GOVERNANCE NETWORKS AND PUBLIC PARTICIPATION IN SOLID WASTE MANAGEMENT IN URBAN AREAS: THE CASE OF LUSAKA DISTRICT

by

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DECLARATION

I, Michael Daka, declare that this dissertation represents my own work and that it has not previously been submitted for a degree at this University or any other similar institution and that all the sources of information used have been acknowledged by complete reference.

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APPROVAL

This dissertation of Michael Daka has been approved as fulfilling the requirements for the award of the Master of Public Administration by the University of Zambia.

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ABSTRACT

Despite several actors being involved in waste management, 85 percent of solid waste in Lusaka district is uncollected. The purpose of this research is to analyse the nature of governance networks and challenges against public participation in solid waste management in urban areas, the case of Lusaka district. The research adopted a mixed methods approach, involving both qualitative and quantitative methods. A sample of 121 was engaged, comprising six key informants and 115 residents. Semi-structured interviews and a questionnaire were used to collect data. This data was analysed by SPSS and content analysis.

The findings indicate that planning for solid waste management is done by a network of actors. These actors include the City council, private companies, Ward Development Committee, the area Councillor and local residents. Privileged actors such as private companies and government officials influence decisions. The findings further show that residents participate in the planning process but their views are not incorporated in decision making. However, evaluation of solid waste management is done independently by different actors. The actors include the City council, private companies, Ward Development Committee and Zambia Environmental Management Agency. The findings also indicate that residents are excluded in planning and evaluating solid waste management. This is due to lack of meetings and structures to organise these meetings. The research therefore, conclude that the nature of governance networks in planning and evaluating domestic solid waste management is that of capture and exclusion.

The networks are captured by privileged actors such as the private companies who influence decisions that promote maximisation of their own profits at the expense of service delivery. The exclusion of governance networks is in such a way that residents face challenges to participate and their views are not considered in decision making. The research recommends that governments should ensure that all actors collaborate in planning and evaluating domestic solid waste management.

Key words: governance networks, public participation, solid waste management, planning, evaluation, Zambia

DEDICATION

This dissertation is dedicated to my family, my wife, Fridah Tembo and children, Bupe, Kumbuso and Chimwemwe.

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ABBREVIATIONS

BSR	Berliner Stadreinigungsbetriebe
CBE	Community Based Enterprise
CSO	Central Statistical Office
DEFRA	Department for Environment, Food and Rural Affairs
ECZ	Environmental Council of Zambia
K	Zambian Kwacha
KCC	Kitwe City Council
LCC	Lusaka City Council
NGO	Non-Governmental Organisation
NPG	New Public Governance
NPM	New Public Management
PSRP	Public Service Reform Programme
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
USD	United States Dollar
USAID	United States Agency for International Development
WDC	Ward Development Committee
WMU	Waste Management Unit
ZEMA	Zambia Environmental Management Agency

CHAPTER 1

INTRODUCTION

1.1 Introduction

This dissertation analyses the nature of governance networks and challenges against public participation in planning and evaluating solid waste management in urban areas, using Lusaka district as a case study. The chapter presents the background of the research, statement of the problem, research objectives, rationale of the research and the conceptual framework. The chapter ends with a presentation of the structure of the dissertation.

1.2 Background

Solid waste is one of the major problems affecting urban areas in both developed and developing countries today. This kind of waste is generated by industrial, commercial, domestic and community activities. It takes the forms of garbage, sludge and refuse (Environmental Council of Zambia [ECZ], 2004). Generation of this waste is increasing faster than the rate of urbanisation. From 2001 to 2011, about 0.64 kilogrammes (kg) of municipal solid waste was generated by each person per day in 2.9 billion urban residents in the world with an increase in 2012 to 1.2 kg per person in 3 billion urban residents. It is estimated that by 2025, the generation of solid waste would increase to 1.42 kg per person in 4.3 billion urban residents (Hoornweg and Bhada-Tata, 2012).

The task of managing solid waste has traditionally been handled by the government in both developed and developing countries. This is in line with the Traditional Public Administration Paradigm. This is a paradigm that gives the government or government bodies the sole responsibility of providing services to its citizenry. The paradigm developed in the late nineteenth century and was heavily influenced by ideas of Max Weber (Osborne, 2006) and emphasises bureaucratisation and politics–administration dichotomy (Piffner, 2004) in the delivery of public services. Therefore, governments at the time, were expected to meet the needs of the citizens both socially and economically (Osborne, 2006), thereby centralising public service delivery.

The Traditional Public Administration Paradigm spread throughout the industrialised world and was introduced under colonial rule, and after independence to most of the commonwealth countries (Robinson, 2015). Like other commonwealth countries, the delivery of public services in Zambia has been highly influenced by this paradigm. This has been the case even with solid waste. Since 1964, local authorities in Zambia have been more active in performing mandatory functions such as water and sanitation, health inspections, garbage collection and disposal, among others, which had an impact to the communities (Lolojih, 2014). Due to population growth within council jurisdictions, the nature of scope of service delivery increased. Local authorities were now characterised by lack of capacity to effectively and efficiently deliver public services such garbage collection and disposal. This situation led to the presence of uncollected heaps of garbage in residential areas and markets, irregular statutory inspections in market stalls, and erratic water supply and sanitation services in most cities such as Lusaka City (Lolojih, 2014). In many places, very small percentage of garbage is collected. This waste finds itself in open spaces, drainages and rivers, resulting in pollution of the environment.

Malama and Kazimbaya-Senkwe (2004) noted that the poor solid waste situation in cities is traced to the traditional approach to solid waste management. This is because the central government, other government agencies and local authorities were the only service providers charged with the responsibility of managing solid waste. This made governments and local authorities to fail to respond to the needs of the people in communities, and thereby making the traditional public administration paradigm unable to make governments effective and efficient in public service delivery. This situation made the paradigm to be heavily criticised in the 1980s (Madimutsa, 2016; Robinson, 2015).

The criticism led to the birth of the New Public Management (NPM) paradigm in the 1980s (Osborne, 2006; Robinson, 2015; Piffner, 2004). The principles of the NPM paradigm include the use of market mechanisms in public sector management, decentralisation and privatisation among others (Osborne, 2006; Robinson, 2015; Piffner, 2004; Madimutsa, 2016). Privatisation in many developing countries for instance, led to outsourcing of government services such as cleaning, road maintenance, ancillary health services and solid waste management which are contracted out to the private sector (Labi, 1999). Zambia, like many other developing

countries had serious difficulties to provide public services to the people since 1980s. Malama and Kazimbeya-Senkwe (2004) observed that as a result, governments and its agencies opted for the involvement of the private sector in the delivery of urban municipal waste in cities such as Kitwe and Lusaka. It was believed that the principles of the NPM paradigm would enhance public service delivery.

Nevertheless, at the dawn of the 21st century, this paradigm was criticised for lack of coordination in the delivery of services. It also reduced the power of politicians to hold service providers accountable for their activities which culminated in poor solid waste management. Like the traditional public administration paradigm, NPM promoted inefficiency and ineffectiveness in the delivery of public services (Madimutsa, 2016).

The criticisms of the NPM paradigm gave birth to the New Public Governance (NPG) paradigm in the 2000s which emphasises coordination among various stakeholders in the delivery of public services. This was the beginning of governance networks in public service delivery. The paradigm focuses on the involvement of many stakeholders in the delivery of public services such as road maintenance, cleaning and solid waste management among other public services. In this vein, the government is viewed as one of the stakeholders amidst many whose responsibilities in public service delivery are based on an inter – organisational relationship with other stakeholders such as the citizens (Robinson, 2015). Zambia is one of the developing countries that have adopted governance networks in the management of solid waste. In an effort to ensure that the public sector is effective and efficient in the delivery of public services, the Zambian government adopted the Public Service Reform Programme (PSRP) in 1993 (Republic of Zambia, 2009). The PSRP had three major components. The first was concerned with restructuring the government service, the second with human resource management and the third with decentralisation and strengthening of local government (Republic of Zambia, 2009; Momba, 2006).

The launching of the PSRP led to the adoption of the National Decentralisation Policy in 2002 which was anchored on the third component of the PSRP (Republic of Zambia, 2009). This policy is premised on empowering communities to participate in public service delivery, including development planning, decision making, financing and coordination of public services and also providing for an institutional framework to promote independence in making decision by local authorities (Republic of Zambia,

2009). In line with this policy, local communities are expected to participate in activities such as solid waste management, natural resource management, rehabilitation and maintenance of feeder roads, construction of schools, markets and clinics, among other activities.

1.3 Statement of the problem

Although governance networks have been adopted in Zambia, the country still fails to effectively manage solid waste especially in residential areas. ECZ (2004) shows that only 15 percent of solid waste is collected in Lusaka City. About 12 percent of this waste is collected by the City council while three percent is collected by private companies. This leaves 85 percent of the solid waste uncollected. This waste finds itself in drainages during rainy season, thereby causing blockages of the drainages and floods. The uncollected heaps of solid waste make the district untidy, cause pollution and are breeding grounds for disease carrying insects such as flies and mosquitoes. This situation, therefore, shows that governance networks are not effective in the management of solid waste in developing countries like Zambia. This situation also raises questions regarding the extent to which local people, who are the generators of waste, are involved in solid waste management. Local people are crucial in this process, because they tend to have insightful information on how to address problems facing them, which other actors might not have (Creighton, 2005). It is for this reason that this research was undertaken to analyse the nature of governance networks and challenges against public participation in planning and evaluating solid waste management in Lusaka district.

1.4 Research Objectives

1.4.1 General Objective

The general objective of this research is to analyse the nature of governance networks and challenges against public participation in planning and evaluating solid waste management in urban areas.

1.4.2 Specific Objectives

The specific objectives of this research are as follows:

i. To analyse the nature of governance networks and challenges against public participation in planning for solid waste management in urban areas.

ii. To examine the nature of governance networks and challenges against public participation in evaluating solid waste management in urban areas.

1.5 Rationale of the research

The rationale of the research is that it may provide information on the nature of governance networks and challenges against public participation in solid waste management in urban areas like Lusaka district. The concept of governance networks has been chosen because it creates a forum where various actors come together, interact and contribute resources and ideas in the processes of decision making and implementation.

Public participation has been chosen because it adds value to decision making. This is because of the incorporation of salient view points and experiences with regards to the problems or issues faced by the residents, which the officials charged with decision making may not have. Thus, quality and effective decisions are made. This is based on the premise that the residents may have very crucial and insightful information (Creighton, 2005) with regard to problems they face which the bureaucrats or the government or government agency may not have in addressing a particular problem. In other words, public participation is believed to be the source of valuable information. Public participation also leads to effective implementation of public policies and service delivery as the public get involved. This is due to that they partly own the decision which gives them the zeal and desire to work towards achieving their goals, thereby contributing to problem solving. In addition, Creighton (2005) contends that public participation helps the public to influence others and, therefore, develop future leaders.

Solid waste management has been chosen because of the high rate of urbanisation in most countries, especially developing countries, which leads to the creation of unplanned settlements, thereby making these localities congested with large population. This, in turn, leads to high generation of waste. This causes harm to the environment and humanity at large. Therefore, it requires measures to be taken to address high generation of the waste.

Thus, the information that the research may provide, may be helpful to local council managers, as they may be able to devise mechanisms that may enhance collaboration of various actors in solid waste management. Local council managers may also be able to devise mechanisms which may eliminate the challenges against public participation and encourage the public to utilise the opportunities available as concerned citizens in the district to participate fully in solid waste management.

Furthermore, the information that may be provided by this research may help the Sub – districts and/ or community level structures to adopt strategies that may encourage maximum participation through enhancement of opportunities available for public participation by way of eliminating the challenges in the process of solid waste management. Finally, the outcomes of the research may be helpful to citizens and scholars interested in solid waste management.

1.6 Conceptual framework

The presentation of the conceptual framework is in two parts. These are definition of key concepts and the conceptual framework guiding the research.

1.6.1 Definition of key concepts

The key concepts in this research are:

1. **Urban area:** - this refers to a densely populated area [city] plus intermediate density [towns and suburbs] area (Dijkstra and Poelman, 2014).
2. **Governance network:** - this refers to

> a relatively stable horizontal articulation of *interdependent*, but operationally *autonomous* actors who interact through *negotiations* that involve bargaining deliberation and intense power struggles which take place within a *relatively institutionalized framework* of contingently articulate rules, norms, knowledge and social imaginaries that is *self-regulating* within limits set by external agencies and which contribute to the production of *public purpose* in the broad sense of visions, ideas, plans and regulation (Sorensen and Torfing, 2005:197).

3. **Challenge:** - this refers to a situation that inhibits someone from taking part in an activity.
4. **Public participation:** - this refers to

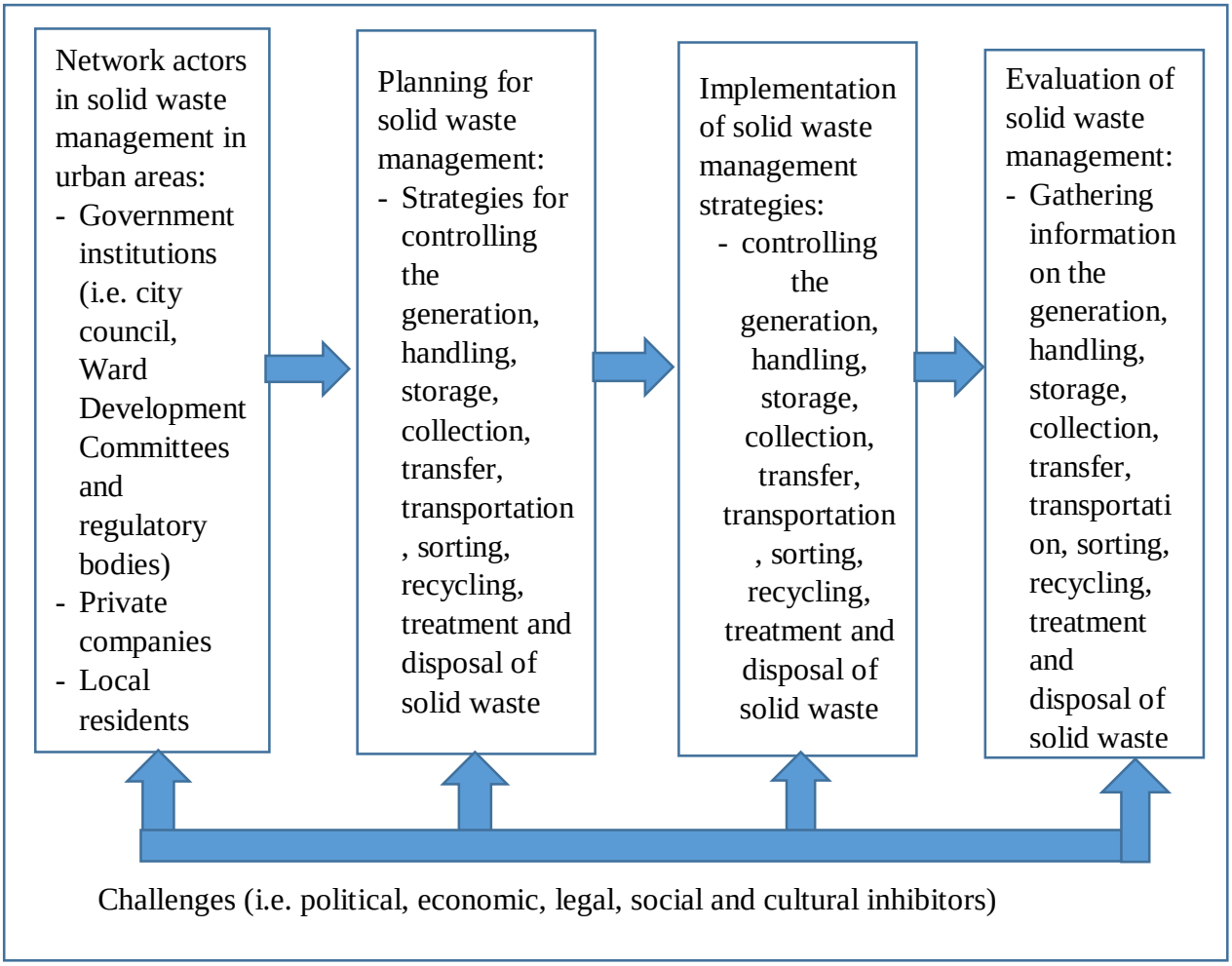
   involving various groups of stakeholders in a process of participation-individuals or citizens' initiatives just as much as representatives of lobbies such as environment or organisations, youths' clubs or professional associations that make the concerns of the group they represent (Arbter et al., 2007:6).

