Commercialising Zambia's Urban Water Services: A critical analysis

Makondo Kabinga

KBNMAK001

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Declaration

I, Makondo Kabinga hereby declare that this work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

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Abstract

This research critically analyses reforms undertaken in Zambia's water sector. Its main focus however, is on the corporatisation of Zambia's urban water services. The objective is to apply some selected indicators of water services improvement to establish whether the commercialisation of urban water services has improved water service delivery. The research uses qualitative and quantitative literature and generally relies on secondary data. Therefore, it is an exhaustive literature review of the available electronic and hard copy sources. Of particular relevance to the research are the National Water and Sanitation Council's (NWASCO) sector reports, which are comprehensive records of the performance of Zambia's Commercial Water Utilities (CUs). The significant finding is that the CUs that were established as a result of corporatisation have succeeded in marginally improving water service delivery in Zambia and this supports the research's hypothesis. The main conclusion is that while an improvement on some indicators has been recorded there are areas that still pose a challenge such as the affordability of water charges. Thus, there is a need for the CUs to sustain the improvements achieved in the water sector and improve on the indicators that have recorded negative results.

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Dedication

I dedicate this Masters dissertation to the wind beneath my wings; a woman from whom I draw wisdom and inspiration, a true paragon of beauty, a friend and a mentor my mother Beauty Booth Kayoba Kabinga. I am indebted to you for the lady I am today. I love you dearly.

List of Abbreviations and Acronyms

CU	Commercial Utility
DTF	Devolution Trust Fund
GRZ	Government of the Republic of Zambia
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
IFI	International Financial Institutions
IMF	International Monitoring Fund
NPM	New Public Management
NWASCO	National Water and Sanitation Council
OECD	Organisation for Economic Cooperation and Development
TPA	Traditional Public Administration
UN	United Nations
UNDP	United Nations Development Programme
WB	World Bank
WHO	World Health Organisation
WSS	Water Supply Services

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CHAPTER ONE: Contextual Overview

1. Introduction

This research is an evaluation of privatisation policies in Zambia. The focus however, is on the corporatisation of urban water services in Zambia and whether it has improved water service delivery. This chapter sets the context for the research and clarifies the focus and time period covered in the research, as well as the overarching research question, research methodology and ethics, research limitations and more importantly the indicators of water service delivery improvement that will be used in this research.

1.1 Background to the research

In a considerable amount of literature water has been described as a human right, crucial for leading a life with human dignity. Access to safe water is also a prerequisite for the realisation of other human rights. The World Health Organisation (2003:7) expresses this view by arguing that "lack of access to safe water has a major effect on people's health. Poor health constrains development and poverty alleviation…education." In fact, according to 'Maslow's hierarchy of needs,' "attempts to satisfy the higher order needs of society would be pointless; unless and until satisfactory progress has been made towards addressing lower order basic needs," (Moeti and Kalo, 2008:220) such as the need for food, water, shelter and clothing. Because of the importance of water, its management and provision should be prioritised by all governments. Yet more than 1.1 billion people out of 6 billion worldwide are without sufficient access to safe drinking water (UNDP, 2010).

Since the end of World War II, water provision has been primarily a state activity, executed by governments in both developed and developing countries through public utilities (also known as State Owned Enterprises) (Dovi, 2007:7). However, the recessionary conditions of the 1970s led to a water sector crisis in Africa when many suppliers found themselves in a financial impasse caused by a decline in government funding of capital expenditure. This was exacerbated by low tariffs, low billing, low revenue collections, crumbling water networks and increasing demand for water (Shirley, 2002). In an effort to remedy the poor performance

of the public utilities, governments adopted a neo-liberal model of service delivery known as the New Public Management (NPM). The NPM is a marriage of two broad orientations, managerialism and private sector involvement. At the centre of the NPM doctrine was the critique of state interventionism in public service provision. Initially, the most popular stream of the NPM was the involvement of the private sector in the "provision, administration and financing of traditional government services" (Baird, 2004:3), broadly referred to as privatisation in this research. The underlying assumption of privatisation was that the private sector, mainly multinational water companies, will come in and take over public water companies (Dovi, 2007:7).

The rationale of privatisation was that the commercial incentives of the private sector would lead to increased efficiency and huge gains for both the private operators (profit maximising and investment returns) and all services users (access to an expanded and upgraded water system). Thus, endorsed by the International Financial Institutions as an international strategy of reform, privatisation was implemented in a number of countries and was known as the first wave of neo-liberal reform. In developing countries, privatisation was a prerequisite for donor funding and debt relief and as such the World Bank and International Monetary Fund took advantage of these countries and carried out fast paced reforms (Bayliss, 2008).

However, a review of a considerable amount of literature on privatisation reveals that in most countries (especially African ones), water privatisation has left detrimental consequences in its wake. While most privatisation projects have ensured that water service providers are autonomous and uphold commercial principles in order to generate revenue this, however, has been outweighed by the demerits which range from the lack of a human face when it comes to indigent households that are disconnected for the non-payment of fees; to outbreaks of water related diseases due to the absence of water and proper sanitation; through to the absence of significant improvements in the number of people with access to safe and adequate water (Budds and McGrahan, 2007; McDonald and Ruiters, 2005; Bayliss, 2003). Moreover, Balance and Trémolet (2005:1) argue that, countries throughout African, are fraught with "a lack of sound legal systems, rampant corruption and national and regional conflicts and as such have never been the prime destination for private investments" thus adversely affecting the environment in which privatisation occurs.

However, most privatisation research suggests that over the last decade, water privatisation has been in decline. Instead there has been a leaning towards more "home-grown utility companies [corporatisation] in the provision of water and sanitation across Africa" (Padfield, 2008:1). According to Smith (2006:1) corporatisation is gaining impetus as an institutional model that promises similar efficiency gains (as privatisation) because it "can permit greater state involvement than the privatisation model and in doing so can mitigate the negative social risks." In line with this reasoning is the argument that corporatisation maintains private sector principles such as cost-recovery and the commodification of water but is a less aggressive model than privatisation (Budds and McGrahan, 2003: 94). Thus, corporatisation has been put forward as a model in opposition to full blown privatisation (Earle, 2001:2).

While studies on the performance of corporatised utilities are still emerging, the few that have been carried out reveal that the results of water corporatisation in a number of African countries have been mixed. A few successes (Burkina Faso and South Africa-Johannesburg) have been documented as well as some modest improvements (Kenya and Namibia) (Smith, 2004; Marin, Fall and Ouibiga, 2010; Magdahl, 2012). A number of scholars have also argued that while there has been little empirical evidence in the literature suggesting that the results of water corporatisation are that different from those of privatisation, corporatisation looks more promising than its predecessor (Bakker and Cameron, 2002; Smith, 2004; Chitonge, 2011; Magdahl, 2012).

Therefore, it is against this background that this research investigates whether the corporatisation of urban water utilities in Zambia has been successful or not. Specifically, the research investigates whether the corporatisation process has improved water service delivery and will centre on a case study of urban water services in Zambia. In numerous ways, the features of Zambia and its water sector epitomize those of other low income economies in Africa with, for instance, "high levels of poverty, limited access to water and a crumbling water network in the urban centres" (Dagdeviren 2008:103). For this reason, Zambia's experience with corporatisation and the lessons related to it will be exceedingly relevant for other African countries.

