WATER GOVERNANCE DYNAMICS IN THE INFORMAL SETTLEMENTS IN LUSAKA: A CASE OF CHIPATA SETTLEMENT, ZAMBIA

By

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A dissertation submitted to the University of Zambia in partial fulfilment of the requirements for the Degree of Master of Science in Spatial Planning

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DECLARATION

I, **PETER MULAMBIA** (Computer Number **2016145678**) declare that all the work except that which has been properly acknowledged is a representation of my work. It has not previously been submitted for a degree, diploma or other qualification at any other University. All published work material from other sources incorporated in this dissertation has been specifically acknowledged and adequate referenced thereby given.

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APPROVAL

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ABSTRACT

The dominant practices of water governance and settlement interventions in the cities of the global South are still rooted in the paradigms of global North resulting in increasing problems of poverty, informality, inequality and socio-spatial disintegration. The dominant interventions fail to address and engage with the 'everyday' practices of communities and the role of power in structuring multi-stakeholder and community-led service delivery arrangements. This research sought to examine the implications of community led multi-stakeholder collaborations in water and sanitation in informal settlements in Lusaka.

The study used Chipata informal settlement as a case study to examine water governance dynamics in a context-specific community-led multi-stakeholder collaborative project called Community Driven Model for equitable services (COMEQS). Data was collected using semi-structured interviews, field observations and focus group discussions. The study used snowball sampling to select non-state actors, convenient sampling to select community residents while key informants were selected using purposive sampling. Data was analyzed using descriptive methods that include thematic and content analysis. Findings of the study reveal that though there are various actors in water provision in Chipata settlement, The Lusaka Supply Water and Sanitation Company is the main actor. Moreover, the collaboration among actors is weak and is characterized by multiple centers of power, conflicted civil society and existence of multiple societies. Further, the study shows that actors have divergent professional and survival interests, conflicting visions on the settlement, materialistic and social identities which have all propelled segregated decision-making processes limiting the spaces for social dialogue and deliberations needed for effective integrated community planning and service delivery. The study also indicated that integrated development-planning needs to be rooted in deep understanding of urbanisms of the community and its governance dynamics.

The study addresses a crucial aspect of the provision of water in the informal settlements. This study concludes that water supply for the urban poor is still characterized by inequalities in terms of access, and affordability of water and sanitation services. The study recommends the concept of community-led multi-stakeholder collaboration as an alternative urban intervention framework that can be used to achieve inclusive and sustainable urban environments and restructure institutional relationships that would arguably lead to a more successful water and sanitation service delivery in the urban poor.

Key words: Actors, water governance, community-led, power relations, global South, integrated development planning

DEDICATION

To my lovely wife, Chewe Luaba Mulambia and my children Patrick, Katrina, Jessica and Miracle.

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ACRONYMS

ADB	Asian Development Bank
CSO	Central Statistical office
CDF	Constituency Development Fund
CBOs	Community Based Organizations
CBEs	Community Based Enterprises
COMEQS	Community Driven Models for Equitable Services
CUs	Commercial Utilities
CURP	Centre for Urban Research and Planning
WDC	Ward Development Committee
DWA	Department of Water affairs
DMMU	Disaster Management and Mitigation Unit
GRZ	Government of the Republic of Zambia
JICA	Japan International Cooperation Agency
IDP	Integrated Development Plan
LCC	Lusaka City Council
LAs	Local Authorities
LADPs	Local Area Development Plans
LWBs	Local Water Boards
LWSSC	Lusaka Water Supply and Sanitation Company
LS-MFEZ	Lusaka South Multi-facility Economic Zone

MCA	Millennium Challenge Account
MEWD	Ministry of energy and water development
MLGH	Ministry of Local government and Housing
NGOs	Non-Governmental Organization
NWASCO	National Water and Sanitation Council
PPIAF	Public Private Infrastructure Advisory Facility
PPHPZ	Peoples Process on Housing and Poverty in Zambia
PSUP	Participatory Slum Upgrading
SNDP	Sixth National Development Plan
SNDP	Seventh National Development Plan
SDI	Slum Dwellers International
UNDP	United Nations Development Program
UN-Habitat	United Nations Habitat
UN	United Nations
UWSSS	Urban Water Supply and Sanitation Sector
URPA	Urban and Regional Planning Act
WARMA	Water Resources Management Authority
WSS	Water Supply Sanitation
WDC	Ward development committee
ZEMA	Zambia Environmental Management Agency
ZHPPF	Zambia Homeless and Poor People's Federation

CHAPTER ONE: INTRODUCTION

1.1 Introduction

The objective of this chapter is to present the introduction of the study. The first section presents the background of the study and problem statement is presented in the second section. The main aim is covered in the third section followed by the objectives in the fourth section. Section five presents the research questions while the significance of the study is presented in section six. The last section presents the overall organization of the study.

1.2 Background

Water is life for cities and the resource is naturally enough in reserves but regularly polluted and scarce in terms of access and safety (Elliot, 2010). However, almost 97% of the water existing in the hydrosphere is distributed as saline water masses in seas and oceans and only 3% of the water available on earth is fresh water (Balasubramanian, 2015:4). In many cities and towns in the global South, governance of the water sector as a whole is in a state of confusion and is dysfunctional with little responsiveness or accountability to citizens (Tropp, 2005). Changes in the world urban population is resulting in rapid urbanization with "most of poor people residing in unplanned settlements with limited access to affordable and reliable water supply and sanitation services" especially in the cities of the global South (Public Private Infrastructure Advisory Facility, 2002:1). Further, most cities in sub-Saharan Africa, including Lusaka, have a large proportion of their population living in informal settlements (Nchito, 2007). In addition, other literatures show a direct relationship between the countries most lacking in water services and those with poor governance (United Nations Development Program, 2004; United Nations, 2006). The majority of the residents in many cities in the global South continue to depend on unreliable and often self-provided water and sanitation services and the few who have access to quality and adequate water do not entirely rely on public networked water infrastructures.

Water-related infrastructures in the global North and in post-colonial cities in sub-Saharan Africa were planned and financed by central governments (Molle *et al.,* 2009). These models of delivering water in cities of the South have continued to serve the elite few and exclude the poor majority in the informal settlements of the urban cities. The structure and form of Southern cities differ greatly from Northern cities, yet, the models of delivering water remain similar. This implies that water for Southern cities is delivered using a wrong model though with

possibly good intentions. Consequently, waterworks have concentrated in the areas where richer groups of urban population resided and lived mostly corresponding to the colonial settlers and local elites (Swyngedouw, 2004b). This has resulted in cities that are splintering between areas of privilege with adequate and reliable water services and those which rely on unreliable self-provisioning of water and sanitation services (Graham and Simon, 2001).

Consequently local elites now occupy the 'well-watered areas' in the city which were previously inhabited by colonial settlers (McFarlane and Rutherford, 2008). Bakker *et al.* (2008) demonstrate that for Jakarta in Indonesia, the expansion of coverage focused on upper class residential neighborhoods regarded as the modern´ areas of the city neglecting non-modern poorer ones. The translation of the municipal hydraulic paradigm in the cities of the global South has led to an uneven coverage of water supply fostering urban disintegration (Graham and Simon, 2001). The involvement of many non-state actors in providing water and sanitation services in informal settlements has created new and dynamic governance systems and structures that need deeper understanding for policy formulation and enhanced conceptualization. In all the 'new' governance structures that are creating a new waterscape (Sutherland, *et al.*, 2015), many cities of the South are increasingly dominantly shaped by the workings of power. The dominant mode of water governance in many informal settlements in the cities of the South has shifted from bureaucratic hierarchical institutional arrangements to network and usually contested community based structures and systems (Pahl-Wostl and Knieper, 2014).

In most cities in the global South, "formal utilities only serve between 40% and 70% of the urban population" (Nickson, 2002:7-15; Mwanza, 2005). Large swaths of the urban population mainly in informal settlements continue to struggle to get access to safe drinking water and adequate sanitation services. This has resulted to increased role of the non-governmental organizations and community groups in setting precedence in service provision. Much of the local and international efforts continue to reconfigure water infrastructure to connect millions of people in the urban centres who lack access to the water services. However, reconfigurations of infrastructure in informal settlements may be driven or hampered by inter alia; manifestations of community solidarity, professionalism, urban governance configurations, unclear socio-economic policies and cultural practices or livelihood demands (Ahlers *et al.*, 2014). The entry

of many actors in the urban water sector has created a new policy and scholarly field called governance beyond the state (Swyngedouw, 2005). Key developments concerns the changing nature of state-society relations which Swyngedouw (2005) depicts as a move to urban 'governance-beyond-the-state'. This implies that non-state actors have become prominent in providing and organizing public services, which previously were the purview of the state. This shift is constituted by a variety of trends, which together, have provided a window of opportunity for the civic movements to become an accepted mode of infrastructure service provisioning especially in informal settlements.

Lusaka Water Supply and Sanitation Company in Zambia were established in 1988 through the Ministry of Local Government with the mandate to coordinate the activities of provision of water and sanitation services within Lusaka Province. In its continued quest to improve effective water governance, the 1994 water policy was revised in 2010 whose focus was to decentralize and integrate stakeholder participation through establishment of locally based institutions (GRZ, 2011). In addition, the Urban and Regional Planning Act No. 3 of 2015 repealed the Town and Country Planning Act of 1961 with focus of enhancing participation in integrated water and sanitation planning. In 2010, the government of Zambia received funding of 355 million dollars from the Millennium Challenge Corporation to help increase greater access to water and sanitation services. Millennium Challenge Account Zambia Limited used US 21.9 million dollars for water reticulation in the communities of Ndeke, Kwamwena, SOS village, Chipata and Ngombe settlement in the city of Lusaka in 2016 for a period of five years.

Despite marked increase in the number of interventions taken in water policy reforms, including current and on-going shifts in planning legislations and water governance, access to safe water and sanitation services in informal settlements remains a challenge for many residents in Lusaka. This is arguably so because there is limited understanding of the new policy and legal reforms on how power re-configurations would affect service delivery in informal settlements in the city. Moreover, there is also limited comprehension about the level of integration between community initiatives and Lusaka Water Supply and Sanitation Company programs in water and sanitation development in Lusaka. There is need to understand the potential of the institutional changes on achieving the core principles of water governance and the role of power and how it configures community-led initiatives in ensuring water security in Chipata settlement.

1.3 Water Reforms Summary in Zambia

National Water Policy of 1994 and the Water Supply and Sanitation Act of 1997 were prepared for improving services in both the urban and rural water supply and sanitation sub-sectors. Considerable focus was placed on devolving the authority to provide Water and Sanitation Services (WSS) from the central government to local authorities. National Water and Sanitation Council (NWASCO) provides a model for Water Supply Sanitation (WSS) regulation in the region with the use of watch groups in water affairs of consumers, regulatory scorecards and other regulatory tools. The local authorities have had a particularly poor service record, with coverage levels actually deteriorating. The Water and Sanitation Chapter in 7th National Development Plan (Government of the Republic of Zambia-Ministry of Finance, 2017) further indicates that poor water supply and sanitation conditions are major contributors to the burden of disease including water-borne diseases and related ailments.

Literature regarding urban water supply has acknowledged that access to urban water is still characterized by inequalities not only in terms of physical access to water but also in terms of wider governance processes. As Bakker *et al.,* (2008:1894), point out, "institutional dimension of water management is not effectively taking into account the needs of poor households". This brings into question the existing institutional settings, decision-making processes concerning urban water supply, call for reassessing current approaches, and decision-making to effectively take into account the needs of poor households. Conceptualizing urban water supply with the wider hydro-social cycle may open up opportunities to analyze the social, cultural, economic and political processes surrounding access and control of water (Linton and Budds, 2013). The hydro-social concept is the shift to water governance calls for concepts of water that recognizes its social dimensions and reflects water's social nature into consideration.

This research sought to uncover how new planning approaches are shifting power from the city builders to the people vis-à-vis waterscapes in Lusaka. Further, the research sought to understand the workings of power in structuring the new institutional arrangements in water governance in the city of Lusaka and how the new arrangements as provided for in the Urban and Regional Planning Act of 2015 will impact the future Lusaka waterscape.

1.4 Problem Statement

Only 31 percent of Lusaka urban population in Zambia has access to clean and safe water while 76 percent of the population has no access to sanitation facilities (UN-Habitat, 2014:243). Water scarcity has been the major concern of many development actors in the city of Lusaka. In many informal settlements of Lusaka, lack of access to adequate safe and reliable water and sanitation services is seriously threatening to retard the prospects for people's socio-economic development and health. "The scarcity of portable water hinders preparation of food and imposes a heavy burden of time and effort on those who fetch water mostly women and children" (Asian Development Bank, 2001:7). To improve the water and sanitation situation in Lusaka, residents of informal settlements including Chipata settlement, have mobilized themselves, and received support from state and non-state stakeholders that include Care International, People's Process on Housing and Poverty in Zambia (PPHPZ), Lusaka Water Supply and Sanitation Company (LWSSC) and local political leadership. This approach in water and sanitation in Chipata settlement has created new governance structures and systems that need deeper understanding to improve service delivery in the area.

1.5 Aim of the study

To examine the impact of community-led multi-stakeholder collaborations in water and sanitation services in Chipata informal settlement in Lusaka.

1.6 Objectives

(i) To analyse water and sanitation situation in Chipata settlement

(ii) To identify actor responsibilities in water and sanitation service delivery in Lusaka.

(iii) To analyse power relations in the water governance systems and structures in Chipata settlement.

(iv) To examine the implications of integrated development planning on water and sanitation services in informal settlements in Lusaka

1.7 Research Questions

(i) How is the water and sanitation situation in Chipata settlement?

(ii) What are the main actor's responsibilities in water and sanitation service delivery in Lusaka?

(iii) How do power relations shape the current water governance systems and structures in Chipata settlement in Lusaka?

(iv) What are the implications of integrated development planning (IDP) on water and sanitation service delivery in informal settlements in Lusaka?

1.8 Significance of the Study

The study sought to enhance understanding on the role of actors in ensuring water security in the informal settlements. The study would enhance concepts about power, effective policy and theoretical frameworks in water service delivery in Lusaka and enhance understanding on the role of actors in ensuring water security in the informal settlements in Lusaka. Potential beneficiaries of the findings are water and sanitation service providers in Lusaka, researchers in urban governance and urban service delivery, urban planners and residents of Chipata settlement among others. The research assumed that improved conceptual understanding of the new water provisioning systems would provide a basis for efficient and equitable waterscapes for people in informal settlements in Lusaka City.

1.9 Organization of the dissertation

This dissertation is organized into seven chapters. Chapter one has provided the foundation for the study. In conceptualizing water governance dynamics, the study focuses on quality of water and sanitation provision in the informal settlements of Lusaka, water patterns in the global North and governance of water and sanitation services in the global South, the role of state and non-state stakeholders in the provision of water and sanitation services, and a summary of water reforms in Zambia. Chapter two provides the relevant literature review by reviewing the theoretical foundations of water governance in the global North and in the postcolonial African Cities of the global South in order to provide a framework for the discussion. Further, the chapter provides cases on community led multi-stakeholder collaboration in water governance, power dynamics and urban service delivery in African cities, policy review and institutional framework on water in Zambia and the implications of integrated development planning in water and sanitation provision in the global South context. Chapter three provides the structure on the study area and reasons for choosing Chipata settlement. Chapter four provides research methodology employed in relation to the research design, data collection methods, sample size, sampling procedure and data presentation and analysis. In chapter five, the dissertation presents

the findings of the study regarding the water situation in Chipata settlement, Community Driven Model for Equitable Services (COMEQS) and emerging issues, actor responsibilities and their network of associations in water and sanitation delivery, the role of non-governmental organizations and community dynamics in water delivery services.

In addition, the chapter presents findings on institutional relationships and their power relations and implications of integrated development planning in water and sanitation. The sixth chapter analyses and discusses the findings of the study with focus on the main themes of the study. Then, chapter seven provides the conclusion and recommendations of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides key literature-based arguments in the water and sanitation service sector in cities in general and in Southern cities in particular. The literature review chapter sought to identify concepts and discourses to form a conceptual framework for data analysis in the discussion chapter. The chapter presents the urban water governance in the global North followed by access, quality and affordability of water and sanitation in the global South. Concepts shaping urban water governance and decision-making processes in African cities and postcolonial African cities are presented in the next section. The emergence of multi-stakeholder collaboration in water and sanitation governance in the global South is presented in the next section followed by literature on actors in water governance. Using case studies, the chapter brings into focus the need for community led multi-stakeholder collaboration in water and sanitation governance. In addition, the study presents literature on how power dynamics and conflicting values in water and sanitation governance shape urban service delivery. Implications of integrated development planning on water and sanitation are discussed in details using Healey's collaborative planning. The last section presents literature on policy review and institutional framework on water and sanitation in Zambia.

2.2 Urban water governance in the global North

Most urban water supply systems in the global North involve a mix between government managed and private-managed water infrastructure involving small private companies supplying water only to limited parts of the city. Swyngedouw (2004) noted that water provision was socially and spatially highly stratified and water businesses were aimed at generating profits for the investors. However, starting from the late 1980s, a new paradigm called 'municipal hydraulics' emerged in urban water provision (Bakker, 2010). This new approach successfully commodified water and since then, there has been a shift by utilities towards treating water as commodity for profit making and not as social service. However, prompted by the experiences of rapidly growing industrial cities in the global North, this paradigm involved the shift towards centralized urban water supply in which it was financed, constructed and managed by local municipal government. This involved bringing existing private operators under public control, the construction of centralized public water supply infrastructure and the decreasing reliance of private wells, water vendors and other sources of water supply. In this paradigm, government

would guarantee commitment to public well-being in the context of democratic accountability on one hand, and ensure the availability of fiscal and technical resources (Bakker, 2010). It is important to note that profitability was not a concern; infrastructure projects were financed with subsidies from general taxation and new methods of financing public works such as municipal bonds were mostly used (Gandy, 2006). In the case of water, this ideal comprehends a networked city with one centralized water network rationally planned providing standardized and universal access to potable water to its residents (Graham and Simon, 2001; Kooy, 2014).

2.3 Water and Sanitation: Access, quality and affordability in the global South

The construction and management of water systems necessitated the expansion of state bureaucracies and creation of new institutions, including government departments and ministries in charge of coordinating the hydraulic infrastructure, what Molle *et al.* (2009) define as hydrocracies. A hierarchical top-down command and control approach was promoted with a great role for the central government in the development of water resources (Linton and Budds, 2013; Pahl-Wostl and Knieper, 2014). This model of treating water as a commodity was successfully exported to Southern cities in the late 1980s through to 1990s (Graham and Simon, 2001). Coupled with a high-powered liberal agenda on development policy, most countries have very unequal waterscapes resulting in what Graham and Simon (2001) call 'splintered cities.' In most postcolonial cities typically in Africa, water supply under a statutory body works with various non-state actors to provide water for both wealth enclaves and poor areas of cities.

The provision of adequate water and sanitation is essential in creating a more inclusive and productive city for all. Most dwellers in informal settlements in many cities of the South rely on both improved and unimproved sources of water. Further, residents in informal settlements rely on anything from standpipes, unprotected wells, vendor water and individual connections to access water (UNDP, 2006). It is estimated that private small-scale water providers such as street vendors, water resellers, kiosks and water tankers excluding community or publicly operated water schemes, supply between 25 and 50 percent of urban population in Africa (Dardenne, 2006). While these providers have substantial presence in urban areas especially in the slums of Southern cities, their services are hampered by high prices, low quality of water, and difficulties in regulating the providers. In addition, the quality of water sourced by private providers from groundwater is highly dependent on the quality of sanitation services within the

area in general. Evidence of this scenario can be studied in literature in the informal settlements of Côte d'Ivoire (Obrist *et al.,* 2006), and Dar es Salaam where inadequate sanitation facilities forced the disposal of waste in areas where groundwater was collected resulting in the outbreak of cholera (Water Aid 2003; Kyessi 2005). Further, the quality of water that reaches the consumer is dependent on the quality of construction or working methods used by providers. For example, mobile distributors, who transfer water between multiple containers, run a much higher risk of contamination (Kjellén and McGranahan, 2006). The quality of access to water with small-scale water providers and community-managed schemes is usually inferior to the access from the public network. This invariably implies lack of continuous access resulting in people queuing for water for a long time and sometimes covering long distances.

In addition, safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights (UN, 2010). The concept of water as a human right assumes all human beings have equal rights under democratic conditions and without discrimination. The concept further provides those who are lacking safe drinking water and sanitation with a stronger position for negotiation with the water sector, water boards, regulatory institutions, as well as with stronger water users in the market. However, most municipalities in Africa are also faced with the mandate to govern water as an economic good according to the national neo-liberal cost-recovery policies of water delivery (McDonald and Pape, 2002). In the global South, governments increasingly lack the resources to provide all citizens with water and sanitation services mandated to deliver, hence water and sanitation failures abound (Sultana and Loftus, 2013).

Additionally, the human rights approach does not necessarily require that water is free for those who are vulnerable and in need of it. However, it rather passes back the affordability problem to the state, requiring them to generate policies that guarantee the access to water as a human right, via subsidies or transferring the costs to those who are capable of paying for it (UN, 2010). "There is little scope for water in Southern cities to be able to pay prices that represent the levels of investment needed, the goal of connections for all users is unrealistic and public sector subsidies and soft loans are essential for meeting these needs" (Budds and McGranahan 2003:109). Therefore, the human rights approaches advocate for the responsibility of the state to provide water in a sufficient, affordable, accessible and safe way.

2.4 Conceptualizing urban governance and decision-making processes in African Cities

The research uses concepts in urban governance to enhance understanding about how actors interact and how decision-making is done to improve water and sanitation services in Chipata settlement. Molle (2008:132) noted that the concepts of urban governance "shape the way things are framed, options are favored, disregarded or ignored; and how particular social groups are empowered or side-lined". Urban governance can therefore be understood as the multiple ways through which city government; business, residents and civil society organizations interact in managing their urban space and life. Governance can be defined as "the sum of the many ways individuals and institutions, public and private manage their common affairs" and the space within which they live (Gupta, *et al.,* 2015:3) as cited in Peyroux *et al.,* (2015:17). Further, governance broadly describes the progressive transformation of the water sector in particular, and the provision of services in general. Myers, (2011:106) argues that this transformation involves the change of roles and the shift of functions and responsibilities from nation-states to "supranational entities, localities, and non-state actors" including citizens, civil society and the private sector (Kooy and Bakker, 2013; Pahl-Wostl and Knieper, 2014). It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action of actors may be taken. Similarly, Perreault (2014) explains that the way water is conceptualized and understood influences the forms of governance that we establish and the ones we struggle against in cities. In the context of water, governance broadly refers to the range of political, organizational, and administrative processes through which citizens and interest groups articulate their interests, exercise their legal rights, take decisions, meet their obligations, and mediate their differences (Bakker *et al.,* 2008). Some authors conceptualize a network of water delivery actors as a way of relations between actors (Sorenson *et al*., 2016). Lindell (2008) analyses governance of water by looking at politics, power relations and multiple actors as more or less involved in decision-making at multiple spatial scales.

