involved or responsible in managing the solid wastes. The researcher used two different methods in obtaining the factual, methods such as questionnaire and interview were seriously utilized to give pure and accurate finding outs.

On other hands, data analyses were done through a special program known as SPSS, Excel and Microsoft Word. 100 repondents as obtained through rondom sampling were enough to give different views and concerns on the behalf of the wards, districts, municipals, regions and national atl large. However, the finding outs revealed that many people in Ilala municipality have low knowledge or awareness on environmental management and solid management at large, hence efforts should be deligated to citizens themselves, local governments, district, municipal and city councils in planing how to manage solid wastes in Ilala municipal to eradicate complicantions or all consequences resulted from poor management of solid wastes.

5.4 Recommendations

As the finding outs detailed above, it is of the great important to take into consideration on the following issues so as to eliminate all complications and consequences brought by poor solid wastes management into our societies.

i. There is a higher need of government to enact or establish an organ apart from NEMC that is overdosed according to many respondentsô views in the study. The organ would only deal with managing wastes particularly solid wastes and providing environmental education to people in the society.
ii. Fortunate measures should be taken soon when it revealed that a certain area is so polluted in the way that it can cause eruption of some diseases such as diarrhea, cholera and many others.
iii. The every end of the month Saturdayôs cleanliness program that is now days taking place every corner of the country, should be effectively implemented and all who run against it to be taken as the gilt of the laws, in this case they should be fined.

iv. Central government together with the local government should see what to do at least to come up with the proper solution if not solutions on inadequacy of tools or vehicles for picking up the wastes into dumping sites.

v. More dump sites should be constructed to ensure safety disposing of the solid wastes required to be disposed instead of being burnt at family level.

vi. Introduction of different charges or fins as you pollute the environment should be highly considered, but should base on the level of economy, status and not randomly. For example, charges to be given to a business men should not be equal to the one given to local personnel or normal person who own nothing. This means that, there should be a fair treatment before the laws and bylaws made for the seek of managing the environment.

vii. Solid wastes management and environmental management should be the personal or an individual behavior and not groupôs behavior. This means that, management of solid wastes and environment at large should base on individual wise and not communityôs task. People should build the tendency motivating them to clean their area around instead of waiting for somebody to motivate them.

5.5 Limitations of the Study

No success without some hindering outs, despite the researcher were successful in collecting data from the field proposed to work on it still there were some limitations that made the study tuff in some areas, these are nevertheless than;

i. Poor penetration of some areas in study, some areas or streets were poor located in the map of the researcher in the way that it was found difficult to

reach them, instead more time were consumed to reach the areas. For example most of Myamani streets were located interior to the researchersô plan.

ii. Budget problem, the fund that were allocated by the researcher to accomplish the task were insufficient as the result, a researcher could find another unplanned budget to recover the deficit budget.

iii. Some respondents were not ready to give their views on the matter concern hence they made a study difficult somehow.

iv. Time limiting due to absence to some respondents in the time were required to be present. Some respondents were not there during collection of the questionnaires as the result a researcher planned another time for the same exercise.

5.6 Area for Future Study

This study assessed the state of solid wastes management in Ilala municipality in Dar es Salaam, as discussed earlier managing the solid wastes and environment at large is not an individualôs task it is a communitiesô task. In this case several issues have been presented but it is the researcherôs humbleness to present the following areas for further investigation, all in all is for the profitability of our country and environment at large;-

i. Investigation on poor solid wastes management and its consequences in the society. The researcher to find out what are the impacts both negative and positive if solid wastes are not managed in society. For example some solid wastes like papers can be converted into manual and used in agriculture to grow some plants and raise our economy.

ii. Investigation on effectiveness of technology in mitigating negative impacts of wastes in community. The researcher to investigate whether the technology is effective in minimizing or mitigating the impacts brought by wastes of different kinds such as solid, liquid or gas wastes in community. Since the technology is of great usefulness in mitigating if not eradicating wastes in any community if is effective used or applied.