1.2 Focus of the research

The analysis of this research focuses on the "corporatisation" option of the NPM in the water sector of Zambia even though both elements (privatisation and corporatisation) have been present in the country's history of reform. Zambia has been selected because it has embarked on initiatives to apply private sector principles in water service provision. The reason for choosing "corporatisation" is because it is the only option which is common among water service providers in the country. A report by NWASCO (2010:2) reveals that since 2009 there are about 99% people in the service areas of the eleven Commercial Utilities (henceforth CUs) while the remaining areas, (1%) are serviced by six private schemes. Notably, the private schemes only provide water to their employees as a fringe benefit. This is the crucial distinction between the CUs and private schemes. In this regard, this research will base its analysis on the 11 CUs in Zambia.

The water services have been selected because "water is an inimitable constituent of the human body and second only to air for any beings' existence" (Roantree, 1990:351). Another reason for selecting water services is that there is a consensus in literature that water corporatisation is a condition set by the IMF and the World Bank among other International Financial Institutions, so that developing countries (Zambia inclusive) can have access to loans and debt relief (Bayliss and Hall, 2000:1; McDonald and Ruiters, 2005: 180; Mitchell, 2000:3). Furthermore, while Roantree (1990:178) acknowledges that there are different stages involved in making water fit for human consumption, as well as the dimension of sanitation which one cannot ignore when discussing water, the focus of this research is limited to "piped clean water."

1.3 Literature survey

Plenty of literature has flourished on the subject of corporatisation in general but very little on its results in the countries where it has been implemented. However, a review of the corporatisation literature reveals that it has received both praise and criticism. One thing that remains constant however, is the manner in which the debate is polarised irrespective of the contexts within which corporatisation occurs. This research is also quick to point out that most of the literature and debates on water corporatisation are drawn from the more general debates on the commercialisation and commodification of water.

This research makes use of Magdahl's 2012 book, *From Privatisation to Corporatisation,* which is one of the core pieces of recent literature on water service delivery. The book outlines the shift in the neo-liberal reform agenda over the past two decades as well as the change of heart by the World Bank which has been instrumental in crafting neo-liberal service delivery models. This research also makes use of McDonald and Ruiter's 2005 book, *The Age of Commodity: Water Privatisation in Africa*, which provides some of the definitional and conceptual parameters for corporatisation. This book will also be useful for this research as it explores the main ideological, legislative and constitutional matters moulding the water corporatisation debate in Africa. In their 2008 book *Privatisation and Alternate Public Sector Reform in Sub-Saharan Africa: Delivering on Electricity and Water*, Kate Bayliss and Ben Fine provide a critical overview of the reforms introduced in the water and electricity sectors and their impact on development in Sub-Saharan Africa. This book unravels some of the traditional arguments presented in support of corporatisation and marketization policies while acknowledging reported shifts in orthodoxy, hence its usefulness for this research.

At national level, water corporatisation in Zambia has not been widely discussed. A few studies however, stand out. Both Anderson (2009) and Mbilima (2007) analyse water utility regulation in Zambia and come to the similar conclusion that regulation plays a pivotal role in influencing the performance of water utilities. Chitonge (2006; 2011) explores the origins, dynamics and implementation of commercialisation of urban water in Zambia, while Dagdeviren (2008) assesses water sector commercialisation in terms of cost-recovery levels by ten urban water utilities operating in Zambia. Drawing on research on the commercialisation of water in the Copperbelt Province of Zambia, Padfield (2008:1) identifies inequalities existing in the water and sanitation sector. Meanwhile, Malama and Kazimbaya-Senkwe's (2004) comparative analysis of the Privatisation of Water and Sanitation and Solid Waste Management Services in the City of Kitwe, revealed that water sector reforms were internally generated as much as they were externally influenced.

The aforementioned studies are of relevance to this research as they focus on various aspects of corporatisation in general and more particularly on urban water corporatisation in Zambia. However, they do not provide an in-depth analysis or the empirical evidence of whether corporatisation has improved water service delivery in Zambia and hence, the need for this

research. This is coupled with the idea that privatisation in Zambia has had detrimental consequences for the country (Musambachime, 1999) and therefore, this research envisages that corporatisation would be more successful than its predecessor and consequently have less negative corollaries for water service delivery. Further, as already demonstrated there have been success stories documented concerning water corporatisation in African countries and as such, this research argues that Zambia may not be the exception. Drawing on the aforementioned assumptions, this research hypothesises that corporatisation has improved water service delivery in Zambia.

1.4 Research Question

The *overarching research question* in this study is: "Has the corporatisation of urban water service improved water service delivery in Zambia?"

1.5 Research objective

The objective of this research is to establish whether corporatisation of urban water services has improved water service delivery in Zambia.

1.6 Rationale of the study

This study is mainly undertaken to unearth the value that corporatisation has added to the water sector in Zambia. In doing so, it provides greater insights into the factors that determine a successful corporatisation and those that inhibit it. This study is particularly relevant to Zambia because studies on the operational performance of corporatised water utilities are only just emerging. Therefore, this research fills a lacuna in the literature by contributing to the body of scholarship on corporatisation of urban water services and acts as a point of departure for further research by academics and researchers. Hopefully, the outcomes of this research will provide lessons for other countries hoping to go the corporatisation route. More specifically, similar (corporatisation) debates are taking place in other service sectors such as electricity, transportation and health care, all of which are affected by the same neo-liberal

fiscal and political reforms affecting water (McDonald and Ruiters 2005:2). Hence, there are lessons to be learnt from water corporatisation for these other sectors as well and vice versa.

1.7 Key Indicators of safe piped water services improvement

Literature suggests that the improvement of water service delivery can be gauged by particular evaluative criteria. However, in the social sciences what makes evaluative criteria is often arguable. This is especially true if there are many actors involved. For instance, Heyne (2002), states that "every attempt to talk about the success or failure of any process or institution raises fundamental questions pertaining to: whose valuations are being used, and how shall they be weighted? Success for whom?" In response to this, Klijn (2006: 274) argues, "evaluation has to be carried out by some method of weighting the various benefits for various actors." In the case of water provision then, improvement (for the government) may be viewed as fulfilling the promises made to the citizenry in terms of access to this basic need; for the commercial water utilities it is viewed in terms of profit and efficiency; and for the general public it may be viewed in terms of service quality, access and affordability. Based on the aforementioned observations the indicators of improved water service delivery used in this research are given below:

1.7.1 Reasonable access to improved water services

The first indicator of improved water service delivery is a comparison between the percentage of people with "access to piped safe drinking" at the beginning of corporatisation and 10 years after its inception in Zambia. Safe water here refers to" piped running water" whether in the household or public standpipe away from households since in most urban settings a pipe network is the cheapest and most effective means of supplying water.