While other authors argue that for development to be inclusive, it must be supported by participatory governance of state and non-state actors with decisions being deliberated and made as close as possible to where they happen and have impact, which is usually at the local government level (Behagel, 2012; Ribot *et al.,* 2010). Literature on governance innovation states that 'governance-beyond-the-state' can ensure greater inclusivity, but that it is also 'Janus-faced', as this new governmentality can lead to power imbalances and the domination of private

actors in state-civil society relations, producing a democratic deficit (Swyngedouw, 2005; Rose and Miller, 2010).

Another view of governance defines governance as the 'good' or 'bad' outcomes of decision-making processes centred on pre-defined conditions (Rogers and Hall, 2003). Similarly, Lautze *et al.,* (2011) view this form of governance as a tool to achieve a pre-defined outcome of decision-making process centred on predefined principles. These include normative principles such as inclusiveness, accountability, participation, transparency, predictability and responsiveness among others (Batterbury and Fernando, 2006). Thus, there is a "general desirability of good governance as it is related with the perception that it will lead to good outcomes" (Franks and Cleaver, 2007:292). Consequently, the "ability of states to deliver safe water to their citizens is often the hallmark of good governance and contributes to their status in achieving development goals, whereby safe-water provision and safe-water consumption harbinger further development achievements in future" (Sultana, 2013:339). However, Gupta *et al.* (2015) argue that inclusive development is one that includes a wide range of actors, most particularly those that are marginalized and vulnerable, in social, political, environmental and economic decision making, and which considers the local context. This implies that water delivery in African cities is a function of governance on how actors relate to produce and supply water for urban populations. Thus, the flow of urban water signals the flow and relations of power and governance mechanisms at city scale.

2.5 Urban water governance in postcolonial African cities

The construction of the first waterworks concentrated in the areas where richer strata of urban population resided and lived mostly corresponding to the colonial settlers and local elites (Swyngedouw, 2004b). As supported by Dill and Crow (2014) city planning and service delivery in the global South has been rooted in the colonial histories of cities established in the global North. Within colonial cities, the interaction of European technologies and colonial economies resulted in the re-enforcement of segregation of residential patterns (Headrick, 1990). In the case of Accra, Bohman (2010:80) observes that during "the colonial era, a pattern of inequality in water consumption was established. "Access to consumption of water visibly materialized social segregation and reflected colonial power structures" within Accra and more water was allocated and supplied to colonial areas within the city, whereas the general public

was urged to save water (Hirvi, 2012). Where the networked supply was not reliable or absent, urban dwellers depended on a variety of mechanisms to access and distribute water including wells, rainwater harvesting, surface water, door-to-door water vendors and kiosks (Stoler *et al.*, 2012).

In post-colonial era, investments in water supply infrastructure intertwined with modernization and nation-building processes followed a colonial pattern and approach to water services. Consequently, water inequalities were moved from race to social class basis, rendering policy shifts rhetoric. Drawing on Kampala urban service delivery systems, Watson and Siame (2018) argue that across large swaths of the urban global South, colonized territories were drawn into the Western project of modernity, particularly in regards to the projects conceptions of economy, politics and knowledge-making. National governments were responsible for improving water supply coverage and developing water infrastructure as completely as part of processes that would transform newly independent countries in modern nations. Yet, in many cases, processes of socio-spatial differentiation initiated during colonial time were reinforced during post-colonial period with the difference that local elites now occupied the well-watered areas in the city, which were previously inhabited by colonial settlers (Gandy, 2004; McFarlane and Ruther-ford, 2008). Thus, urban planning along with its institutional structures, hierarchical power relations and ideas about what constituted modern cities was very much part of the colonial and modernizing projects (Numes, 2015; Homes, 2014). During the colonial and post-colonial time, the translation of the municipal hydraulic paradigm in the cities of the global South led to an uneven in water coverage fostering urban fragmentation. To describe this process, Bakker (2003) introduces the metaphor of the 'archipelago' constituted by spatially separated islands of networked hydraulic supply within a multiplicity of delivery mechanism in-between.

2.6 Emerging water governance in the global South: Multi-stakeholder collaboration

There has been a shift from top-down making to the inclusion of non-state actors in decision-making. As actors engage in decision-making arenas, "a new range of political practices has emerged between the institutional layers of the state and between state institutions and societal organizations" (Hajer and Wagenaar, 2003:1). Multiple actors, from global to local, thus interact to shape the rules and processes that are needed to manage and transform cities. The shifts in

urban water governance refer to changing relations between actors, the understandings of the relations between society and nature and how these are embedded in the conceptualizations of the flow of water either as a hydrological cycle or hydro-cosmological. This extends the concept of hydro social cycles by intimately linking diverse water cultures, rights, frames, and worldviews to the socio-natural construction of hydrological flows (Boelens *et al.,* 2014). Further, multi-stakeholder platforms for water management are institutional innovations for combining the diverse agendas of a number of actors who recognize a common management problem and realize their interdependence in solving it (Steins and Edwards, 1999). An example of these could be multi-sectoral and multi-actor oriented committees or commissions. Baud *et al.,* (2014) articulates that multi-stakeholder arrangements on the other hand mean that several organizations are involved, and cooperation is not limited to the private for-profit sector, but includes local communities. In addition, how global processes shape, and in turn are shaped by the everyday interactions allows us to link governance modalities, social relations, infrastructural design and biophysical processes related to water provision and consumption (Ahlers *et al*., 2014). Reconfigurations of the urban waterscape may be driven by manifestations of solidarity such as water gifts which are often linked to strong social relationship (Zug and Graefe, 2014) and cultural practices or livelihood demands, such as nomadism or poverty (Peloso and Morinville, 2014). This implies that day-to-day negotiations over water involve not only contestation, but also the request for a favors, gifts and agreeing on a delay in payment of the bill. With these acts, social relations are produced; consolidated, contested, and consequently urban space is reconfigured.

The analysis of everyday negotiations over access to water also shows that all actors involved that is users, providers, policy-makers; authorities have multiple identities, moving in and out of formality. Further users contribute to shaping the urban waterscape through their diverse practices of accessing and actively producing service configurations. Baud *et al.* (2014) and Peyroux *et al.* (2014) adopted the concept of urban governance configurations to understand the relationally connected elements that contribute to urban development decision making. As a result, social movements and civil society organizations challenge the top down approach adopted by both national and local states in many cities in the South, creating ‘counter’ knowledge and social action that attempts to shift policy and practice. New hybrid forms of water governance have emerged involving multiple actors and decision-making arenas at local,

national, regional and global level. At the same time, new concepts and principles such as demand management, market-based mechanisms, decentralization and stakeholder participation have emerged and come to play. The dominant mode of water governance has shifted from bureaucratic hierarchies to markets and subsequently to networks and community involvement (Pahl-Wostl and Knieper, 2014).

2.7 Actors in water governance: A network of association

Understanding how the relationships among multiple actors in water governance come together in place to produce urban space is important in uncovering the governance challenges faced in creating cities that are more inclusive. Multiple spaces, which are made up of social, spatial and environmental relations, come together in particular ways, in particular places to produce urban life (Dierwechter, 2001; Massey, 2005). However, at macro-level, the central governments are the primary actors in a country's system of governance; public institutions are in fact only one category of actors with determining stakeholders in national governance. In additional, civil society organizations comprising non-governmental, Community-Based Organizations, and individuals among others, play an important role in water supply and governance in African cities. The types and impacts of urban water policies, actor responsibility and decision-making processes around water and challenges around water at different scales constitute major issues that continue to dominate policy and intellectual debates in African urban waterscapes (McDonald and Ruiters, 2013; Budds *et al.*, 2014).

Dierwechter (2006) further argues, multiple actors at different scales, embedded in both formal and informal institutions, construct discourses and practices to produce urban space within particular social, economic and environmental settings. The coalition of actors may collectively create what some view as a space of innovation that may have a significant impact on water and sanitation policies and practices, which can produce a specific hydro social cycle in the city, with associated technologies to supply and manage water (Sutherland *et al.,* 2015). However, contemporary governance regimes and policy arenas in the global South are criticized for a lack of participation and deliberative decision making that undermines inclusive development (McFarlane, 2012). This is widely viewed by water and urban policy analysts as detrimental to inclusive and productive urban development. In addition, the engagement between local state, actors and civil society groups does not support a shift towards more inclusive development and

these actors have become polarized (Bond, 2012; Macleod, 2014). Nevertheless, Joshi and Houtzager (2012) explain that multiple actors have developed a number of different platforms and social accountability to engage with its citizens. Further, through these systems, the actors tend to control the engagement and flow of knowledge between themselves and the residents mainly for the purposes of receiving feedback regarding actor's innovations. These 'invited' spaces of engagement enable the everyday lived worlds of ordinary citizens to intersect with the abstract policy spaces of city governments (Miraftab, 2004). As noted by Sultana (2013), the waterscapes of Indian cities are produced by an assemblage of actors, technologies, policies, discourses and infrastructures.

While regulation for private water supply actors is desirable as a means of achieving uniform and high standards in the water sector, there is also some evidence that private providers may be against regulation as this is likely to increase their costs further (Kjellén and McGranahan; 2006). Frequently, the informal providers operate illegally but are tolerated by the municipal authority, recognizing the important role they play in serving significant number of inhabitants of informal settlements which are not served, and are unlikely to be served in the near future by network utilities. As noted by Kjellén and McGranahan (2006) households water resellers in Ghana, while operating illegally, have been transferred from an increasing block tariff to a commercial tariff effectively acknowledging current practice. Considering the lack of full water supply coverage by networked urban water systems and formal utilities, many authorities view small-scale private suppliers as providing an essential service to what is a significant and increasing proportion of the urban population lacking access to water supply. However, private providers typically operate in an uncertain and unpredictable legal and policy framework, between tolerance by the authorities and illegality in law (Conan and Paniagua, 2003; Mehta and Virjee, 2003). The identification of actors and the relations between them is therefore critical for understanding the governance regime as it reveals the relationship between the state and its citizens around particular issues, in this case water and sanitation provision.

2.8 Why Community led multi-stakeholder collaboration in Water governance?

In many African cities, with extensively informalised systems of service provision and livelihoods, popular groups have developed their own sets of rules for regulating relations irrespective of state policy or approval (Lourenço-Lindell, 2002). Simone (2005) articulates that

numerous highly localized and dispersed governance rules have been developed beyond the purview of the state and by default rather than devolution by the state through the years. In addition, in order to access resources and opportunities in a widely informalised atmosphere, grass root community are increasingly required to experiment with and resort to provisional forms of collaboration and temporalities of water and governance institutions. These highly fragmented rules and creativities are therefore not necessarily agreeable to co-ordination and establishment by the government. As acknowledged by Simone (2005) that local state often lack the necessary capacity and political legitimacy and is rarely in a position to bring together these dispersed initiatives into collaborative networks, or to co-ordinate and steer these networks into a coherent direction or towards a particular one. Many stakeholders often make decisions and act relatively insulated from the influence of pressure groups, as well as detached from any existing policies or urban plans. In such highly political contexts, the relations between the local community structures and popular actors exercising governance functions may be branded by lack of mutual recognition and the absence of a commonly agreed set of rules.

Given the gap between local community's needs and aspirations, it is not surprising that influential work on urban governance in the global South focuses on the relations between state and 'civil society' (Devas, 2004). This illustrates urban governance in terms of those relations and displays a particular concern with participatory processes and with the extent to which civil groups can influence public policies. This demands for real and transparent participation of local communities in Chipata settlement in the planning, problem appraisals and implementation via effective deliberations. Governance policies relating to water use and access should thus, be based on consultations with local residents, including direct engagement with the poor on their water priorities and needs (Ahmad, 2003). Ostrom (1990) confirms that direct participation and involvement by local community will improve outcomes by taking into account local knowledge and will result to more effective monitoring. However, despite the fact that community participation is likely to be valuable on many levels; there is need for carefulness on the mode of participation by all stakeholders. For example, when community participation is not coupled with resource capacitation, it can represent a transfer of responsibilities to communities or certain segments of the population, such as women or the poor (Siame, 2013).

Additionally, other literature agrees that devolution of governance responsibility to local communities can also involve the capture of resources by local elites resulting in participation that is not meaningful. For example, attendance of meetings by local community but unable to contribute effectively, entrenches power dynamics and further marginalizes vulnerable community members (Harris, 2009; Ribot, 2010). In addition, though participatory water governance is expected to foster meaningful participation among all people, it has repeatedly proven to be very difficult to actualize. The issue of participation in water governance in Chipata settlement is of particular interest due to ongoing concerns about the lack of water access and affordability by local residents. These relations are indisputably critical elements in understanding present-day political dynamics and the political economy of water in urban African cities. However, current intellectual and policy analysis on the relations between civil groups and the state seems to be insufficient to capture the complexity of governance in African cities. It runs the danger of rendering invisible the relations and processes of governance taking place outside the institutions of government and consequently, the highly complex patterns of urban politics to which they give rise. It is therefore important to closely consider relations within civil groups that engage themselves in the practice of governance, as well as relations between these groups as they collaborate or compete with each other for influence or access to the state.

2.9 Urban community-led water projects: Some case studies

It is suggested that small-scale water providers should be integrated into the formal water sector and encouraged to expand their investment in order to improve the services to the poor in the Peri-urban areas (Conan and Pariagua, 2003). This emerging literature views water vendors and other small-scale projects in a much more positive light. Their good local knowledge, innovative and responsive business practices are recognized (McGranahan *et al.*, 2006). Community- led small projects play an important role in the provision of essential services especially in the absence of any other alternative. Typically, local community groups are partnered in their operations by international NGOs which facilitate technical and financial resources and help relax the prohibitive restrictions regarding water. Water Aid, an NGO active in the development of community based water provision in informal settlements in developing countries describes their typical operation in Dar es Salaam, Tanzania. “A community-based water project involves setting up a social infrastructure that can manage community water and sanitation needs, like a

local water committee. The effort proceeds to build a physical water infrastructure, typically a community water kiosk" (Water Aid, 2003:34).

Another case informing this literature assessed participatory water governance in several informal settlements in Accra with a focus on Local Water Boards (LWBs) established in 2007. Although Ghana as a whole is generally not considered to be water stressed in a biophysical sense (Lundehn and Morrison, 2007), water-related infrastructure and services in metropolitan Accra fall short of international goals with respect to access, quality and affordability (UN, 2010). In addition, LWBs could be described as citizens' associations to promote community engagement. LWBs and water dialogues offered ways to involve residents of impoverished communities in making decisions regarding water access and affordability (Lundehn and Morrison, 2007). It is argued that if carried out with sensitivity, effective community engagement offers a pathway to promote more equitable and sustainable water governance. However, Mitlin (2002) notes that community based water provision can also be exclusionary and discriminatory, failing to serve the interests of all people in the community. Within the decision-making forums central to community participation, it is often those with the strongest, most powerful voice, which influence the direction of operation. In Lilongwe (Malawi), for example, it is reported that the control of community operated kiosks was subject to exploitation by community leaders who appropriated a percentage of income subsequently indebting the kiosks to the network utility which provided the water supply (Water Aid, 2008).

Associated to community participation is the lack of capacity of the poor, or the absolute poor within informal settlements to project their needs or wishes (Torres, 2007). Further concerns are raised regarding the mobilization of residents within the community for a sustained period of operation of community projects. The resolution of social disputes and divisions is often problematic and this creates difficulties for the sustainability of community-managed projects (Hanchett *et al.,* 2003). For example, in meetings involving water and sanitation community baseline survey, relatively vocal and well-off people tended to dominate. Those residents among the poorest section of the community tended not to participate in meetings in the absence of special efforts to ensure their participation' (Water Aid, 2008). In addition, because of the small scale of the facilities, community managed schemes often charge higher prices than network suppliers. For the same reason, cross subsidization is not feasible. This is why in many cities

such as Dar es Salaam, poor households rely on shallow wells and rivers that often are contaminated (Kyessi, 2005). These cases reveal that when community local water structures are carefully regulated to collaborate with other stakeholders in their initiatives, they play an important role in sustaining water services in the urban cities as residents participate directly and feel that they own the project.

2.10 Power dynamics and urban service delivery

The study of engagements of governance and governance relations induces an important issue of how scholars and practitioners perceive the location of power. The research focused on how power dynamics and power relations structure the actor relations to supply water and sanitation services in cities. It is undeniable fact that in a situation of an increased number of actors, state centered standpoints of governance focus entirely on the mechanisms of the formal institutions of the state. These formal institutions in turn are increasingly considered insufficient for grasping the complex webs of power relations. As noted by Foucault (1980) power is not the possession of some groups or institutions rather, it is dispersed through society and circulates between people, who both exercise and are subjected to power. Allen (2004) adds that this 'art of dispersed government' works through the internalization of discipline and through indirect techniques of regulation, not through direct constraints.

Further, it is worth noting that power has neither clear locations nor clear centers, instead it is all-inclusive and pervasive. The concept of power in which dominance and resistance is conceived as "a trace of the other that contaminates or subverts it" (Sharp *et al.,* 2000: 20) is useful as a starting-point for understanding the entwined ways in which societies are governed. However, Foucault has been plainly criticized by Allen because his views of power render the concept of power meaningless by reducing all relations to power. Allen (2004) however, argues that power pertains to a particular time and spatial context and cannot be taken to be universally valid. In addition, the view of dominating power as being all encompassing, diffuse and difficult to locate carries with it a devastating view of political agency. Therefore, even if power is diffuse, it is still to some extent concentrated in social institutions, which tend to be potential centers. In addition, Allen (2004) opposes centered and diffuse conceptions of power unproductive and suggests that relationships of power are mediated by a variety of actors and agencies through which power is exercised.

Resonating in Foucauldian concept of power, social relations are described as "moving substrate of force relations which by virtue of their inequality constantly engender states of power which are always local and unstable" (Foucault 1998:93). These states of power are generated from the inequality of societal relations and the nature of the post-colonial states (Robins *et al.*, 2008). Foucault insists on the innate and natural state of power and argues that power is everywhere, not because it embraces everything, but because it comes from everywhere. Central to Foucault's concept of power is discourse, which is considered the boundary of power and knowledge (Siame, 2013). Inclusive of representations and practices, the notion of discourse stretches beyond language to include social practices that form knowledge and produce truth, which therefore creates and sustains power. This implies the recognition that water accessibility; relations of power between multiple actors and groups (Loftus, 2009) shape distribution and management. Thus, governance involves questions about how water is provided, by whom, for who, where it flows (and where it does not) and, more importantly, who gains and who pays (Lu *et al.*, 2014; Perreault, 2014).

2.11 Conflicting values in water governance

Conflicts occur as a result of the dissatisfaction of large groups of society, usually the most vulnerable with respect to the decision-making processes which favors the few at the expense of the urban vulnerable, excluding the latter from access to safe drinking water. This explains why conflicts involving water bring to light deeper disputes particularly in the countries of the south (Merlinsky, 2009). In reality, the phrase "water flows in the direction of power" has been the prevailing situation (Boelens, *et al*., 2014:447). Water not only differentiates public opinion but fragments urban space into areas with and without water especially in cities of the South. In the process of urban development, the water gap between the poor and the wealth is increasingly evident and the urban space is fragmented by a tendency towards discrimination and social environmental conflicts (Fernandez- Maldonado, 2007). In conflicts over water the disputes are not exclusively or mainly socio-environmental but are also economic, political, cultural, and territorial, therefore also issues of water governance have to encompass all these different dimensions (Merlinsky, 2009).

2.12 Integrated development planning in the lens of Healey's collaborative planning

The emerging system of integrated development planning in the South is influenced by current thinking in both developmental and spatial planning and is based on a communicative approach to planning (Pieterse, 2004). Healey in her "collaborative planning", states that communicative rationality is the only viable alternative to "idealist fundamentalism", and that this approach to planning is needed to enlarge and empower current democratic processes (Healey, 1996:252). Healey (1996) argues that in the collaborative planning, all participants are encouraged to debate on contentious issues in public meetings and understand more fully the different points expressed by each other and what this mean for the community. This implies that wider discussion on water and sanitation issues would generate a shared understanding of the ways and means desired by local individuals to communicate with one another once they integrated in planning. This inclusionary strategy must allow for fresh perspectives on spatial policy that includes new ways of seeing the world and the potential of planning with it (Healey, 1996). Thus, using collaborative planning in the formulation of integrated development planning in water and sanitation delivery may ensure effective communication of ideas with different interest groups, arguing about these ideas, debating differences for just and transparent public decision-making processes. However, Healey's collaborative planning fails to explain the influence of power on intra-governmental relationships between state actors and non-state actors in IDP deliberations. This may result in frustration by stakeholders when provincial and national government implement provincial and national directives in their local areas of jurisdiction, which does not necessarily address local needs and priorities as identified in the deliberated IDP processes.

2.13 Integrated Development Planning: implications in water and sanitation

Integrated development planning in Zambia reflects an interest in multi-sectoral, integrated, bottom-up approaches to local and regional development and is expected to give effect to notions of 'developmental local government'. Further, it is likely to align resources around the chosen development directions of the municipality, and to ensure both horizontal integration between sectors within local government and vertical integration with other spheres of government (Urban and Regional Planning Act No. 3, 2015). On the other hand, Pieterse (2004:7) defines IDP as essentially "a planning methodology that links a statement of purpose, with plans, programs, institutional design and practices, monitoring mechanisms and financial

flows". Further, Todes (2004) states that IDPs are intended to be holistic multi-sectoral plans, which guide the future development of the locality, giving direction to both the municipality and other spheres of government operating in the area containing a spatial development framework expenditure. One of the most critical debates in planning theory is how to achieve 'meaningful' planning, in particular as viewed from the communicative action and collaborative planning theory perspective. Integrated development planning in Zambia reflects this planning perspective in that it actively seeks to involve all relevant stakeholders in the IDP process and strive to reach a consensus network regarding the proposed outcomes of the process through meaningful discussions. Internal and external networks existing within local government promote and establish particular discourses through their actions (Keeley and Scoones, 2000) and their contribution to the IDP process and its outcomes are determined by their relationships within and between government spheres. Thus, the IDP would be able to bring stakeholders together in the mobilization of resources for water and services, facilitate their interaction, and assist them in constructively addressing their conflicts of interests.