5. **Solid waste:** - this refers to discarded substance from industrial, commercial, domestic and community activities such as garbage, sludge and refuse (ECZ, 2004).
6. **Solid waste management:** - this refers to a process of controlling the generation, handling, and storage of solid waste, as well as the collection, transfer, transportation, sorting, recycling, treatment/processing and disposal of solid waste (Tchonoglous and Kreith, 2002; Lusaka City Council, 2004).
7. **Planning:** - this refers to ''the systematic process of establishing a need and then working out the best way to meet the need, within a strategic framework that enables you identify priorities and determines your operation principles'' (Shapiro, 2001:5).
8. **Evaluation:** - this refers to a ''systematic attempt to gather information in order to make judgements or decision.'' (Zohrabi, 2012:62).
9. **Franchise companies:** - this refers to contracted private companies by a local authority to manage waste in suburbs (medium and low density areas).

1.6.2 Conceptual framework guiding the research

The conceptual framework guiding the research is presented in Figure 1.1.

Figure 1.1: Conceptual framework



The conceptual framework is based on the assumptions of the governance networks theory. This theory assumes that policy and service delivery are generated and implemented in a network of independent actors (Klijn and Koppenjan, 2012). The networks are initiated and sustained by interdependency of actors (Koppenjan and Klijn, 2004). These actors have different views on solutions to problems which are based on the perceptions of the situations in the world (Schon and Rein, 1994). In this research, independent actors include the City council, private companies, Ward Development Committees, Councillors, regulatory bodies and local residents. We assume that these actors have different perceptions, resources and solutions to solid waste management, and depend on each other. Despite having different perceptions, the actors work together and come up with decisions that may help to attain intended outcomes. The interdependence occurs at planning, implementation and evaluation of solid waste management. Solid waste management is viewed in terms of controlling

the generation, handling and sorting of solid waste, as well as the collection, transfer, transportation and disposal of solid waste (Tchonoglous and Kreith, 2002).

Klijn and Koppenjan (2012) assume that as a result different perceptions of the actors and their interdependency, complex interactions and solutions to problem solving, policy implementation and service delivery emerge in the network. The interaction patterns result in institutionalisation of relationship between actors which can be best understood as rules (Klijn and Koppenjan, 2012; Lauman and Knoke, 1987). The rules are aimed at regulating the behaviour of the actors and influencing performance (Koppenjan and Klijn, 2004). Klijn and Koppenjan (2012) further assume that these complex interactions between actors require some form of management to guide and organise the proceedings of the deliberations between actors with regards to problem solving, policy formulation and implementation, and service delivery. Meier and O'Toole (2007) refer to this process as network work management. They further argue that managers in networks play a pivotal role by facilitating interactions among actors in ensuring that better results are achieved. In this research, we assume that government officials set the rules and regulations that each actor is expected to follow in the management of solid waste. These rules regulate the interactions and conduct of the actors at planning, implementation and evaluation stages of solid waste management in communities.

Despite the network actors interacting and discussing with each other, the quality of the discussions in most cases is usually poor (Griggs and Howard, 2007). Edelenbos and Klijn (2006) contend that decisions in networks are influenced by the representative bodies rather than the citizens, hence, capturing the networks for their own preferences (Madimutsa and Pretorius, 2018). The argument is that citizens' contributions in networks has little or no impact in decision making. Designated network managers, who are the representative bodies, make decisions that suits their interests. In this research, we assume that government officials will be designated network managers. These managers and private companies will capture the networks and make decisions which will favour their interests. On one part, the City council is interested in ensuring that solid waste is manage in local communities, as this is one of its core mandate. By this, the City council contracts private companies to help in the management of solid waste. Private waste management companies on the other part are interested in maximising profits in the process of service delivery. Therefore,

government officials are expected to make decisions at planning and evaluation of solid waste management which empowers private companies to maximise profits for their own preference, as they manage solid waste in communities. It is expected that this scenario will make citizens experience challenges in participating, in planning and evaluation process of solid waste management, as their contributions are expected not to yield any impact on decision making and ultimately, the government officials and private companies emerge as beneficiaries.

1.7 Organisation of Dissertation

This dissertation is organised into six chapters. Chapter 1 is the introduction.

Chapter 2 presents Literature review.

Chapter 3 presents Research methodology.

Chapter 4 analyses the nature of governance networks and challenges against public participation in planning for solid waste management in Lusaka district.

Chapter 5 examines the nature of governance networks and challenges against public participation in evaluating solid waste management in Lusaka district.

Chapter 6 presents the conclusions and recommendations of the dissertation.

The next chapter reviews literature on the concept of solid waste management and public participation in solid waste management.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The previous chapter introduced the dissertation and presented the conceptual framework guiding the analysis of the nature of governance networks and challenges against public participation in planning and evaluation of solid waste management in urban areas. The chapter revealed that public service delivery such as solid waste management has been conforming to change in public administration paradigm that is, the Traditional Administration Paradigm in the 1800s followed by the New Public Management Paradigm and later the New Public Governance in the 2000s. The NPG governance emphasised coordination among various stakeholders in public service delivery such as solid waste management. In its presentation, the chapter has shown that planning and evaluation of solid waste management can be understood by a conceptual framework which is based on a cross examination of the assumptions of the governance networks theory.

This chapter attempts to review literature on the concept of solid waste management and public participation in solid waste management. To do this, the chapter is divided into four sections. The first section is the introduction. The second section is a detailed review of literature on solid waste management. The third section is a detailed review of literature on public participation in solid waste management. The final section is a conclusion.

2.2 Solid Waste Management

Edema, Sichamba and Ntengwe (2012) in their research article titled ‘‘*Solid Waste Management: Case Study of Ndola’’*, evaluated the methods of solid waste disposal, level of access to solid waste services and attitudes of residents towards solid waste management. The study sampled 60 households from Kasenshi (a low-density area), Skyways (a medium density area) and Kabushi (a high-density area) and questionnaires were employed. The findings of the study show that all respondents strongly agreed that solid waste constituted a serious health problem in the city. The study demonstrates that there is inadequate solid waste management facility in Ndola even though 80 percent of the households in medium density areas indicated

willingness to pay for waste collection and disposal services. In addition, the study revealed that the use of rubbish pits was the most common method of waste disposal employed in low and medium density areas. Other methods include burning and open dumping of waste. Furthermore, the study indicates that the majority, representing 76 percent, agreed that waste collection and disposal was the sole responsibility of the government and that improper solid waste management contributes to poor hygiene of the city. The study demonstrates that the respondents have a serious concern towards solid waste due its effects on health and are willing to have a stake in solid waste management. The study however, did not show whether the residents are consulted in solid waste management or not.

Pasi (2014) in her Master's dissertation titled ''*An Evaluation on the Impact of Reducing Central Government Grants on Solid Waste: A Case Study of Kabwe Municipal Council''*, evaluated the impact of reduction of funding on the capacity of Kabwe Municipal Council to provide waste management services. The study employed a case study design and 150 respondents were sampled using purposive and stratified sampling techniques. The instruments of data collection included structured questionnaires, interview guides and review of documents. The study indicates that the council diverted funds from central government to service personnel emoluments at the expense of solid waste management. In addition, the study revealed that there were no established dumpsites and no disposal bins provided by the council and that the council had inadequate resources to effectively collect the waste generated leading to air pollution and outbreaks of communicable diseases. Furthermore, the study showed that 60 percent of the respondents noted that solid waste management was a sole responsibility of the council. The study by Pasi (2014) is important in that it clearly shows that the council is the one responsible for solid waste management but has no capacity. The study however, does not explain the role of other stakeholders such as members of the public and the private sector in solid waste management.

Nkowani (2013) in his Master's dissertation titled ''*Water and Sanitation Service Delivery in the high density areas of Kitwe'',* investigated the nature and extent of the inadequacy of water and sanitation service delivery and access in the high density areas of Kitwe. The study used structured questionnaires and guided interviews to obtain data from six residential areas. With regards to the nature and access to solid waste removal services in the high density areas of Kitwe, the findings show that solid waste

removal services are offered by Kitwe City Council (KCC) and the private waste collectors. Many informal agents such as waste pickers, traders and dealers, informal dump services providers and informal recycling enterprise are also involved in the removal of solid waste, albeit as a secondary activity. The study also shows that KCC provides the collection of waste through door-to-door at a fee and on communal waste points and markets dumpsites for free while the private waste collectors collect only offer the collection of waste at residence. The findings further show that 70 percent of the majority of the surveyed households do not access any form of solid waste removal services.

The study has also demonstrated that a majority (72 percent) of the surveyed residents indicated dissatisfaction with the solid waste removal services offered. The reasons for the dissatisfaction include the following: poor, unreliable services characterised by high service charges which do not match service delivery, low waste collection frequency and poor response to customers' complaints from both KCC and the private waste collectors and lack of capacity by KCC to undertake the removal of solid waste in all the high density areas. The findings also show that the surveyed residents used open spaces, burning and burying as some alternative methods to solid waste removal. This study is important as it has shown that there are a number of stakeholders involved in solid waste removal services, a majority of the residents do not access the service and were dissatisfied with the service. Further, the study has demonstrated that KCC lacks capacity to remove the waste. However, the study fails to show whether residents were engaged by either KCC and the private waste collectors on the service provided.

Din and Cohen (2013) in their journal article, ''*Modelling Municipal Solid Waste Management in Africa: Case study of Matadi, the Democratic Republic of Congo''*, presented key elements for best performance and profitability of Municipal solid waste management in a low-income city. The article reveals that in addition to policy impacts, the sector of solid waste management is affected largely by economic factors such as prices and costs. Further, the article shows that the spreadsheet model is used at planning collection and transportation of municipal solid waste, CDM tools and methodologies are used to predict carbon credit grants allowing for the economic evaluation of the municipal solid waste treatment plant, and anaerobic digestion technology is used for economic evaluation of municipal solid waste treatment plant. These, could be used for solving waste problem in low -income cities where the budget

for municipal services is scanty. The study also shows that there was absence of local institutional, technical and management capacities in Matadi and there were no available vessels or bins for waste collection in the streets. The municipality paid tipping fees to the Municipal solid waste company. Furthermore, the findings reveal that households paid for waste collection and only a part of the total amount of municipal solid waste from neighboring households was planned for collection in bins. This study is important as it has demonstrated that Municipalities lack capacity to manage the waste and that in the absence, waste management companies perform its roles. The study can be criticised for failure to show whether households were in involved in planning for solid waste management.

Sarkar (2003) in his research article titled, ''*Solid Waste Management in Delhi – A Social Vulnerability Study''*, employed literature review, questionnaire survey and open ended interviews to collect data. The findings reveal that solid waste is managed by Municipal bodies, starting from collection of recyclable materials to the final disposal and recycling of waste. In addition, the study shows that private stakeholders participated in segregation, collection, sale and purchase of recyclable materials. The study further demonstrates that waste pickers who come from highly vulnerable background buy waste from residents, sell it to waste dealers and also work as sorters for the dealers. The study also indicates that the waste pickers often become victims of exploitation despite their significant service to the environment and society. The study indicates that the waste pickers also suffer from fever, skin diseases and respiratory ailments. The study by Sarker (2003) shows that solid waste can be managed by various stakeholders such as the public sector, private and business persons (waste pickers). However, the main weakness of the study is that it does not show whether members of the public are involved in solid waste management practices such as sorting of waste.

Poletto et al (2016) in a journal article titled ''*Urban Solid Waste Management in Caxias Do Sul/ Brazil: Practices and Challenges'',* examined the participation of scavengers in an integrated municipal solid waste management system. The study employed observations, interviews and questionnaires, as instruments of data collection with a sample of 200 scavengers (62 percent being females and 38 percent males). The findings reveal that solid waste management is the responsibility of the local authority which works in collaboration with scavenger associations. The local

authority provides public waste containers for organic and recyclable waste. The local authority delivers recyclable waste to the scavenger associations at no fee who later separate/sort the waste, press it and later sale. The study further reveals that scavenger associations face challenges such as lack of infrastructure and lack of being involved in policies associated with urban solid waste management. In addition, the study shows that manual collection is carried out by informal waste collectors. This study is important as it highlights public - private collaboration in solid waste management. However, it fails to explain why scavengers are denied the opportunity to participate in the formulation of policies relating to solid waste management.