1.7.2 Efficiency in terms of performance of the water utility

As a concept, there is no consensus on the definition of efficiency. However, in this research it refers to *getting the maximum possible output from given resources*- in other words

avoiding wastages (see Pollitt and Bouckaert, 2000:8). But then again, the use of the word efficiency always raises a fundamental question; in the words of Osborne and Gaebler (1992:3), efficiency for whom? While this research acknowledges the relevance of this predicament, it also recognises literature that suggests that the two most common indicators of water efficiency are technical and collection efficiency (Jammal and Jones, 2006:10). The former is defined as the "ratio of the volume of water billed to water produced" and the latter refers to water charges collected by the water services providers (the ratio of the volume of paid-for water to water billed). Efficiency is measured in terms of the *reduction of water that is wasted* commonly known as *Unaccounted For Water* (UFW) (NWASCO, 2010). Furthermore, the number of *staff employed per 1000 connections* as a result of corporatisation initiatives is considered as another indicator of efficiency.

1.7.3 Cost recovery (profit objective)

A significant number of scholars have argued that the rationale behind commercialisation is to achieve cost recovery, i.e. to make a profit. Thus, the profit objective (cost recovery as a result of collection efficiency) is an indicator of improved water service delivery for the CUs.

1.7.4 Service quality

Improvement of water service delivery is not confined to issues of accessibility and efficiency. The *quality of water* is equally important. The WHO (2004:12) confirms this by stating that "safe drinking water and basic sanitation are indispensible to the preservation of human health and consequently life." Thus, the quality of water serves as a key indicator of improved service delivery in this research. Moreover, the *hours of supply* will be considered as another indicator of service quality. While this research acknowledges that customer feedback/ratings on the quality of services they receive from these CUs would be most useful for this research, it is not included for the simple reason that such information is scarce.

1.7.5 Affordability and tariffs

While efficiency and effectiveness are emphasised in the provision of water, its affordability for the consumers is equally important. Most literature suggests that water and sanitation services still remain a privilege of the rich minority whilst the poor majority make do with a sub-standard service and often times no service at all (Padfield, 2008:10). Hence this research also pays particular attention to the tariff changes that is due to the introduction of corporatisation.

It is important to note that the aforementioned indicators can be weighted differently: for instance an increase in cost recovery may not necessarily mean an increase in accessibility of water. It can be weighted more than accessibility or vice versa.

1.8 Period covered

The period covered for this research is 2001 to 2011 to allow for the comprehensive analysis of water sector performance as most water utilities were corporatised only in 2000 and beyond. This is despite the fact that Lusaka Water and Sewerage Company was corporatised as early as 1989 and Chipata Water and Sewerage Company in 1992. Also, due to the absence of accurate and reliable data on the performance of the water utilities prior to the corporatisation process, this research only makes use of datasets which have been well documented from 2001 onwards. Moreover, the New Public Management reforms (which prompted corporatisation) only trickled down and proliferated in Africa in the early 2000s and coincide well with the datasets used in this research.

1.9 Methods of Inquiry

1.9. 1 Research design

A research design is considered the glue that holds all the elements of a study together by virtue of it asserting how one intends to carry out their research. To address the research questions outlined in the previous section, the study generally relies on qualitative and

quantitative research approaches. The two will complement each other to avoid biases associated with each design when conducted in isolation. The literature used in the research is of a qualitative nature while the data used is quantitative. The former will quantitatively describe and interpret the data.

1.9.2 Research methodology

The study makes use of secondary sources. Hence, it is an exhaustive literature review of electronic and hard copy sources. The hard copy sources include books, published and unpublished journals, articles, theses, annual reports of water providers and government documents and legislation. Electronic sources include the Internet, and other media such as newsprint. More importantly, the study makes use of data from National Water and Sanitation Council (NWASCO) sector reports, which are comprehensive records of the performance of Commercial Water Utilities in Zambia. The data collected will then be analysed against the NWASCO benchmarks using statistical analysis, which includes the use of graphs and tables to interpret data.

1.10 Research ethics

This study observes the research ethics of confidentiality and integrity as prescribed by the University of Cape Town. To avoid plagiarism, all information will be accurately presented and all consulted sources will be properly referenced and included in the bibliography.

1.11 Limitations

One of the limitations of this research is the lack of proper records on management and consequently poor availability of data which makes it difficult to gauge the performance of the water CUs prior to the corporatisation process. Another limitation is attributed to the nature of the data obtained from the annual reports of water utilities which Andrews (2009:6) suggests, may be inaccurate or manipulated by CUs in an effort to meet benchmarks. However, this is not to say that all information is unreliable. The water sector regulator and watchdog (NWASCO), ensures that all data submitted by the CUs conforms to the principles

of integrity and reliability. Besides, it is the only way that an in-depth understanding of improved water service delivery may be achieved. Furthermore, due to limited time and financial constraints, it was not viable to conduct field studies in Zambia.

1.12 Summary of Chapter 1

Chapter one is a synopsis of the background of the topic under investigation. The chapter has also revealed the focus and timeframe for this research as well as the research question, research methodology, ethics and limitations.

1.13 Synopsis of the rest of the chapters

The following chapters of this research will include the literature review which will provide the theoretical debates surrounding water corporatisation and locating it in Zambia's historical context. Following this will be an analysis of the 11 CUs and corporatisation in terms of the water services improvement indicators mentioned earlier, after which a conclusion will be drawn with some potential areas for future research.

CHAPTER TWO: Literature Review

2. Introduction

This chapter presents a review of relevant literature on corporatisation. However, it begins by presenting a brief overview of the evolution of State Owned Enterprises as providers of public goods and services. The chapter proceeds to argue that the purported shortcomings of State Owned Enterprises have given rise to the dominance of the neo-liberal models of public service delivery under the guise of the New Public Management doctrine. While privatisation and its variants has been one of the most attractive streams on the NPM menu, endorsed by the International Financial Institutions and implemented in numerous countries, the lens through which this research looks at NPM is corporatisation, which stems from the managerial approach of NPM and has been gaining popularity as a model for public service provision and as an alternative to privatisation in the last decade. After this discussion on the NPM, this chapter explores the nature of corporatisation, provides its conceptual parameters and argues that the approach is guided by the state and that in developing countries it is a precondition for aid from the IFIs. Furthermore, corporatisation is a process that is underlined by commercialisation – that is the process of using market forces to transform basic human needs such as water into commodities. The results of corporatisation in a few countries are also discussed. The chapter ends with examining the common arguments that have been mobilised for and against the implementation of corporatisation in the water sector.

2.1 Contextual overview and evolution of State Owned Enterprises

The origin of State Owned Enterprises-henceforth SOEs is rooted in the period following the end of World War II. Many governments in Europe and that of the United States embarked on nationalisation programmes which involved the establishment of SOEs commonly known as ‘parastatals’ or ‘corporations’ (Friedman, 1980: 61). The establishment of SOEs was enshrined in an Act of Congress which labelled them as “revenue generating enterprises [solely] owned and controlled by the State” (Van de Walle 1989: 601). The SOEs covered a wide range of strategic industries, from manufacturing to telecommunications.

Nationalisation was not a phenomenon unique to the global North. In many African countries, the development of nationalisation occurred in the 1960s and 1970s, a decade or two later than in the West [but also located in a period of transition] and it "coincided with the move towards independence and the dawn of the postcolonial period" (Smith 2004: 377). Similar to the nationalisation process in the West, the rationale for establishing SOEs in newly independent African nations was to attain "economies of scale, improve the methods of production, and implement import substituting industrialisation" (Tangri, 1999:19).