Subsequently, water and sanitation, integrated development planning can help to prioritize; focus and make choices that require balanced debate on holistic distribution and allocation of water and sanitation opportunities between departments and locations of poor population groups especially those in the informal settlements. Thus, such debates tend to be confrontational ones and the challenge of developmental local government is to handle and resolve these conflicts (Keeley and Scoones, 2000). Further, knowledge of the way in which power manifests itself in local government relations provides valuable insights into how planners could deal with these conflicts in the integrated development planning process. This calls for all stakeholders in the planning of water and sanitation to deliberate freely and agree through democratic participation on issues affecting the community. This includes developing transparent working relationships with knowledgeable individuals at national, provincial, regional and local levels. It should also involve good communication linkages with other stakeholders for effective collaboration.

2.14 Policy review and institutional framework on water in Zambia

The provision of water and sanitation services in Zambia is the mandate of the government and is guided by several policies. Among them, include the following; National Water Policy of 1994, Seventh National Development Plan (SNDP) 2017, Participatory Slum Upgrading (PSUP)

2008, the Constitution of Zambia (amendment) Act No.2 of 2016. The following section presents a close review of these policies in line with water and sanitation provision.

2.15 National Water Policy 1994

Proceeding to the 1994 water sector reforms, the provision of water and sanitation services had been a responsibility of local Councils in both urban and rural areas. However, by the mid-1980s most of these Councils had become bankrupt making it extremely difficult for most Council to meet the growing demand for water and sanitation services because of rapidly growing population (Chola, 2003). The overall objective of the Water Policy is to promote sustainable water resources development with a view of facilitating an equitable provision of an adequate quantity and quality of water for all competing users at acceptable cost and ensuring security of supply under varying conditions (National Water Policy, 1994). Nevertheless, in view of the new challenges and modern approaches that have evolved, regarding the management of water resources, National Water Policy of 1994 was revised in order to provide a comprehensive framework for sustainable development, management and utilization of the water resources. The revised Water Policy of 2010 embraces modern principles of water resources management and endeavors to deal with the daunting challenges of poverty reduction. In addition, it takes into account other interventions, such as the National Decentralization Policy, which is not yet implemented.

2.16 The Vision 2030 (2006-2030) and the Seventh National Development Plan (2017-2021)

The Vision 2030 is a national long-term plan written to express the aspirations of Zambians by the year 2030. The Zambian people's vision is to become "A Prosperous Middle Income Nation by 2030" (GRZ, 2006: 1). Basing on a sector vision, the plan strives to achieve "clean and safe water supply and sanitation for all by 2030" (GRZ, 2006:32). Its main socio-economic development objective is "to provide secure access to safe, potable water sources and improved sanitation facilities to 100 percent of the population in both urban and rural areas by 2030" (GRZ, 2006:32). Among its targets includes; improvement of access to appropriate, environmental friendly sanitation by all Zambians; attainment of 80 percent access to clean water supply to all by 2015 and 100 percent by 2030; and fully integrated and sustainable water resource management (GRZ, 2006:33). This is important as the policy document brings out

assurance of full access to clean and safe water supply and sanitation for all including informal settlement.

The Seventh National Development Plan, 2017-2021 (7thSNDP) is principally a policy document that outlines the Government's desired developmental outcomes. The Plan departs from sectoral-based planning to an integrated multi-sectoral approach under the theme accelerating development efforts towards Vision 2030 without leaving anyone behind (GRZ, 2017). Under this policy, access to water and sanitation services by all sections of the population is a key constituent of all aspects of sustainable development. The plan is important as it recognizes that poor water supply and sanitation conditions are major contributors to the burden of disease and expose people to water-borne diseases and related ailments. The plan informs the situation in Chipata settlement which faces a challenge in accessing safe and clean water. Thus, the SNDP calls for an increase in levels of access to sanitation; clean and safe water services for people in both rural and urban areas.

2.17 Participatory slum upgrading ((PSUP) 2016

The Participatory Slum Upgrading Program (PSUP) was launched in April 2008 with a view of contributing towards urban poverty reduction and implementation of the Millennium Development Goals (MDG's), particularly Goal number 7 through participatory and sustainable slum upgrading activities. The term slum upgrading refers to the improvement of slum households living conditions that can be achieved through better water supply and sanitation (LCC, 2016). The PSUP is one of UN-Habitats' key initiatives intended to mobilize partners and resources to commonly contribute to poverty reduction especially in the urban poor living in slums (UN-Habitat, 2014). In addition, the partnership of the University of Zambia, Comic relief, PPHPZ and LCC established a Centre for Urban Research and Planning (CURP) to collaboratively come up with practical and tailor-made solutions to abate the challenge of urban informality through community-driven projects in Lusaka and other African cities (PPHPZ, 2015). The PSUP through the Lusaka Master Plan promotes improvements of existing settlements (in-situ upgrading) where community residents are actively involved in the water and sanitation projects of the community.

2.18 Regulatory framework

The legal framework for the provision of water and sanitation provision in Zambia is anchored by two pieces of legislations; the Water Supply and Sanitation Act no.28 of 1997 and the local government Act no. 22 of 1991. The main tenets of the two acts are outlined below:

2.19 Local Government Act No. 22 of 1991

This Act was enacted to provide an integrated three level local administration system. This inter alia; to define the functions of local authorities; to repeal the Local Administration Act and certain related laws; and to provide for matters connected to the foregoing (MLGH, 2011). The local government Act grants the local authorities principal responsibility for the provision of water supply and sanitation services to all areas within the local authority boundaries. Under this Act, the local authorities are also empowered to make by-laws, set standards and guidelines for service provision.

2.20 Water Supply and Sanitation Act No. 28 1997

Following the need for separation of regulatory and executive functions within the water supply and sanitation sector, National Water Supply and Sanitation Council (NWASCO) was formed under the Water Supply and Sanitation Act of 1997 to regulate Urban Water Supply and Sanitation Sector (UWSSS). Among its functions include; providing for the establishment, by local authorities, of water supply and sanitation utilities; to provide for the efficient and sustainable supply of water and sanitation services (MLGH, 2011). The WSS Act empowers Local Authorities to form Commercial Utilities (CUs). Under obligation, the local authorities are mandated to provide water supply and sanitation services falling under its jurisdiction (Water Act, 2011).

2.21 The Urban and Regional Planning Act No. 3 of 2015

This Act was enacted to provide for development, planning and administration principles and requirements for urban and regional planning processes. In the preamble, the act reads in part ‘An Act to establish a democratic, accountable, transparent, participatory and inclusive process for urban and regional planning that allows for involvement of communities, private sector, interest groups and other stakeholders in the planning, implementation and operation of human settlement development; ensure functional efficiency and socioeconomic integration’ (URP, 2015).

2.22 Water Act 2011

The Water Act is the supreme law on water resource issues in Zambia. The Act stipulates the ownership of water and the procedures of authorization and nullification of water use. The water act is mandated to regulate abstraction of groundwater with respect to conditions, and registration of borehole construction

2.23 Existing institutional arrangements

The Ministry of Energy and Water Development (MEWD), through the Department of Planning and Information (DPI) and the Department of Water Affairs (DWA), has the overall leadership on water policy and is responsible for water resource management. Further, the department of Water Affairs was originally responsible for many smaller water supply schemes and has seconded staff in certain localities to assist local authorities that have taken over these schemes. Under the current institutional set-up, MEWD is responsible for the national water policy and water resources management tasks, while the Ministry of Local Government and Housing (MLGH) is responsible for water supply and sanitation including the mobilization of resources to maintain and expand infrastructure and service provision through the Department of Infrastructure and Support Services (DISS) (Figure 1). In accordance with the National Water Policy 1994 and 2010, the Ministry of Local Government and Housing has the responsibility to support devolution of authority to its lower levels and support private sector involvement in service provision. The mandate of advising, licensing and regulation for sanitation services lies with NWASCO (NWASCO, 2013). Thus, NWASCO regulates the CUs with the aim to improve delivery, efficiency and sustainability of water supply and sanitation services.

2.24 Commercial Utilities (CUs)

The Water Supply and Sanitation Act (1997) empowers Local Authorities to form Commercial Utilities (Figure1). However, CUs throughout Lusaka mainly focus on the high-income neighborhoods, neglecting services in low-income areas such as Chipata settlement, which has largely remained beyond the network. Commercial water utilities shunning poor areas have been documented all over the world (Marin *et al.,* 2010). The argument is that the real measure of success for a service provider lies in improving water services and coverage for the poor urban and rural communities. Figure 1 illustrates the existing institutional framework for the urban water and sanitation sector and the interface with other key institutions.

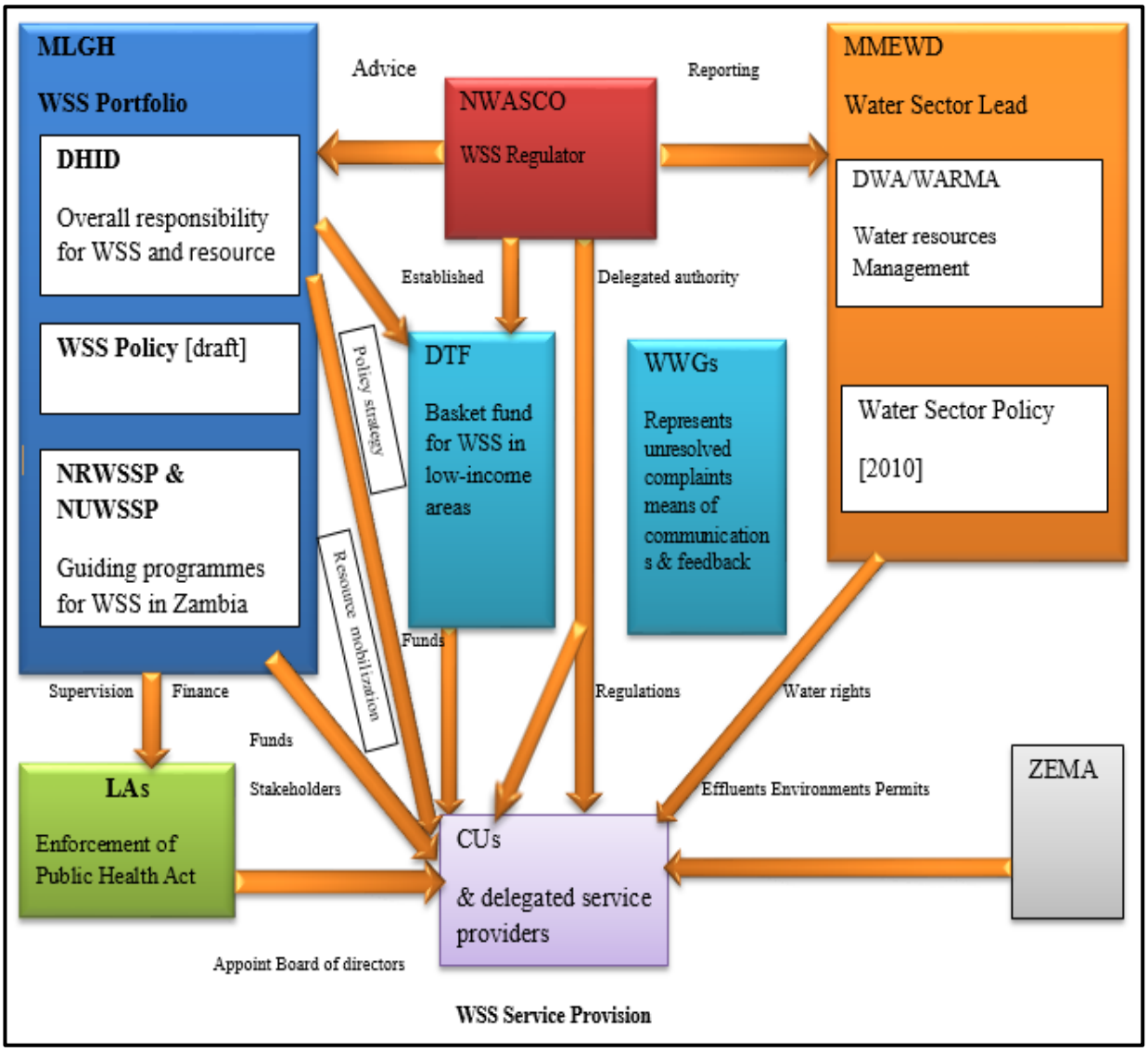

Figure 1: Existing institutional framework for urban water supply and sanitation (Adapted from MLGH, 2015)

Water services reforms implemented so far have however worsened the situation because most CUs are reluctant to provide services to Peri-urban areas arguing that the profit prospects are low (Dagdeviren, 2008). In addition, there seems to be an overlap in the execution of functions of institutions with different identities of power and interests on the provision of water services in urban cities. There is also lack of effective integration of community initiatives on water and sanitation delivery coupled with limited resources.

2.25 Research gap

Key concepts emanating from this chapter is that water service and delivery is still highly contested by multiple centers of power among actors. Further there is limited understanding among actors on how divergent power among actors re-configures the effective delivery of water and sanitation delivery in the urban cities of the global South. Further, literature has revealed that integrating collaborative planning in integrated development plan through viable debates among stakeholders with the local community at the center may ensure effective delivery of water services. Therefore, examining the interactions and relationships between informal and formal practices in water provision and state driven initiatives as multiple but interdependent sites of urban water governance is of great importance in achieving effective water and sanitation provision.

CHAPTER THREE: DESCRIPTION OF STUDY AREA

3.1 Introduction

The objective of this chapter is to provide a description of the study area and provide a geographical and social-political context to guide data analysis. The first section provides brief background of Lusaka. The brief background of Chipata settlement is presented in section two. Section three discusses the location of Chipata settlement and physical characteristics of the study area are discussed in section four. The socio-economic characteristics are presented in section five and the status of water and sanitation in Chipata settlement is discussed in section six. Section seven introduces COMEQS project and how it influences the choice of the study area.

3.2 Lusaka

Lusaka is the capital city of Zambia with a population of 2.5 million and population densities of 100.4 persons per square kilometres (CSO, 2016). The city of Lusaka covers an area of 360 square kilometers and about 70 percent of Lusaka's population lives in in poor unplanned settlements, comprising 20 percent of the city's residential land (UN-Habitat, 2014). Lusaka is experiencing typical urban problems associated with developments such as high population growth, high levels of urbanization and unemployment, illegal settlements, and political interference in land allocation, lack of services and inadequate waste management (UN-Habitat, 2014).

3.3 Background of Chipata settlement

During the colonial period Chipata settlement was a farmland that supplied food to the white settlers in urban Lusaka but after independence, the white settlers left the area. It was later in 1971 that people from Chipata District of the Eastern Provinces of Zambia, migrated into the area in search of employment in Lusaka City (LCC, 2006). The settlements were first built by workers of nearby farms and industries such as quarries, and continue being the easiest and most affordable housing solution for many (Nchito 2007). However, not all found jobs in industries hence others engaged into charcoal burning, as the area was rich with trees (LCC, 2006). In addition, because of charcoal business, the area became famous with its people originating from Chipata district hence the area came to be known as Chipata settlement. Chipata is a '*Ngoni'* word for the provincial headquarters of Eastern Province of Zambia. It was legally

acknowledged by the Lusaka City Council in 1979 and was upgraded during the 1980 to 1982 period by resettling people within the overspill area to upgrade roads and drains. Further, the area was later declared an improvement area in 1982 under the Housing Statutory and Improvement Area Act (LCC, 2006). Contrary to settlers in other informal settlements in Lusaka, the settlers in Chipata constructed houses from the beginning using mound mud bricks or concrete blocks and used iron-roofing sheets. However, the settlement did not have water. Residents used to fetch water from areas such as Marrapodi settlement, nearby farms and the *Ngwerere River.*

3.4 Location

Chipata settlement is located about 7 Kilometers South West of the Lusaka Central Business District (CBD) along great north road and lies between 15^{o} South and 28^{o} East. It is surrounded by four main residential areas namely; Mandevu and Marrapodi settlements to the south, Roma and Maziyopa areas to the east and Kabanana settlement to the north (Figure 2). The settlement has a total surface area of approximately 1000 hectares of almost flat land (LCC, 2006). This implies that the area is still expanding in population and more extended houses have been developed. This exerts more pressure on the need for more service delivery such as water and sanitation.

3.5 Physical Characteristics: Topography and Geology

Chipata settlement is located on the top of the Lusaka plateau about 1,250m to 1,300m in elevation above sea level. The plateau is one of the highest places around Lusaka District and the settlement is located in Chunga river catchment Area. The *Ngwerere* stream drains most of the northeast part of the city into the Chongwe River (JICA, 2009). Chipata settlement lies on the carbonate dolomite rock and schist, which is mainly distributed in Lusaka City. The flat areas of the area consist of carbonate rocks, the slope areas consist of schist rocks, and Karst exists in the carbonate rock area with some variation (JICA, 2009). This implies that much of the study area falls under Lusaka plateau dolomite, which has many cracks with schist and karst covered.

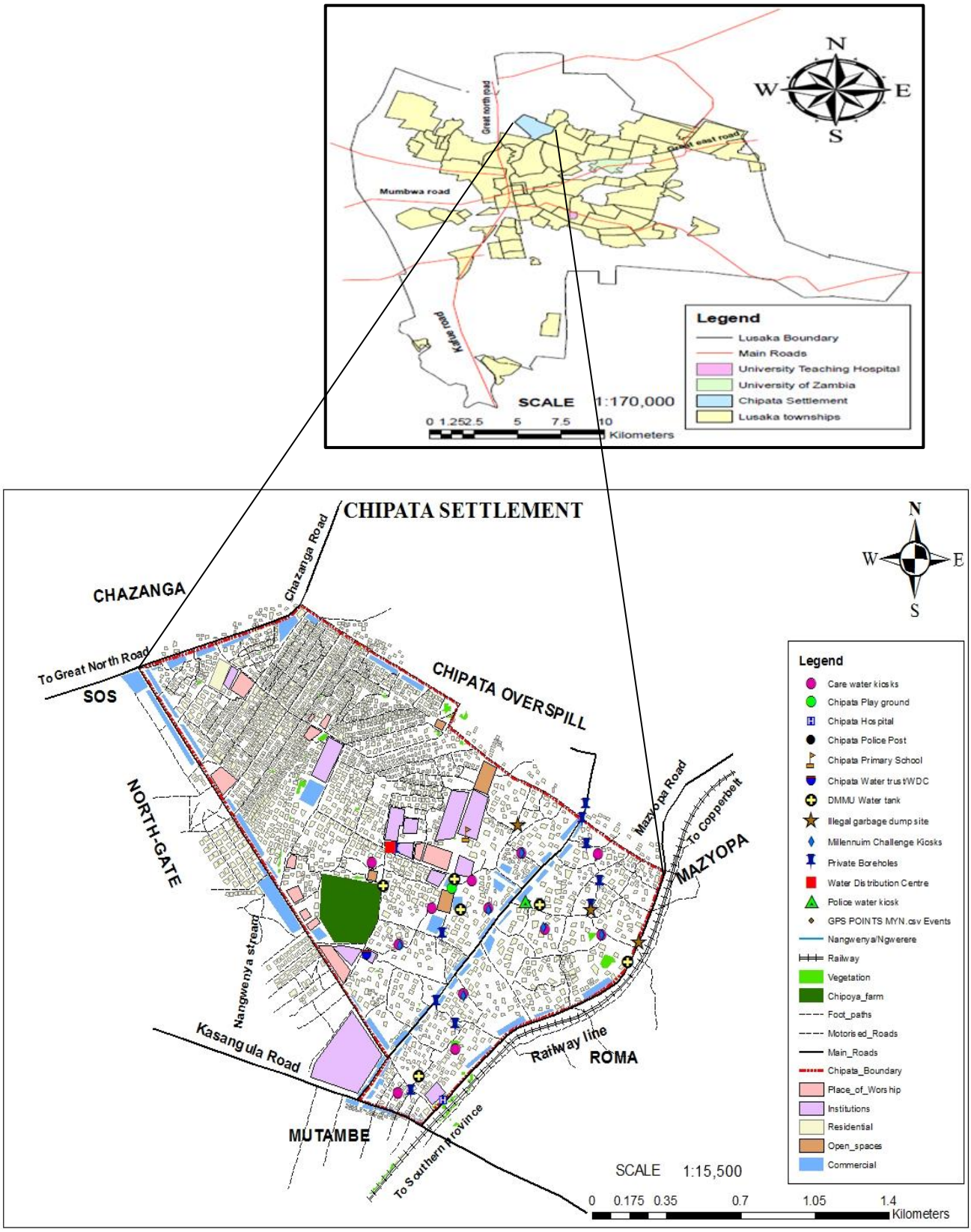

Figure 2: Chipata Settlement in the Context of Lusaka (Source: Field data, 2018)

3.6 Climate: Rainfall patterns

Located within Lusaka, the climate in Chipata settlement is typical of a sub-tropical environment, and characterized by three distinct seasons: the cool dry season experienced from April to August; hot dry season experienced from August to November and the hot rainy season experienced from November to April (JICA 2009). Generally, rainfall reliability in the area is moderate with floods in some selected parts. In Lusaka, there is much rainfall in December, January and February and there is almost no rain from May to September. Much of the rainfall is concentrated in the rainy season from November to March. Average annual rainfall in Lusaka is about 782mm (JICA 2009)

3.7 Temperature patterns

Chipata settlement like any other parts of Lusaka District, experiences an average temperature of about 20.7^{o}C. However monthly average temperature in September and October is highest at 23^{o}C and that in June is lowest at 16^{o}C. Monthly average of daily maximum temperature in October is highest at 30^{o}C and that in June and July is lowest at 23^{o}C. Monthly average of daily minimum temperature in November is highest at 18^{o}C, and that in June and July is lowest at 10^{o}C (JICA, 2009)

3.8 Hydrology

Lusaka City is located on the Lusaka plateau that is gently sloping to the northwest. Groundwater recharge area for Lusaka City water supply is limited to the surface of Lusaka plateau accordingly. Similar to other places in Lusaka, Chipata settlement lies on the northeast plateau of the city and generally, there is no mountain that can recharge and store groundwater around Lusaka (JICA, 2009). In addition upstream catchment of groundwater lies on the up streams of the catchment area located in the southeast area of Lusaka City where Lusaka South-Multi-Facility Economic Zone projects are taking place. This threatens underground water shortage and contamination for Lusaka City.

3.9 Socio-economic characteristics of Chipata settlement: Population and Housing

The area is under Mandevu constituency, Raphael Chota ward 22 (LCC, 2006). The area has an estimated population of 95,041, with 47,780 males and 47261 females with an estimated number of 18,667 households and an average household size of 5.9 (CSO, 2016). The housing infrastructure is informal without layout plans and often lack authorization from the council.