Cole et al (2011) in an article titled ''*Household Waste Management in the UK: Current Practices and Challenges'',* examined household waste management drivers, current practices and challenges within the context of the United Kingdom. The study revealed that there are several drivers that exist to force changes to the way household waste is managed and include Political, legislative and financial measures. The key legislative and policy drivers include the Waste Framework Directive which covers regulation, handling and movement of waste and Landfill Directive, 1999 and Waste Incineration Directive, 200 covering particular types of waste treatment and disposal. The main financial driver is Landfill Tax used to reduce the use of waste disposal. The study further reveals that waste management is a devolved responsibility in the United Kingdom (UK). Local authorities have a statutory duty under the Environmental Protection Act, 1990 to collect and dispose household waste. The findings also show that Local authorities report waste movements on a quarterly basis to the Department for Environment, Food and Rural Affairs (DEFRA) which reports the performance of the local authorities.

The study further indicates that the key challenges in household waste management in the UK are the division of responsibility for waste collection, treatment and disposal between Local Authorities and Government departments, lack of participation and behavioural attitudes of householders, as well as the practical issues of sorting waste. This study is important, as it shows that waste is managed following government regulations and also that household waste management is the responsibility of both the local authorities and other government departments. The study also shows that there is lack of householders' participation in household waste management. However, it

fails to explain why householders do not participate and also fail to explain the behaviour of the householders in household waste management.

Wada (2011) in his article titled ‘‘*Municipal Solid Waste Management in Japan-Present Situation and Characteristics’’,* used Kanazawa City and Amori City as case studies to describe Japan’s municipal solid waste management situation and identify its characteristics, as compared to the European situation. The findings reveal that incinerators are used to manage waste due to limited suitable land for use as Landfill site and also that cranes are used to manage waste which is disposed of in a refuse pit (The Seibu Clean Centre Pit) in Kanazawa City. The findings also show that private contractors are outsourced to collect garbage. Residents in Amori City pay for waste collection for example, residents pay 800 Yen per piece for bulky waste. In addition, the City licenced 34 general waste contractors to collect refuse. The study further shows that bulky waste is collected twice a week as different districts are assigned different collection days, copies of refuse calendar are distributed to inform the residents of the collection schedule. The study also shows that fees are still quite low and refuse management costs are for the most part still paid within tax payer’s money as refuse management service is for the most part funded by tax payers.

The study also demonstrates that residents dump their refuse along main roads. This study is important as it has demonstrated that local authorities work with private contractors to manage solid waste, residents pay for solid waste collection and that waste is disposed of in the refuse pit and along the main roads. However, the study fails to show whether residents are engaged in solid waste management at planning and evaluation stages as shown by some residents who dump the waste along the main road.

Schwarz-Herion et al (2008) in a journal article titled ‘‘*A Case Study of Successful Municipal Solid Waste Management in Industrialised Countries by the example of Karlsruhe City’’,* presented an overview of solid waste management as a Case Study on successful municipal solid waste management in Karlsruhe City. The study shows that the Municipal office for waste management is responsible for waste disposal, street cleaning and municipal haulage park and merely in some outskirts, a private disposal is put in charge of the waste disposal. In addition, the study shows that different waste generated is gathered in the City in different waste bins which are

located in front of the residents' homes and the bins are provided for particular waste types. Further, the study shows that stakeholders such as the public are involved in separation and recycling of waste. The study has demonstrated that different public and private actors are involved in solid waste management in the City. However, the study has failed to show the participation of other stakeholders such as the residents in planning and evaluation of solid waste management.

According to Schulze (2013) in his brochure titled ''*Municipal Waste Management in Berlin'',* waste is collected by a waste management company called '*Berliner Stadtreinigungsbetriebe*' (BSR) the country's waste management utility. Different types of waste are collected in different coloured bins. BSR is responsible for cleaning the road network and offers independent consultancy services to private households and small businesses, among others, on waste avoidance, recycling and environmental considerations when dealing with waste. In Berlin, 80 percent of municipal waste comes from households and 20 percent from commercial sector, including road sweeping. Schulze (2013) noted that BSR also has subsidiaries through which it offers commercial waste disposal services such as Berlin recycling which collects sorted glass. In addition, there are other companies that work with BSR to recycle waste. Schulze (2013) also argues that the majority of waste is delivered by BSR with a smaller proportion being delivered by other companies. The study by Schulze (2013) is relevant because it shows that solid waste can be managed through collaboration between the public and private sector, with the public sector playing a major role. However, the major limitation of Schulze (2013) is that he does not explain how private households are engaged in evaluating the strategies put in place in solid waste reduction, sorting and recycling.

2.3 Public participation in solid waste management

Lessons on solid waste management can also be drawn from literature on public participation in solid waste management. In his Master's Thesis titled ''*Forbidden Spaces? Public Participation in Solid Waste Management in Lusaka'',* Siachiyako (2016) explores participatory practices in solid waste management public spheres, examines how actors problematise the issue and what they think should be done to improve the situation. The study is a case study of Mtendere Waste Management Zone and employed semi - structured interviews, Focus Group Discussions, observation and

document review. Besides Focus Group Discussions, the study interviewed the Head of Waste Management, Health and Environmental Inspector, Communication and Public Relations Manager, Mtendere Peri – urban Officer, 12 households and one Community Based Enterprise (CBE). The study reveals that grass root spheres for planning and decision – making in solid waste management are dominated by the Ward Development Committee (WDC) and the political leadership. In this regard, the ward councillor speaks for households in the wards and represents them in decision making processes. Officials from the Lusaka City Council (LCC) indicated that participation in solid waste management public spheres at grass roots and above have been weakened and dominated by political stakes. Siachiyako (2016) contends that CBEs and households are excluded from grass root spheres in preference for people who are socio – economically and politically powerful. Thus, out of displeasure towards solid waste management, planning, policy – making or waste collection, households dispose garbage along roadways and have developed mistrust on the entire process of solid waste management. The study further reveals that because of exclusion, the CBEs hold parallel meetings on issues that affect them in solid waste management. The CBEs collect money for collecting garbage from the residents.

This study demonstrates that members of the public have an opportunity to participate in grass root spheres through the WDC, but are facing some challenges to participate. This is because of the politicisation of the local structures. However, the weakness of the study by Siachiyako (2016) is that it covers one category of residential areas in Lusaka, high density areas and fails to show public participation in low and medium density areas.

Chilinga (2014) in his journal titled ‘‘*An analysis of Public Perception of Domestic Solid Waste Management: The Case of the Make Zambia Clean and Health Programme in Livingstone’’,* analysed public perceptions of domestic solid waste management by evaluating the Make Zambia Clean and Health programme in Malota, Dambwa North, and a High cost residential area North-West of the Central Business District in Livingstone. The study shows that the residents are aware of the campaign and consider solid waste collection and disposal as important issues in the community, and that the community working together with the City Council authority and community members could positively influence decisions about waste collection and disposal. The study also reveals that residents were not aware of who made decisions

on domestic solid waste management. This is because the residents never attended any meeting addressing domestic solid waste management issues.

Chilinga (2014) contends that there was no waste collection system in Malota (high density area) and Dambwa North (medium density area) but there was one in North West of the central business district (low density area) where residents paid for waste collection services. The study further revealed that residents in high density areas participated in taking domestic solid waste to the communal collection points. In addition, the study indicates that residents in the three localities buried, burnt and dumped waste within the yards. The study by Chilinga (2014) is relevant because it shows that members of the public perceive collaboration among stakeholders to be important in the management of solid waste. However, Chilinga (2014) can be criticised for not indicating why privileged actors fail to involve the residents in decision making processes.

In a Journal article, ''*Analysis of Public Participation in Sustainable Waste Management Practice in Abuja, Nigeria''*, Amasuomo, Tuoyo and Hasnain (2015) investigated the rate of public participation in sustainable waste and environmental management activities in Abuja. The study reveals that residents in Abuja believe that waste has value and also assume that environmental sanitation is the sole responsibility of the government. The study also shows that low public participation in separation and recycling of waste is due to lack of incentives for residents who are involved in the activities. In addition, the study reveals that low public participation in sustainable waste management practices is as a result of low publicity, lack of funding, inadequate government policies, poor environmental programs by waste management agencies, and the behavior of the residents. The study also shows that the government had put waste bins, and the participant believed that increasing resources both capital and human as well as increased publicity and awareness, can encourage public participation in sustainable waste management in Abuja.

This study has demonstrated that members of the public are involved in sustainable solid waste management practices such as separation and recycling though at a lower rate. The high public participation is hindered by failure of government and waste management companies to put in place necessary facilities, policies and programmes. In addition, the study has demonstrated that the behavior of residents is an obstacle to

public participation. This study could be criticised for failure to show whether government agencies and waste management companies engaged residents in planning and evaluation of waste management practices so as to change their behavior of residents in waste management.

Banga (2011) in her research article titled, ‘‘*Household Knowledge, Attitudes and Practices in Solid Waste Segregation and Recycling: The Case of Urban Kampala’’*, examined household's knowledge, attitudes and practices in the separation and recycling of solid waste in Urban Kampala. The study reveals that the majority of the households had knowledge on separation and recycling of waste, and separated waste at the source before mixing the waste, and earned from it. In addition, the study reveals that households paid waste collection fees. The study also shows that households who stay in houses with backyards have alternative ways of disposing waste such as dumping in pits and burning, and that gender, education and income influence participation of residents in separation and recycling of waste. The study is important because it has demonstrated that members of the public participate in solid waste management practice despite it being low. However, the study is criticised for failure to show whether households were involved in planning and evaluation of solid waste segregation and recycling activities.

Berisa and Birhanu (2015) in an article titled, ‘‘*Assessment of Solid Waste Management Practices and the Role of Public Participation in Jigjiga Town’’*, analysed the city's current municipal solid waste management problems, opportunities and existing solid waste management practices and the role of community participation. The study employed both qualitative and quantitative designs and review of literature. 298 households were sampled. The study reveals that there is low participation by communities in solid waste management in the city. This is as a result of lack of properly designed collection system, inadequate and malfunctioning operation equipment, and poor condition of the final dumpsite and less awareness among community members which encouraged illegal dumping. The study further revealed that there were a number of actors involved in solid waste management namely Non – Governmental Organizations (NGOs) such as the United States Agency for international Development (USAID), who provide equipment to collectors, private sector transporters and Micro and Small Scale Enterprises that buy the waste. In addition, the study revealed that the city faced a number of challenges in solid waste

management process such as unwillingness to pay collection fees, ill dumping of waste and inadequate funds among others. This study is significant in that it shows that the public are impeded to participate in solid waste management due to a number of factors such as inadequate awareness on solid waste management practices and lack of properly designed refuse collection systems, among others. The study, however, does not explain why appropriate systems, and resources cannot be provided to ensure effective management of solid waste.

Pinnawala (2016) in an article titled ''*Community Participation in Solid Waste Management: The Case of Kurunagala Municipal Council''*, examined community strategies in managing solid waste at the household level and to understand community cooperation with local authority in managing it at community level. The study covered 160 households selected through simple random sampling method. The study used a questionnaire survey on the households and in-depth interviews with Municipal Council officers and sanitary labourers who are involved in solid waste management of the Municipal Council. The study revealed that the community was actively involved in reducing their waste by re – using the waste and a few participated in recycling and separation of solid waste. The study also revealed that some people are not aware of the problem of solid waste and also about the strategies of managing solid waste. Pinnawala (2016) contends that community cooperation for solid waste management is at an average level as they thought that managing of solid waste was a responsibility of the Municipal council. The study is important in that it shows that the households participated in some solid waste management practices, although full participation is hindered by the belief that such a task should be handled by the Municipal council. However, the study fails to show the challenges that the council faces in involving the community in the planning and evaluation process of the solid waste management programme.

Ramos, Ortega and Vicentini (2012) in an article titled ''*Challenges and Opportunities of waste Collection in Caracas: The Case Study of Sucre Municipality''*, contend that in Sucre, the local authority has established an agreement with a private concessionaire to collect waste collection fees. However, the company faced a number of challenges in the delivery of service, such as inadequate capacity to meet the requirements of the labour laws with regards to payment of wages to the workers. The study revealed that the 'Mochilero' collected garbage under the Mochilero project run by Junior a political

ambitious person. The study further revealed that training of neighbours and the community in recycling was held under the project recycling in '19 de Abril.' The study shows that the private sector does not offer solutions to the problem of solid waste. It faces some challenges. However, the study fails to show the challenges and opportunities for public participation in solid waste management.

Gojani (2015) in his Master's thesis titled ''*Citizens Attitudes and Participation in Solid Waste Management: A Case of Gjakova'',* explored the citizens' attitudes and participation in solid waste management for improvements in the future. The study used qualitative and quantitative methods of data collection, interviews and document review and sampled 80 respondents. The study reveals that citizens had concerns on the waste and the laws on waste disposal. There was lack of inspectors to implement these laws or to prescribe fines for those who break the law. In addition, the study reveals that citizens shared their personal experiences of reporting violators but there was no appropriate response from the city council. The study also revealed that 70 percent of the respondents paid monthly collection fees of five Euros to Cabrati Company but they indicated that the fees were unfair because they were not generated according to the capability to pay. In addition, the study revealed that citizens disposed waste, either through burning, throwing in rivers, in fields or in containers at the markets. The citizens did not recycle or re - use the waste despite many private companies participating in recycling. The study is significant in that it shows that to some extent, the citizens had positive attitudes towards solid waste management despite lack of effective collaboration with the City council. The study, however, does not indicate why the waste collection fees were not generated according to the capacity of the citizen to pay.

In an article titled ''*Municipal Solid Waste Policy and Public Participation in Household Source Reduction in Madison''*, Lober (1996) examined the nature of public participation in implementing household source reduction of municipal solid waste in order to inform the development of waste policy. The study sample was 138 respondents and used telephone survey as a method of data collection. The study revealed that the public participated in the activities of source reduction using a variety of measures, which included intrinsic measures of conserving natural resources, preventing pollution and preventing litter. The study also revealed that there was high participation in recycling activities (80 percent of the respondents participated in

recycling) than source reduction. The study showed that the public were involved in solid waste management practices such as source reduction of waste and recycling. However, the study does not indicate public participation in the evaluation of the effectiveness of the said activities of source reduction and recycling of solid waste.

2.4 Conclusion

From the reviewed literature above, it can be learnt that there are many strategies of managing solid waste. They include collaboration of stakeholders and payment of waste management fees to service providers. The literature also shows that governments face challenges to manage solid waste hence, the involvement of other stakeholders such as private companies and members of the public. Furthermore, the literature indicates that despite the implementation of public – private partnerships, solid waste is still a problem faced by communities. The major challenges associated with public – private partnerships are lack of proper coordination on solid waste management systems and lack of implementation of by-laws by government agencies.