The argument for the creation of SOEs was that the public interest could only be attained and protected through a "high degree of public intervention in markets" (Nellis 2005:3). Thus, government needed to set up specialised service delivery vehicles outside line departments (Smith, 2004:377). It is useful to point out that SOEs are not part of the civil service but provide public goods and services. Heymans (1995:437) claims that the process of nationalisation in Africa and in the West was driven by an analogous ideology, where the state was perceived as the main engine of development. What is also apparent in the literature is that both models, placed emphasis on equity as the "underlying motivation for state intervention in the provision of collectively consumed goods" (Smith page 2004:377). A crucial point to note here is that most African intellectuals (including Presidents) also viewed the establishment of SOEs as a response to the manacling claws of economic domination that still lingered in newly independent states (Musambachime, 1999). Moreover, for some politicians the establishment of SOEs paved the way for the creation of "a patronage mechanism to distribute jobs to loyal supporters" (Shirley 1993: 193).

According to Utt (1993:5), SOEs became "an attractive form of economic strategy for development" which was widely embraced by developed and developing countries alike, leading to their proliferation between the 1960s and 1970s. While the conditions under which the SOE sector operated varied from country to country a common trend among them was that the SOE sector came to occupy a dominant role in the economy of most countries (Smith, 2004:3). Furthermore, despite governments investing a significant amount of public funds in the establishment phase of the SOEs, over the years the SOE sector was the recipient of grants and subsidies usually financed by tax payers' money (Musambachime, 1999: 9).

2.2 State Owned Enterprises fall from grace

However, in practice, a review of the performance of SOEs in both developed and developing countries in the 1970s revealed that SOEs generally failed to meet the expectations of their creators and funders. Very few countries had the financial muscle to intervene at the level required for establishing a welfare model, a factor that impacted negatively on the ability of SOEs to function well (Smith, 2004:377). According to Nellis (1986), instead of contributing to government revenues, most SOEs (especially in Africa) incurred colossal losses, could not cover their operational and maintenance costs and regularly became a burden on already strained budgets. In African countries this grew to be an alarming and obvious financial gap- which attracted the attention of the International Financial Institutions, henceforth IFIs (Nellis, 2005:2). Although this was not universally the case, the good performers were heavily outnumbered by the bad.

When investigated, the poor performance of SOEs during this epoch was attributed to a number of factors. The major one was the existence of conflicting objectives (social versus economic). For instance governments "decreed that SOEs operate in a commercial, efficient and profitable manner" and simultaneously insisted that they "serve as generators of employment, provide goods and services at subsidized prices, hire employees irrespective of their competencies and award contracts to state sanctioned suppliers" (Nellis, 2005:3). This inevitably culminated in political interference in the operations of the SOEs to the detriment of managerial autonomy and efficiency. All this occurred against a background of service delivery discontentment and protests by citizens in a number of countries.

Efforts to remedy the problems of the SOEs were first evident in the US in 1976 under the Carter Administration, then later in 1979 Britain under the Thatcher government and worldwide thereafter, and included the erosion of the welfare capitalist state (Smith, 2004:377). This gave way to a first wave of neoliberal strategies that were rooted in a critique of state interventionism (Brodie, 1995; Jones, 1998). At the centre of the critique was the tension between the "ethic of citizenship rights to public provision and the ethic of entitlement based on individual achievement" (Pickvance and Preteceille, 1991:216). Of particular influence to the reform process was the New Public Management doctrine which will be elaborated in greater detail in the following section. In developing countries, the first

efforts to reform the SOE sector in the late 1970s took the form of stabilization and Structural Adjustment Programs (SAPs) as prescribed and orchestrated by the IFIs. The SAPs constituted a fundamental policy shift from previous attempts at economic reform in developing countries and offered prompt financial help to countries struggling with servicing their debts (Simutanyi, 1996:826). However, this help was subject to "satisfying certain economic criteria leading to 'structural adjustment' of an economy (Zawalinska, 2004:4).

2.3 The New Public Management paradigm

The New Public Management acts as a starting point for reforming the SOE sector as it is the umbrella under which the neo-liberal agenda was implemented. Despite its extensive use, there is no unified definition for the term NPM. According to Ferlie, Ashburner, Fitzgerald, and Pettigrew (1996) this is because it is not one phenomenon or paradigm, but a cluster of several. Waine (2004:16) defines the NPM as "a generic term or convenient shorthand used in the academic literature to refer to a set of similar administrative doctrines and systematic changes which occurred in the organization of public sector services." Meanwhile, a number of academics (Ormond and Loffler, 2006:11; Pollitt and Bouckaert, 2000:133; Manning, 2001:297) argue that the NPM should be merely envisioned as a toolbox with many elements; from which different countries can choose and implement with a view towards creating efficient, effective and economic public institutions/sector.

The NPM has two broad orientations explained by the marriage of two different but related schools of thought, 'neo-classical economics' and 'business-type managerialism' and its overarching philosophy is the supremacy of "private sector principles over those of the public sectors" in tandem with the assertion that "the application of such principles" would precipitate improvements in the performance of public institutions (Thatcher cited in Osborne, 2006: 379; see also Hood, 1991).

The NPM marks a shift from the Traditional model of Public Administration by pointing out the supposed deficiencies inherent in the latter and locates the problem in the nature and practices of the public sector. In its application, there are a succession of unifying characteristics of the NPM aimed at "fine-tuning the organization and practices of the public sector" with a view towards making it more competitive and efficient in resource

management and service delivery. A dominant theme of the NPM is giving line manager's greater managerial authority and responsibility (Hood, 1991:4). In line with this is the introduction of short-term appointments by contract, which entail hiring people based on competition, often from the market and "terminating the contracts of those who do not perform" (Cameron, 2009: 926). Another appealing theme of NPM is the use of "explicit standards and measurement of performance" for both individuals and organisations (Hood, cited in Hughes, 2003: 52). Financial reforms are also central to the NPM. Some of these reforms are budgetary, which mark a shift from the traditional line item budgeting towards programme specific budgeting (Cameron, 2009: 920). For managers this means more financial discretion which in turn means greater control over budgets for which they are held accountable.

Another central theme of NPM is its preference for lean, specialized, autonomous organisational forms. The crux of this argument is that "rivalry is the key to lower costs and better standards" and downsizing the public sector, proliferation of the use of markets, competition and contracting out are the vehicles used to achieve this (Hood, 1991:4). This led to the introduction of private sector involvement in service provision broadly defined as privatisation in this research. Linked to this is the disaggregation of units in the public sector with the view towards making them more manageable and efficient commonly known as corporatisation. A strong customer focus is another attractive theme of the NPM and it exemplifies the notion that citizens are customers and therefore, can challenge the power of producers (Hood, 1991:4). In conclusion, the NPM is an extensive dismissal of the bureaucratic pillar of traditional public administration. Its tenets have been implemented either singularly or in combination in a number of countries as a means of restructuring the public service.