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APPENDICES

APPENDIX I: QUESTIONNAIRE FOR CITY COUNCIL, MUNICIPAL AND DISTRICT ENVIRONMENTAL OFFICERS

Name of ward:é é é é é é é é é é é é é é é é .

Name of the respondenté é é é é é é é é é é é é é é é é .

Nationality é é é é é é é é é é é é é

Position (post)é é é é é é é é é é é é é Dateé é é é é é é ..

1. For how long have you been involved in solid wastes collection?

   Circle the corresponding numerical

   1, 2, 3, 4, 5, 6,7,8, 9, 10, above 10

2. What made you to get involved in this task?

   a) é .

   b) é .

   c) é

3. Which area do you save? (name, population and coverage)

4. How do you conduct your work?

   a) é

   b) é

   c) é

5. Who are the main clients in your task?

   Indicate (ã) tick where corresponding

   (a) Residential areas ( )

   (b) Commercial ( )

   (c) Institutions ( )

(d) Café and restaurants ( )

(e) Health centers ( )

6. When do you reach them? Indicate tick

(a) Every day ( )

(b) Two days per week ( )

(c) Once per week ( )

(d) Once per month ( )

(e) One per year ( )

(f) Not at all ( )

7. Which transport do you use to reach your clients?

(a) Motorcycle ( )

(b) Bicycle ( )

(c) Lories ( )

(d) On foot ( )

8. How do you collect solid wastes in your area?

(a) Excellent ( )

(b) Very good ( )

(c) Good ( )

(d) Satisfactory ( )

(e) Poor ( ) (f) Very poor ( )

9. Which kind of wastes do you collect?

Kind of wastes	**Indicate +**
Plastic wastes	
Glass wastes	
Bottles wastes	
Cloth wastes	
Wooden wastes	
Kitchen wastes	
Papers wastes	

10. Which means do you use to collect solid wastes?

    (i) é é é é é é é é é é é é é é é é é

    (ii) é ..

    (iii)é é

    (iv)é é

11. What is the community participation in your area in solid waste collection?

    (i) Excellent (how?)

    (ii) Very good (how?)

    (iii)Good (why?)

    (iv)Poor (why?)

12. Are you aware that, solid wastes are important economic resource, in terms of energy and law materials? Indicate if YES ( ) How? NO ( ) why?

13. How is solid waste collected in your locality?

    (i) é .

    (ii) é .

    (iii)é .

    (iv)é .

14. Which tools are used in collecting solid waste in your locality?

Tools used in collecting wastes	**Indicate(+) if correlate**
Tractors	
Bulldozers	
Private cars & lories	
Dumpers	
Sacks	
Wheleballows	
Folk (sepetu)	
Gloves	
Baskets	
Buckets	

15. What challenges do you face in collecting, transporting, and disposaling the solid wastes in your locality?

    (i) é .

    (ii) é .

    (iii)é ..

    (iv)é é

    (v) é

16. How many solid waste disposal dumpsites do you have in your area?

    Circle the corresponding number

    1, 2, 3, 4, 5, 6, 7, 8, 9 above 9

17. What to be done to ensure community participation in municipal solid waste collection?

    (a) é

    (b) é

    (c) é

    (d) é

    (e) é

18. How many cases have been reported to your office on refusal for community participation in solid waste collection in 201/16/ in your area?

19. How solid wastes are managed in your area?

    (i) é

    (ii) é

    (iii)é é

    (iv)é é

.

20. Any other opinions (comments) on issues?

é é

Thank you for your cooperation

APPENDIX II: QUESTIONNAIRES FOR WARD ENVIRONMENTAL OFFICERS AND STREET CHAIRPERSONS

Name of ward:é ..

Name of the respondenté é é é é é é é é é é é é é é é é .