However, despite there being literature on public participation in solid waste management, it is not comprehensive. Much of the literature focuses on participation at the implementation stage of solid waste management. The direct participation by members of the public at the stages of planning and evaluation of solid waste management is not adequately covered. Therefore, the dissertation attempts to fill the gap in the existing literature by analysing the nature of governance networks and challenges against public participation in planning and evaluation of solid waste management in Lusaka district. The design and methodology is presented in the next chapter.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter reviewed literature guiding the analysis of the nature of governance networks and challenges against public participation in planning and evaluation of solid waste management in Lusaka district. The chapter indicated that despite there being a great deal of literature on public participation in solid waste management, it is not comprehensive. The existing literature does not discuss public participation in planning and evaluation of solid waste management comprehensively. The chapter also indicated that the dissertation attempts to fill the gap in the existing literature by analysing the nature of governance networks and challenges against public participation in planning and evaluating solid waste management in Lusaka district.

The purpose of this chapter is to discuss the methodology and design of the study used to analyse the nature of governance networks and challenges against public participation in planning and evaluating solid waste management in Lusaka district. In order to achieve this purpose, the chapter is segmented into 12 sections, that is, introduction, type of research, scope of research, research design, sources of data, sample size, sampling methods, methods of data collection, reliability of data, validity of data, methods of data analysis, research ethics and limitations of the research.

3.2 Type of research

The type of research conducted was looked at from three angles. The first angle is based on the purpose of the research. In this regard, the research was descriptive in nature. The purpose of descriptive research is to describe the phenomenon under investigation. It involves collecting background information and gaining insight into the phenomenon under investigation (Glass and Hopkins, 1984). In this research, the phenomenon under investigation was public participation in solid waste management. Therefore, the research attempted to gain insight into this subject matter.

The second angle was based on the number of cases to be investigated. In this regard, the research was a case study of Lusaka district. A case study has been chosen because

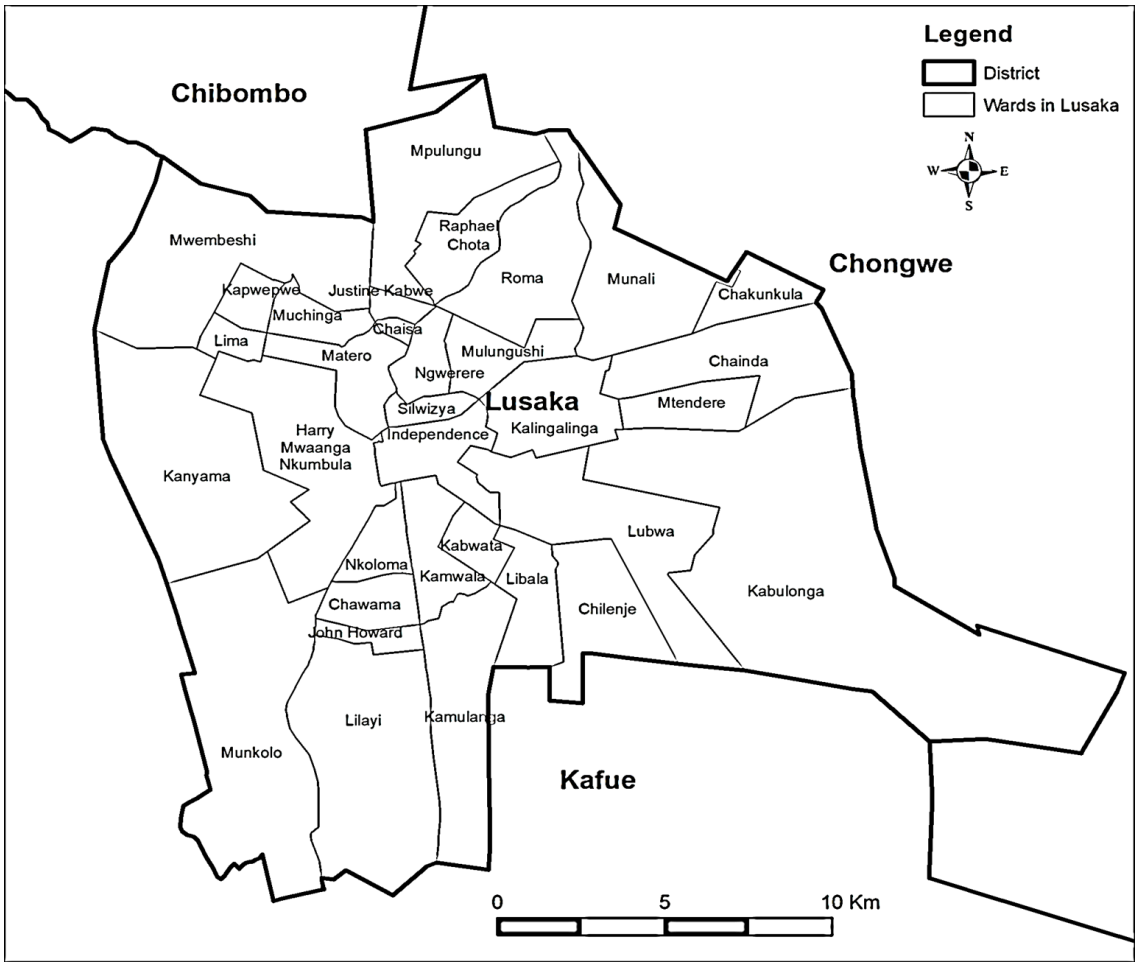
it gives a detailed examination of one group or class of phenomena (Abercrombie, Hill and Turner, 1984) and if properly conducted, it is truly scientific (McCutcheon and Meredith, 1993). In addition, a case study uses multiple data collection methods to obtain information on a single example of a class of phenomena (Benbasat, Goldstein and Mead, 1987).

The third angle was based on the time-frame within which the research is conducted. In this regard, the research was a one – time research. A one – time research is a research which is conducted at a single point in time which makes it less costly. The point in time that this research was conducted was between 11th December, 2017 and 25th February, 2018.

3.3 Scope of the research

The research was confined to Lusaka district. This district is divided into seven constituencies, namely; Chawama, Kabwata, Kanyama, Lusaka Central, Mandevu, Matero and Munali. Each constituency is then divided into wards. Lusaka district has a total of 33 wards (CSO, 2013). Residents of each ward elect a councillor every five years to represent them in the City council. Each ward is then divided into zones. Figure 3.1 shows the geopolitical sketch map of Lusaka district.

Figure 3.1: Geopolitical sketch map of Lusaka district



Source: Author's own illustration using Geographic Information System

Lusaka district has been chosen because of a number of reasons. First and foremost, Lusaka has the largest population and one of the fastest developing cities in Africa. In 2010, the district had a population of 1,747,152 and a projected 2,426,898 people in 2017 (CSO, 2013). In addition, there are a number of unplanned settlements which have mushroomed due to rapid rural – urban migration. Furthermore, there are a lot of economic activities such as quarrying, retail and wholesale sales, transportation and distribution, entertainment activities, and manufacturing, processing and construction activities. Thus, these factors lead to higher generation of solid waste as compared to other districts in the country. Uncollected waste makes the district untidy, block drainages during rainy season, cause floods and are breeding grounds for disease carrying insects such as flies and mosquitoes.

3.4 Research design

This research used a mixed methods research design. A mixed methods research design is a design that mixes both qualitative and quantitative research designs in collecting and analysing data in order to comprehend a particular research problem (Creswell and Clark, 2011). Qualitative design was used, which focused on collecting in – depth information on the nature of governance networks and challenges against public participation in planning and evaluating of solid waste management in Lusaka district. On the other hand, quantitative design was also used which focused on collecting quantifiable data, that is, data that can be generated into tables, percentages and graphs among others on the nature of governance networks and challenges against public participation in solid waste management. The reason for adopting the mixed methods research design is that a combination of qualitative and quantitative designs in a research helps to complement the inadequacies attributed to either design in data collection, analysis and reporting.

3.5 Sources of data

The research obtained data from two sources namely primary and secondary sources. Primary data is data that has never been documented before and is obtained from individuals with different or similar portfolios in life. This type of data can also be obtained from similar or homogeneous samples. Primary data gives a better understanding of the research problem, as it comes from the concerned and reliable respondents, and as such, is considered to be original (Kothari, 2004). The source of this type of data in this research includes government officials from LCC and WDC, the public and managers of private waste management companies in Lusaka district who have a stake in solid waste management. The reason for collecting this type of data is to have an in – depth understanding of the nature of governance networks and challenges against public participation in planning and evaluating solid waste management in Lusaka district.

Secondary data, on the other hand, is data that has been documented and is obtained from sources such as books, research reports, seminar presentations, conference papers, working papers, among others, which can be obtained from individuals, libraries and the internet. This type of data is collected in order to gain insights into what has been written by others on the subject of research. The data was used to

identify research gaps on solid waste management and public participation specifically on public participation in planning and evaluating solid waste management. This provided a basis for comparison on what has been written on solid waste management and public participation with data that is obtained from the field.

3.6 Sample size

A sample is a subset of a statistical population whose characteristics studied to obtain information about the entire population (Webster, 1985). Primary data in this research was collected from a total sample of 121, comprising six key informants and 115 residents. Among the key informants, two officials were from LCC, three managers of private waste management companies and one WDC chairperson.

The respondents comprised of 115 household heads from three residential areas namely; Chainda compound, Libala township and Roma township. Chainda compound represented high density areas from which 50 respondents were drawn (39 males and 11 females), Libala township represented medium density areas from which 40 respondents were drawn (22 males and 18 females) while Roma township represented low density areas from which 25 respondents were drawn (14 males and 11 females). The sample in each category of residential area was arrived at due to non-availability of the complete list of households in the named residential areas of Lusaka district, as only the total number of households in each ward is available. A ward is made of a number of residential areas. According the Central Statistical Office (2010), there are 13,804 households in Roma ward, 4,396 households in Libala ward and 8, 076 households in Chainda ward.

The researcher was unable to come with a sampling frame. This was due to the limited time [one year] allocated to conduct a research, prepare a write up of the dissertation and submit for examination. Coming up with a sampling frame, meant that the researcher was first of all supposed to conduct census by listing all houses in Lusaka district, and coming up with a register. Secondly, list all households and household heads, household heads and finally, come up with a sampling frame. All this could not be done within a year. However, the variation in the sample is based on the number of households expected to be found in a particular residential area compared to other residential areas. For instance, high density areas are characterised by many households, hence, 50 respondents were drawn. Medium density areas are

characterised by an average number of households, hence, 40 respondents were drawn while low density areas are characterised by fewer households, and hence, 25 respondents were drawn.

3.7 Sampling methods

A sampling method is a method used to select a sample from the population. This research employed multi – stage sampling method to generate a sample from residential areas. This sampling method has been adopted because it works well for studies that cover a wider geographical area where a complete list of members of the population is not available. The first stage of multi-stage sampling method involved stratifying the residential areas in Lusaka district into low, medium and high density areas from which samples were drawn using stratified sampling method. Stratified sampling involves dividing the population into several strata that are usually more homogeneous than the total population and more reliable and give detailed information (Kothari, 2004). In each stratum, simple random sampling method in particular Lottery techniques was used to select one residential area. All the names of residential areas were written down on pieces of paper, put in the box, then shuffled and picked the sample. Lottery techniques give equal chances to residential areas to be picked in the sample.

The second stage involved selecting households from the sampled residential areas. The actual households were obtained by systematic sampling method. Kothari (2004) notes that, in this type of probability sampling method, only the first unit is selected randomly and the remaining units are selected at fixed intervals. This method was adopted because it helps to cover a wider population easily. In this research, after sampling the first household using simple random sampling method, a skip interval of five was used to select the households. The actual respondents and the key informants were purposively selected. Creswell and Clark (2011) contend that purposive sampling method involves the identification and selection of individuals or groups of individuals that are proficient and well informed with the phenomenon of interest. Thus, on the one hand, household heads were selected as respondents because they are the ones in charge of the house and responsibilities that come in the day to day living of the entire households. On the other hand, key informants were selected because they are key stakeholders in solid waste management in the communities and the district as a whole,

and have relevant knowledge on the subject matter. Thus, a mixture of sampling methods was used to minimise biases in the sampling process.

3.8 Methods of data collection

Qualitative data was collected using semi – structured interviews, which were conducted with key informants in order to probe and gain insights on the nature of governance networks and challenges against public participation in planning and evaluating solid waste management in Lusaka district. A questionnaire was used to obtain quantitative data from the 115 household heads. The two types of tools were administered by the researcher. On the other hand, secondary data was collected by reading and analysing documents on solid waste management and public participation in solid waste management and jotting down relevant information. This method was used with a view to gain insights into what was documented on solid waste management and public participation in solid waste management. The use of these two methods helped to obtain data that is comprehensive.

3.9 Reliability of data

Bless and Achola (1988) contend that reliability refers to the degree to which a particular measuring procedure gives equivalent results over a number of repeated trials. This research used internal consistency as a method of assessing reliability. Internal consistency involves the use of questions in a research instrument that are logically related with their responses logically related too (Mwanje, 2001). To achieve this goal, the research instruments were designed in such a way that the questions are logically related. After data collection, the responses from each informant or respondent were checked for their logical relationship. In cases where the informant or respondent was found to be contradictory in his/her responses, such data was rejected. Only responses that were not contradictory with the corresponding questions were taken to be reliable. These are presented and analysed in this research.

3.10 Validity of data

Validity is the degree to which a data collection tool measures what it is supposed to measure. This research used content validity to assess the validity of data. Content validity involves the use of a research instrument that is a representative of the full content of the subject under investigation (Bless and Achola, 1988). In this research,

the content of public participation comprised involvement in planning and evaluation of solid waste management. As for solid waste management, its content comprised generation, storage, collection, transportation, transfer, sorting/separation, recycling, treatment, waste reduction and disposal of solid waste. The reason for using content validity in this research is to ensure that all the elements of public participation and solid waste management are taken into consideration thereby making the collected data valid.

3.11 Methods of data analysis

Hatch (2002: 148) defines data analysis as ‘‘a systematic search for meaning.” The methods of data analysis that the research used are Statistical Package for the Social Sciences (SPSS) and Content analysis. On the one hand, quantitative data was analysed using SPSS version 23 because it is user friendly and can help to generate percentages, tables and frequencies among others for quantifiable data. On the other hand, qualitative data was analysed using content analysis. Content analysis involves the researcher searching for structures and patterns in the text which are broken down in controllable categories and logically drawing inferences on the available evidence and intensity with which certain words have been used (Mwanje, 2001). This research created the following categories: nature of governance networks in planning and evaluation for solid waste management and challenges against public participation in planning and evaluation of solid waste management.