The houses are constructed very close to each other in a poor environment. Most of the houses are made of concrete blocks and a few are made of mud bricks.

In addition, some houses have been upgraded by using permanent construction materials. The inner-settlement roads are gravel and in poor condition; they are narrow and have no drainage system. Thus, during the rainy season, roads become impassable due to potholes and mud. Currently, the settlement has experienced rapid growth in its population due to people migrating to the area for various reasons. The settlement experience unpredictable supply of quality water for domestic consumption as many residents relies on shallow wells and a few functional boreholes put up by Care International (LCC, 2006)

3.10 Status of water and sanitation in Chipata settlement

The common source of water in Chipata settlement is Chipata Water Trust that supplies water through community water kiosks and private individual boreholes that supply water to the community at a fee. Water kiosks are part of Care International Organization that commenced operations in mid-1997 but are owned and managed by Chipata Water Trust. In total, there are 63 community taps in Chipata settlement and on average; each tap has running water for only four hours in a day (PPHPZ, 2015). The Chipata settlement considered water supply to be its highest priority and a scheme was developed by Care International. The Chipata Water Trust scheme supplied water to a population of about 45000 in 1997 through 40 water kiosks. However, with an increase in population in the area coupled with dilapidated water infrastructure, the supply of water in the area is far below expected standards. In addition, the network of LWSSC is in poor condition as pipes are old and usually leaks leading to water loss. Further the shallow wells in the area are in poor condition and dry up during the dry season (LCC, 2006). This implies that the area is prone to numerous water borne diseases such as cholera.

3.11 Sanitation Challenges in Chipata Settlement

The major sanitation challenge in Chipata settlement is inadequate toilets in the area. Further, a few residents use improved Eco-san toilets. These are toilets which have been modified and improved by not mixing urine and fecal matter and has extended air vent pipe. The majority of the population use shared pit-latrines and the settlement is not connected to the main sewer line

of the Lusaka Water Supply and Sanitation Company. The people usually suffer from diarrhea related diseases due to contamination of underground water (PPHPZ, 2015).

3.12 Waste management in Chipata Settlement

One critical risk that poses a threat to the people of Chipata settlement is poor waste management. Most of the garbage is dumped carelessly especially in areas that are prone to floods and unused pit-latrines. Further, CBEs that are in charge of garbage collection lack garbage collection machineries as a result, they are unable to collect all the garbage in the area (PPHPZ, 2015). For individuals that fail to pay collection fees to the CBEs usually dump their waste in drainages, along roads and even on unfinished structures.

3.13 COMEQS Project

COMEQS is a project in which grass root structures in Chipata settlement are driving the project of water and sanitation delivery with other state and non-state actors. This prompted the need for choosing Chipata settlement as a study area. This is because it presented an opportunity for state and non-state stakeholders to find working spaces in trying to find solutions for water and sanitation challenges faced by the residents in area. Further COMEQS created the need for better understanding on how the network of actors would shape the governance of water and sanitation delivery in Chipata settlement.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Introduction

This chapter describes the strategy of enquiry in water governance dynamics among stakeholders and how this is linked to inclusive participation of community residents in the provision of water and sanitation in Chipata settlement and other informal settlements in Lusaka. The study is designed as a descriptive and interpretive inquiry analyzed through qualitative methods. The study analyzed the approach of enquiry and attempt to evaluate the knowledge used in water and sanitation delivery services in Chipata settlement.

4.2 Strategy of enquiry: Case Study

The research design adopted a case study to enable an in-depth study of the water governance dynamics in bounded context of Chipata informal settlement. The selection of case study was driven by the aim and eventually the nature of the research objectives. A qualitative approach was used in this study, which meant that the focus was on generating facts using in-depth interviews and the interpretation of the water reality in the study area. In addition, a case study is most appropriate to better understand the complexities surrounding governance dynamics that exist in water and sanitation services in Chipata settlement. Creswell (2002:15) defines a case study as "an in-depth examination of information about a small number of units or cases either confined to a single period or across multiple periods of time". According to Yin (1994), the advantage of the case study approach is that it embodies data collection and data analysis strategies that can cope with the problem of analyzing a complex social phenomenon within its real-life context where the boundaries between the phenomenon and context are not always clear. A unit of analysis may be considered as individual people, organization, movements, institutions, and countries (Neuman, 2011). Case studies are recommended for studying complex social phenomena as they allow for in-depth appreciation of issues and relations in natural real-life context and for bounded and defined social contexts (Duminy *et al.,* 2014).

Case study research is a useful methodological approach as it allows expanding and generalizing theories by combining the existing theoretical knowledge with new empirical insights (Yin, 1994). In addition, the benefit of using case studies is that they bring out participants' viewpoints through multiple sources of data (Yin, 1994; Tellis 1997). An added advantage of the case study approach is that it may give voice to people on the ground (Neuman, 2011). On a

similar note, Tellis (1997) point to the strengths of applying case study research in linking and reshaping theory with lived experiences, while providing in-depth learning. Yin (1994) nevertheless cautions against limitations that arguably characterize case study designs, as elaborated later. The type of research questions posed in this study and the degree of focus on current events all justify the use of a case study approach. The existence of 'what' and 'how' questions call for the application of a case study approach in answering these questions.

4.3 Evaluating the knowledge claims

This research claims knowledge through social constructivism. A knowledge claim means that researchers begin a project with certain assumptions referred to as paradigms, philosophical assumptions, epistemologies and ontologies (Creswell, 2002; Neuman (2011). The supposition made is that individuals seek understanding of the world and develop subjective meanings, which are abundant and diverse. In keeping up with this supposition, meanings attached to this research are generated from data collection in the field. Creswell (2002) translates the broad philosophical ideas of these claims as post-positive knowledge, social constructed knowledge, pragmatic knowledge and advocacy knowledge claims. The specific paradigm within qualitative research that is used in this study is the constructivist-interpretive theory.

In addition, the constructivist interpretive paradigm focuses on the production of reconstructed understandings. It further concentrates more on the individual experiences that may be similar to other experiences, than on generalizing experiences by ensuring internal and external validity of several experiences (Denzin and Lincoln, 1998). Within this particular approach, the method of case study has been employed to arrive at certain conclusions regarding the influence of power dynamics on meaningful practices of stakeholders with informal community initiatives. According to Robson (2002:89), "a case study is one of the three traditional flexible research strategies and is appropriate to exploratory work which aims to assess phenomena in a new light and, because of their intensive nature, can usually only focus on a small number of cases". Furthermore, Flyvbjerg (2001) argues that researchers stand to gain the most advanced level of understanding when they place themselves in the context being studied.

4.4 Validity through Triangulation

When the case study approach is used in qualitative research, it is important to deploy a triangulated research strategy as it improves the validity and integrity of the study (Yin, 1994)

and ensures that the findings are supported by "multiple forms of evidence" (Gillham, 2000:19). The use of triangulation enhances the credibility and trustworthiness of the findings of case studies, as well as assisting in validation of the findings. Further, "triangulation is a method which implies the multiple observations of the same phenomenon or the convergence of different kinds of evidence, gathered in different ways but bearing on the same point" (Gillham, 2000:13). In addition, triangulation enriches our understanding of a situation by emphasizing diverse processes to study the different aspects of an experience, using an interpretive, naturalistic approach, which enables a researcher to examine human group life in a manner that acknowledges its complexity (Denzin and Lincoln, 1994).

Throughout this research, various sources of data, evidence and views of participants were used through triangulation to support facts. Yin (1994)) and Stake (1995) identify at least six sources of evidence that can be used in the triangulation process, namely documents, archival records, interviews, direct observation, participant observation and physical artefacts. It is important to keep in mind that not all sources are relevant for all case studies (Yin, 1994) and that each case will present different opportunities for data collection. Thus, this research used in-depth interviews, direct observation and focus group discussions. These methods are discussed in more details below.

4.5 Semi-structured interviews

Semi-structured involving face-to-face interviews were chosen for gathering data from individuals residing in Chipata settlements. Neuman (2011) refers to a variety of interviews such as unstructured, ethnographic and open-ended questions. Interviews are conversations between interviewer and respondent with the purpose of eliciting certain information from the respondent (Bell, 1997). The same method of semi-structured interviews was used to collect information from key respondents such as government ministries, agencies, community leadership structures, international and national NGOs as well as bilateral organizations. The researcher used an interview guide in which a list of topics and other questions that had a bearing on a given theme was prepared. Further, extra questions were added to explore the research questions and objectives of the study. As Wilman *et al.* (2005:66-67) contends, "although all the research respondents are asked the same questions, the interviewer may adapt the formulation including the terminology to fit the background and educational level of the respondents". In this way,

semi-structured interviews allowed the researcher to probe with a view to clearing up vague responses or to ask for elaboration of incomplete answers.

The researcher selected this method of collecting data as it had the potential for allowing spontaneous, rich, specific and relevant answers from the respondents (Neuman, 2011). Moreover, face-to-face interviews are self-communicating and allow the establishment of a rapport with the person being interviewed. Similarly, Seidman (2006) argues that semi-structured interviews have the potential of revealing unanticipated themes and thus enabling a better understanding of the interviewee's social realities and perspectives. However, interviews in general are known to be time consuming, often costly, requiring training, travel and supervision of research assistants (Bell, 1997; Neuman, 2011). Moreover, there is a danger of bias as interviewers are human beings and this method may have an effect on the respondents. This implies that one has to be persistently aware of this potential problem and apply constant self-control. In spite of these challenges, Bell (1997) concludes that interviews centered on a topic and conducted by a skillful interviewer may produce rich information.

4.6 Direct field observation

Field observations, which mainly aimed at assessing the existing conditions of Chipata settlement, were done. Identification of sources of water in the area, the type of water and sanitation infrastructure, housing and physical characteristics of the area were done by the use of camera and satellite images. This assessment of the general service delivery was considered and formed an important step in establishing their spatial distribution in the study area. Checklists of water and sanitation facilities in each household interviewed were used with quick drafts of the settlement to map out the major routes, Water kiosks, dumpsites of solid waste and movement patterns. Pictures of various economic activities within the settlement were also taken. Creswell (2002) argues that impressions also influence the choice of what is to be observed. Selective observation is defined as a "process of examining in a way that reinforces pre-existing thinking" (Neuman, 2011:4). For Neuman, with selective observation one tends to focus on specific cases and events. The findings from direct observation were then compared with those from focus group discussions and in-depth interviews. Taking into consideration possible problems as a stranger to gain entry into the informal settlement to observe (Yin, 1994), the researcher considered being accompanied by those well known in the area such as the local federation and

leaders of the Ward Development Committee. In order to avoid biases, leaders from the WDC, federation and grass root structure were picked randomly. Creswell (2002) suggests that establishing a rapport by finding common ground with those being observed in order to gain their acceptance is important.

4.7 Water and sanitation mapping

Water and sanitation mapping was done using a handheld GPS to map and gather information about the location of water kiosks, waste dumpsites and sanitation facilities. Mapping also helped to determine the number of households accessing a particular water or sanitation facility. Further, participatory methodologies such as transects, community mapping and ranking of issues were used especially during the focus group discussions with the community members and civil society organizations which was held in 10thJanuary 2018. Thus, to ensure accurate mapping, a settlement was divided into eight zones and federation members within the community and surrounding communities independently mapped each. The results were then combined and compared to those from focus group discussion and in-depth interviews.

4.8 Focus group discussions

Focus group discussions consisting participants from different Community Based Organizations (CBOs), civil society groups, local federations and WDC at community level were conducted. The focus group discussions comprised 8 members; 4 males and 4 females with age group ranging from 21 to 63 years. According to Fortana and Frey (1994), the purpose of group interviews is based on the collection of qualitative data. In addition, “a small number of such individuals brought together as a discussion and resource group is more valuable many times over than any representative group” (Fortana and Frey, 1994:365). Further, the authors argue that during group interviews, the research directs the interactions and inquiry either in a very structured or unstructured manner. Data from focus group discussion was supplemented by participatory community forum via online communication in which 7 members comprising 2 females and 5 males were selected conveniently. The group discussed water governance, challenges and strategies towards water and sanitation issues. The aim of group interviews was to gather information that could perhaps not collected easily by means of individual interviews as the study area was negatively affected by the cholera outbreak.

4.9 Sampling techniques and sample size

The study used 39 participants drawn from different stakeholders and institutions. The study used non-probability sampling techniques. The participants were selected using purposive, convenience and snowball sampling methods. Snowball sampling is defined as a technique for finding research subjects where one subject gives the researcher the name of another subject, who in turn provides the name of a third, and so on (Vogt, 1999). In the study, snowballing technique was used to collect data from key stakeholders who were partners in the provision of water and sanitation in Chipata settlement. Snowball sampling "begins with a few people and spreads out based on links to the initial people" (Neuman, 2011:269). Subjects for this sampling were found through recommendations, that is colleagues and stakeholders referred a small number of people or institutions who were partners in Chipata settlement to the researchers. The identified people and stakeholders were then able to recommend other people that could be interviewed.

In addition this strategy was employed because during preliminary visit to the study area, there were no official registers available to show the existence of vendors and other stakeholders operating in the area. Thus, the method helped to overcome the problems associated with sampling concealed populations such as the socially weak, the socially stigmatized and elites in the study area. The use of snowball strategies further provides a means of accessing vulnerable and more impenetrable social groupings. This process is based on the assumption that a link exists between the initial sample and others in the same target population, allowing a series of referrals to be made within a circle of acquaintance (Berg, 1988). Thus, PPHPZ and the local federation; a group of women working with Chipata Water Trust in Chipata settlement helped the researcher to identify active institutional stakeholders working in the water sector in the study area. In addition, 4 researchers with vast experience in waste management and planning were selected purposively to helper the researcher with the required data.

Additionally, key stakeholders were selected purposively basing on their rich understanding and experiential knowledge on issues of water governance and sanitation in informal settlement. Purposive sampling is the most important type of non-probability and Wilman *et al.* (2005) contends that researchers rely on their ingenuity or previous research findings to deliberately obtain units of analysis in such a manner that, the sample they obtain may be regarded as being

representative of the relevant population. However, Wilman *et al.* (2005) were quick to mention that the problem with this kind of sampling is that different researchers may proceed in different ways to obtain such a sample. It is therefore impossible to evaluate the extent to which such samples are representative of the relevant population.

Convenience sampling was employed in gathering data from households with issues of access and governance of water in the area. Convenience sampling involves selecting haphazardly those cases that are easiest to obtain for the sample (Wilman *et al.,* 2005). In addition, the sample selection process is continued until sample size is reached. Though this technique of sampling is used widely, it is prone to bias and influence that is beyond researchers control. Preceding interviews, the researcher visited Chipata settlement, PPHPZ offices and had telephonic conversations exchange with the Ward Councilor and key officials at MCA, LWSSCO, Care International, LCC, Chipata Ward Development Committee and Chipata Water Trust. The conversations were meant to guide the researcher to identify people that later represented these institutions during interviews.

4.10 Sample Profile

A total of 39 respondents were interviewed in this study. A sample size of 20 households and 11 respondents from non-state organizations were identified. Further the researcher identified 8 key informants all of whom had knowledge in water governance under COMEQS. Subsequently the researcher picked 39 respondents with substantial contribution in the provision of water and sanitation to represent the selected institutions during the interview process. The 39 participants are as presented in table 1.

Table 1: Table showing summary on sample profile (Source: Field Data, 2018)

Target Group	Sample size	Sampling Method	Data Collection Methods	Data Collection instrument
Chipata settlement (Households)	**20**	**Convenient**	**Household Semi-structured interviews**	**Interview guide Dictaphone**
State actors LCC,MCA,LWSSC,WARMA, MWDEP,NWASCO	**08**	**Purposive**	**Semi-structured Interviews**	**Interview guide Dictaphone**
Non-state organizations NGOs, CBOs, Civil groups , CBEs, WDC,	**11**	**Snowball**	**Focus group discussion Semi-structured Interviews**	**Focus group guide Interview guide Dictaphone**
Chipata settlement physical form			**Field observations**	**Checklist, GPS, Satellite images, Camera**
Total	**39**			

4.11 Data processing and analysis

After data collection, raw data from interviews was transcribed and edited for purposes of cleaning and meaning making. The process of data analysis, as described by Neuman (2011) is a way of systematically organizing, integrating and examining data to search for patterns and relationships. This was undertaken after data had been collected from focus group discussion, direct observations and in-depth interviews. The researcher used a question-by-question unit of analysis to show how all the respondents responded to each question. Further, the researcher read text data word by word in order to derive codes, common themes and derive narratives. This was done in view of the suggestion by Hsieh and Shannon (2005:1279) “there is need to highlight the exact words from the text that appear to capture key ideas from which codes can be consequential”. Key expressions in the text data were used as the coding frame in agreement

with Creswell and Clark (2003) who contend that a coding frame can be a sentence, paragraph or phrase.

In addition, "the codes derived from the rereading of the text data were sorted into categories, a process called open coding by Strauss and Corbin" (1990:56), building on how different codes were related and linked (Hsieh and Shannon, 2005). Text data was understood following the three research questions and the three research objectives which the empirical study seek to answer and explain respectively. Draper (2004) agree that categories are the themes or concepts that emerge from the text data themselves rather than an imposition of predefined coding categories. The clusters in this research were further reduced into broad categories with respect to the three objectives for a more efficient analysis. This shows the constructivist nature of text data analysis, which is in cycle with the conceptual framework that drives this study. According to Draper (2004:644) the emergent "categories enable thick description in which phenomena are not only described but also explained dependent on the context in which they occur".

4.12 Analysis of data from observations

Observation data was essentially analyzed for themes in order to build up a picture of the phenomenon observed. The data from observations was analyzed on a daily basis in order to help in the focusing of the study. Each data set collected on the spatial distribution of settlement pattern, water kiosks, and sanitation and waste disposal sites was read three times continuously to code the data into meaningful themes, which helped in discovering the patterns. The category codes that were used for this study are adapted from Bogdan and Biklen (1998) which are process codes, activity codes, event codes, and relationship codes (formally defined relations). Information obtained concerning the four objectives that the research sought to achieve was analyzed using descriptions, themes and narratives.

4.13 Reliability and validity

Although some qualitative researchers reject the idea that truthfulness does not make sense to be concerned with the truth, if the truth is based on interpretation and description (Creswell, 2008), Drost (2012:114) argues that validity is concerned with the meaningfulness of research components. Further, Weiner and Hopkins (2007) adds that validity is the degree to which any instrument succeeds in describing what it is designed to measure. This qualitative research applies validity as a measure for credibility of the research. It does so by certifying that the

findings capture what is there (Merriam, 1998). Reliability on the other hand as distinguished by Merriam (1998) is when a study is consistent, reasonably stable over time and across researcher methods' while validity suggests truthfulness of the data (Neuman, 2011).The credibility of this research is assured and strengthened by the triangulation through comparing a number of data sources. This study considered content validity in coming up with the items for the interview guides (Appendix A, B, D, F and G), the observation check lists (Appendix E) and focus group guide (Appendix C). The instruments were prepared with reference to the research questions and the objectives of the study to ensure that the data collected helped to answer the research questions. The items on the schedules were piloted and then presented to the supervisor for approval before use in the collection of data. This is in line with Weiner and Hopkins (2007:22) who expounds "content validity deals with whether the items included in the instrument adequately represent the universe of questions that could have been asked."

4.14 Ethical Consideration

Ethics in research is defined by Marshall (1998:566) as "the application of moral rules and professional codes of conduct to the collection, analysis, reporting and publication of information about research [participants], in particular active acceptance of [participants] right to privacy, confidentiality and informed consent". Ethical principles are essential in ensuring that conclusions drawn from the research are validated (Gallagher, 2005). In addition, informed and voluntary consent; confidentiality of information shared; anonymity of research participants; beneficence or no harm to participants and reciprocity are some of the ethical principles that guide research as explained by Halai (2006). Within scientific research, there are basically three questions regarding ethics, namely the researcher careful in research and honest in the reporting, does the researcher comply with his/her responsibility to society and does the researcher treat the participants with respect and protect them from harm. Participants in research may well be concerned with how they appear in the report and whether their interests, individually or collectively, are affected by the study. In this research reasonable precautions were taken to ensure participants protection. Ethic clearance was not granted by ethics committee, because the study is not a medical study neither did the study involve minors. However, the researcher employed verbal consent from the respondents. The respondents were verbally informed regarding the nature and objectives of the study, what was expected from them as participants.

4.15 Dealing with the potential threats to methodological limitations

Although the research achieved its aim, there were some limitations. Besides financial challenges, the research was conducted in an area that was declared an epi-center for serious cholera outbreak 6th October, 2017. Thus, time factor was a challenge as no gathering for more than five people was allowed and most state actors such as LCC, LWSSC, MCA, community leadership and other commercial utilities, community structures were busy on the ground trying to sensitize the community in Chipata settlement. Therefore, appointments kept on being rescheduled hence the research was conducted on a small sample size. The study area was negatively affected by the cholera outbreak from October, 2017 to April 2018. Thus after consultations with my academic advisor, all earlier arrangements which were made with key informants and community members were postponed to a later date. Initially, data collection was planned to start on 2nd November 2017 however, to minimize the risk the researcher commenced the fieldwork on 20th December 2017 and ended in March, 2018. The researcher's assumption was that since cholera cases were still high in Chipata settlement, meetings and gatherings could have increased the risk of further spreading of the disease.

CHAPTER FIVE: RESEARCH FINDINGS

5.1 Introduction

This chapter presents the research findings based on the objectives of the study as outlined in chapter 1. The analysis of these findings led to the compilation of an informed and up-to -date situation of water governance dynamics in informal settlements in Lusaka and Chipata settlement in particular. The chapter is divided into eleven sections.

5.2 The water and sanitation situation in Chipata Settlement

The first objective of the research was to analyse the water and sanitation situation in Chipata settlement. Establishing the reality of the status of water and sanitation is critical in understanding the levels of actors' participation and how institutions interact. Research results revealed that there are four main sources of water that exist in Chipata settlement. Further 5 key research participants revealed that Chipata Water Trust is one of several projects supported by Care International under its prospect initiative to supply water to a population of about 45,000 in 1997.

> *The area had three ground tanks, a small pumping station, and an overhead reservoir and chlorination facility, which was to supply 40 communal water points by gravity to a population of 45000 in 1997. Care International provided the infrastructure and the whole scheme were being managed by the community with Care International, LWSSC and LCC.*
>
> (Interview, Scheme official, Chipata Water Trust, 9 January 2018)

The research findings revealed that 59 percent of the households obtained their water from private boreholes (Figure 3a), 3 percent of the households relied on piped water directly connected to households from LWSSC, 10 percent of households depended on water from shallow wells and about 28 percent accessed their water from Chipata Water Trust scheme (Figure 3b) either through direct household connection or communal water kiosks (Table 2).
The percentage figures of the above collected data are also represented on figure 4.