Nationality é é é é é é é é é é é é é Dateé é é é é é é é

1. How many times do you get involved in waste collection and dispose?

   Circle the correct answer;

   (a) Once per week, (b) twice per week, (c) always (d) once per month

2. How many kilogram estimated to be produced by each family hold per each collection a day Indicate tick

   Indicate tick

   (a) 1-2 kg (b) 2-3kg (c) 5-7 kg (d) 10 and above

3. Which group of people is responsible in solid management in your area?

   (i) House hold/tenants

   (ii) Community at large

   (iii) NGOs,

   (iv) Individuals

   (v) Groups of individuals

   (vi) Municipal council

   (vii) Private paid actors

   (viii) City council

   (ix) Local government

4. How is the state of solid waste management in your locality?

   (a) Excellent (b) very good (c) good (d) poor (e) very poor

5. Below is a table that indicate various areas produce solid wastes, indicate ñ+ò symbol where you think wastes are produces mostly and (-) symbol where you think solid wastes are produced less.

Area	**Indicate**
Household	
Hospital	
Market	
Education institution	
Worshiping centers	

6. What is the involvement of community (citizens) in solid waste management in your area? Circle the corresponding letter.

   (a) Excellent (b) Very good (c) good (d) poor (e) Very poor

7. How does your community participate in solid wastes management?

   (i) é ..

   (ii) é

   (iii)é é

   (iv)é .

   (v) é .

8. Are the tools involved in the program satisfactory?

   YES ( ) how?
   é
   NO ( ) why?

9. Do you get a budget from the Municipal council for the program?

   If YES ( ) how much a month/year ?.....

   NO ( ) why?.....

10. How many times an education is given to Community (citizen) about community involvement in solid waste management? Circle the corresponding letter.

(i) Once per month (ii) Once per three months (iii) regularly (iv) Not at all

11. Who normally come to educate the community on their significance in municipal solid waste management? Indicate tick (ã) where relate

(i) Environmentalist from municipal council

(ii) Doctors from hospitals

(iii) Volunteers environmental expertise

(iv) No one used to come

12. What to be done to ensure community participation in solid wastes management around your area**?**

(i)

(ii)

(iii)

(iv)

(v)

13. The table below shows the items used in solid wastes management and cleanliness at large, indicate (ã) tick the items which available and being used in the program in your locality.

Item	
Tractors	
Bulldozers	
Lories	
Dumpers	
Small vehicles	
motorcycle	
Bicycle	
Hard blooms	
Whelbalows (Tolori)	
Hand gloves safety	
Safety gumboot	
Safety goggles	
Basket / buckets	

Thank you for your cooperation

APPENDIX 3: TIMETABLE

MONTH	WEEK	ACTIVITY	REMARKS
Mar h	2nd week	Selecting and submitting research topic	Done
April	1st week	writing concept paper	Done
	1st week	Writing first research chapter	Done
	1st week	Literature review	Done
	2ndweek	Writing second chapter	Done
	2nd week	Writing third chapter	Done
	2ndweek	Research proposal editing and printing	Done
	2nd week	Submission of the research proposal	Done
June	1st week	seeking Permission	
	2nd week	Questionnaire distribution	
	3rd week	Research begins	
July	1st week	Collecting data in different Ilala wards	
	2nd week	Data analysis and hypothesis testing	
	3rd week	Data summarization , typing, editing and printing research report	
August	1st week	Research report submission	

Source: Researcher (2019)

APPENDIX 4: TENTATIVE BUDGET

	Item	Descriptions	Amount(Total)
1.	Research equipments	Two pens @500, 1 lim paper 10000/=, one file 3000/=,two envelope@500/=, two pencials @200/=	14,900/=
2.	Transport and communication	For daradara short roots to and from Ilala wards destinations	30,000/=
3.	Stationery	For typing about 100 pages of the report @200/=, for printing about 50 pages for report@200/=	40,000/=
4.	Meals	For breakfast and lunch	12,000/=
5.	Miscellaneous	For any case (pocket) money)	50,000/=
Grand total= 163,000/=Tsh			

Source: Researcher (2019)