3.12 Research ethics

In this research, research ethics are taken to be the acceptable behaviour observed in the research process. The following are the research ethics that were observed: obtaining permission to conduct the research at various institutions were made in writing, all potential research subjects were spoken to about the objectives of the research, sampling methods and data collection methods, research subjects were allowed to ask any questions about the research, research subjects were asked for their consent and told that their participation in the research is voluntary. The data collected during the research was kept confidential, and the anonymity of all the participants in the research was maintained. In line with this obligation, job titles were used to identify the key informants and honesty and integrity was maintained in the process of data collection, analysis and presentation.

3.13 Limitations of the research

In the process of conducting this research, few limitations were encountered as indicated below:

- Key informants such as the Councillors were not willing to participate. In addition, WDC Chairpersons were not available in medium and low density areas. It was difficult to get views from such actors in these areas. However, efforts were made by engaging the Head of WMU at the City council regarding experiences in these areas.
- During the research period, there was an outbreak of cholera in some parts of Lusaka district especially in the Western region of Lusaka district. Therefore, only residential areas in the Eastern region of Lusaka district were sampled, thereby increasing the sample bias. Since the western region is dominated by high density areas, efforts were made to engage the Community Development Officer at the City council and include a high density area in the research so as to capture the experiences in such residential areas.
- Some few respondents were not willing to participate in the research. This reduced the sample size from the intended 150 respondents to 115. This reduction cannot have an adverse effects on the findings, as efforts were made to ensure that the sample is 30 or more in line with the Central Limit Theory. The next chapter presents the findings.

CHAPTER 4

GOVERNANCE NETWORKS AND CHALLENGES AGAINST PUBLIC PARTICIPATION IN PLANNING FOR SOLID WASTE MANAGEMENT IN URBAN AREAS

4.1 Introduction

The previous chapter presented the research design and methodology of the research study. The chapter has shown that the research was confined to the analysis of the nature of governance networks and challenges against public participation in planning and evaluation of solid waste management in urban areas.

The purpose of this chapter is to present and discuss findings relating to the first specific objective which reads: To analyse the nature of governance networks and challenges against public participation in planning for solid waste management in Lusaka district. In order to achieve its purpose, the chapter has been divided into six sections. The first section is the introduction. The second is background characteristics of informants/respondents. The third section analyses the methods of solid waste disposal in Lusaka district. The fourth section analyses the nature of governance networks in planning for solid waste management in Lusaka district. The fifth section presents the challenges against public participation in planning for solid waste management in Lusaka district. The final section is a conclusion of the chapter.

4.2 Background characteristics of informants/respondents

4.2.1 Key informants

There were six key informants. One out of the six was female. This shows that the sample of key informants was dominated by males.

4.2.2 Household heads

The sample was also composed of 115 household heads. The characteristics of these household heads are presented in terms of sex, age, level of income and educational background. The details of these characteristics are presented below.

The 115 household heads were selected from three residential areas namely Chainda compound, Libala township and Roma township. Chainda compound represented high

density areas from which 50 respondents were drawn (39 males and 11 females), Libala township represented medium density areas from which 40 respondents were drawn (22 males and 18 females) while Roma township represented low density areas from which 25 respondents were drawn (14 males and 11 females). This information is shown in Table 4.1.

Table 4.1: Residential area by sex

	Residential area				
Sex	High density	Medium Density	Low density	**Total**	**Percent**
Male	39	22	14	75	65.2
Female	11	18	11	40	34.8
Total	**50**	**40**	**25**	**115**	**100**

Source: Field Data

Of the 115 respondents, 75 (65.2 percent) were males and 40 (34.8 percent) were females. This shows that the sample was dominated by male household heads.

The ages of the respondents ranged from 20 to above 60 years. Majority of the respondents were between 40 to 49 years representing 28.7 percent with the least age group being between 20 to 29 years representing 3.5 percent of the respondents. 27.8 percent of the respondents were 60 and above years of age. 21.7 percent respondents were in the age range of 30 to 39 while the remaining 16.5 percent were in the age range of 50 to 59. This indicates that the majority of the respondents (94.7 percent) were of the age 30 and above hence, the sample being dominated by mature household heads with a sense of responsibility on waste management. This is shown in Table 4.2 below.

Table 4.2: Age distribution of the household heads

Age Group	**Frequency**	**Percent**
20-29	4	3.5
30-39	25	21.7
40-49	33	28.7
50-59	19	16.5
60 and above	32	27.8
No response	2	1.7
Total	**115**	**100.0**

Source: Field Data

Few household heads 42 (36.5 percent) earn K 3,801 and above with 69 (60 percent) earning below K 3,801. This means that the majority of the household heads lack capacity to use the legal method of disposal of domestic solid waste (use of private waste management companies). Table 4.3 summarises the information.

Table 4.3: Level of income of the household heads

Income (K)	Frequency	Percent
0-3,000	62	53.9
3,001-3,800	7	6.1
3,801-5,900	13	11.3
5,901 and above	29	25.2
No response	4	3.5
Total	**115**	**100.0**

Source: Field Data

The majority of the respondents have been to school and acquired some education with only seven (6.1 percent) without formal education. 21 respondents (18.3 percent) had primary education, 41 (35.7 percent) with secondary education and 46 (40 percent) with tertiary education. This shows that the majority of respondents are able to comprehend solid waste management practices. Table 4.4 shows the educational background of the household heads.

Table 4.4: Educational background of the household heads.

Level of education	Frequency	Percent
No formal education	7	6.1
Primary education	21	18.3
Secondary education	41	35.7
Tertiary education	46	40.0
Total	**115**	**100.0**

Source: Field Data

4.3 Methods of disposal of domestic solid waste in Lusaka district

There are two major methods used to dispose of domestic solid waste in Lusaka district. These are legal and illegal methods. The details of these methods are discussed below.

4.3.1 Legal methods of domestic solid waste disposal

The legal methods of disposing of domestic solid waste in Lusaka district involve a network of actors. These actors are private waste management companies, the City council, community organizations and the residents. The roles of these actors are prescribed by *the Local Government (Solid Waste Management) Regulations* (Republic of Zambia, 2011b). This approach to solid waste management agrees with the governance networks theory which assumes that networks operate on the basis of rules aimed at regulating the behaviour of the actors and influencing their performance (Klijn and Koppenjan, 2012; Koppenjan and Klijn, 2004). This finding is similar to experiences in other developing countries like Kosovo, where regulations are used in the management of solid waste (Gojani, 2015). It is also similar to what is obtaining in developed countries like the United Kingdom (Cole et al., 2011). The regulations in Zambia, empower the local council to engage private waste management companies to manage the waste on its behalf (Republic of Zambia, 2011b). This finding is in agreement with Meier and O'Toole (2007) who argue that networks require someone to facilitate the interaction of actors so that set goals are achieved.

The private waste management companies found in Lusaka take the forms of CBEs and Franchise companies. CBEs operate in peri-urban areas (high density areas) while franchise companies operate in the suburbs (medium and low density areas). The residents of these areas are required to pay money to the contracted companies or to the local authority to have their waste collected and disposed of. The use of this method also requires the residents to pack the waste in bins, bin liners, plastic bags, or receptacles that are provided by either the waste management company or by the residents themselves. The waste is then removed by the residents from their households and placed near the entrance to their premises on the day of collection by the waste management company. The Managing Director for G.L. Carriers Limited (interview, 6th January, 2018) stated that "a timetable for collecting waste from particular locations is generated and followed." On the day of collection, the waste management company collects and transports the waste to the dumpsite prescribed by the City council. The prescribed dumpsite for solid waste is ''*Chunga''* dumpsite, which is managed by the City council. For waste management companies to dispose of the collected waste at this dumpsite, they need to pay money to the City council. This finding is similar to experiences in other African countries like the Democratic

Republic of Congo where residents pay waste management fees (Din and Cohen, 2013). It is also similar to experiences in developed countries like Japan. Wada (2011) indicates that the residents of Aomori city in Japan pay waste management fees. However, the difference between African and developed countries is that the residents of Africa are required to pay directly for waste collection and disposal while in the developed world, waste management fees are paid within the tax payer's money. The residents of Africa are subjected to waste management fees despite paying several taxes to the government such as income and sales taxes, among others. This implies that despite the residents of Africa being poor, they are overburdened by user fees and taxes thereby worsening their poverty situation.

The findings show that a majority of the residents in Lusaka district, 86 out of 115 residents (74.8 percent) use the above-mentioned method of waste disposal. The fees paid for waste management vary from one residential area to another. These fees are illustrated in Table 4.5. The amounts are in Zambian Kwacha (K). The exchange rate is United States Dollar (US$) 1 is equal to K12.

Table 4.5: Waste management fee by residential area.

Waste management fee in (K)	**Residential area**			**Total**	**Percent**
	High density	Medium Density	Low density		
30	34	0	0	34	29.6
50	0	1	0	1	0.9
60	0	4	0	4	3.5
75	0	23	0	23	20
80	0	1	2	3	2.6
90	0	0	3	3	2.6
100	0	0	2	2	1.7
120	0	1	2	3	2.6
150	0	0	4	4	3.5
200	0	0	1	1	0.9
250	0	0	8	8	6.9
Not applicable	16	10	3	29	25.2
Total	**50**	**40**	**25**	**115**	**100**

Source: Field Data

The amount of money paid by the residents for waste management to private companies is based on the perception of the residents' ability to pay. The general belief

in Zambia is that the poorest people in the cities reside in high density areas, medium income earners reside in medium density areas while rich people reside in low density areas. Based on this belief, residents of high density areas pay the lowest amount of money for domestic solid waste management while those in low density areas pay the highest amount. The exact amount of money paid by residents in high density areas covered by this research is K30 ($2.50) per month. The perception that the poorest people living in cities are found in high density areas is supported by data presented in Table 4.6.

Table 4.6: Income by residential area

	Residential area			
Level of income (K)	High density	Medium Density	Low density	**Total**
0-3,000	35	24	3	62
3,001-3,800	2	3	2	7
3,801-5,900	6	3	4	13
5,901 and above	5	10	14	29
No response	2	0	2	4
Total	**50**	**40**	**25**	**115**

Source: Field Data

Table 4.6 reveals that a majority of the residents in high density areas, 35 out of 48 (72.9%) earn between K0 ($0) and K3, 000 ($250) per month. The next category of residents is for those living in medium density areas. The amount paid by residents in these areas for solid waste management ranges from K50 ($4.17) to K120 ($10) per month. This is shown in Table 4.5. The variation in the amounts paid by these residents is based on a number of reasons. According to the Head of Waste Management Unit (WMU) for the City council (interview, 11th December, 2017) ‘‘waste management fees are not the same in all the localities. Residents who reside in suburbs cannot pay the same amount with those in peri-urban because of their difference in social and economic status.’’

First and foremost, the exact amount paid by each resident is based on the customer relations that exist between the private waste management companies and the residents. According to the Managing Director for G.L. Carriers Limited (interview, 6th January, 2018), “the company allowed one client to be paying K50 [$4.17] instead of K75 [$6.25] because she is aged [elderly person] but very consistent in paying the waste management fees.” Second, higher amounts are paid because of the additional

materials provided by the waste management companies such as waste bins. One resident who pays K120 ($10) indicated that "he pays such an amount because the company which collects his domestic solid waste provided a big movable plastic bin." This means that the cost of waste packaging materials is transferred to the residents. As noted above, the residents in medium density areas pay higher amounts than those in high density areas because they are perceived to be medium income earners among people living in urban areas. This perception is supported by data in Table 4.6, which shows that 16 out of 40 residents (40%) in medium density areas earn above K3,000 ($250) compared to only 13 out of 48 residents in high density areas (27%) who earn above K3,000 ($250).

The residents who pay the highest amount of money for waste management are those living in low density areas. The amount paid by these people ranges from K80 ($6.67) to K250 ($20.83) per month. These residents pay the highest amount because they are perceived to be the highest income earners in the country. This perception is supported by data in Table 4.6, which shows that 20 out of 23 residents in low density areas (87%) earn above K3,000 ($250) compared to 40% in medium density and 27% in high density areas. The variation in the amount of money paid for waste management within low density areas is due to the cost of additional materials given to the residents in the process of waste collection and disposal such as receptacles. This approach to domestic solid waste management is similar to what is obtaining in other cities in Zambia. Chilinga (2014) indicates that domestic solid waste management in Livingstone is done through the combined efforts of the residents, private companies and the City council. This finding is also similar to experiences in other African countries like Ethiopia (Birhanu and Berisa, 2015). It is also similar to what has been reported in developed countries like Germany (Schwarz-Herion et al., 2008).

4.3.2 Illegal methods of disposal of domestic solid waste in Lusaka district

The illegal methods of disposing of domestic solid waste in Lusaka district involve the use of rubbish pits and open grounds. These methods are considered illegal by *The Local Government (Solid Waste Management) Regulations*, which even prescribe the punishment for offenders. The punishment includes a fine and imprisonment (Republic of Zambia, 2011b). Despite these regulations being in place, some residents continue to dispose of their domestic solid waste using illegal methods. This behaviour is shown in Table 4.7 below.

Table 4.7: Illegal method of disposal of domestic solid waste by residential area.

Illegal method	Residential Area			Total	Percent
	High density	Medium density	Low density		
Rubbish pit	15	10	3	28	96.6
Open grounds	1	0	0	1	3.4
Total	**16**	**10**	**3**	**29**	**100**

Source: Field Data

The findings reveal that 29 out of 115 residents in Lusaka district (25.2%) use illegal methods to dispose of their domestic solid waste. The most popular illegal method is the use of rubbish pits. This method is used by 28 out of 29 (96.6%) residents who do not comply with the solid waste management regulations. Figure 4.1 shows solid waste disposed of in a rubbish pit.

Figure 4.1: Solid waste disposed of in a rubbish pit

Source: Field Data

The remaining 3.4% of the residents who use illegal methods, use open grounds to dump their waste. Figure 4.2 shows solid waste disposed of on open grounds.

Figure 4.2: Solid waste disposed of on open grounds

Source: Field Data

This phenomenon of using illegal methods to dispose of domestic solid waste is also found in other cities in Zambia such as Ndola and Livingstone (Edema et al., 2012; Chilinga, 2014). This finding is similar to what happens in other African countries like Uganda and the Democratic Republic of Congo (Banga, 2011; Din and Cohen, 2013). This finding is also similar to the experiences in developed countries like Japan. Wada (2011) asserts that stations located along the main roads in Aomori city are used by residents to dump their refuse.

Residents engage in illegal methods of domestic solid waste disposal due to a number of reasons. Table 4.8 presents these reasons.

Table 4.8: Reason for engaging in illegal method of domestic solid waste disposal by residential area.