(a) (b)

Figure 3: (a) Private individual borehole (b) Tap water from Chipata Water Trust

(Source: Field data, 2018)

Table 2: Table showing summary figures on the sources of water (Source: Field data, 2018)

Sources of water	Frequency	Percentage (%)
Private Boreholes	11	59
LWSSC	1	3
Shallow wells	2	10
Chipata Water Trust	6	28
Total	20	100

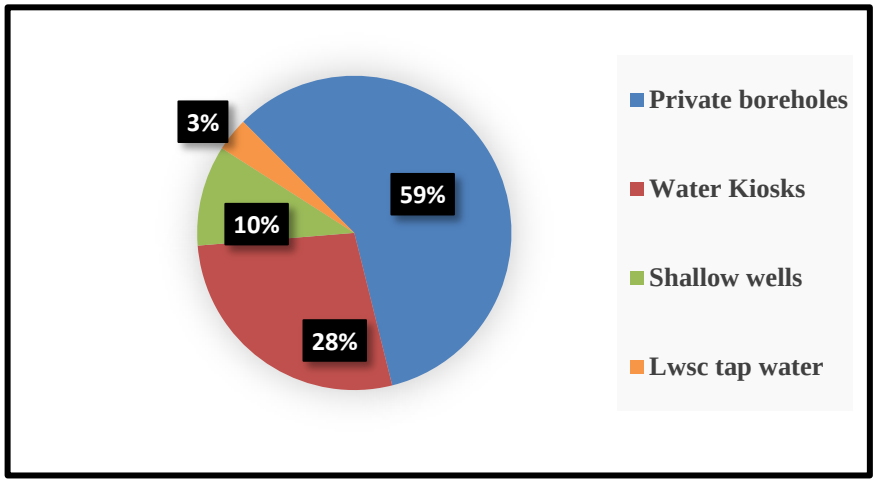

Figure 4: Main sources of water (Source: Field Data: 2018)

Because of insufficient supply of water, many people have resorted to drilling of private boreholes and shallow wells. This is why there is cholera outbreak; many people are collecting dirty and contaminated water from these shallow wells.

(Interview, Community leader, Chipata settlement, 23 December 2017

LWSSC and a team from Ministry of Health came and tested the sampled water and it was found contaminated with cholera bacteria. This is the reason why we were instructed to work on all leakages and the shallow wells used by some customers are being buried by the Zambia Army and Council police.

(Interview, Scheme official, Chipata Water Trust, 9 January 2018)

In addition, the research results from mapping of water points revealed that the study area had 12 temporal water tanks with capacity ranging from 5000 litres to 10000 litres mounted at strategic points by Disaster Management and Mitigation Unit to mitigate the spread of cholera (Figure 5a and b). However, it should be noted that free, clean, and safe water is accessed during crisis times in the community. As illustrated in Figure 5a and b, these times include periods for disease outbreaks, droughts and flooding seasons.

(a) (b)

Figure 5: (a) and (b) showing water tanks by DMMU/LWSSC (Source: Field data, 2018)

Further results obtained from mapping of sanitation facilities at household level indicated that approximately 69 percent of households use traditional pit latrines (Figure 6a), 7 percent are

connected to LWSSC main sewer system, 14 percent use improved pit-latrine (Figure 6b) and 10 percent use both pit latrines and soak ways (Table 3 and Figure 7)

(a) (b)

Figure 6: (a) Traditional Pit-latrine (b) Improved Pit-latrine (Source: Field data, 2018)

Table 3: Types of Toilets used by residents in Chipata settlement (Source: Field Data, 2018)

Type of Toilets used	Frequency	Percentage (%)
Traditional Pit-latrines	14	69
LWSSC	1	1
Improved Pit-latrines	3	14
Pit-latrines/ Soakaways	2	10
Total	20	100

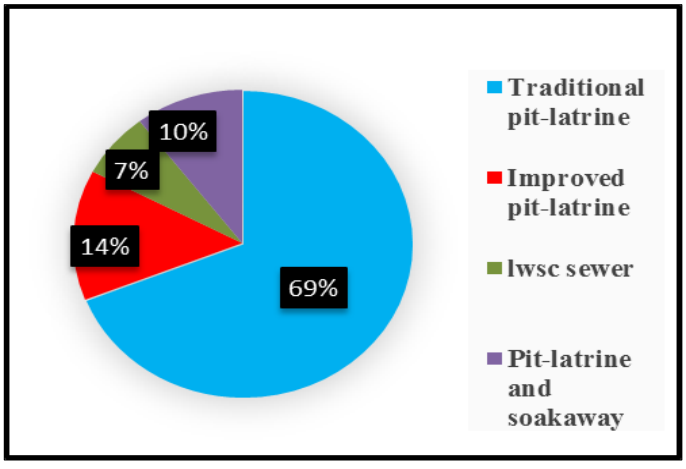

Figure 7: Type of toilets (Source: Field data, 2018)

There are a small number of people who are connected to LWSSC water especially in Kabanana. But we have very few people who have connected to the main sewer system. When we are distributing bills we still see people using pit latrines.

(Interview, Community leader, Zone 40, Chipata settlement 26 December 2017)

The infrastructure for sanitation is very underdeveloped in Chipata settlement. It is very difficult to improve standards from above, there is just need to sensitize the population to promote uptake of improved sanitation systems in Chipata settlement. We have a situation where many people use traditional pit-latrines and use shallow wells, so, Chipata settlement presents a pure case of public health crisis driven by poor water and sanitation standards.

(Interview, Community leader, Zone 40, Chipata settlement, 26 December 2017)

5.3 Access, Quality and affordability of water dynamics in Chipata Settlement

In terms of affordability, the results indicated that a 20litres of water is sold at ZMW 0.50 from Chipata Water Trust; this is bundled with solid waste collection. However, the private water sellers and individual household borehole owners sell two buckets of 20litres of water at ZMW 0.40 with an exclusion of solid waste collection (Table 4). In terms of access, the study results further revealed that people in the area especially women and girls line-up for water at Water kiosks which is only provided twice in a day as early as 03:00hours to 05:00hours and in the evening around 18:00hours to 19:00hours.

Table 4: Table showing cost of water in relation to quantity (Source: Field Data, 2018)

Type of water source	Quantity (litres)	Cost (ZMW)
Chipata Water Trust	20	0.50 Bundled with solid waste collection cost
Private Boreholes	40	0.40 Unbundled with solid waste collection cost
Water Vendors	20	0.50 Unbundled with solid waste collection cost

In terms of quality, 87 percent of household respondents indicated that the water that the community access from private boreholes and Chipata Water Trust is dirty with a bad smell and black in color. In order to make it safe for domestic purposes, the water is treated by either boiling or adding Clorin. In addition, the results revealed that the dependence on water from water trust was low since most of the time such taps are vandalized.

Further research findings indicate that access and availability of clean water is a challenge for people in Chipata settlement. More than 60 percent of the research respondents further revealed that private boreholes were preferred as there was a general view that it is cheaper compared to the water provided by Chipata Water Trust and LWSSC. Further research findings indicated that 87 percent of the respondent used between 60 to 200litres of water daily for their domestic uses costing on average ZMW 1.5 to ZMW5 per day.

> *Chipata Water Trust is the major source of water and it is expensive. A 20-litres bucket costs ZMW 0.50 with garbage collection cost included. We are a family of 12 and we need 18 buckets of water per day, so every month we spent over ZMW 220 the situation is hectic.*
>
> (Interview, Community resident, Chipata settlement, 23 December 2017)

5.4 COMEQS and Tariff Bundling: Community Dynamics

COMEQS is a community initiative aimed at maximizing solid waste management through tariff bundling. Tariff bundling is a system in which the cost of water is bundled with the cost of solid waste collection. Six key research participants indicated that COMEQS is a project, which was initiated by Care International in January, 2014 to November, 2018 in partnership with PPHPZ, LWSSC and LCC in corroboration with Ward Development Committee and Chipata Water Trust. Further 59 percent of the respondents revealed that when they pay for water, automatically CBEs collect solid waste from their individual households.

> *People pay ZMW 0.50 for a 20litre bucket of water. A ZMW 0.40 goes to Chipata Water Trust; 10n is for the waste collection. We have also household connections where individual households are connected to the water system. These are billed on monthly basis according to consumption. This is helping in the collection of revenues for maintenance and collection of waste.*
>
> (Interview, Scheme official, Chipata Water Trust, 9 January 2018)

During fieldwork, it was observed that there were many emerging private boreholes operating in Chipata settlement and there is indiscriminate disposal of garbage along the road and at the back yards of other houses. Research respondents from focus group discussion (Figure 8) reviewed that from the onset of tariff bundling project; many people have started selling water through private boreholes.

Figure 8: Focus group discussion (Source: Field data, 2018)

In addition 59 percent of respondents revealed that illegal borehole owners are attracting people to go and buy water from them. However, the garbage generated by their customers is dumped in the backyards of those who are paying and along the roads (Figure 9a and b). Mapping of water sources and sanitation types revealed that there are over 56 private functional boreholes located in houses supplying water using either one or multiple water taps and over 63 Chipata Water Trust kiosks and 17 of these taps are old and malfunction.

> *The number of private boreholes has increased from 26 to 56 within a short period. Private boreholes are selling water at ZMW0.50 for two 20litre buckets of water. This is a challenge as we are losing business since most customers have stopped buying water from Water trust.*
>
> (Interview, Scheme official, Chipata Water Trust, 9 January 2018)

Figure 9: (a) Illegal waste dumped on unfinished buildings (b) Illegal waste dumped on roadside (Source: Field data, 2018)

However, three key participants pointed out that the whole process of tariff bundling was done in a transparent and consultative manner as suggested below.

We had stakeholder meetings where we called all CBEs working in that area; it was a consultative process where Particularly Appraisal and Needs Assessment (PANA) were conducted. Thus, the community appraised itself by analyzing the importance of the project and its benefit. Then COMEQS project came to help build capacity of CBEs.

(Interview, Executive, Department of Peri-Urban, LWSSC, 3 January 2018)

5.5 Actor responsibility: A network of associations

The second objective of the study was to identify the different actors involved in the provision of water in Chipata settlement. All the research participants were considered cardinal by the researcher, as they are players who contributed positively towards the provision and governance of the water and sanitation in the area. Research findings revealed that there were several actors in the provision of water and that they involved 8 respondents from 6 state (formal) actors and 11 respondents from 7 non-state (informal) actors. There are six knots of stakeholders that form the web of associations (Figure 10). These include the private partners, donors, the state, NGOs, the community and learning institutions. These institutions have diverse levels of authority on the provision of water and sanitation services in Chipata settlement. Further their level of power sieves through either direct or indirect stakeholder relations.

Six key research participants indicated that LWSSC is the main commercial utility that works hand in hand with NGOs, CBOs and other stakeholders in Peri-urban areas of Lusaka. It is a license holder that plays monitoring roles on the standard and quality of water supplied to the public by other water providers in Lusaka but the regulators are NWASCO. In this partnership, five key research participants indicated that Chipata Water Trust is the only licensed water vendor in Chipata settlement with representation from both the community and the institutions in its structure (Figure 10).

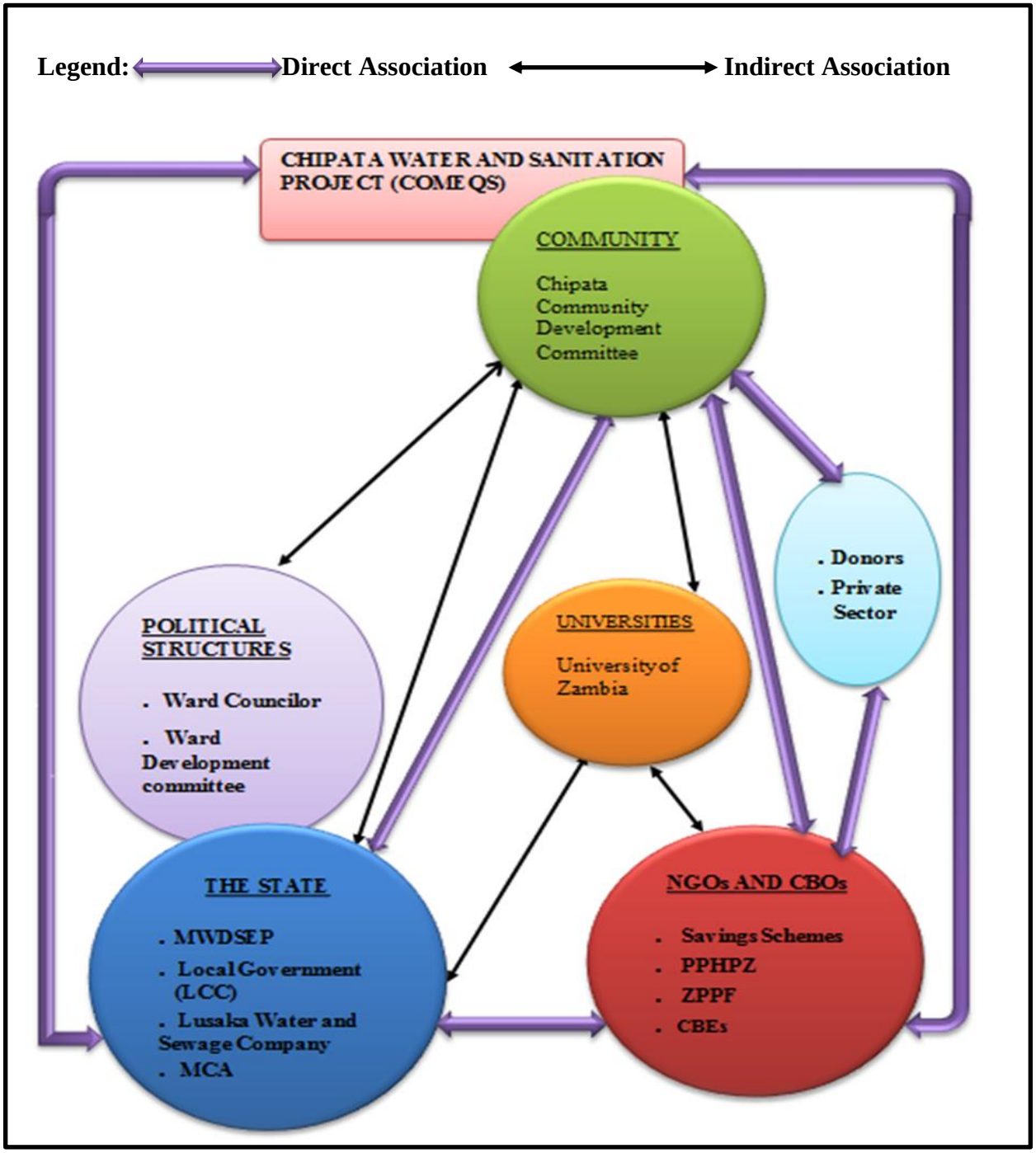

Figure 10: Stakeholder associations in Chipata Settlement (Source: Fieldwork data, 2018)

The findings further indicated that one member from LWSSC sits on the Chipata Water Trust board, two members from LCC and five members from the community which includes business entities, community residents, Zonal leaders and CBOs. The composition of the board is structured in such a way to ensure a strong community involvement and the Chipata Water Trust

is also working with Care International; an NGO to supply water to all residents of Chipata settlement.

> *LWSSC are mandated to provide water and sanitation services to all the residents in Lusaka province in line with World Health Organization standards of clean and safe water. Water is a service, which requires multi-sector approach. Thus, the Ward Development Committee, Chipata Water Trust and other communities have formed boards, which oversee development in informal settlements.*
>
> (Interview, Executive, Department of Peri-Urban, LWSSC, 3 January 2018)

> *Our main responsibility is to supply water to the residents of Chipata settlement with a population of about 123000 people. Our sources of water are boreholes; we have nine boreholes where this water is kept. We have about 688 cubic metres capacity in Chipata settlement; in Kabanana, we have another reserve tank with a capacity of 112 meter cubic on the ground. We also have a 24-cubic metres elevated tank, from the tank that is where we are distributing water to the network.*
>
> (Interview, Scheme official, Chipata Water Trust, 9 January 2018)

Two other key respondents revealed that MCA is another state actor that was formed to implement the Lusaka Water Supply Sanitation and Drainage projects on behalf of the government of Zambia. It was established that there is an international agreement between the American government and the Zambian government. The American government provided over 355 million US dollars to invest in the water supply improvements, sanitation and drainage projects in the informal settlements of Lusaka. However, 21million US dollars was used to improve water reticulation in Ndeke, Kwamwena, SOS village, Chipata and Ngombe settlements. Further, it was established that MCA investment master plan is in three categories; short term, medium term and long term and it is working on the short-term intervention. It was noted that MCA is working closely with other stakeholders that include LWSSC, LCC, PPHPZ and the community leadership structures. The aim is to build an integrated development aspect where all stakeholders are working towards achieving the same goal as suggested below.

> *People should have access to clean and safe water. We also offer technical assistance to LWSSC by building capacity for them to manage the infrastructure that we are giving them. We are also offering support to LCC in drainage projects. For Chipata settlement,*

we are targeting the population of 28000 people and 5096 households, which will benefit directly. Therefore, we are looking at over 2500 connections to households and 17 kiosks.

(Interview, Director, Communications MCA, 17th January, 2018)

In addition, three key research respondents indicated that the LCC is a formal actor mandated to provide social services through the department of housing and social services. LCC further works closely with Chipata Water Trust and the CBEs. In addition, the director, housing and finance LCC, sits on the Chipata Water Trust Board. Its main objective is to organize and mobilize communities and facilitate stakeholder participation in community development for effective social service delivery. It was revealed that through the Water Trusts, LCC ensures that waste is collected by the CBEs.

Further one key respondent revealed that it is working closely with NWASCO and LWSSC in ensuring that ground water abstraction is regulated as mandated by the new statutory instruments. However, it was indicated that working with residents in informal settlements in regulating drilling of boreholes would present challenges.

With the enactments of statutory instruments No. 18, 19 and 20, as we expect high compliance levels when it comes to procedures to be followed before people decide to drill any borehole. This will ensure water security not only in Lusaka but in Zambia.

(Interview, Official, Water Department, WARMA 27 March, 2018)

In addition, it was also indicated by research respondents that though operating outside the required guidelines, private water sellers play a major role in supplying water to the residents of Chipata settlement.

We provide clean water to the community at a reduced price because we want to serve the community. Majority of these people are not working, there is need to help them by giving them cheaper water since there is high demand for water which LWSSC and Chipata Water Trust has failed to meet.

(Interview, Private Borehole Owner, Chipata settlement, 26 December 2017).

5.6 The Role of Non-Governmental Organization

The other key non-state actors are in the category of non-governmental organizations. Five key research participants revealed that PPHPZ, which is part of the Slum Dwellers International (SDI), works closely with informal settlements in collaboration with other stakeholders to mobilize and advocate for better service delivery for the urban poor. Further, it was established that PPHPZ encourages and supports capacity building and creation economic resilience among the residents, strengthen communities in education empowerment and income generating activities through the formation of income serving groups. The purpose is to create partnership with the community for them to build a sustainable and resilient capacitation in service delivery.

> *Our role is to look into how best we can improve and build the economic capacitation of these informal communities. We empower them by giving them income-generating ventures such as loans to start-up businesses that can boast up their income. We also empower the community in water and sanitation by innovating different models in sanitation practices such as Eco-san toilet. PPHPZ with the help of SDI also finance trainings in plumbing, bricklaying, financial management and other entrepreneurship programs. The main purpose is to create a sustainable capacity building among the residents of informal settlement.*
>
> (Interview, Community Development Officer, PPHPZ, 9 January 2018)

The Zambia Homeless and Poor People's Federation (ZHPPF) is a grassroots savings movement. Through health savings and loan fund savings called '*Swalisano*' urban poor fund, the federation aim to improve the livelihoods of its saving members across the informal settlements in Lusaka and other provinces. In addition, 60 percent of the respondents in Chipata settlement indicated that through the loan fund, communities have been able to obtain loans for income generation to improve livelihood by constructing low-cost housing units and Eco-san toilets. Research findings revealed that the PPHPZ-ZHPPF alliance advocates for community driven developments where people should be placed at the center of every developmental projects.

5.7 Community group Dynamics: contending with difference

Research participants revealed that community residents and its leadership receive valuable support from both the municipality and the NGOs such as the PPHPZ. The research established

that leaders in the Ward Development Committee and Zones are all residents of Chipata settlement; who know best the needs of the community and how to mobilize residents on behalf of other stakeholders. Further, research findings indicated that elected community leaders are key in ensuring the success of the COMEQS project. It was echoed by all the state and non-state respondents that the sustainability of water and sanitation delivery is highly dependent on active community involvement. The Community needs to own the process in the provision of water and sanitation by actively participating in program design, funding, project implementation and project monitoring. The views on this are clear:

> *For governance structures to be effective in water management and sanitation, they must begin at community level because community leadership is the most crucial entity. Once these relationships are strengthened, it becomes much easier for purposes of implementation. This is because the community knows the real problem it faces.*
>
> (Interview, Community leader Zone 40, Chipata settlement, 6 January 2018)

The key respondents indicated that there was need for the radical shift of mind-set of people not only in the use of these facilities but also in the ownership of the investment as supported below:

> *When community residents hear anything about donors, they start having dynamics in terms of participation. Others will start asking for their reward before participating in any project. However, when you involve them and you transfer implementation to them, they begin to manage the project.*
>
> (Interview, Ward Development Committee, Chipata settlement, 6 January 2018)

> *It is one thing to do structure investment, it is another thing to change the mind-set of the people to interact responsibly with the infrastructure but that is critical. You can give people a toilet but they fail to use it properly. These are real dynamics.*
>
> (Interview, Director Communications, MCA, 17 January 2018)

5.8 Project emphasis: The difference is in the approach

All the non-state research respondents' echoed on the provision of adequate social services, which are community driven in order to improve on the well-being of the settlement. The approach seeks to build capacity while providing improved waterscapes for all the residents in the area. The approach in Chipata settlement emphasizes that communities know best the critical issues that need to be prioritized as indicated below:

Sanitation and safe water provision are most important development issues now. We are trying to clean the environment especially the areas near Katambalala market and the surroundings closer to the clinic. There is too much garbage lying alongside the main road. We are working in sections and zones together with the church organizations in cleaning and sensitization program in order to improve our environment.