2.4 The International Finance Institutions as architects of the neo-liberal reform agenda

It is crucial to note that the neo-liberal reform agenda (via NPM) was dominated and proposed by most of the International Finance Institutions (IFIs). Significant actors in this regard include the World Bank, International Monetary Fund, regional development banks, leading OEDC (Organisation for Economic Cooperation and Development) countries and the European Union among others (Goldman 2005, Castro 2008; Magdahl, 2012:9). While NPM

has in practice been applied extensively in its native Commonwealth habitat, considerable literatures suggest that the IFIs took advantage of the need for loan and debt relief of many of the African countries since the 1980s and 1990s to increase the pace and the magnitude of New Public Management style reforms (Common, 1998:440, Manning, 2001:298, 308).

2.5 The First Wave of Neo-liberal Reform: Privatisation as the model strategy for reforming the public sector

While the focus of this research is on corporatisation, a brief discussion on privatisation is imperative as it provides a backdrop for the corporatisation model. One tenet of NPM that received extensive attention and implementation is privatisation. With the World Bank being the foremost proponent and exponent of the privatisation strategy most IFIs, regional finance institutions and donor countries closely followed the same strategy. Privatisation thus became the predominant international strategy for reform over the last two decades (World Bank 2004; Goldman 2007; Castro 2008; Magdahl 2012:6-9).

For the purpose of this research privatisation refers to "all possible practical policy options designed to promote greater role and involvement of the private sector in the provision, administration and/or financing of traditional government services (Baird 2004:3). Thus, privatisation is an array of options that can be presented as a spectrum, ranging from the least form of private sector involvement (i.e. service contracts) to the most extreme form (divesture). However, there are other forms of privatisation which lie in-between the two extremes of the spectrum such as (in ascending order), 'Management Contracts', 'Affermages/Leases', 'Concessions' and 'BOT types.'

Privatisation also featured in the reformation of urban water services and its magnitude in most African countries is evident in table 1. What is also apparent is that the magnitude and trend of privatisation initiatives in the water sector increased owing to the IMF/World Bank's SAPs in Africa in the 1980s and 1990s; a period in which many developing countries needed financial loans and debt relief from the IMF and the World Bank (Lobina and Hall, 2001).

Table 1 : The extent of water privatisation in Africa (as at 2004)

Date	Country	Contract type and duration	Lead Multinational Company
1960	Cote d'Ivoire	Contract started in 1960. Renegotiated in 1987 for 20 years	SAUR (France)
1989	Guinea	10 Years lease	SAUR (France)
1991	Central African Republic	15 Years Lease	SAUR (France)
1992	South Africa (Queenstown)	25 years Lease	SUEZ (France)
1996	Senegal	10 Years Lease	SAUR (France)
1997	Uganda	3 Years Management Contract	H.P Gauff Ingenieure GmbH& Co. (Germany)
1997	Gabon	20 years concession	Vivendi (France)
1999	South Africa (Dolphin Coast)	30 Years Lease	SAUR (France)
1999	South Africa (Nelspruit)	30 Years Lease	Biwater (UK)
1999	Mozambique	Maputo and Matola 15 Years, Other three cities: 5Years	Agua de Portugal(Portugal)
1999	Cape Verde	50 Years Lease	Agua de Portugal (Portugal)
2000	Mali	20 Years Lease	SAUR (France)
2000	Chad	30 Years concession (Management contract initially)	Vivendi (France)
2001	South Africa (Johannesburg)	Management Contract	JOWAM/SUEZ (France)
2001	Niger	10 Years renewable contract for water and electricity supply	Vivendi (France)
2001	Burkina Faso	5 Years Management contract	Vivendi (France)
2001	Cameroon	20 years Lease	Suez Lyonnaise des Eaux
2002	Uganda	2 Years Management Contract	Suez-ONDEO (France)
2002	Republic of Congo (Brazzaville)	Contract awarded (details unknown)	Biwater (UK)
2003	Tanzania	Lease contract	A consortium of Biwater and Germany's H.P Gauff Ingenieure
2003	Rwanda	Management contract (ELECTROGAZ)	Lahmeyer (Germany)

Source: adopted from Hall and Lobina (2006:28)

However, it is crucial to note that privatisation of the SOEs in Sub-Sahara Africa existed before the advent of the SAPs, for example in Cote d'Ivoire since the 1960s – 20 years before the SAPs or NPM (Bayliss, 2000:2), but it swept across many countries through the SAPs in 1980s and 1990s (Tangri, 1993:38).

2.6 The demise of the first wave and rise of the second wave of neoliberalism

However, the growing arguments against privatisation (laced with political sensitivity and controversy) in the development debate have spurred the shift to a second wave of neoliberalism. (Smith, 2004:379). The critiques are based on negative experiences with previous water-privatisation projects around the world over the last decade (Magdahl, 2012: 31). A variety of literature presents widespread evidence that water privatisation projects "faced severe challenges in ensuring affordable and accessible services to the poor, for instance in Argentina (Loftus and McDonald, 2001), Bolivia (Nickson and Vargas, 2002), England (Bakker, 2001), Poland (Moran, 2000) and South Africa (Bakker and Hemson, 2000; Smith 2004:379). One of the lessons drawn in reviewing this period is that privatisation initiatives were not tailored to local needs. Table 2 below illustrates the discontentment with privatisation evident in the withdrawals from water privatisation in Africa.

Table 2 Withdrawals from water privatisations in Africa (as at 2002).

Country	Company	Parent	Reason for withdrawal
Gambia	MSG	Sogea	Bad relations between investor and government from the beginning, exacerbated by aggressive disconnection campaign. Contract unilaterally terminated in 1995, following coup.
Ghana	Azurix	Enron	World Bank withdrew funding because of lack of transparency in contract award
Guinea	SEEG	Saur/Vivendi	Breakdown in contract renewal negotiations
Kenya	Seureca Space	Vivendi	Contract suspended after outcry over contract terms; World Bank commissioned study of alternative privatisation options
Mozambique	Aquas De Mozambique	Saur	Reasons for withdrawal not made public
South Africa	Fort Beaufort	Suez	Contract nullified
Zimbabwe	Gweru	Biwater Saur	Company withdrew from negotiations for commercial reasons. Negotiations suspended in 1999.

Source: Adopted from Jerome (2004: 18)

These failed initiatives are indicative of the growing failures of service delivery options that were part of the first wave, and its harsher version, of neoliberalism. The negative social consequences ensuing from the problems facing these exhaustive privatisation initiatives incited extensive thinking among academics and practitioners on the role of the state in making markets more effective (Drache and Boyer, 1995). One of the lessons drawn in reviewing this period is that most governments discovered that the need to regulate the private sector was more challenging than providing public services themselves. Furthermore, Smith (2004:379) makes the crucial observation that the expectations of privatisation were not realistic in the sense that "turning to the private sector is no quick fix for governance problems that have been neglected by state authorities for decades."

2.7 From Privatisation to corporatisation: trajectories in water service provision

Given the shortcomings of the first wave of reforms (privatisation and its variants) there has been a development and shift away from privatisation as the dominant strategy towards corporatisation of public water services (Magdahl, 2012:6). The latter is also a neoliberal reform model. It is useful to point out that while the historical track record is that corporatisation is often the first step towards explicit forms of private sector involvement-privatisation, considerable literature has emerged suggesting that corporatisation was regarded by the Global South in the late 1990s as an alternative institutional model to privatisation (Smith 2004:375; McDonald & Ruiters 2005, Magdahl, 2012:31). This is not a view unique to the global South; in fact the IFIs have been on record for legitimising the shift from privatisation to corporatisation.