Reason for engaging in illegal method	Residential Area			Total	Percent
	High density	Medium density	Low density		
Cannot afford the waste management fees	8	7	1	16	55.2
Lack of awareness	0	1	0	1	3.4
Non - availability of Waste Management companies	8	0	1	9	31
Waste management companies not consistent in collecting waste	0	2	1	3	10.4
Total	**16**	**10**	**3**	**29**	100

Source: Field Data

The first reason for engaging in illegal methods of domestic solid waste disposal is that residents cannot afford the waste management fees. This is the most popular reason as shown by 16 out of 29 (55.2%) residents of Lusaka who dump their waste illegally. Most of these people live in high density areas which are characterised by low incomes. This situation is similar to experiences in other districts of Zambia such as Livingstone (Chilinga, 2014). The second reason for using illegal methods is non-availability of waste management companies in residential areas. This problem is most common in high density areas. This implies that private companies are reluctant to operate in communities where residents have challenges to pay for services. The third reason for using illegal methods is the inconsistent manner in which waste management companies collect solid waste from the communities. This problem is faced in residential areas including those where people pay a lot of money for their solid waste to be collected. This finding, therefore, implies that private waste management companies are not interested in service delivery but to generate revenue for themselves.

The fourth reason is that the residents lack information on the legal methods of solid waste disposal. This is evidenced by one resident who uses open grounds to dispose of domestic solid waste due to lack of awareness. The absence of community awareness is attributed to the inadequacies of the City council. The Head of the Waste Management Unit at Lusaka City Council (interview, 11th December, 2018) mentioned

that "the inadequate sensitisation of the residents on solid waste management practices by the local authority is due to inadequate human resource (health inspectors) and finances to sensitise the residents." This finding is similar to experiences in other African countries like Nigeria and Ethiopia (Amasuomo et al., 2015; Birhanu and Berisa, 2015).

The lack of information on solid waste management practices by the residents has resulted in their failure to sort the waste when packing in receptacles or bins in readiness for collection and disposal. This, in turn, presents challenges to waste management companies that end up sorting the waste at the point of collection or refusing to collect the unsorted waste. According to the Operations Manager for Clean Fast Limited (interview, 4th January, 2018), "the residents face a lot of problems with separation of domestic waste. As a result, the waste is separated by the company workers in the field before it is transported to the dumpsite." In a related manner, the Managing Director for G.L. Carriers Limited (interview, 6th January, 2018) indicated that "the residents do not separate the waste into recyclables and non-recyclables and hence, such waste is not collected." The level of community awareness about solid waste management in Africa is different from what obtains in other continents. Gojani (2015) reveals that the residents of Gjakova in Kosovo are not only aware of the laws on waste disposal but also comply with them and report violators of the laws to the City council.

Looking at the reasons for illegal solid waste disposal presented above, questions can be raised regarding the extent to which the residents participate in the process of planning for solid waste management. This is the issue to be covered in the next section.

4.4 Nature of governance networks in planning for solid waste management in Lusaka district

Planning for domestic solid waste management in Lusaka district is done through a network of actors. These actors include the City council, private companies, WDCs, councillors and the residents. WDCs in charge of fostering and coordinating development activities in each ward. This committee is made up of elected individuals from the zones (i.e., zonal representatives) and ex-officials from institutions within the ward. The ex-officials include the ward councillor and representatives of faith-based

organizations and government departments such as community development, education, agriculture, and health. The affairs of the WDC are managed by an executive committee made up of the chairperson, vice chairperson, secretary, vice secretary, treasurer, vice treasurer, and four committee members. However, the activities of the WDC can be highly politicised, resulting in some wards being denied the opportunity to establish such committees. In communities that do not have WDCs, organs of the ruling political party such as political ward committees tend to take up their place. The Community Development Officer stated that:

> In communities, there are ward structures formed by the local authority called WDCs and one formed by the political party in power called political ward committees. Lusaka City Council had formed six WDCs but was later told to halt the process by the Ministry of Local Government until such a time it will be allowed. And so, where the WDC is not available, Lusaka City Council works with the political structure to foster development in the ward.

The above revelation by the Community Development Officer shows that there is political interference when dealing with issues of development in general and solid waste management in particular, in Zambia. This leaves the welfare of citizens at the mercy of politicians. This, in turn, makes citizens to be passive actors in matters affecting them. The Community Development Officer further stated that:

> Residents in communities are involved in planning indirectly through their representatives, the WDC members ... So, we as officials from Lusaka City Council, sit with the WDC and plan on how to improve solid waste management and mitigate challenges faced by both the WDC and the private waste management companies in the process of solid waste management in the wards. After the meeting, the WDCs take the information to their people. So, if we plan with WDCs, then, it means we are planning with the community as WDCs are representatives of the community and are in charge of spearheading developmental programmes such as solid waste management in the community.

The process of engaging the residents in solid waste management is handled by WDCs and councillors who organise meetings to discuss the duties of private waste management companies and those of the residents. According to the Chairperson for the WDC (interview, 25th February, 2018) in Chainda residential area, "planning for solid waste management in this compound is done by the WDC, area councillor, Tehila Enterprise- a private waste management company, council officials present in the ward, and the public through their zonal leaders." The Chairperson for the WDC in Chainda residential area further mentioned that "the secretariat of the WDC writes notices of the meeting and all the members of committee are invited to attend." On the actual day of the meeting, the WDC chairperson takes the lead in facilitating the deliberations. This finding agrees with Klijn and Koppenjan (2012) who argue that governance networks involve complex interactions between actors, which require some form of management to guide the deliberations between actors towards problem solving, policy formulation, implementation and service delivery.

Nevertheless, decision-making processes in solid waste management tend to be influenced by the network managers rather than the residents. The Chairperson for the WDC in Chainda residential area (interview, 25th February, 2018) indicated that:

> During the meeting, zonal leaders, Tehila Enterprise, and market committees present reports on the management of solid waste. The reports are then deliberated on and solutions to the problems raised in form of decisions are made. For instance, the committee agreed that K30 [$2.50] be the amount each resident pays for solid waste disposal [per month]. The decision is later communicated to the residents using a megaphone. After decisions are made, a general public meeting is organised where all interested residents in the compound [residential area] are invited and normally these meetings take place at the community hall during the working days so that the area councillor and other stakeholders attend.

The domination by network managers makes it difficult for residents to participate in planning for solid waste management. The findings show that 10 out of 86 residents (11.6%) who pay waste management fees attended the meeting to discuss duties of private waste management companies. Most of the people who attend such meetings reside in high density areas. A majority of the residents who pay waste management

fees (88.4%) never attend community meetings that pertain to solid waste management. Most of the people who never attend such meetings reside in medium and low density areas. This situation is worsened by the absence of WDCs that are supposed to be organising local people to discuss developmental issues. This was the case in the medium and low density areas covered by this research which operated without any WDC in existence. This leaves the residents at the mercy of private companies that tend to have the right to manage solid waste without any form of regulation, thereby exposing the residents to massive exploitation by the service providers. The findings reveal that five out of 10 residents who attended the meeting (50%) tried to contribute to the deliberations. Their submission was that the waste management fee be reduced from K30 [$2.50] to K20 [$1.67] per month. Nonetheless, the views of the residents were not incorporated in the final decision. This is because the organisers of the community meeting argued that the decision had already been made by the WDC and the private waste management company.

The domination by privileged actors in solid waste management also makes the residents who attend community meetings to withhold their contributions to the deliberations. This is the situation that five out of 10 residents (50%) who attended the meeting found themselves in. They indicated that they did not contribute to the deliberations because the WDC just came to inform them about the decision made on solid waste management in Chainda residential area and that there was no need for further debate. The residents further indicated that the WDC came with a predetermined figure for waste management which it had agreed with the private waste management company before meeting the residents. This finding is in agreement with Madimutsa and Pretorius (2018:321) who assert that networks "can be captured by privileged actors so as to serve their own preferences." In this regard, the process of solid waste management is captured by private companies who use it to make profit for themselves.

The government and community leaders are also captured and used to pacify the residents and perpetuate capital accumulation by private waste management companies. According to the Chairperson for the WDC in Chainda residential area (interview, 25th February, 2018), zonal leaders collect information from the residents regarding solid waste management. The information covers issues such as the number of households paying for waste management, the number of households that do not

pay for waste management, the amount of money paid for waste management, the frequency of waste collection by the private company, challenges faced by residents in managing solid waste, and their views on how to enhance solid waste management in their community. As observed earlier, despite this information being collected, the final decision is made by WDC in conjunction with private waste management company. This implies that the acts of soliciting information from the residents and inviting them to attend community meetings are meant to pacify rather than embrace them in the decision-making process. This finding agrees with Edelenbos and Klijn (2006) who contend that decisions in networks are approved by representative bodies, not the citizens.

4.5. Challenges against public participation in planning for solid waste management

Residents do not only face challenges at the stage of making contributions to deliberations in community meetings but also to attend the same meetings. As noted earlier, only 10 out of 86 residents (11.6%) who pay waste management fees had attended the meeting to plan for solid waste management in their communities. A majority of the residents, 76 out of 86 (88.4%) never attended the meeting. The main reason for residents not participating in the planning process is that there are no meetings held in the local communities. This challenge affects 68 out of 76 residents (89.5%) who do not participate in planning for solid waste management. This challenge is common in all the three categories of residential areas in Lusaka district. However, the situation is worse in medium and low density areas. These areas are the worst affected because they do not have any WDCs to organise such meetings. This finding is similar to the experiences of other African countries. Amasuomo et al. (2015) indicate that members of the public in Abuja, Nigeria, are prevented from active participation in waste management by poor government policies and lack of the necessary support from the government and other stakeholders.

The other challenge that prevents residents from participating in planning for solid waste management is lack of time. Residents in this category tend to be busy attending to their personal activities when community meetings are called. The findings show that eight out of 76 residents (10.5%) are affected by this challenge. Nonetheless, the residents cannot be entirely blamed for failing to attend community meetings due to

their busy schedules. They find themselves in this situation because of poor government policies. As stated earlier by the Chairperson for the WDC in Chainda residential area:

> After decisions are made, a general public meeting is organised where all interested residents in the compound [residential area] are invited and normally such a meeting takes place at the community hall during the working days so that the area councillor and other stakeholders attend.

The above revelation shows that public meetings are called at the time that is convenient to government officials and their private sector counterparts as opposed to the residents. Like government and private sector officials, some of the residents are in formal employment. On one hand, it is convenient for government and private sector officials to organise and attend public meetings during working days because this is the time, they perform their official duties including interacting with local communities. On the other hand, residents who are in formal employment use working days to attend to their duties as assigned by their employers thereby being too busy to attend community meetings. As such, only unemployed residents have time to attend community meetings during working days. With low community attendance at such meetings, it becomes easier for the government and its private sector partners to dominate decision-making processes. This problem of poor government policies preventing active public participation in waste management is not unique to Zambia. It is also found in other African countries like Nigeria (Amasuomo et al., 2015).

4.6 Conclusion

Both developed and developing countries rely on networks to manage solid waste. These networks comprise governments, private companies and local communities. However, the networks in urban areas of Africa such as Lusaka district, have been captured by private companies that use them to make profit for themselves. As a result, local communities are left with a lot of uncollected solid waste despite waste management fees being paid. The process of network capture is done in two stages. The first stage involves the government being made to formulate laws that force residents to subscribe to private waste management companies. When residents fail to subscribe and dispose of their solid waste illegally, they are subjected to punishment such as a fine and imprisonment. The second stage of network capture involves the

government collaborating with private companies to set waste management fees at a rate that is unaffordable to the residents. To pacify the residents, a few of them are asked to present their views on how they want solid waste to be managed in their communities. Nonetheless, their views are never taken on board. Instead, the final decision is made by government officials in conjunction with private waste management companies.

Since waste management fees are unaffordable, some residents end up using illegal methods to dispose of their solid waste such as rubbish pits and open grounds. Because of their desire to make profit, private companies rarely collect the waste from residents who pay the prescribed waste management fees. By virtue of being captured, the government fails to reprimand the private companies for their inconsistency in the collection of solid waste in communities. Ultimately, communities are characterised by uncollected solid waste while private waste management companies accumulate capital.

CHAPTER 5

GOVERNANCE NETWORKS AND CHALLENGES AGAINST PUBLIC PARTICIPATION IN EVALUATING SOLID WASTE MANAGEMENT IN URBAN AREAS

5.1 Introduction

The previous chapter analysed the nature of governance networks and challenges against public participation in planning for solid waste management in Lusaka district. The chapter has shown that solid waste is managed by several actors and that planning of solid waste management is done at community level by a network of actors such as the Ward Development Committee, private waste management companies and council officials. The chapter has also shown that the views of the public are not considered in planning for solid waste management and that the privileged actors have captured the decision making process. The main challenge that inhibits the residents from participating is lack of planning meetings, especially in medium and low density areas.

The purpose of this chapter is to present and discuss findings relating to the second specific objective which reads: To examine the nature of governance networks and challenges against public participation in evaluating solid waste management in Lusaka district. In order to achieve its purpose, the chapter has been divided into six sections. The first section is the introduction. The second section analyses the quality of solid waste management in residential areas in Lusaka district. The third section examines the process of evaluating solid waste management in Lusaka district. The fourth section discuss how waste management fees are revised. The fifth section presents challenges against public participation in solid waste management in Lusaka district. The final section is a conclusion of the chapter.

5.2 Quality of solid waste management in residential areas of Lusaka district

Local residents have different views on the management of domestic solid waste in the district by the private companies. Table 5.1 below shows whether residents are unhappy, happy, happier and happiest with the way domestic solid waste is managed by private waste management companies

Table 5.1: Distribution of responses by residential area and Level of unhappiness/happiness with solid waste management by private companies

Residential Area	Level of unhappiness/happiness with solid waste management				Total
	Unhappy	Happy	Happier	Happiest	
High density	9	18	5	2	34
Medium density	13	10	4	3	30
Low density	4	3	2	13	22
Total	26	31	11	18	86
Percent	**30.2**	**36**	**12.8**	**21**	**86**

Source: Field Data

Table 5.1 shows that a majority of the residents, 60 (i.e., 31, 11 and 18) out of 86 residents (69.8 percent) are happy, happier and happiest respectively, with the way domestic solid waste is managed by private waste management companies in Lusaka district. The reasons for happiness vary. 25 (41.7 percent) out 60 respondents indicated that the waste management collected waste regularly, 21 (35 percent) indicated that the waste management companies were effective in communication whenever they had a breakdown which disturbed the collections dates/hours, and 14 (23.3 percent) stated that the waste management companies provided receptacles at a cheaper price. The Managing Director for G.L. Carriers Limited stated that "Clients are provided with receptacles at a cheaper price. This is done in order to encourage them to use recommended receptacles" (interview, 6th January, 2018). According to the Community Development Office, "CBEs may provide residents with receptacles, but of course, it is not for free" (interview, 16th January, 2018).