(Interview, Community Activist, Chipata settlement, 27 December 2017)

5.9 Unmasking institutional relationships: grassroots inclusion or political patronage?

In analyzing power relations in the water governance systems and structures in Chipata settlement, all State and non-state key research respondents pointed out that stakeholders faces significant nevertheless adaptable institutional challenges, and it is clear that there are political divisions within and between different stakeholders. Research findings established that political interference at grass roots level is a major issue as research results revealed that people within the community have different political inclinations and would want to glorify the tariff bundling project towards their political support and supremacy. The following are the reflections from the respondent's perceptions;

We mobilize communities through their local leadership and federation. They have got serving groups; we bring the CBEs together through the federation. They discuss and give their own views on how they want things to be done. If they are compromises and disagreements, we negotiate with them freely. The aim is to create a free environment where players are free to debate on various issues.

(Interview, Community Development Officer, PPHPZ, 6 January 2018)

We have people with private boreholes who are selling water to the public. Resolutions from stakeholders meeting instructed that all private borehole owners to stop selling water. Surprisingly, the Councilor sided with illegal private borehole owners because they voted for him. Besides, the councilor has also a private borehole and he is selling water to the public therefore, the directive failed.

(Interview, Scheme official, Chipata Water Trust, 9 January 2018)

Non-state respondents further revealed that ideas from community help to identify specific areas in the Settlement in need of services such as Water kiosk or a tap stand. Previously when the COMEQS project started the community worked together with other stakeholders such as Care

International, MCA and the LWSSC in digging the trenches for laying down the pipes for MCA. Research results from both state and non-state respondents indicated that when players interact and communicate effectively with the community, lower governance structures are strengthened as people in communities feel empowered and easily build a sense of ownership of the project. This helped in building strong working linkages for sustainable water provision.

> *Every project-taking place in the area must pass through this office. This office coordinates all community projects with stakeholders and other cooperating partners. We do not discuss politics; we just work in line with the policies of the government of the day. The problem is that we are not coordinating well with the Ward Development Committee. We need to work in accordance with the policies and regulations given for us to improve our area.*
>
> (Interview, Ward Councilor, Chipata settlement, 6 January 2018)

> *The Councilor sit in the chambers but the resolutions, which are discussed, does not flow into the community. Therefore, we tend to wonder as to whose interest he represents. Besides, the Lusaka City Council cannot function without the WDC as it is mandated to oversee all developments in the communities and report to the council.*
>
> (Interview, Water task force official, Zone 19, Chipata settlement, 13 January 2018)

Further research results revealed that by obligation, there is a direct association between the State machinery with Chipata settlement. In addition, the State through its political structure at local level has indirect relations with the Chipata water and sanitation project and the community of Chipata settlement.

> *I cannot work with people who are always against the projects of the government, the people decided to remove WDC from office. However, my office is open for dialogue to everyone. All we want to see is development in our area.*
>
> (Interview, Ward Councilor, Chipata settlement, 6 January 2017)

Further, there is a direct relation between non-governmental organizations and the community water and sanitation project. It was also established that strong linkages that exist among the University of Zambia, NGOs, Donors, and the community call for genuine collaboration with other stakeholders in community driven water and sanitation project. The differences in interests, power, visions, methods and agenda among the stakeholders has created silent fights

due to conflicting ideologies on how COMEQs project should be executed. In addition, the settlement and its local leadership provide a determinant structure for partnership activities in Chipata settlement. Zambia alliance, which compromises PPHPZ and ZPPF, are key negotiators amongst the partners in Chipata settlement.

On the other hand, one non-state respondent indicated that political interference does not have an impact on their work because of the kind of approach that has been employed. It was further revealed by one state respondent that political interference worked positively to drive stakeholder agendas. However, two non-state respondents revealed that they work well with the area Councilors and the Ward Development Committee by involving them from the beginning on the projects. Other respondents observed that political interference worked positively to drive stakeholder agendas as suggested below:

> *We cannot run away from politics, it is part of us. Sometimes, the politicians influence both the positive and the negative. We have encroachments where politicians allocate plots on our infrastructure. Sometimes through politics, we have mobilized resources to help us provide other services.*
>
> (Interview, Executive Department of Peri-Urban, LWSSC, 3 January 2018)

> *When we get into the communities, sometimes we do not even pass through the Councilor's office. Actually, we go to the community first; we even start doing the project. We avoid the dynamics of politics.*
>
> (Interview, Community Development Officer, PPHPZ, 9 January 2018)

However, other research participants echoed that there has been strong relationship between stakeholders and the community. Further, the respondents revealed that stakeholder-community relationships have helped to create efficient water and sanitation governance structures and systems.

> *We are working well with civic leaders, the Councilor always involve us whenever there is any project in the community and he always cooperates well with other officials from Lusaka Water Supply and Sanitation Company and Lusaka City Council.*
>
> (Interview, Private Water Provider, Chipata settlement, 10 January 2018)

Lusaka City Council is the custodian of all the areas and the Peri-urban, whatever they want to pass, whatever decision they want to make, they will not do it without consulting the community. LCC invite us to be part of workshop; therefore, we are grateful that we are actually working close with LCC, LWSSC and the PPHPZ.

(Interview, Federation leader, Chipata settlement, 3 January 2018)

5.10 Resource mobilization and Power relations: Fights over resources

Two state research respondents revealed that stakeholders mobilized resources differently while the other three State respondents felt that they mobilized more resources than others did. Other four non-state respondents indicated that the community has small savings schemes, which cannot be equivalent to funds provided from the Constituency Development Fund (CDF) for community development projects. Other non-state research participants however pointed out that the stakeholder collaboration is facing ideological mix-ups. These are closely associated with the desire to control resources, kickbacks, exercise of political patronage in diverse ways of engaging with one another, misconceptions around development and the propensity to flip back to conventional approaches of service provision (Figure 11). Research participants further revealed that power relations among stakeholders is escalating but it was also confirmed that conflicts in such engagements are unavoidable as suggested below:

Politicians are using cadres who want to control all community activities, threaten the NGOs and community leadership. This is creating political divisions and misunderstandings in the community.

(Interview, Old community resident, Chipata settlement, 28 December 2017)

LCC has not been honoring our CDF development applications. The Member of Parliament and Councilors have too much power in deciding who should be in CDF committee, how the money should be divided without focusing on the priorities of the community. This has been the main source of conflicts and misunderstanding in the provision of water and sanitation.

(Interview, Community leader, Chipata settlement, 27 December 2017)

MCA has built new water kiosks next to those water Kiosk built by Care International but they are not functional because there is no information as who shall manage and

control them. We are only mandated to control and manage water kiosks under Chipata Water Trust.

(Interview, federation leader Zone 18, Chipata settlement, 27 December 2017)

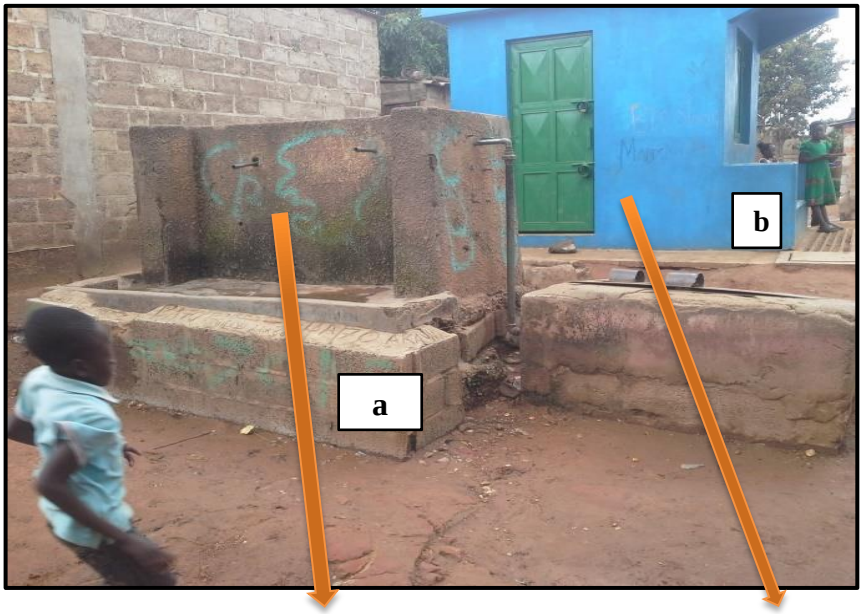

Figure 11: (a) Water kiosk by Care International (b) Water kiosk by MCA

5.11 Challenges surrounding stakeholders' collaboration

All non-state research participants indicated that Chipata settlement faces numerous challenges in the area of water and sanitation provision. Challenges include lack of effective harmonization between political and non-political institutions as well as lack of positive change in mindset of community members. Other challenges include high demand for water and clean sanitation and lack of access for infrastructure expansion in the informal settlements. Further, other participants indicated that inadequate funding and finding the right stakeholders is a major challenge. It was revealed by two state actors that accessibility into Chipata settlement is a big problem since people have built everywhere as a result putting up new infrastructure is very difficult because of lack of space. The research results further established that community resilience is another major challenge as some people resist to cooperate and this presents a challenge especially when putting up new water and sanitation infrastructure. However, all the partners still believe that challenges are not intractable.

Communities are difficult to deal with as they always expect free things. However, our model has been that it has to be a sustainable process. If we make a Water kiosk or a

toilet, we expect somebody to pay back in instalments slowly. Nevertheless, community members do not want to pay back.

(Interview, Community Development Officer, PPHPZ, 9 January 2018)

Resettlement is a big problem when working in unplanned settlement. To put up water or sewer network in such places is difficult and costly. We have spent about 5.5million US dollars compensating people.

(Interview, Director Communications MCA, 17 January 2018)

5.12 Accomplishments in Chipata water and sanitation sector

Further, 80 percent of research respondents indicated that they are not satisfied with the level of change and development in the area. In addition, research participants emphasized that more work still remains to be accomplished as population has expanded but service provision has not improved. Research results confirmed that when tariff bundling was introduced, people expected to see clean water and effective garbage collection but the situation has become worse (Figure 12b). Further 90 percent of the respondents pointed out that MCA had put up 17 new Water kiosks. However, the infrastructure is inadequate and not functional to serve the community as a result people are still using old and dirty Water kiosks (Figure 12a) as suggested below:

We pay for waste collection each time we buy water but the situation of waste collection has not improved at all. We have not been provided with skip bins at designated points for dumping garbage. We heap waste on our yards waiting to be collected.

(Interview, Community resident, Chipata settlement, 1 January 2018)

(a) **(b)**

Figure 12: (a) Old water kiosk 22 (b) Waste on the roadside (Source: Field data, 2018)

5.13 Integrated development planning: What is the position of stakeholders?

Integrated Development Planning (IDPs) reflects an interest in multi-sectoral, integrated and bottom-up approaches for local development. Research participants indicated that IDPs are expected to align resources and actors around priority development directions of the stakeholders. Further, the findings revealed that IDPs would ensure both horizontal integration between sectors within local government and vertical integration with other spheres of government. In addition, many research respondents indicated that IDPs is the only way to go about ensuring effective delivery of water and sanitation. Results also indicated that issues of sanitation and water need to be planned together as they have complimentary functions. Further, the respondents revealed that they could not build houses and pit-latrines toilets without water. The integration aspect of development planning involves a balanced environment in which service delivery and inclusivity are created and focused on the marginalized who are the majority in urban cities as supported below:

> *For us we are feeding into the priorities of the government developmental agenda, which is the investment master plan. This is highly integrated as it speaks to other sectors and stakeholders hence we are contributing within the designed systems that will move the country forward and bring holistic development.*
>
> (Interview, Director Communications, MCA, 17 January 2018)

Over 65 percent of state and non-state respondents revealed that integrated development planning could have positive implications if it is well implemented. The implication of IDP is that services will be provided in a well-coordinated manner unlike what is happening now. The findings further indicated that the IDP would encourage cooperating partners to work together as they will focus to achieve similar objectives as suggested below:

> *Integrating water and sanitation into development planning may yield strong teamwork among different players. This may lead to efficient access to safe and clean water and improved sanitary services, not only in Chipata but also in all informal settlements.*
>
> (Interview, Director Communications, MCA, 17 January 2018)

CHAPTER SIX: DISCUSSION OF RESEARCH FINDINGS

6.1 Introduction

This chapter discusses the research findings as presented in chapter five. The research findings are analyzed against the theoretic framework of urban governance, post-colonial African cities and Foucauldian concept of power. This chapter connects the findings to the research questions and upholds the research findings to come up with conceptual, theoretical and policy insights in Chapter seven.

6.2 The water and sanitation situation in Chipata Settlement

Understanding the coverage of water and sanitation facilities in Chipata settlement is important in establishing the extent of the water inadequacies that the area is facing. Currently the area has experienced a near double increase in population of about 123,000 people and this has triggered more challenges in water services for the population. Although Chipata Water Trust is mandated as a legalized scheme to supply water to all residents in Chipata settlement through water kiosks and household connections, its supply is inadequate to meet the ever growing population. This has resulted in the rationing of water by Chipata Water Trust due to high demand and lack of extra tanks for storing underground water. In addition, LWSSC supplies piped water in some parts of Chipata settlement though this covers a very small portion and only a handful of households are connected to LWSSC. In addition, over 95 percent of the residents are not connected to the public utility (LWSSC) and MCA Kiosks for their water supply. This implies that many people still draw water from unimproved sources such as shallow wells, private boreholes and unimproved Water kiosks.

As a result of inadequate sources of clean water, many people depend on private boreholes while others depend on water from shallow wells. Similarly, UNDP (2006) explains that most informal settlements in cities and towns rely on both improved and unimproved sources of water and may be using public standpipes, unprotected wells and water from vendors. These trends are confirmed by country case studies in the slums of Nairobi and Abidjan where for example over 80 per cent of population relies on sources other than household connections, including kiosks, water resellers and other small-scale providers (Obrist *et al.*, 2006; Gulyani and Talukdar, 2008). In Lagos too, only 5 percent of households in the city are connected to public water system. The rest of population depends on wells, boreholes, water tankers, various illegal

connections, street vendors and 'scooping' of water from open drains by the side of the road (Gandy, 2006). With the use of shallow wells widely spread, times of crisis results in top-down state temporal interventions. For instance, the study established that at a time when the researcher was collecting data, the state through the LWSSC and DMMU mounted temporal water tanks in specific points worst hit by cholera for people to have free access to water in the settlement to mitigate the spread of cholera. However, it was noted that the supply is far beyond meeting the high demand of water in area.

With regard to sanitation, over 90 percent of the residents in Chipata settlement are not connected to the main sewer line of public utility of LWSSC as a result many people still largely depends on traditional pit latrines and a few residents have improved Eco-san and septic tanks toilets, some which are dug closer to the Chipata Water Trust kiosks and individual private bore holes. This implies that Chipata settlement suffers from inadequate sanitation infrastructure and problems with solid waste disposal. About 90 percent of residents use pit latrines, most of which are unimproved (World Bank 2016). Akin to PPHPZ (2015), many people suffer from diarrhea and typhoid because of contamination of underground water as a result of seepage of fecal matter in pit latrines. This implies that the area still faces a huge challenge in terms of decent sanitation and improved sources of water. It is undeniable fact that the status of water and sanitation in Chipata settlement is in bad condition as access and quality of water and sanitation services are compromised as discussed below.

6.3 Access, quality and affordability of Water dynamics in Chipata Settlement

The cost of water is a major factor in the determination of domestic activities to be undertaken. The residents in Chipata settlement face difficulties in accessing safe and clean water for their domestic usage. While water is never readily available, it is also expensive for many people in the area. In addition, despite the community taps being located within the area, it takes hours for one to fetch water from a communal tap due to long queues. Women and girls spend long hours trying to fetch water; this affects girl's performance in school as they fail to attend classes to fetch water for their family members (LCC, 2006). This implies reduced productivity on the women and school-going children especially the girls. Thus, people in Chipata settlement have to work both struggle financially to access the commodity and have to wait for long hours on ques or wake up early to ensure they get to access water before taps run dry. This might also

take up a significant proportion of the household income. Since this is a daily expense and not a monthly expenditure, it constantly triggers the residents' consciousness on the limit of how much to spend in a given day.

Further, despite the increased attention, that improving water supply has gained since the 1970s; large parts of urban and rural dwellers continue to lack access to safe, reliable and affordable water, particularly in Sub-Saharan Africa (Castro, 2007). Water from Chipata Water Trust and Lusaka Water Supply and Sanitation Company is rarely available and unreliable in terms of access in Chipata settlement. This leaves 69 percent of people accessing water from private borehole owners and from shallow wells that nobody knows its quality and safety. This is contrary to the declaration by United Nations General Assembly that 'Safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights (UN, 2010). This is akin to the findings of Dardenne, (2006) who estimates that private small-scale providers, water resellers, kiosks and water tankers excluding community or publicly operated water schemes, supply a large portion of urban population in Africa. Access to clean and safe is a major challenge to the majority of the residents in Chipata settlement as confirmed in Vision 2030 that access to clean and safe water by most Zambians remains a challenge (GRZ, 2006).

With regard to affordability, water provided by Chipata Water Trust via water kiosks is more expensive than individual yard tap connections provided by the same scheme which is charged according to consumption. In addition, water supplied by Lusaka Water Supply Sanitation and Company is unreliable and expensive to an average household family of six. However, Kariucki and Schwartz (2005) argue that piped water connected to cities' main network has the lowest tariffs per unit of water provided than services provided by private network which are hampered by high prices, low quality of water, and difficulties in regulating the providers. As supported by Budds and McGranahan (2003:109) "there is little scope for users of the South to be able to pay prices that represent the levels of investment needed, the goal of connections for all users is "unrealistic" and public sector subsidies and soft loans are essential for meeting these needs. It is argued that the majority of people who access water from communal water kiosks pay more compared to household connections as these are charged according to consumption. The fact is poor households who are not connected to the network pay more per unit of water. Foster

(2005), Dagdeviren (2008) Chitonge (2010) suggests that a higher proportion of resident's income in informal settlement goes to water services. This implies that the cost of water for the residents of Chipata settlement constantly triggers their consciousness on the limit of how much to spend in a given day hence lowering their production.

On issues of quality, water supplied in Chipata settlement is generally dirty and contaminated due to leakages and this is evidenced by the high number of cholera cases in the area. This is similar to the report of World Health Organization (2018) that there had been over 4700 cholera cases and 88 deaths during the 2017-2018 epidemics in Lusaka. It is argued that many residents in Chipata settlement do not have access to improved drinking water, as defined by the Joint Monitoring Program (JMP) of the World Health Organization (WHO). According to JMP (2012), improved drinking water implies that the water is more likely to be safer than water from unimproved sources, although this is not assured. Further, improved sources include public taps, standpipe or rainwater sources, while unimproved sources include tanker trucks, surface water or unprotected dug wells (JMP, 2012). In addition, the quality of water, which reaches the consumers, is dependent on the quality of construction or working methods. For example, mobile distributors, who transfer water between multiple containers, run a much higher risk of contamination (Kjellén and McGranahan, 2006).

Further, over 90 percent of residents in Chipata settlement do not have access to water borne toilets however depend on traditional pit-latrines, which are usually poorly constructed mostly without doors, scanty roofing sheets and are used by either one or more households. When these pit latrines fill up, sometimes there is not enough space for digging a new one hence during rainy season, these toilets flood and containment the water. This is similar to the findings of Nchito (2007) who contends that Peri-urban areas are especially vulnerable to fecal contamination because they are located largely in low-lying land prone to floods. Rainwater frequently causes pit latrines to overflow, resulting in environmental and health hazards. In such situations the affected household would look for a neighbour willing to share the use of their pit latrine (World Bank, 2006b; PPHPZ, 2015). Similarly, governments in the global South increasingly lack the resources to provide all citizens with services they are mandated to deliver, and hence water and sanitation failures abound (McFarlane, 2008; Sultana and Loftus, 2013).

The research has shown that 93 percent of the residents do not have access to clean and decent sanitation and this is really a challenge to most residents of Chipata settlement.

It is also argued that waste management facilities such as garbage collection points are lacking in Chipata settlement. As a result, residents in the area dispose of their waste on the roadsides, open spaces, and sometimes in rubbish pits dug within their premises as observed during field tour. Waste disposed in these undesignated places is rarely removed as a result, it pollutes the environment. The uncollected waste is a nuisance in that it is not only ugly to look at, but produces offensive smell, which attracts flies, which in turn are responsible for the spread of diseases such as cholera.

Evidence of this can be found in literature in Côte d'Ivoire (Obrist *et al.,* 2006), and Dar es Salaam where outbreaks of cholera and other water-borne disease have occurred in informal settlements in the city, where inadequate sanitation facilities forced the disposal of waste in areas where groundwater is collected (Water Aid, 2003; Kyessi, 2005). The improvement of sanitation services are thus inextricably linked with those of water provision (World Bank 2006a).

6.4 COMEQS and Tariff Bundling: Contending with Community Dynamics

Understanding community dynamics is important in assessing how stakeholders interact with each other and the community in the provision of services. Both the state and non-state research participants confirmed that diverse community dynamics have different competing interests. COMEQS is a project, which was initiated by Care International in partnership with PPHPZ, LWSSC, LCC and Chipata Water Trust. The literature informing this research assessed participatory water governance in several informal settlements in Accra with a focus on Local Water Boards, which are described as citizens' associations that promote community engagement. The research in Accra found that the boards do enable a certain level of citizen engagement in addition to responsibilities related to water distribution and payment collection (Leila, *et al.*, 2013).

In tariff bundling, the cost of the water was found to have been bundled with the cost of solid waste collection to maximize waste management through COMEQS. It is argued that contrary to expectations and aim of COMEQS, tariff bundling project is driven and pulled in different

directions by actors such as civic leaders, political leaders and other state and non-actors thereby creating contested conflicts among actors who may want to take COMEQS project for their political and personal gain. Additionally, there are many emerging private boreholes and indiscriminate disposal of garbage around the settlement since tariff bundling began. In addition, private borehole owners and other operators in Chipata settlement have formed an informal coalition to supply water to the public with the support of other civic leaders. Thus, as urban civil societies in Zambia are growing quickly and becoming extremely varied, it is of great importance to study how these organized initiatives relate to each other.

In trying to meet the high demand of water, community members are drilling private boreholes producing spatial expression, which are highly contested within the space. This is similar to Lourenço-Lindell (2002) and Halfani (1997) who contends that in many African cities, with extensively informal systems of service provision and livelihoods, popular groups have devised their own sets of rules for regulating relations irrespective of state policy or approval. It is thus argued that LWSSC and Chipata Water Trust has failed to supply adequate and safe water in order to meet the ever increasing population in the area giving rise to the establishment of illegal private borehole who are selling water without taking waste collection into consideration. This has attracted residents within and outside Chipata settlement to start dumping their garbage illegally into Chipata settlement at the expense of community residents who are paying for waste collection.