For instance, the World Bank has been doing some soul searching and acknowledged the severity of the consequences that water privatisation brings in its wake. The Institutions' acceptance that full scale water privatisation is unlikely to be achieved in the near future, has in some sense led to the "(re)emergence of a grudging tolerance of the state" (Bayliss, 2011:74). However, while the adverse effects of water privatisation have made it difficult to overlook its deficiencies and have clearly exposed their inadequacies, its most optimistic proponents (World Bank and IMF) have continued to blame internal factors for the failure of privatisation programs. On the one hand they concede some of the flaws of water

privatisation but on the other hand they "lay most of the blame on African countries, which are accused of either not having the 'political will' or creating 'the enabling environment' necessary for the successful implementation of the programs" (Hussain and Faruqee 1994; Simutanyi, 2006:1).

Remaining constant in the water service delivery debates during both the first and second wave of neoliberalism is the leading view that "the private market logic ensures full-cost recovery and therefore offers a more efficient method for delivering public services" (Smith 2004:380). According to Moran (2000:35), corporatisation can "capture many of the efficiency gains claimed in the process of privatizing, yet avoiding the political debates that accompany such moves." The subsequent section pays particular attention to conceptualising corporatisation in order to highlight how it signifies a second wave of neoliberalism by virtue of "utilizing a private sector rationale to transform the public sector" (Smith 2004:380).

2.8 Conceptualising Corporatisation

There are several corporatisation models in the literature including "a corporatised utility, a crown corporation or a business unit within a government department (Bakker and Cameron 2002). Table 3 highlights the variety of institutional (corporatisation) models available in water service delivery.

Despite the various corporatisation models, a common thread running through all of them is the particular approach to accountability According to Smith (2006:2) "government becomes the single client for a publicly owned, yet institutionally separate service provider." It is crucial to point out the corporatisation models adopted by the global North usually strike a balance between running the institutions along business lines and retaining public service ethos, for example ensuring universal access to low-income users regardless of ability to pay (Bakker and Cameron 2002). In the global South, this balance is difficult to achieve for countries that have selected corporatisation as the service delivery model as the ability of states to adhere to a public service ethos is inhibited by the absence of sufficient financial resources and human resource capacity, political will and an adequate demand structure (Smith, 2006:2). Thus, cost-recovery objectives tend to dominate the service delivery models in many countries in the global South.

Table 3 Business models for water supply infrastructure

Business model	Who owns the structure?	Who operates the structure?	Legal status of operator	Legal framework	Who owns the Shares?	Examples
Government utility direct management	Municipal or regional government	Municipal or regional association	Government department	Public	N/A	Canada
Municipal board or commission	Municipal government	Commission or board	Public agency	Public	N/A	Peterborough, Toronto
Co-operative	Users/cooperative society	Users or delegated authority	Cooperative society or corporation	Varies	N/A (or users)	Denmark
Crown corporation	Government or utility	Utility	Usually defined by special law	Public or corporate	Government	Ghana
Corporatized utility	Government or private company	PLC as permanent concessionaire	Corporation	Corporate	Local/provincial government	Edmonton, Alberta
Government utility-delegated management	Government or private company	Government and/or temporary private concessionaires	Corporation	Corporate	Private shareholders	France
Direct private utility	Private company	Private company	Corporation	Corporate	Shareholders or investor owned	England

Source: adopted from Bakker and Cameron (2002)

As a term, corporatisation is often used interchangeably with commercialisation (Smith, 2005:1). However this research argues that the two are different. According to Nestor and Mahboobi (1999:13) corporatisation is defined as the "transformation of State Owned Enterprises into full blown commercial companies, subject to private law requirements and obligations and having the same legal governance structure as any other commercial entity." Yarrow (1999:23) comes to a similar conclusion and defines corporatisation as a structural reform process of "creating an arms-length-service entity that is fully owned and operated by the state but which is ring-fenced financially and managerially from other services." Commercialisation on the other hand, is "a process by which market mechanisms and market practices are introduced into the operational decision making of a service" (McDonald and Ruiters, 2005:17). Furthermore, these mechanisms include "profit maximization, cost

recovery, competitive bidding, cost-benefit analysis, and performance targeted salaries, ring fenced decision making, and demand-driven investments." Notably, commercialisation takes the form of either corporatisation or privatisation.

An equally important concept associated with commercialisation is commodification. The latter entails the transformation of goods and services into a commodity (McDonald and Ruiters, 2005:17). In the process of commodification, Mannan (2009:14) argues, "natural resources are given a price value and assigned proprietorship." The distinction between commercialisation and commodification lies in the formers' definition as the introduction of commercial principles in the institutions that manage these goods and services (commodities).

The ability of a corporatised entity to establish a "working environment for a public enterprise that replicates the internal and external conditions of successful private enterprises," (Mannan, 2009:14) is further evident in the manner in which it governed. According to NWASCO (2005:7) a corporatised entity is governed by a board of directors, although it often remains fully owned by the (local) state usually with an increased number of shareholders.

As a form of internal reorganisation, corporatisation involves three major structural shifts to manage service delivery. The first is financial ring fencing which entails "all resources directly involved in the delivery of a particular service being separated from all other service functions" (Smith, 2004:381). For instance, where resources are shared by more than one department, (e.g. vehicles, information technology) the ring-fenced unit pays the other unit a full-cost fee for the use of those resources. One of the most important changes financial ring-fencing brings is greater transparency such as accounting whereby all costs and revenues related to the service can be clearly identified (Nestor and Mahboobi, 1999:8). This allows managers to gain better insights into the areas of losses/gains, costs/surpluses of running a service that may have otherwise been hidden in the complex accounting systems of centralised public institutions (Smith, 2004:381). According to Nestor and Mahboobi (1999:8), this also brings forth the problems related to the financial structure of companies and often obliges the state to assume directly certain liabilities, in order to improve this structure. The authors substantiate this point by citing Ludwig's (1996) example of the

corporatisation of German Railroads (DB) in 1995 which resulted in the state taking over some DM 70 billion of debts.

Financial ring-fencing also creates a conducive environment for the introduction of financially driven performance targets for managers- the second facet of corporatisation. For instance line managers are rewarded for achieving cost recoveries or meeting profit targets as in the 'Managerialist' approach to NPM (Smith, 2004). Also in line with this reasoning is the introduction of "market-based remuneration for managers with the aim of attracting 'world class' executives who are expected to pay their way by ensuring that the bottom line is positive"(McDonald and Ruiters, 2005:18). The third facet of corporatisation is managerial ring fencing which entails the "creation of separate business units managed by appointed officials operating at arms' length from the municipal authority" (McDonald and Ruiters, 2005:18). In other words corporatisation enables the separation of policy making from policy implementation by virtue of the corporatised entity being managed professionally at arm's length from the policy and strategies that need to be implemented (Mannan, 2009:14). The daily management and long-term planning of the unit is left to the ring-fenced management team but the elected officials monitor and evaluate its activities (McDonald and Ruiters, 2005:18). This ensures insulation from political interference.