However, the happiest people are found in low density areas as shown by 13 out of 22 residents (51.1 percent). This finding simply shows that private waste management companies tend to offer better services in areas which are seemingly for the higher income earners who affords to pay for the waste disposal. This explains the presence of such companies in low density areas of Livingstone as established by Chilinga (2014). The finding also shows that 26 (30.2 percent) out of 86 residents are unhappy with the way private companies manage domestic solid waste. Table 5.2 shows reasons why some residents are unhappy with the way domestic solid waste is managed by the private waste management companies.

Table 5.2: Distribution of responses by residential area and reason for unhappiness with solid waste management

Residential area	Reason for being unhappy with the waste management companies manage the waste			Total
	Not consistent in collecting waste	Waste management fees are too high	They do not collect certain types of waste	
High density	6	3	0	9
Medium density	4	7	2	13
Low density	1	2	1	4
Total	11	12	3	26
Percent	**42.3**	**46.2**	**11.5**	**100**

Source: Field Data

The findings show that the main complaint by the residents, 12 out of 26 residents (46.2 percent) is waste collection fees being too high. This finding is similar to experiences in other districts in Zambia like Kitwe. Nkowani (2013) noted that residents in high density areas were dissatisfied with the solid waste removal services by the service providers because the service was poor, unreliable and characterised by high service charges which do not match service delivery. This problem is most prevalent in medium density areas as shown by seven out 13 respondents (53.8 percent) and two out of four respondents (50 percent) in low density areas respectively, who indicated that waste management fees were too high. Residents in these residential areas pay higher amounts than residents in high density areas as shown in Table 4.5. This finding clearly shows that residents in medium and low density areas are charged higher than those in high density areas. The complaint of waste management fees being too high for residents in both medium and low density areas means that there is a problem of affordability of the service in these areas as well.

The second problem is that of private waste management companies are not consistent in collecting waste. This problem is most prevalent in high density areas, as shown by six out of nine residents (66.7 percent) indicating that the private company is not consistent in collecting waste. According to the Director for Tehila Enterprise (interview, 2nd February, 2018), a Community Based Enterprise contracted by Lusaka City Council to manage domestic waste in Chainda Compound, ‘‘Chainda compound

is small but with many households. The generation of domestic solid waste is higher and having one vehicle to collect waste from the households to the dump site has proved a challenge.'' One resident indicated that ''in the contract I signed with Tehila Enterprise, domestic solid waste is supposed to be collected once per week. However, the company sometimes comes after two weeks to collect the waste.'' This finding shows that the Community Based Enterprises in high density areas lack capacity to manage solid waste, despite the residents paying waste management fees. This finding agrees with Nkowani (2013) who observed that solid waste removal services by the service providers in Kitwe district of Zambia is characterised by low waste collection frequency and poor response to customers' complaints. The finding is also similar to experiences in other developing countries like Venezuela (Ramos, Ortega and Vicentini, 2012).

The least presented problem is private waste management companies not collecting certain types of waste. This problem is prevalent in medium and low density areas, as shown by two out of 13 respondents (15.4 percent) and one out of four respondents (25 percent) of residents indicating that private companies do not collect certain type of waste. Two residents and one resident in medium and low density areas respectively indicated that solid waste such as metal and plastic containers, dry wood and grasses are not collected. This is despite the residents paying higher amounts for waste management. This explains the reason why some residents use rubbish pits to dispose of solid waste in medium and low density residential areas as shown in table 4.7.

5.3 Evaluation of solid waste management in Lusaka district

Evaluation of solid waste management in Lusaka district is done independently by actors such as the WDC, Councillors, Lusaka City Council officers (Community Development Officer and Public Health Inspectors), local residents and Zambia Environmental Management Agency (ZEMA).

In areas where WDCs exist, the WDC conducts a survey by asking local residents a number of questions regarding their performance and that of the private waste management companies. The Chairperson of the WDC (interview, 25th February, 2018) in Chainda stated that:

> Zonal leaders go round in their respective zones, collecting information from the public regarding their performance in line with payment of waste management fees and packing of domestic solid waste awaiting collection by the CBE. They also ask residents how often the CBE collects waste and how much it charges. Thereafter, a report is compiled and submitted to Lusaka City Council.

The Community Development section of LCC also evaluates solid waste management on a quarterly basis. The officers go round in the community, asking local residents questions regarding their participation in solid waste management and also how the CBE is fairing in terms of collection of domestic waste. The Community Development Officer stated that:

> despite having solid waste management systems in place, domestic solid waste is found lying in the communities, indicating that either local residents are not paying for disposal of waste, or the service providers are not performing…CBEs are assessed by looking at the number of households they are servicing, trips they go to the landfill, and sometimes by going through the receipts and also by checking on how they keep the containers (interview, 16th January, 2018).

The evaluation of the performance of private waste management companies in the district by LCC is both formative and summative. On the one hand, formative evaluation is done by a Public Health Inspector assigned to a specific area. The Operation Manager of Clean Fast Limited (interview, 4th January, 2018) indicated that ‘‘normally, LCC assigns a Health Inspector to a specific area serviced by a waste management company. The inspector monitors and evaluates the performance of the waste management company and provides advice on the weaknesses noted.’’ On the other hand, summative evaluation of the performance of the private waste management companies is done on a quarterly basis. The Managing Director G.L. Carriers Limited stated that:

> evaluations of our performance is done on a quarterly basis by a team of officers from LCC. The team is composed of Public Health Inspectors and the one who does formative evaluation is not part of the group. This is done so that a fair and independent summative evaluation is done. The

> focus of the inspectors is on the employment status, compliance with the *Local Government (Solid Waste Management) Regulations of* 2011, equipment and complaints of residents on the service provided. The idea is to determine the capacity of the waste management company in domestic solid waste management in communities. The officers, then compile a report. Therefore, evaluation of the solid waste management system put in place by LCC is a continuous process (interview, 6th January, 2018).

According to the Head for WMU (interview, 11th December, 2017), he stated that

> Normally, evaluation of the performance of private waste management companies is supposed to be done quarterly, but it is not done quarterly because of lack of finances…the team which is involved in the process is huge and as such, needs financial resources and it is WMU which is supposed to fund such activities. But you will find that we do not have fuel to run waste management and so, why should we do an evaluation process…so sometimes, it is only done once in a year. Like in the last two years, it has only been done once. So, the evaluation of private waste management companies is first of all done by the WDCs and the area Councillor who are the representatives of the community, who ask the communities members a lot of questions such as how regular private waste management companies collect and dispose of domestic solid waste? How much residents pay for the service? When do they pay? Are they given receipts after paying? And are they satisfied with the service of the company?

Similarly, Councillors also investigate how the waste service providers relate with the residents, the fees charged, and their effectiveness among other things (interview with Head for WMU, 11th December, 2017). He further indicated that the Zambia Management Environmental Agency (ZEMA) officials also conduct their survey and mainly focus on whether LCC and private waste management companies operate in line with the Environment Act of 2004 in the management of solid waste.

After surveys are conducted by each of the actors namely WDC, Councillors, LCC officials and ZEMA, submissions are made to LCC, in particular the WMU. The WMU

prepares a report which is presented to the Council and decisions are made on what to do with the non-performing private waste management companies. According to the Head for WMU (interview, 11th December, 2017) ‘‘certain private waste management companies were found not to be effective and as a result, LCC grabbed certain areas of service and engaged other private waste management companies with the capacity.’’ He further indicated that based on the submissions from ZEMA, LCC was also found wanting and ZEMA made recommendations that it releases certain areas it service to private waste management companies with the capacity to manage solid waste. This means that LCC lacks capacity to manage solid waste in the district. This finding is similar to experiences of other local authorities in other districts of Zambia like Kabwe (Pasi, 2014) and Kitwe (Nkowani, 2013). This finding is also similar to experiences in other African countries like Nigeria (Amasuomo et al., 2015).

The findings show that actors in urban areas do not work together in a network in evaluating solid waste management or systems put in place by the local authority. The findings further indicate that local residents participate in the evaluation process of solid waste management by way of responding to questions raised by actors carrying out a survey. One resident in high, two in medium and one in low density areas respectively indicated that ‘‘they respond to actors conducting a survey because they are eager to forward their submission with the hope that the problems regarding solid waste management could be solved.’’ The participation of the local residents in the evaluation process of domestic solid management in Lusaka district is intrinsically motivated. This kind of participation is similar to the experiences of developed countries like the United States of America (Lobber, 1996).

The findings show that in the evaluation process of solid waste management, residents’ representatives make submissions to LCC on the performance of the service providers. Residents in Lusaka district were asked whether they had attended any meeting to decide how the private waste management companies could improve on the way to manage domestic solid waste. The findings indicate that residents of Lusaka district are not involved in the discussions regarding the performance of private waste management companies operating in their communities. This means that the solid waste management system in Lusaka district works to the advantage of private companies. In this case, the evaluation of solid waste management is captured by these companies. This is because the generators of domestic solid cannot engage the service

providers on issues regarding the quality of service provision. This finding is similar to experiences in other districts in Zambia like Livingstone (Chilinga, 2014). This finding is also similar to experiences in other developing countries. Poletto et al (2016) indicates that scavenger associations in Brazil face challenges such as lack of infrastructure and lack of being involved in policies associated with urban solid waste management. Similarly, Gojani (2015) asserts that citizens of communities in Southern Europe like Kosovo have concerns regarding laws on waste and waste disposal but there are no inspectors to implement the same laws.

5.4. Revision of fees for solid waste disposal

Waste management fees are revised from time to time. One respondent indicated that ‘‘I used to pay K 60.00 when I shifted to Libala township but after three months, G.L. Carriers Limited raised the amount to K 75.00.’’ Private waste management companies increase the fees from time to time. The Managing Director for G.L. Carriers Limited stated that ‘‘waste management fees are adjusted when there is a major shift in salaries, fuel and vehicle maintenance… in other words, when the cost of operations goes up, we have to increase as well’’ (interview, 6th January, 2018). Table 5.3 shows residents’ responses on revisions of waste management fees.

Table 5.3: Revision of waste management fees by residential area

	Residential area				
Fees revised	High density	Medium Density	Low density	**Total**	**Percent**
Yes	0	26	17	43	50
No	32	4	5	41	47.7
No response	2	0	0	2	2.3
Total	**34**	**30**	**22**	**86**	**100**

Source: Field Data

Table 5.3 shows that private waste management companies operating in medium and low density areas have revised the waste management fees as shown by 26 out of 30 respondents (86.7 percent) and 17 out of 22 respondents (77.3 percent), respectively, who indicated that private companies revise waste management fees. The finding further shows that in high density areas, private waste management companies have not revised the fees. The 43 residents in medium and low density areas who reported revision of the fees were asked if they were informed on the new fees. However, their

responses were that they never attended any meeting called by private companies or the local authority. In addition, they never read any publication in a daily newspaper of general circulation in the area, as demanded by *The Local Government (Solid Waste Management) Regulations* (Republic of Zambia, 2011b). The residents were just informed of the new fees through notices which companies gave them whenever there was an increment. The Head for WMU (interview, 11th December, 2017) stated that ''LCC negotiate waste management fees with private companies on behalf of the residents, and residents are normally informed on the changes in the fees by the service providers.'' This finding is also similar to experiences in other developing countries like India (Sarker, 2003). The finding implies that local authorities and private waste management companies fail to comply with the regulations, and therefore, implement activities which benefit their interests. Lack of publicity on the changes of the fees, partially explains the lack of compliance with the legal method of solid waste disposal by the residents as noted in the previous chapter.

5.5. Challenges against public participation in evaluating solid waste management in Lusaka district.

Residents do not only face challenges in planning for solid waste management in their communities as noted in the previous chapter, but also in evaluating solid waste management. The main challenge that inhibits residents of Lusaka district from participating directly in evaluating solid waste management is non-availability of both public and private structures to engage them in their communities. There are no meetings which are called by the service providers (neither public nor private) inviting the residents to participate in evaluating solid waste management. According to the Community Development Officer, ''LCC had formed six WDCs … but was told to halt the process of forming by the Ministry of Local Government until such a time it will be allowed.'' WDCs are structures at grass root levels which allow the involvement of various stakeholders, including residents in developmental activities such as solid waste management. Therefore, in most of the residential areas, especially medium and low density areas in Lusaka district, WDCs are not present. This poor government policy in service delivery hinders local residents from participating in public service such as solid waste management. This finding is similar with experiences of other developing countries like Brazil. Poletto et al (2016) noted that scavenger associations face challenges such as lack of infrastructure and lack of being

involved in solid waste management. As mentioned above, all the 43 residents who reported revision of waste management fees were not informed through the prescribed channel as indicated in *The Local Government (Solid Waste Management) Regulations of 2011*.

Therefore, the residents are excluded from participating in the evaluation process of solid waste management, as each actor involved does it independently. The Managing Director for G.L. Carriers Limited stated that ‘‘residents are not part of the evaluation of solid waste management, as they are not part of the contract, only officers from the City council and ZEMA evaluate our activities and performance’’ (interview, 6th January, 2018).

5.6 Conclusion

The absence of structures, both public and private to engage actors in evaluating solid waste management in communities has led to each actor, evaluating solid waste management as a single entity. The actors involved in evaluating solid waste management in Lusaka district include the City council, private waste management companies, WDCs, ZEMA and Councillors. Therefore, in communities, there are no meetings which are called by the service providers inviting local residents to participate directly in evaluating solid waste management. Local residents are only used as a source of information on the management of domestic solid waste by actors. Reports generated by these actors are submitted to the City council which makes decisions and implement them.

The majority of residents (69.8 percent) in Lusaka district are happy with solid waste management by the private waste management companies. Their happiness is due to the following reasons: waste management companies collect domestic solid waste regularly, are effective in communicating whenever there is a breakdown of vehicles, and provide receptacles at a cheaper price. The happiest people are found in low density areas where residents are considered to be richer and pay higher amounts to the Franchise companies. These companies are consistent in managing the waste in these areas.

The unhappiness on the other hand is as a result of the companies not being consistent in collecting the waste, waste management fees being too high and being selective in

the waste to collect. However, the main reason for the unhappiness, is waste management fees being too high. This problem is most prevalent in medium (58.3 percent) and low (50 percent) density areas respectively. This shows that there is a problem of affordability of the service by residents in these areas. The fees are revised by the service providers when the cost of operations goes up. In Lusaka district, private waste management companies revise fees when there is a major shift in salaries, fuel and vehicle maintenance. Revision of fees is mainly common in low and medium density areas. The residents in these areas are not informed through the prescribed media platform as stated in *The Local Government (Solid Waste Management) regulations of 2011*, when revising the fees. However, these fees are communicated to them through notices which are given on the day of collecting the waste.