The emergence of these community dynamics is posing a challenge to Chipata Water Trust as most customers have stopped buying water from the scheme hence they are losing business to the private borehole owners. Chipata Water Trust is thus grappling with challenges to deal with ever-increasing garbage accumulation. This implies that practices of governance also occur beyond state institutions and involve a range of non-state actors such as private sector enterprises, which appear to play an increasing role in many places, in the context of models of governance that advocate the privatization of basic services (Lindell, 2008).

6.5 Actor responsibility in water provision: A network of associations in action

Both formal and informal actors exist in the provision of water in Chipata settlement. Formal actors were those licensed and therefore legally recognized to operate in the provision of water while informal actors involved those who were not licensed but carried out the business of

selling water to households in Chipata settlement. The actors perform diverse but complementary responsibilities which includes provision of water and sanitation project planning and implementation, project funding, community mobilization and sensitization, regulatory roles, provision and maintenance of services and provision of checks and balances for improved water and sanitation services in Chipata settlement.

The research shows that in principle the dominant water actor is the LWSSC, which is a license holder that has the mandate to supply water to all residents of Lusaka Province. Further, the public utility company plays monitoring roles on the standard and quality of water supplied to the public. This is confirmed in Beekman *et al.* (2016:31), "Lusaka water and Sanitation Company is the sole commercial utility providing water supply and sanitation services to Lusaka residents in both the Peri-urban and planned urban areas". However, it is argued that LWSSC have minimal spatial coverage in the informal settlements in Lusaka compared to huge coverage it has in the formal residential places.

Further, despite actors such as MCA, LWSSC, LCC, NWASCO, MWDSEP, WARMA, NGOs and other community structures working together, the partnership is weak and faces numerous challenges due to differences in philosophical approach. In addition, MCA has its own agenda drawn from the investment master plan of 2009 that portrays mostly top-down paradigm in its approach. In addition, the research brought to light that MCA projects are not well understood by community residents as they are just informed on what it intends to do to improve the livelihoods of people in the informal settlements and the levels of community participation is low. It is thus argued that in as much as State-led projects are important in providing services; they tend to be ineffective in urban development processes. The study results correlates with the findings of Turner (1978) who argues that urban development through public provision of housing and basic services based on highly scientific and bureaucratic approaches, often involves coercion, high costs and inefficiency. As a result, Turner favors 'slum upgrading' projects where governments aim to improve the environment of squatter settlements by providing waste collection, water and sanitation services, public phones and street lightening through community participation.

In addition, there has been less genuine collaboration among state actors with community members especially at grassroots level due to rapid involvement of political influences and

corruption resulting into conflicts and failure of inclusive development. It is commonly agreed that effective water and sanitation delivery relies on strong institutions and good governance so that all people, even the poorest, receive water effectively and can use it to serve their needs (Bakker *et.al.* 2008; Hardoy, 2005). The engagement between the local authorities and civil society groups does not occur in a constructive discursive space that allows for deliberation and the shifting of positions. Similarly, these engagements does not support a shift towards more inclusive development and actors have become polarized (Bond, 2012; Macleod, 2014). Akin to Joshi and Houtzager (2012) multiple actors have developed a number of different platforms and social accountability to engage with its citizens. The actors tend to control the engagement and flow of knowledge between itself and its citizens mainly for the purposes of receiving feedback from clients regarding its innovations. It is argued that infrastructure violence and splintering urbanisms are shaping waterscapes as water flows in the direction of power (Graham and Simon, 2001)

6.6 The Role of Non- Governmental Organization

Further the collaboration of Non-government organization such as Care International and PPHPZ in the capacitation of community residents in water and sanitation services in the informal settlements is cordial. In addition, PPHPZ is working in partnership with LCC, LWSSC, MCA, Care International and mostly importantly the community leadership structure to mobilize and advocate for active community participation for inclusive service delivery for the urban poor. Akin to Peyroux *et al.* (2014) who argue that policymaking for more inclusive development increasingly needs to be carried out through networks of actors who are relatively stable sets of independent, but operationally autonomous and negotiating actors, focused on joint problem solving.

In addition, PPHPZ is working in fighting poverty and homelessness in the informal settlements by doing precedence setting to try to empower poor people by constructing low cost houses and Eco-san toilets which are environmentally friendly and capacitate community residents in COMEQS project. The role of NGOs in Chipata settlement is important in ensuring a successful engagement between state and non-state actors (Mitlin, 2008; Watson, 2012; Pal, 2006). This implies that most non-governmental organizations are working closely with the community and are advocating for community-led projects in Chipata settlement for inclusive sustainable in

water and sanitation development. Chipata Water Trust is another community-based actor in water provision whose main responsibility is to supply water to the residents of Chipata settlement to a population of about 123,000 people. In addition, Chipata Water Trust is the only legal and licensed community water vendor mandated to provide water to all residents of Chipata settlement through water kiosks and individual connections. However, the partnership with civic leaders such as the Ward Councilors and WDCs is weak and is characterized by lack of transparency, power interests, conflicts, uncoordinated programs and political antagonism. These findings are in consistence with the findings of Dierwechter (2006), who argues that multiple actors at different scales, embedded in both formal and informal institutions, construct discourses and practices to produce urban space within particular social, economic and environmental settings.

In addition, the role of informal private water vendors is always criticized and often considered inferior to those provided by the formal network as they operate illegally under compromised conditions in terms of quality and standards. However, a considerable proportion of urban dwellers in developing countries, especially in unplanned settlements, rely on a wide range of small scale providers whose services are vital in the absence of alternatives. This research views water vendors and other private small-scale projects in a much more positive light. Their good local knowledge, innovative and responsive business practices are recognized (McGranahan *et al.*, 2006). As Conan and Pariagua (2003) suggested small scale water providers should be integrated into the formal water sector and encouraged to expand their investment in order to improve the services to the poor in the Peri-urban areas. It is argued that improving the conditions of access to safe water in slum areas requires multi-dimensional interventions, including policies to address the problems of tenure, urban planning, relocations and housing finance which are beyond the responsibility of the private sector. As argued by World Bank (2006b) that recognition of small scale providers to improve the access of water to poorer communities through legal, contractual, regulatory and policy adjustments that allow flexibility are important.

6.7 Project Emphasis: The difference is in the approach

The focus of the development issue in Chipata settlement is different from the conventional approaches to the provision of water and other services in Zambia. The emphasis is on ensuring

in-situ partnership-based among stakeholders to collaboratively provide water and sanitation services in the area. Steins and Edwards (1998) explain that multi-stakeholder platforms for water management are institutional innovations for combining the diverse agendas of a number of actors who recognize a common management problem and realize their interdependence in solving it. Residents of Chipata settlement have mobilized themselves through a local grass root federation in order to fight poverty, homelessness and services delivery through its alliance with ZHPPF. The study further shows that through the grassroots savings movement known as 'Swalisano' Urban Poor Fund' the Chipata Settlement Federation has improved the livelihoods of its saving members as they able to construct Eco-san toilets and start some other businesses. This has helped to alleviate poverty levels among the residents across the informal settlements in Lusaka.

Similarly, civil society groups may represent group interests and engage with the State to defend these interests and may perform gap-filling functions by delivering basic services and addressing material needs (Lindell, 2008). It is argued that civil groups such as NGOs often contain internal power structures aligned along gender, ethnic and class lines and struggles for influence for the urban poor. In the same way, civil groups often regulate access to resources, establish rules of conduct and become sites of governance in their own right (Lindell, 2008). The communities of Chipata settlement through its partnership with PPHPZ/Care International have prioritized and developed different models in water and sanitation practices in which communities are key participants. For example; 60 percent of respondents confirmed that residents have been obtaining loans for income generation to improve their livelihoods as well as to construct low-cost housing units and environment friendly Eco-toilets in the area. This implies that most stakeholders' especially Non-governmental organizations are working closely with the community and are advocating for community-led projects in Chipata settlement for inclusive sustainable development.

Akin to Siame (2013) stipulates that Langrug community partnership in South Africa with other civil society groups achieved considerable results in upgrading toilets and water points into better facilities and turned them into clean communal centers for promoting learning and literacy**.** On a similar note, Gupta *et al*. (2015) assume that inclusive development is one that includes a wide range of actors, most particularly those that are marginalized and vulnerable, in

social, political, environmental and economic decision making, and which considers the local context. In addition, Ahlers *et al.* (2014) go further to assume that collaborative arrangements in which users, providers, policy-makers, and government authorities interact through a dynamic set of social and material relations to access, provide and control water supply is the way forward for achieving meaningful and inclusive development in the provision of water and sanitation for all. It is thus argued that when stakeholders directly involve communities, their participation will improve outcomes by taking into account local knowledge that can lead to more effective monitoring

6.8 Unmasking institutional power relationships: grassroots inclusion or political patronage?

The role of resources mobilization in influencing the balance of power and stakeholder relations is important in understanding how different institutions interact to help shape service delivery in Chipata settlement. In addition, discrepancies and inequality in local access and supply of services are mainly rooted in stakeholders and political choices administered by unequal power relations. Chipata settlement is facing many challenges in the issues of power relations. Foucauldian concept of power describes social relations as "moving substrate of force relations which by virtue of their inequality constantly engender states of power which are always local and unstable" (Foucault 1998:93). This research reveals that the State and non-state structures are among institutions that have been actively involved in the provision of water and sanitation in Chipata settlement. Accordingly, multi-stakeholder is faced with dynamic power relations with challenges mainly being induced by the desire by some institutions to dominate and control the partnership, the community and program resources. Similarly Robins *et al.*, (2008) argue that these states of power are generated from the inequality of societal relations and the nature of the postcolonial states. Further, the study brings to the attention that these actors do not operate at the same scale and have varying capabilities in terms of resource contribution, networking, vision, plans, control and how they relate with one another.

Drawing from research findings in chapter five, the state through LWSSC, MCA and LCC emerged as the main and most powerful government institutions in the provision of water and sanitation in the area. Although in their daily activities, actors seem to be having cordial relationships; it is argued their relationship with each other and other stakeholders is weak and

superficial as it does not depict genuine collaboration. This study points to the fact that other stakeholder's feel they contribute more than others do in terms of finances, resources mobilization, and technical work and this has resulted in some stakeholders having too much power and control over others. Akin to Roy (2009) informality is at the very heart of the state and is an integral part of the territorial practices of state power

Further, many stakeholders have not fully involved each other and the community participation, as most deliberations are informative. Akin to McFarlane (2012) explains that contemporary governance regimes and policy arenas in the South are criticized for a lack of participation and deliberative decision making that undermines inclusive development. Drawing from these results, governance policies relating to water use and access should be developed based on consultations with local residents, including direct engagement with the poor on their water priorities and needs (Ahmad, 2003; Goldin, 2013). As supported by Ostrom (1990) direct participation and involvement by local community will improve outcomes by taking into account local knowledge and will result to more effective monitoring when. However, this is contrary to the findings of Harris (2009) who argues that when community participation is not coupled with resource capacitation, it can represent a transfer of responsibilities to communities or certain segments of the population, such as women or the poor.

Additionally, other literature confirms that devolution of governance responsibility to local communities can involve the capture of resources by local elites resulting in participation that is not meaningful. For example, attendance of meetings by local community but unable to contribute effectively which entrenches power dynamics and further marginalizes vulnerable community members (Kesby, 2005; Harris, 2009). It is thus argued that for sustainable results to be achieved in water and sanitation there is need for community led multi-stakeholders to collaborate through mutual, transparent and democratic deliberations in which all their concerns and worries can be actualized. The research stresses that there must be a shift from top-down approach to inclusion of non-state actors in decision making of water governance as multiple actors interact to shape the rules and processes that are needed to manage and transform cities.

In addition, some actors indirectly claim to have the right to dominate the partnership and to control the development activities as they feel that they contribute more resources that others. Mayo and Moore (2002) argue that where collaboration efforts occur, power, authority and

struggle to control resources are likely to be dividing factors. In reality, the phrase "water flows in the direction of power" has been the prevailing situation (Boleans and Davilla, 1998:447). As commented by Bevir and Rhodes (2003) who relate networked forms of governance to a hollowing-out of the state. This implies that water does not only differentiate public opinion but fragments urban space into areas with and without water especially in cities of the south. Consequently it is argued that these differences in terms of institutions structural compositions, varying interests and agenda and institutional philosophical underpinnings has created silent conflicts, mistrusts, lack of transparency and scanty coordination towards issues of water and sanitation in the informal settlements in Lusaka. Akin to Lindell (2008) who adds that governance is analyzed by looking at the politics, power relations and multiple actors more or less involved in decision-making at multiple geographical scales.

In addition, the relationship between the local community structures and many state actors exercising governance is weak and is characterized by lack of mutual recognition and the absence of a commonly agreed set of rules. The relationship between Chipata Water Trust and the Ward Councilor is very weak. In addition, it is characterized by political patronage and political inclinations, personal gains, and lack of transparency among the civic leaders. Akin to Lindell (2008) alliances and cleavages in civil society certainly play a role in urban governance. The research indicates that horizontal relationship between civil groups and the civic leaders have had an influence in the internal relations of individual groups such as private boreholes. It is argued that for inclusive development to occur there must be genuine collaboration among the local structures which should take the interests and innovations of community residents, Chipata Water Trust and the local authorities into consideration. The governance of water in Lusaka's urban poor is not based on stakeholders mechanisms shared mutual interests or basic set of rules governing the interactions among different actors rather governance appears to lack any resemblance of coherence and to be more fragmented, disjointed and split by deep antagonisms. This is in line with the findings of Robins *et al.,* (2008) who asserts that actors are conflicted in practice and state is a divided entity. Thus, in Chipata settlement, actors have divergent views and interests pulling COMEQS project in different and opposite directions. It is argued that there is a limited space for social dialogue and deliberations needed among actors and this has propelled segregated decision-making processes.

In addition, the Ward Councilor considers his office as one that is mandated by law to control and supervise all the development activities in Chipata settlement projects. Thus, politicians and civic leaders such as Ward Councilor play populist functions by directing the Ward Development Committee to channel water and sanitation services that tend to benefit only individuals of the same political affiliation. For example over 59 percent felt that there was an opportunity for them to create business; they drilled boreholes with the support of the Ward Councilor contrary to the goal of Chipata Water Trust. Akin to perspectives of Foucault (1994), power is not the possession of some groups or institutions rather, it is diffused through society, it circulates between people, who both exercise and are subjected to power. The collaboration of the office of the Ward Councilor with the Ward Development Committees and the Non-governmental organizations is weak citing political interference, personal gains and lack of transparency. This is contrary to the recommendations of UNDP (2004) which explains that good water governance is based on principles of good governance, which include equity, efficiency, participation, decentralization, integration, transparency and accountability.

This research indicates that the stakeholders have different interests that do not portray common interest of the grassroots. For example, the suspension of the WDCs in Chipata settlement by LCC is a major setback in the democratic and transparent governance of water and sanitation in the area. Moreover, civic leaders in the local authorities have not effectively engaged the community since the WDC, which is supposed to act as a conduit for democratic deliberation with the residents, has been suspended. Similarly Blakeley (2005) and Mitlin (2004) supports that there is an increasing occurrence of persuasive forms of public participation, whereby local governments use top-down strategy for the delivery of local services utilize community groups and social networks.

Similarly the relationship between the new WDC, which was appointed by the LCC and the community-based organizations, is weak and is characterized by segregation, intimidations, threats, lack of inclusiveness and transparency in the provision of the water and sanitation. This is in line with the findings of Fernandez-Maldonado (2007) who asserts that in the process of urban development, the gap between the haves and the have-nots is increasingly evident and the urban space is fragmented by a tendency towards discrimination and social environmental conflicts. Similar to these findings, Shah and Schacter (2004:2) stipulates that corruption, lack

of integrity, unethical and dishonest conduct whether originating from the private, public or community sector associated with weaknesses and failures in the water governance are critical generators of conflict, tension, and mistrust. In addition, corruption manifests itself both as bureaucratic or petty corruption in which a vast number of officials abusing public office extract small bribes and favors and as grand corruption and as state capture.

It is therefore argued that for development to be inclusive, it must be supported by participatory governance that includes State and non-state actors, with decisions being deliberated and made as close as possible to where they happen and have impact, which is usually at the local government level (Ribot *et al.,* 2010; Behagel, 2012). It is thus argued that processes in which power is practiced among national government agencies, local authorities and provincial government and non-state actors is of great importance in shaping water and sanitation programs and initiatives. As supported by Watson (2003) that actors have divergent professional and survival interests, conflicting visions on the settlement, materialistic and social identities which have all propelled segregated decision-making processes, limited spaces for social dialogue and deliberations needed for integrated community planning and service delivery. Further, actors have failed to create inclusive, sustainable and effective water and sanitation production approaches and the everyday practices and urbanisms in water and sanitation services in Chipata settlement remain dynamic, organic and contested. It is thus argued that institutional arrangements for effective community driven multi-stakeholder require self-organized institutional systems for negotiating partnership dynamics.

6.9 Challenges surrounding stakeholder collaboration: Appreciating challenges

Stakeholders in Chipata settlement are employing different strategies to cope with a challenging water environment and largely low-level conflict and power ridden water partnership at the local scale. There is no trust among selected political and non-political structures. This has been powered by poor communication among stakeholders and civic leaders. There are views that community leaders are intrusive in the political sphere and that they override the authority of politicians and civic leaders. There is lack of collaborations between the community and civic leaders.

In addition, the municipality and the Ward Councilor subject partners and community structures to rigid procedures and processes in the collection of waste by the CBEs creating politically

charged atmosphere in the area. The office of the Ward Councilor and the civic leaders has engaged their cadres and other people of their preference to collect waste in the area. In addition, both State and non-state stakeholders are not comfortable to have political structures drive water and sanitation projects, as they fear that local politics would take over the project. Similarly, Pal (2006) contends that political structures are not the best vehicles to promote participation of the local marginalized populations. This is so because politicians tend to operate on partisan lines and this would frustrate the urban poor in community driven projects. There is a view that community leaders and other grass root partners are overruling the authority of politicians and civic leaders. It is argued that communities are not difficult to deal with as evidenced by their collaborative participation in local federation in which members of the community learn to sustain their financial schemes by paying or contributing towards construction of improved eco-san toilets.

Furthermore, community achievement in Chipata settlement is highly shaped by the emphasis on the use of dialogue to resolve conflicts and this is similar to recommendations by Gualini (2001). In trying to resolve conflicts emanating from highly charged political environment, State and non-state stakeholders in Chipata settlement avoid using confrontational means instead they resort to democratic and peaceful dialogue. Similarly, Siame (2013) contends that the presence of political cadres, weak savings schemes, and poor federating culture, limited resources, and weak WDC structures, imbalances in power relations, political divisions and lack of a warm atmosphere between the political and non-political players are among challenges faced by actors in service delivery. This has created in balances in the delivery of water and sanitation in Chipata settlement. There is also lack of equity in the distribution of power and influence within the partnership, such that "without the presence of a strong and trusted local leadership, the partnership would have suffered elite capture" (Pal, 2006:517).

6.10 Integrated development planning: What is the position of stakeholders

Over 70 percent of the respondents revealed that Integrated development planning is likely to promote bottom-up planning for local development in which different multi-stakeholders agendas will be speaking into other stakeholders within the designed systems and this will move the project forward and bring holistic development. Akin to Mogaladi (2007) Integrated development planning is an approach designed to address poor planning of the past in order to

ensure sustainable rural development and provision of infrastructure. It is thus argued that service delivery, which is defined as a strategic action by local government to facilitate the provision of infrastructure to rapid expanding population areas, is cardinal (Harper, 2000). Further, Visser (2001) adds that within government, integration will promote communication and interaction between the work of local government and external departments to facilitate development and service delivery in a sustainable manner. Based on Habermas' work (1989) communicative action in planning aim at creating an ideal speech situation, where different interests take part in undisturbed communication in order to reach a consensus concerning goals and formation of the planning processes (Flyvbjerg and Richardson, 2002:46).

In addition, integrated development planning is likely to align resources around the prioritized development directions of the state and its collaborators, and to ensure both horizontal integration between sectors within local government and vertical integration with other spheres of government as supported in Urban and Regional Planning Act No. 3, 2015. This is in conformity with section 19 (4) of the Urban and Regional Planning Act (2015) which states that integrated development planning of water and sanitation would align the resources and capacity of the local authority for the implementation of those components of the plans requiring the use of local resources. Similarly, Pieterse, (2004) argues that integrated development planning links a statement of purpose with plans, programs, institutional design, practices monitoring mechanisms and financial flows.

Further it is argued that IDP needs to be rooted in deep understanding of Southern urbanism and urban governance dynamics. The study indicates the need for planning to engage with institutional contradictions and the urban everyday politics of people earning a living at the margins of opportunities in African cities. Over 65 percent of the State and non-state actors indicated that the IDP approach is likely to transform planning from being a techno-managerial process to a grounded people-led process that resonates with the wishes of the people. A strong wish of the people in Chipata settlement is to be water and sanitation secure, thus, changing the urban waterscapes that requires change in the way cities are planned and developed. It is therefore argued that IDPs process should be a synchronized process were water and sanitation should go together. The role of stakeholders is to ensure the best approach that can integrate informal water and sanitation by creating a level playing field for all entities and its implication

is total inclusivity for all. In terms of governance, water and sanitation are intertwined as they ensure complete development as all plans; strategies and efforts of stakeholders seek to speak to each other.

6.11Achieving water security in IDP processes and frameworks

It is argued that the work and efforts of stakeholders must speak and uplift the water and sanitation needs for the urban poor in Chipata settlement through inclusive participations. Further, in terms of water and sanitation, integrated development planning might help to prioritize, focus and make choices that require balanced debate on holistic distribution and allocation of water and sanitation opportunities between departments and locations of poor population especially those in the informal settlements. Equally Siphuma (2009) explains that Development concept involves a stage of people's engagement throughout the decision-making process in the preparation of the IDP plans. Firman (2004) elucidates that the concept of development in the context of integrated urban development planning refers to provision and equal distribution of infrastructure between the rich and poor communities. Meaningful development thus should aim to achieve urban integration in the provision of water and sanitation by minimizing the imbalance between urban rich and urban poor areas. IDPs should therefore stimulate people-driven projects since development is about people (Siphuma, 2009). In addition, this includes developing transparent working relationships with knowledgeable individuals at national, provincial, regional and local levels. It should also involve good communication linkages with other stakeholders for effective collaboration and democratic deliberations involving the urban poor. Similarly, Landman (2000) adds that integrated development planning aims to achieve democracy, equality and integration in the IDP processes.