The rationale behind the creation of commercial utilities, Jones (2001: 219) points out, is to dichotomize commercial objectives (e.g. profit motives) from non-commercial objectives (e.g. public interest/social) of SOEs. The importance of this separation cannot be overemphasised and has two significant implications. On the one hand, it leads to the creation of the purchaser-provider divide which Nestor and Mahboobi (1995:7) refer to as "an arm's length relationship between the state as regulator and the commercial firm as producer of goods and services." On the other hand, they note, this separation begs for a clear demarcation between shareholder and regulatory functions within the state. Both arguments are very crucial to achieving efficiency and effectiveness in the running of institutions or utilities that provide goods and services to a significant number of consumers.

2.9 Corporatisation in Africa: Success or failure?

While studies on the performance of corporatised water utilities are only just emerging, a review of the available literature on the experiences of corporatisation in urban areas of African countries reveals mixed results.

For instance, corporatisation in Burkina Faso has been recorded as a success. Prior to 1994, the provision of urban water supply services was the responsibility of a state-owned utility the 'Office national de l'Eau et de l'Assainissement' (ONEA). By the early 1990s ONEA's performance was typical of inefficient public enterprises, with "household connections coverage standing at 24% in urban areas, poor service quality" and ONEA's inability to expand its network at a rate commensurate with growing demand that came with urban expansion (Marin, Fall and Ouibiga, 2010:1) In an effort to improve water service delivery ONEA was transformed into a corporate entity, still owned by government, governed by private law, with an autonomous board subject to performance contracts with explicit operational targets. More importantly, ONEA was permitted to cut off service for the non-payment of water bills (Marin et al, 2010:1). A review of the performance of ONEA since it was corporatised reveals that there has been substantial progress in water service delivery. By 2008 the household connections coverage stood at 50%, service quality improved; for example there was a reduction in UFW, an increase in the number of service hours and increased collection efficiency (Marin et al, 2010:1). However, all this happened against an increment in tariffs which enabled ONEA to recover costs. Government refraining from interfering in ONEA's operations, corporatisation being tailored to local conditions set with realistic expectations, the appointment of competent and professional employees, as well as the reform process being supported by significant investments are all factors which created a conducive environment for successful corporatisation in Burkina Faso (Marin et al, 2010:1).

Unlike Burkina Faso, Namibia has recorded modest results when it comes to corporatisation. In 1997, the government of Namibia corporatised the national water service company which supplied water to the country's local water services. The newly established Namibia Water Corporation (NamWater) propelled the reform process by replacing the state subsidy of water prices with commercial ventures and cost recovery policies (Magdahl, 2012:48). Like the trend in other countries, the installation of prepaid meters and disconnection from the main

water network for the non-payment of water charges soon followed. However, a number of studies carried out to assess the performance of NamWater post-corporatisation revealed that corporatisation has led to substantial increase in water charges; during the period 1998 to 2004, a price hike of 114% was recorded (Bayliss, 2008; LaRRI, 2005). This had negative corollaries for the local water service providers who experienced difficulties in "obtaining payment from their consumers in poor areas since they could not afford to pay the inflated prices" (Magdahl, 2012:48). Consequently, local water service providers had problems recovering their costs and consequently accrued debt with NamWater. On account of their accumulated debts, NamWater reduced or cut water supply to these service providers and this forced the latter to take a harder approach with consumers who failed to pay. As a result of this exercise, there has not been a significant increase in the number of people with access to water, particularly in a country where unemployment and poverty are widespread (Magdahl, 2012:48).

In South Africa, corporatisation has been carried out in Johannesburg. The rationale for corporatisation was influenced by the macro-economic policy Growth, Employment and Redistribution (GEAR) which was introduced in 1996 (Magdahl, 2012:47). GEAR promoted tight fiscal control, cut in budgets and the allocation of more responsibilities to city authorities. Faced by difficult economic situations and rapidly growing demand as a result of increased urbanisation, the city of Johannesburg embarked on corporatisation through the establishment of Johannesburg Water to accelerate water service delivery even though the World Bank recommended privatisation (Smith 2004). In Johannesburg corporatisation is on record as being successful despite the introduction of prepaid meters. There has been an improvement in water service delivery on indicators such as accessibility, reduction in UFW and hours of supply (Smith, 2006). However, a few studies have pointed out that the success of the Johannesburg corporatisation model is partly due to the introduction of the "Operation Gcin'amanzi" introduced in 2003 to ensure that the poor pay for their water consumption and do not threaten corporatisation (Magdahl, 2012:47). However it is crucial to point out that there is considerable literature and debates on affordability and collections that also reveals that the impact of free basic water policy on South Africa has also opened the door to huge opportunity costs. While this raises fundamental arguments this is not a debate this research will dwell on.

Corporatisation has also been carried out in the Kenyan capital of Nairobi with the establishment of the Nairobi City Water and Sewerage Company in 2004. Notably the corporatisation process was supported and funded by the World Bank even though it originally supported privatisation (Magdahl, 2012:47). Like in other African countries, the underlying process of corporatisation involved the application of commercial principles such as cost recovery and service cuts when payment was not forthcoming. However, the years following corporatisation have revealed "heavy price hikes, with an average increment of over 65 % for the city's consumers" (Magdahl, 2012:47). Given that a large proportion of Nairobi's population reside in informal settlement areas, with 60 % living under the poverty line, in 2007 thousands of consumers were disconnected from the water supply in an effort to force them to pay their water-service bills (ADB, PPIAF and WSP, 2009).

From the few case studies above, it is evident that corporatisation has had mixed results in African countries where it has been implemented.

2. 10 Debating water corporatisation

While the contexts and technologies in which corporatisation takes place vary, the debates tend to polarise. The following section unravels the arguments mobilised in favour of and against corporatisation in the water sector. Notably, the debates on water corporatisation range from discussions of the political to the moral as the following section will establish.

2.10.1 Arguments "for" water corporatisation

a. State Failure

The most popular argument crafted in favour of corporatisation is often linked to broader claims that public utilities that are run on private sector principles (commercial) are more efficient than those run on public sector principles (Budds and McGrahan 2003:97). According to McDonald and Ruiters (2005:1), proponents of this view argue that "governments are corrupt, unaccountable, unimaginative and financially strapped, and unable to expend and upgrade water services on their own in a reliable and cost effective manner." While it is not the purpose of this research to investigate the authenticity of these arguments, they raise a fundamental point that the most significant reason behind corporatisation in developing countries is the state's failure to address the water needs of its citizens.

The argument for the superiority of private sector principles over those of the public sector is located as far back as the early 1990s when privately run utilities were almost non-existent in low and middle income countries. The assumption was that public utilities that replicated the operational environment of private utilities would be more efficient owing to their commercial incentives that would embolden operators to pursue the "highest possible efficiency" in a bid to make a return on their investments, reduce possible losses from inefficiency and default of payment by customers (Budds and McGrahan, 2003:97). The crux of this argument is that efficiency gains were for the benefit of all service users, particularly indigents as they too would be connected to the water system as paying customers (Budds and McGrahan, 2003:97).