The final chapter is the conclusion and recommendations which could be possible solutions to some of the problems encountered by the local residents in planning and evaluating solid waste management in urban areas.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The purpose of this chapter is to present the conclusions and recommendations of the dissertation. In order to achieve its purpose, the chapter will begin by presenting the conclusions of the dissertation and end with recommendations.

6.2 Conclusions

The conclusions of this dissertation are presented in accordance with the objectives of the research. The first specific objective of the research was to analyse the nature of governance networks and challenges against public participation in planning for solid waste management in Lusaka district. The findings shows that both developed and developing countries rely on networks to manage solid waste. These networks comprise governments, private companies and local communities. However, the networks in urban areas of Africa such as Lusaka district, have been captured by private companies that use them to make profit for themselves. As a result, local communities are left with a lot of uncollected solid waste despite waste management fees being paid. The process of network capture is done in two stages. The first stage involves the government being made to formulate laws that force residents to subscribe to private waste management companies. When residents fail to subscribe and dispose of their solid waste illegally, they are subjected to punishment such as a fine and imprisonment. The second stage of network capture involves the government collaborating with private companies to set waste management fees at a rate that is unaffordable to the residents. To pacify the residents, a few of them are asked to present their views on how they want solid waste to be managed in their communities. Nonetheless, their views are never taken on board. Instead, the final decision is made by government officials in conjunction with private waste management companies.

Since waste management fees are unaffordable, some residents end up using illegal methods to dispose of their solid waste such as rubbish pits and open grounds. Because of their desire to make profit, private waste management companies rarely collect the waste from residents who pay the prescribed waste management fees. By virtue of being captured, the government fails to reprimand the private companies for their

inconsistency in the collection of solid waste in communities. Ultimately, communities are characterised by uncollected solid waste while private waste management companies accumulate capital.

The second objective was to examine the nature of governance networks and challenges against public participation in evaluating solid waste management in Lusaka district. The absence of structures, both public and private to engage actors in evaluating solid waste management in communities has led to each actor, evaluating solid waste management as a single entity. The actors involved in evaluating solid waste management in Lusaka district include the City council, private waste management companies, WDCs, ZEMA and Councillors. Therefore, in communities, there are no meetings which are called by the service providers inviting local residents to participate directly in evaluating solid waste management. Local residents are only used as a source of information on the management of domestic solid waste by actors. Reports generated by these actors are submitted to the City council which makes decisions and implement them.

The majority of residents (69.8 percent) in Lusaka district are happy with solid waste management by the private waste management companies. Their happiness is due to the following reasons: waste management companies collect domestic solid waste regularly, are effective in communicating whenever there is a breakdown of vehicles, and provide receptacles at a cheaper price. The happiest people are found in low density areas where residents are considered to be richer and pay higher amounts to the Franchise companies. These companies are consistent in managing the waste in these areas.

The unhappiness on the other hand is as a result the companies not being consistent in collecting the waste, waste management fees being too high and being selective in the waste to collect. However, the main reason for the unhappiness, is waste management fees being too high. This problem is most prevalent in medium (58.3 percent) and low (50 percent) density areas respectively. This shows that there is a problem of affordability of the service by residents in these areas. The fees are revised by the service providers when the cost of operations goes up. In Lusaka district, private waste management companies revise fees when there is a major shift in salaries, fuel and vehicle maintenance. Revision of fees is mainly common in low and medium density

areas. The residents in these areas are not informed through the prescribed media platform as stated in *The Local Government (Solid Waste Management) regulations of 2011,* when revising the fees. However, these fees are communicated to them through notices which are given on the day of collecting the waste.

The general objective of the research was to analyse the nature of governance networks and challenges against public participation in solid waste management in urban areas. In this regard, the general conclusions of this dissertation are that the governance networks in solid waste management are those of capture and exclusion. The networks are captured by privileged actors, who in this case are the private waste management companies who make or influence decisions that promote maximisation of their own profits. This is done at the expense of residents who deserve services that are not only affordable but of good quality. The governance networks are captured in such a way that residents have challenges to participate directly in the process of decision making. This is mainly due to lack of meetings that involve people to make decisions that affect them. The exclusion of governance networks is in such a way that views of the less privileged actors, the public are not considered in decision making during meetings.

6.3 Recommendations

The recommendations are in two categories. These are policy recommendations and areas for future research.

6.3.1 Policy Recommendations

To ensure effective public participation in solid waste management in Lusaka district, the following recommendations should be considered by either policy makers at the national level, by Lusaka City Council, by private waste management companies and all other actors involved in solid waste management;

1. Ministry of Local Government should consider allowing local authorities to continue the process of forming WDCs. This may enhance coordination of public services such as solid waste management at local level.
2. LCC and its substructure, WDCs, should enhance sensitisation of the residents on solid waste management practices. This may enhance effective solid waste management by residents in communities.

3. LCC should ensure that all actors who have a stake in solid waste management in communities should collaborate in a network at planning, implementation and evaluation of solid waste management, and decision making should be owned by all the actors. This may greatly help residents and the service providers to work towards achieving their goals.
4. The government should quickly consider revising the Local Government Act (Laws, Volume 16, Cap 281) the Local Government (Solid Waste Management) Regulations of 2011 so as to ensure that Private Waste Management Companies contracted by a Local Authority should be able to engage residents in solid waste management practices. This may help residents to provide checks and balances in solid waste management and enhance service provision by private companies.
5. Lusaka City Council should consider standardising waste management fees for each category of residential area. This may greatly help residents to dispose of their waste using the solid waste management system put in place in a particular district, as issues of affordability of fees may be considered.

6.3.2 Areas for future research

Although this research has provided valuable insights into the nature of governance networks and challenges against public participation in solid waste management, it did not discuss strategies of empowering local residents in the process of solid waste management. This is the area of focus for future research.

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APPENDICES

APPENDIX 1

THE UNIVERSITY OF ZAMBIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES

QUESTIONNAIRE FOR HOUSEHOLD HEADS

Dear Respondent,

I am Daka Michael, a post – graduate student at the University of Zambia in the school of Humanities and Social Sciences carrying out a study on **Governance networks and challenges against public participation in planning and evaluation of solid waste management in Lusaka district**. This study is purely an academic exercise and is meant to enable me to partially fulfil the requirements of the Degree of Master of Public Administration [MPA].

You have been selected to complete this questionnaire and I would be very grateful if you would spare a few minutes to respond to the questions. Please answer the questions to the best of your knowledge and be assured that the information you will offer will be kept strictly confidential. However, you are free to withdraw at any time from the study without giving reasons.

I thank you in advance.

INSTRUCTION

Please tick the appropriate answer to the question. Where the question asks you to write the answer, please do so in the space provided.

BACKGROUND INFORMATION

1. Sex

    1. Male [ ] 2. Female [ ]

2. Age at last birthday?

……..

3. Residential Area

    1. High density [ ]

    2. Medium density [ ]

    3. Low density [ ]

4. Educational background

    1. No formal education [ ]

    2. Primary education [ ]

    3. Secondary education [ ]

    4. Tertiary education [ ]

5. Marital status

    ……...

6. Family size

    1. Less than 5 [ ]

    2. 5 – 8 [ ]

    3. 9 – 12 [ ]

    4. More than 12 [ ]

7. Occupation

    1. Informal [ ]

2. Formal [ ]

3. Unemployed [ ]

8. Level of income per month.

1. K0 – K3 000 [ ]

2. K3 001 – K3 800 [ ]

3. K3 801 – K5 900 [ ]

4. K5 901 and above [ ]

PLANNING FOR SOLID WASTE MANAGEMENT

9. How do you dispose of solid waste generated by your household?

1. Rubbish pit [ ]

2. Dump sit [ ]

3. Open grounds [ ]

4.Use of private waste management companies (Skip to q11) [ ]

5. Other (Specify)

……

10. If the response to question 9 is rubbish pit, dump site and open grounds, why don't you use private waste management companies? (Skip to q 37).

1. Cannot afford waste collection fees [ ]

2. Lack of awareness [ ]

3. Non availability of private companies in the area [ ]

4. Other (specify)

……

11. If private waste management companies, how much do you pay per month for them to collect your solid waste?

……

12. If private waste management companies dispose of your solid waste, have you ever attended any meeting to discuss their duties in managing your waste?

    1. Yes [ ]

    2. No [ ]

13. If no to question 12, why?

……
……
…… (Skip to q 20)

14. If the response to question 12 is yes, who organises the meeting?

    1. Lusaka City Council [ ]

    2. Private waste management companies [ ]

    3. Ward Development Committee [ ]

    4. Councillor [ ]

    5. Other (specify)

……

15. Have you said anything in those meetings about how you want solid waste to be managed?

    1. Yes [ ]

    2. No [ ]

16. If the response to question 15 is no, why?

……
……

……
……

17. If the response to question 16 is yes, were your views incorporated in the final decision of how solid waste should be managed in your community?

    1. Yes [ ]

    2. No [ ]

18. If the response to question 17 is no, why were your views rejected?

……
……
……

19. Whose views were adopted at that meeting?

    1. Lusaka City Council [ ]

    2. Private companies [ ]

    3. Ward Development Committee [ ]

    4. Councillor [ ]

    5. Other (specify)

……

EVALUATION OF SOLID WASTE MANAGEMENT

20. Are you unhappy, happy, happier and happiest with the way solid waste is managed by private waste management companies in your community? Tick your response.

    1. Unhappy [ ]

    2. Happy [ ]

    3. Happier [ ]

4. Happiest [ ]

21. If the response to question 20 is unhappy, state the reasons for your unhappiness?

……
……
……

22. If your responses to question 20 is happy or happier or happiest, state the reasons for your happiness.

……
……
……

23. Have you attended any meeting to decide how these private companies can improve the way they should manage solid waste in your community?

1. Yes [ ]

2. No [ ]

24. If the response to question 23 is no, why?

……
……
……

25. If the response to question 23 is yes, who organised the meeting?

1. Lusaka City Council [ ]

2. Private companies [ ]

3. Ward Development Committee [ ]

4. Councillor [ ]

5. Other (specify)

……

26. Did you say anything in the meeting?

1. Yes [ ]

2. No [ ]

27. If the response to question 26 is no, why?

……
……
……

28. If the response to question 26 is yes, were your views incorporated in the final decision?

1. Yes [ ]

2. No [ ]

29. If the response to question 28 is no, why were your views rejected?

……
……
……

30. Whose views were adopted?

……
……

31. Have the fees you pay for solid waste disposal revised before?

1. Yes [ ]

2. No [ ] (Skip to q 37)

32. If the response to question 31 is yes, did you attend any meeting to be informed on the new fees?

1. Yes [ ]

2. No [ ]

33. If the response to question 32 is no, why?

……
……
……

34. If the response to question 32 is yes, did you contribute any views?

1. Yes [ ]

2. No [ ]

35. If the response to question 34 is no, why?

……
……
……

36. If the response to question 34 is yes, what were your contributions?

……
……
……

37. What do you think should be done for you to actively participate in solid waste management programmes in your community?

……
……
……
……..

APPENDIX II

INTERVIEW GUIDE FOR GOVERNMENT OFFICIALS

Dear Respondent,

I am Daka Michael, a post – graduate student at the University of Zambia in the school of Humanities and Social Sciences carrying out a study on **Governance networks for and challenges against public participation in planning and evaluation of solid waste management in Lusaka district**. This study is purely an academic exercise and is meant to enable me to partially fulfil the requirements of the Degree of Master of Public Administration [MPA].

You have been selected to participate in the study and I would be very grateful if you would spare a few minutes to respond to the questions. Please answer the questions to the best of your knowledge and be assured that the information you will offer will be kept strictly confidential. However, you are free to withdraw at any time from the study without giving reasons.

I thank you in advance.

BACKGROUND

1. Name of Organisation: …….
2. Position held in the Organisation: ……
3. Gender: ……
4. Date of interview: ……
5. Start time of interview: ……

PLANNING FOR SOLID WASTE MANAGEMENT

6. How is solid waste managed in your district or residential area?
7. Which people or organisations are involved in planning for solid waste management in your district or residential areas?

8. What is the planning process for solid waste management in your district or residential areas?

9. In this process, are local people involved?

   1. Yes [ ]

   2. No [ ]

10. If the response to question 9 is yes, how are they involved?

11. If the response to question 9 is no, why are they not involved?

EVALUATION OF SOLID WASTE MANAGEMENT

12. How often is solid waste management in the district or residential areas evaluated?

13. Which people or organisations are involved?

14. How is the evaluation process done?

15. In this process, are local people involved?

   1. Yes [ ] 2. No [ ]

16. If the response to question 15 is yes, how are they involved?

17. If the response to question 15 is no, why are they not involved?

18. What do you think should be done to effectively manage solid waste in your city or residential areas?

19. Finish time of the interview: ……

20. Duration of the interview: ……

END OF INTERVIEW **THANK YOU**

APPENDIX III

INTERVIEW GUIDE FOR PRIVATE WASTE MANAGEMENT COMPANIES

Dear Respondent,

I am Daka Michael, a post – graduate student at the University of Zambia in the school of Humanities and Social Sciences carrying out a study on **Governance networks for and challenges against public participation in planning and evaluation of solid waste management in Lusaka district**. This study is purely an academic exercise and is meant to enable me to partially fulfil the requirements of the Degree of Master of Public Administration [MPA].

You have been selected to participate in the study and I would be very grateful if you would spare a few minutes to respond to the questions. Please answer the questions to the best of your knowledge and be assured that the information you will offer will be kept strictly confidential. However, you are free to withdraw at any time from the study without giving reasons.

I thank you in advance.

BACKGROUND

1. Name of the Organisation: ……
2. Position held in the organisation: ……
3. Gender: ……
4. Date of interview: ……
5. Start time of interview: ……

PLANNING FOR SOLID WASTE MANAGEMENT

6. How do you manage solid waste in the residential areas that you service?
7. Who is involved in planning on how solid waste should be managed in the residential areas you service?
8. How is the planning process done?

9. Are local people involved in this process?

   1. Yes [ ] 2. No [ ]

10. If the response to question 9 is yes, how are they involved?

11. If the response to question 9 is no, why are they not involved?

EVALUATION OF SOLID WASTE MANAGEMENT

12. How often is your performance in solid waste management in these residential areas evaluated?

13. Who conducts the evaluation process?

14. How is the evaluation process done?

15. Are local people involved?

16. If the response to question 15 is yes, how are they involved?

17. If the response to question 15 is no, why are they not involved?

18. What do you think should be done to effectively manage solid waste in residential areas?

19. Finish time of the interview: ……

20. Duration of the interview: ……

END OF INTERVIEW **THANK YOU**