Consequently, integrated development planning may ensure that the decisions taken in the planning of water and sanitation target and priorities important needs and problems of the people. According toTodes (2003), planning helps the municipality to determine potential areas for investment and to decide on programs, which may have potential impacts on the urban poor. This research indicates that stakeholders should ensure to apply the best approach that can integrate informal water and sanitation by creating a platform were all stakeholders can freely deliberate for inclusivity. Healey, (1996:252) confirms that communicative rationality is the only viable alternative to "idealist fundamentalism" that is needed to enlarge and empower

current democratic processes. Similar to the findings of Mogaladi, (2007) possible solutions are explored during planning and debated with a view to plan and decide on the most effective strategy. Integrated development planning should reflect planning perspective that actively seeks to involve all relevant stakeholders in the IDP process and strive to reach a consensus network regarding the proposed outcomes of the process through meaningful discussions. The concept of communicative reason is based on inter-subjectivity and a free and equal participation of parties to a dialogue (Yilmaz, 2002:28, Booher and Innes, 1999) where it is proposed as a way to reach consensus without resorting to power and violence. It is thus argued that integrated development Planning processes need to be rooted in deep understanding of urbanisms of the community and its governance dynamics and need to engage with informality through collaborative integrated development planning.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter presents conclusions and recommendations arising from a sequence of connected arguments from research findings about how to reason and act logically in order to create water and sanitation systems that are more inclusive.

7.2 Conclusions

The findings of the study indicate that the area has four main sources of water inter alia; water kiosks, private boreholes, public utilities and shallow wells. However, private providers emerged to be the main source of water supplying to over 59 percent of the residents in Chipata settlement followed by Chipata Water Trust which serve water to 28 percent of the residents while 10 percent access water from shallow well and 3 percent access water from LWSSC. This research indicates that though in principle, LWSSC is a dominant supply of water in Lusaka Province; it has minimum coverage in the informal settlements, Chipata settlement inclusive. This research concludes that majority of the residents in Chipata settlement access water from individual private boreholes and Chipata Water Trust.

In addition, although Chipata settlement has more than 56 private water boreholes and 63 water kiosks from Chipata Water Trust in strategic points, access to clean and safe water remains a challenge, as it is unreliable and people especially women and children have to wake up early and que for many hours for the commodity. This has both cost and time implication reducing effective production on the education of the children. In terms of quality, water supplied in Chipata settlement is generally contaminated as evidenced by a high number of cholera cases in October 2017 to May 2018. Despite the increased attention that improving water and sanitation supply has gained; large parts of urban poor in Lusaka continue to lack access to safe, reliable and affordable water and sanitation services. This research concludes that Water supply for the urban poor is still characterized by inequalities in terms of governance processes, access to safe, reliable and affordable water and sanitation services.

In relation to issues of sanitation, 69 percent rely on traditional pit-latrines, 24 percent on improved pit-latrines, 10 percent relied on both pit-latrines and soakaways while 7 percent relied on piped sewer by LWSSC. Though LWSSC is mandated to manage sanitation, it has very minimum coverage in Chipata settlement as only a handful is connected to the main public

sewer system. This study concludes that the majority of the residents in the area still depend heavily on traditional pit-latrines, which are shared by more than one household. Further, the toilets are built closer to boreholes resulting to break out of water borne diseases such as cholera as a result of contamination of water.

Both State and non-state actors are engaged in the delivery of water and sanitation in Chipata settlement. The top state actor on the hierarchy is the Ministry of Water Development, Sanitation and Environment Protection responsible for development and management of water resources, provision of water supply and sanitation and environmental protection. NWASCO, LWSSC, LCC, MCA, WARMA are other state actors working together to manage the provision of water and sanitation. The informal actors include NGOs such as PPHPZ, Care International, WDC, local federations, CBOs, CBEs and the churches. However, the actors interact at different scales and the collaboration among them is weak and highly contested by differences in power relations. In addition, the collaboration is further characterized by divergent philosophical underpinnings, political interference, corruption, different power interests, visions, directions, and silent political inclinations among stakeholders.

The research has shown that in some cases, knowledge has been shared between stakeholders and has been deliberated by different actors, thereby shaping decision-making, but in other instances, it has not, creating conflicting and polarized positions on the level of social justice in the water governance system. Multiple actors in their operational spaces yield representational spaces that contain their visions, dreams, symbols and hopes of the city, as they can be transformative. Further, multiple actors struggle to emerge and in doing so achieve greater inclusiveness, remaking the dominant order as a result of failure by actors to appreciate shared water governance model. This has resulted to failure in the effective delivery of water and sanitation services and has led to uncoordinated and segregated decision-making processes creating conflicts among stakeholders. This research concludes that State is a divided entity and has no monopoly on legitimacy and usually challenged by local residents.

In addition residents have been able to organize themselves through its alliance with the ZHPPF, PPHPZ in partnership with Care International and LWSSC in the COMEQS and tariff bundling project. State agents show clear conflict of interest, for instance the Councilor and the CBEs subscription disputes and fights over contested claim on legitimacy, control and use of power.

The relationship between NGOs and the community is cordial. However, this research indicates that the relationship between the local community structures and civic leaders such as the Ward Councilor exercising governance is weak, and characterized by lack of mutual recognition and the absence of a commonly agreed set of rules. It has been argued that for sustainable results to be achieved in water and sanitation there is need for community led multi-stakeholders to collaborate through shared, transparent and democratic negotiations in which all their concerns can be represented. This research concludes that new working spaces need to be created by actors to allow for genuine collaborations that would ensure synchronized and inclusive settlement planning.

It is clear that water has been part of the planning efforts however; master plan is almost silent on sanitation in Chipata settlement. Evidence shows lack of rootedness of water interventions in institutional dynamics on water in Chipata settlement. It is further concluded that without properly situating integrated development planning within a broader spectrum of planning initiatives throughout different government spheres and stakeholders will not necessarily result in meaningful integrated development planning. The failure of most planners in achieving holistic and inclusive water and sanitation for the urban poor lies in their mechanistic approach towards planning which heavily depends on the legacy of past planning practices as well as the absence of future anticipation. Thus, the role of professionals has been critical in providing correct guidance and capacity building for the community teams clustered as community leaders, co-researchers and sector groups among others. Further, integrated development planning of water and sanitation needs to be rooted in deep understanding of urbanisms of the community and its governance dynamics for equitable planning of water and sanitation services.

This study concludes that inadequacies in effective water governance continue to limit innovations meant to increase access to safe water and sanitation services in many informal settlements in Lusaka. Key findings emanating from the study is that water service and delivery is highly contested by multiple centres of power among actors. Further, there is limited understanding among actors on how divergent power among actors re-configures the effective delivery of water and sanitation delivery in in the urban cities of the global South. Further, the study has revealed that integrating collaborative planning in integrated development plan through viable debates among stakeholders with the local community at the center may ensure

effective delivery of water services. Therefore, examining the interactions and relationships between informal and formal practices in water provision and state driven initiatives as multiple but interdependent sites of urban water governance is of great importance in achieving effective water and sanitation provision.

7.3 Recommendations

i) The study recommends the need for community-led multi-stakeholder collaboration by state agents as an alternative dynamic model that could be used to achieve sustainable urban environments and restructure institutional relationships that would arguably lead to a more successful water and sanitation service approach for the urban poor as enshrined in section 19 (4) (e) (ii) of the Urban and Regional Act No. 3 of 2015.

ii) The study further recommends the role of external actors to be carefully considered, with perhaps more effort to enable grassroots or bottom-up communication with residents, particularly to support communities as they consider whether to establish grass root structures or to pursue other participatory mechanisms.

iii) There is need to learn and share best practices from other groups among communities dealing with similar water and sanitation related challenges. There is hope regarding the benefits of participation offered by Chipata Water Trust and community local federation.

iv) In addition, the study also recommends that policy makers such as the MWDSEP through NWASCO and WARMA put measures that can integrate local community and private water initiatives while regulating their operation. This will ensure a coordinated and collaborative approach that would promote community led initiatives that will integrate all stakeholders' views responsibly.

7.4 Areas for future research

Understanding how Integrated Development Planning as an instrument of power can be used to engage with institutional contradictions in ensuring sanitation and water security in the informal settlements of Lusaka. This may be a grey area for future research that may provide a platform on how IDP may engage with informality in providing water security.

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APPENDICES

Appendix A: Interviews with Key Informants

Interview, Scheme official, Chipata Water Trust, 9 January 2018

Interview, Community leader, 23 December 2017

Interview, Community resident, 23 December 2017

Interview, Private Borehole Owner, 26 December 2017

Interview, Community leader, Zone 40, 26 December 2017

Interview, Executive, Department of Peri-Urban, 3 January 2018

Interview, Director, Communications MCA, 17thJanuary, 2018

Interview, Community Development Officer, PPHPZ, 9 January 2018

Interview, Community leader Zone 40, 6 January 2018

Interview, Ward Development Committee, 6 January 2018

Interview, Community Activist, 27 December 2017

Interview, Community Development Officer, PPHPZ, 6 January 2018

Interview, Ward Councilor, 6 January 2018

Interview, Water Task Force Official, Zone 19, 13 January 2018

Interview, Private Water Provider, 10 January 2018

Interview, Federation leader, 3 January 2018

Interview, Official, Water Department, WARMA 27 March, 2018

APPENDIX B: INTERVIEW GUIDE FOR LWSSC/LCC/WARMA/NWASCO/MCA

The University of Zambia
School of Natural Sciences
Department of Geography and Environment Studies
Master of Science in Spatial Planning

Topic: Water Governance Dynamics In Informal Settlements in Lusaka: The Case of Chipata settlement
Date: …….. **Time:** ……..

Declaration: the information in this interview will be confidential and will be used for academic purposes only as part of a Master of Science in Spatial planning research at the University of Zambia, Lusaka Zambia. Please answer all questions, try to be as specific as possible and focus answers on the Chipata settlements where possible (or specify otherwise).

Part One: Actors in water governance and sanitation in Lusaka.

In relation to the provision of water and sanitation services in Chipata settlement:

1. Who are the main actors in water and sanitation delivery services in Lusaka?
2. What are their main responsibilities?
3. Under the current situation, is your institution mandated to cover informal settlements in Lusaka? If yes, what standards guide water and sanitation services in informal settlements including Chipata (how much water is supplied to Chipata informal settlement?
4. If no, who are alternative providers of water and sanitation in Chipata settlement?
5. a) What are the challenges if (any) faced by your organization in the supply of water to residents in Chipata settlement and why?
   b). How are you currently addressing the water and sanitation problems in Chipata settlement?

Part two: Actors and power relation in water and sanitation provisions in Chipata settlement?

1. What is the number of licensed water vendors (if any) in Chipata settlement?
2. Is there an interconnection between community practices in water provision and multi-stakeholder initiatives in water and sanitation provision in Chipata Settlement? If yes, how are communities and multi-stakeholders relate in the provision and governance of water and sanitation services?
3. If no, how is water and sanitation services governed in Chipata settlement?
4. What platforms do you use to engage with community structures in providing water services in Chipata?
5. How does this relationship help create efficient water and sanitation management structures in the area?

6. Is there a plan to completely cover the area with piped water? If yes, what is the time scale?
7. What advice would you give to other water operators in order for them to operate efficiently?
8. How is the tariff bundling being implemented and who is the main beneficiary?
9. Who made this decision to introduce tariff bundling in Chipata settlement?
10. How are NWASCO guidelines and standards being adhered to in the tariff bundling project in Chipata settlement?

Part Three: Policy guidance and planning

1. How is your organisation taking water and sanitation into integrated development planning approach?
2. What is the implication of integrating water and sanitation into IDP in informal settlements in the City?
3. What internal policies guide your organisation/Ministry/Agency?
4. What external policies guide your organisation/Ministry/Agency?
5. What are the strengths of these policies?
6. What are the weaknesses of these policies?

Part Four: The Role of Institution/Agency/Ministry

1. What role does your organisation/Ministry/Agency play in ensuring water security in Lusaka's informal settlements?
2. Does your organisation/Ministry/Agency interact with community in the provision of water and sanitation services in area
3. If yes, how does your institution relate with the community initiatives in the governance of water and sanitation in the area?
4. How does this relationship help create current governance structures in water and sanitation services in the area?
5. What informal or formal arrangements does your organization/Ministry/Agency have with community-based governance structures?
6. How does community leadership support water secure Chipata settlement?
7. What community dynamics support or hamper efforts to ensure water secure Chipata settlement?

Part Five: The influence of politics

1. To what extent, if at all, has political interference influenced the planning of water and Sanitation services in informal settlements of Lusaka?
2. What type of political interference have you experienced in delivering water and sanitation services?
3. How do the area councillor and ward development committee support or distract water services' delivery in Chipata settlement?
4. How do Community-Based Organisations (Churches, NGOs, resident, community lobbyists) influence the water sector in Chipata settlement?

5. How do donors and the private sector shape your efforts to improve water in Chipata settlement and other informal settlements in the city?
6. Describe the interface between your organisation and community leadership structures in delivering water in Chipata?

Part Six: The current state of water supply/sanitation and the role of new inhabitants

1. What is the meaning of water and sanitation security in Zambia and Lusaka in particular? Explain this in relation to water and sanitation supply in informal settlements?
2. Who is the custodian of standards in water and sanitation and land use in Lusaka or Zambia?
3. What is the current state of water supply in Chipata settlement?
4. What are new inhabitants in these areas doing to assist or hinder the supply of water in?
5. What is the current state of water and sanitation services in Chipata settlement?
6. What are new inhabitants in these areas doing to assist or hinder the improved sanitation services in Chipata settlement?
7. How does informality (operations, legal status of the settlement, water connections) affect water and sanitation security in Lusaka informal settlements or upgraded settlements?

APPENDIX C: INTERVIEW GUIDE FOR FOCUS GROUP DISCUSSIONS

The University of Zambia
School of Natural Sciences
Department of Geography and Environment Studies
Master of Science in Spatial Planning

Topic: Water Governance Dynamics In Informal settlements in Lusaka: The Case of Chipata settlement
Date: …….. **Time:** ……..

Declaration: this information is confidential and will be used for academic purposes only.

1. Who are the main water providers in Chipata settlement?
2. What is the current water situation in Chipata settlement in terms of?
3. What are the key factors responsible for the current water situation?
4. How can the situation be improved?
5. How would the improvement affect your daily activities?
6. Who makes decisions on issues of water and sanitation in Chipata settlement?
7. What platforms and processes do residents in Chipata settlement use to participate in the water governance?
8. How does the current water governance affect water security in Chipata settlement?
9. What changes would suggest to the current water governance in Chipata settlement?
10. What role can community level structures play to ensure water security in Chipata settlement?
11. How has lower level governance structures (Ward Councilor, Water trusts, NGOs, neighborhood Watch) worked with higher-level governance structures (NWASCO, LWSSC) in water and sanitation delivery in Chipata settlement?
12. What are the sources of misunderstanding and conflicts in the water and sanitation delivery in Chipata settlement?

APPENDIX D: INTERVIEW GUIDE FOR HOUSEHOLDS

The University of Zambia
School of Natural Sciences
Department of Geography and Environment Studies
Master of Science in Spatial Planning

Topic: Water Governance Dynamics In Informal settlements in Lusaka: The Case of Chipata settlement

Section name: …..... Date……

Declaration: the interview is conducted to gather information regarding the provision of basic water and sanitation services in selected informal settlements in Lusaka. This is a research study for a Master of Science Degree in Spatial planning at the University of Zambia. The interview will take approximately 30 minutes.

Section A: General information

1.	Gender of respondent (Male/Female)	
2.	Age of respondent	
3.	Family Size (number)	
4.	Length of stay at dwelling (years)	
5.	Head of family	
6.	Size of dwelling (sq. m)	
7.	Ownership Status Owned/Rented	
8.	Main Source(s) of Income	
9.	Highest level of education	
10.	Employment status(single, married, divorced, widow)	

Section B: Access to water

11. Type of water facility		
House connection/ piped water	Yes/No	
Stand pipe	Yes/No	
Borehole	Yes/No	
Protected well	Yes/No	
Open well	Yes/No	
Rain water tank	Yes/No	
Other (include tankers services and vendor)	Yes/No	

12. What is the current state of sanitation and water supply in Chipata settlement? Describe the situation.
13. Are there records or incidents of water pollution in the area? (Describe the situation or the incident)
14. If no, how do you know that the water you are drinking is safe and clean?
15. Describe any water service providers (by category below) and their services, if any:

    Category 1: (for supplies within the home- own supply)

    How did you get this supply?

    Category 2: (for point source supplies outside- communal boreholes/ wells/ stand pipes)

    How did this come about? Who initiated it? Who manages it? What are regulations governing these water sources?

    Category 3: (external suppliers, examples, kiosks, vendors and tankers)

    How did this come about? Who initiated it? Who manages it? What are the obligations of users and supplies?

16. Describe any challenges regarding access to water

For respondents served by piped water

17. If you are connected, how often do you get your bills?
18. Do you sell water to your neighbours? If yes, how much per 20litres container?
19. Are there water restrictions (access) in the neighbourhood? Explain these.

For respondents served by standpipes and water kiosks

20. Do you have complaints concerning the location of the water point from your premises?
21. If yes, how far/ near to your home would you like it to be located from your premises? Explain
22. Who is currently responsible for managing the water points in the area?
23. Are there any issues or problems in the water governance in the area? Describe
24. Who is best placed to deal with the complex water issues at community level? give reasons

For respondents served by mobile water vendors

25. How are you supplied with water?
26. In case of improvement of water supply services, are you willing to be connected to water supply? Explain.
27. In case of a kiosk selling water from a pipe connection, what are you prepared to pay per 20 litres container?
28. In your opinion, who can be relied upon for effective water supply and management and why?

Open discussion

29. What do you consider the biggest problem with water Provision in the area?
30. What other problems do you encounter because of the water and sanitation problems in this neighbourhood? explain
31. How are decisions made in the water sector in Chipata settlement? explain
32. Who has the mandate to ensure water security in Chipata settlement and how accountability is ensured?

Section C: Water Consumption

33. What are main water sources and the distance to the sources of water? Describe

Section D: Access to sanitation

34. What sanitation facilities are you using?
35. How did you get this toilet?
36. Describe any challenges regarding access to sanitation.
37. Who is mandated to ensure water and sanitation security in Chipata settlement?

APPENDIX E: CHIPATA SETTLEMENT OBSERVATION CHECKLIST

S/N	Spatial attributes	Characteristics	Description	y/n
01	Settlement layout	Planned versus unplanned layout	Amount of drainage, open space available,	
02	Housing Infrastructure	Buildings Materials	Corrugated iron sheets, plastics, bricks, cardboards	
		Density		
03	Water and sanitation infrastructure	Water kiosks, wells, waste solid collection point, type of sanitation,	Nature and number of kiosks, unprotected and shallow wells, unimproved pit-latrines,	
04	Engineering services	Roads	Tarred vs gravel	
		Water and sanitation	Toilet facilities and reservoir	
		Waste management	Presence of dumping ground/landfills	
		Storm water drainage	Presence of manholes	

APPENDIX F: INTERVIEW GUIDE FOR WATER OPERATORS IN CHIPATA SETTLEMENT

The University of Zambia
School of Natural Sciences
Department of Geography and Environment Studies
Master of Science in Spatial Planning

Topic: Water Governance Dynamics in Informal Settlements in Lusaka: The Case of Chipata settlement
Date: …….. **Time:** ……...

Declaration: the information in this interview will be confidential and will be used for academic purposes only as part of a Master of Science in Spatial planning research at the University of Zambia, Lusaka Zambia. Please answer all questions, try to be as specific as possible and focus answers on the Chipata settlements where possible (or specify otherwise).

1. Name of respondent
2. Age
3. Name of water provider
4. Place of residence
5. Sex of respondent
6. How long have you been supplying water in this area?
7. Where do you obtain the water to sell?
8. For how much do you buy the water and at how much do you sell (subscription fees)?
9. What mode do you use to supply water?
10. What problems do you encounter in water delivery in this area?
11. Based on your experience in water services in Chipata settlement, how can the water situation be improved in Chipata settlement?
12. How would the improvement affect your operation in this area?
13. Do you work with other organizations in providing water services in the area?
    If yes, how do you relate with the other stakeholders in the provision of water services?
14. Who do you think should be responsible for the management and improvement of water and why?
15. What improvements can be made to the water and sanitation in Chipata settlement?

APPENDIX G: INTERVIEW GUIDE FOR WARD DEVELOPMENT COMMITTEE/CARE INTERNATIONAL/PEOPLES PROCESS ON HOUSING AND POVERTY IN ZAMBIA /CHIPATA WATER TRUST

The University of Zambia
School of Natural Sciences
Department of Geography and Environment Studies
Master of Science in Spatial Planning

Topic: Water Governance Dynamics In Informal Settlements In Lusaka: The Case of Chipata Settlement

Date: …….. **Time:** ……...

Declaration: the information in this interview will be confidential and will be used for academic purposes only as part of a Master of Science in Spatial planning research at the University of Zambia, Lusaka Zambia. Please answer all questions, try to be as specific as possible and focus answers on the Chipata settlements where possible (or specify otherwise).

1. What constitutes the structure of your organisation?
2. What are the main responsibilities of your organisation in Chipata settlement?
3. Are there any ongoing water and sanitation projects in Chipata settlement?
4. If yes, describe how this is governed and managed?
5. Who is funding the project?
6. What is the duration of the project?
7. Are there any other actors you are working with in the implementation of water and sanitation provision in Chipata settlement? What are their responsibilities?
8. How are you taking issues of water and sanitation into integrated development planning in Chipata settlement?
9. What are the challenges if (any) faced by your organisation in implementing the water and sanitation project in the area?
10. Is there an interconnection between community practices and multi-stakeholder initiatives in water and sanitation provision in Chipata Settlement?
    If yes, how does these stakeholders relate with the community initiatives in the governance of water and sanitation in the area?
11. How does this relationship help create efficient water and sanitation governance structures in the area?
12. What platforms do you use to engage with multi-stakeholders structures in implementing water and sanitation projects in Chipata settlement?
13. Describe the interface between your organisation and community leadership structures in delivering water in Chipata settlement?
14. What multi-stakeholder dynamics support or hamper efforts to ensure water secure in Chipata settlement?
15. Do any of these institutions undermine the efforts of your organisation to improve water supply and sanitation services in the Chipata settlement? If so, how?
16. How do donors and the private sector shape your efforts to improve water in Chipata settlement and other informal settlements in the City?

17. To what extent, if at all, has political interference influenced the planning and implementation of water and Sanitation provision in Chipata settlements of Lusaka?
18. What type of political interference have you experienced in delivering water and sanitation services in Chipata settlement?
19. How do community-based organizations (Churches, networked NGOs, resident membership organisation, community lobbyists) and broker power influence in the water and sector in Chipata settlement?

20. How is the tariff bundling being implemented and who is the main beneficiary?
21. Who made this decision to introduce tariff bundling in Chipata settlement?