Meanwhile, authors such as Tabarrok (2005:2) point out that in theory, it is problematic to commercialise water. He, like Bakker (2003: 328), attributes this to the 'natural monopoly' problems and positive externalities associated with clean water. In practice however, Budds and McGrahan (2003:97) argue that it is much easier to commercialise water because "publicly run water and sanitation utilities in developing countries have been singularly unsuccessful in providing reliable, adequate and quality water supply and sanitation." Proponents of corporatisation share this sentiment and argue that "the market is the panacea for social and ecological crisis, including those of the water sector, which cannot be addressed by the inadequate and inefficient practices of the state" (Fazel-Ellahi, 2011:4).

State failure is epitomised by the inability of most countries to meet the World Bank/IMFs 'International Drinking Water and Sanitation Decade' outlines for the period 1980-1990. This declaration required every government in the world to ensure 100% access to safe piped water for all citizens in a country (Budds and McGranahan, 2003:91). However, an assessment of the countries' performances at the end of the stipulated period revealed that only a handful of governments, Western ones (UK, USA, Germany, New Zealand and Scandinavian countries), achieved almost 100% of water services to all their citizens. Meanwhile, governments in developing countries (Africa, Asia and Latin America) lagged far behind (WHO/UNICEF, 2006:1). This point is reiterated by the presence of more recent data in the *2006 Water Development Report* that reveals that parts of the African continent are the only places not on track to meet Millennium Development Goal 7C by 2015, which aims to halve the amount of people without access to safe drinking water (Kimani, 2009 cited

in Hunter 2010). In fact, of the ten countries with the least developed water sectors, nations in Africa make up seven (Hunter, 2010:1).

However, it would be superficial for this research to ignore the reasons behind state failure in the provision of water to its citizens. The reasons advanced are twofold. The first is the lack of government capacity which often results in weak performance and low payment for poor services (Budds and McGrahan, 2003:91). This point is reiterated by Musambachime (1999:18) who argues that in most developing countries, the civil service to which the state enterprises were accountable to was "poorly trained and motivated, lacked initiative and was slow in decision-making." In line with this reasoning is also the view that state owned and operated utilities are usually subject to political interference and corruption especially at the local level, a point which this research will return to later on. All this is despite the colossal amounts of international aid and multilateral loans that developing countries have been the beneficiary of since the late 1980s.

Then again, the perilous state of public water utilities is attributed in part, to "the absence of funds and access to finance in the public sector," which are required to carry out improvement and expansion of services (Budds and McGrahan, 2003:92). In many low- and middle-income countries, public sectors have been plagued by indebtedness and other financial problems, at least since the 1980s despite the colossal amounts of international aid and multilateral loans that developing countries have been the beneficiary of since the late 1980s. The public sector, especially local level government in most developing countries, often does not have access to sources of commercial finance or loans, due to the absence of prerequisites such as assets and creditworthiness (Cameron, 2006).

b. Corporatisation reduces political interference

Another argument central to corporatisation is that it reduces political interference. This is cemented by the claim that public utilities run by the state (especially in developing nations) are prone to higher rates of corruption than corporatised ones (Hunter, 2010: 8). Too often, advocates of this view argue that "African governments have been clientelistic and have politicized water by appointing friends or constituents to positions of power within this sector" (Jones, 2008:2). According to Spronk (2010: 160), when water is publically owned,

"SOEs are exposed to short-term political interventions, struggles for political advantage, and the demands of special interest groups."

Mwebe (2005:11) also identifies a correlation between public ownership and political interference and argues that much of the blame for the poor performance of the public enterprises can be attributed to incessant political interference, politicisation of key decisions regarding personnel administration and the absence of managerial autonomy. In numerous instances, public enterprises have become a vehicle for "political patronage, corruption, nepotism, misappropriation of public funds, and certainly an instrument for advancing the political and material interests of the ruling parties" (Mwebe, 2005:11). This point relates particularly to the material weakness of the bourgeoisie class in African countries. Theobold (cited in Cameron, 2006: 3) argues that what often sets apart the African bourgeoisie from their Western counterparts is that the former often enters politics or assume positions of public responsibility in order to "accumulate capital." This is reiterated in the fact that there is an absence of alternatives and the state apparatus provides political power and a wide range of resources and opportunities. In a nutshell, corporatisation can be as costly politically as privatisation and the political costs can include job losses, an end to subsidies and privileges, or lower prices for suppliers. Thus, its proponents argue that "corporatisation insulates the enterprise from inefficient political influences" (Mwebe, 2005:1).

c. Water is an economic good

Over the years there has been growing consensus that water should be re-conceptualised as an 'economic good' which Budds and McGrahan (2003: 95) loosely define as "a good that can command a price in a market." The 1992 Dublin Principles emphasise that "water has an economic value in all its competing uses and should be recognized as an economic good." That water has become a precious commodity is reiterated in the American magazine, *Fortune*, which holds the view that "water promises to be to the 21st Century what oil was to the 20th century: the precious commodity that determines the wealth of nations" (Barlow and Clarke, 2002:1). Another common argument in support of water commercialisation is that "charging for a resource inevitably leads to the conservation of the said resource as people are less likely to waste something they have to pay money to procure" (Hunter, 2010: 8). This

is unlike when the public sector provides scarce consumables for free (or at subsidized prices).

2.10.2 Arguments 'against' corporatisation

The advocacy of corporatisation in water provision has not gone unchallenged. The following arguments have been crafted against corporatisation.

a. Water is a human right

The corporatisation of water is laced with a lot of controversy owing to the nature of water; it is an 'essential human need,' and a 'precondition for the realisation of other human rights' (Marvin and Guy, 1997:21). Budds and McGrahan (2003:94) assert that, the controversy also stems from the argument that "water...is defined as a good to which people have a right, regardless of ability to pay." This view is echoed in voluminous literature which argues at great lengths for the decommodification of water (Marvin and Guy, 1997; Bakker 2000; 2002). Numerous agreements (e.g. WHO, UN) that most countries have ratified insist that governments should take the necessary steps towards the progressive achievement of the right of everyone to…"sufficient and safe water for personal and domestic use" (UN, 2006).

A crucial observation that can be made at this juncture is that, the recognition of sufficient, affordable and safe water as a human right in itself does not imply that its provision should be solely made by the public sector. Moreover, Budds and McGrahan (2003:95) point out that, there are no arguments in the literature that "rule out a role of corporatised utilities" in water provision. But perhaps the most contentious issue in the corporatisation debate is the view that the application of private sector principles in the provision of water services is largely motivated by profit-generating objectives. According to Budds and McGrahan (2003:95) the prominent view is that human rights are violated by corporatisation based on the hypothesis that corporatisation is typically accompanied by full cost-recovery through user fees. Opponents of corporatisation argue that this commodification of water infers that it will be sold to the highest bidder, often at the expense of the poor. They maintain that "water has important biological and symbolic values beyond the market" (Bond, et al, 2001:4). Drawing on the aforementioned arguments, opponents of corporatisation argue that the state must be

the only institution to provide water– not private companies or corporations (Roth, 1987:231; Tabarrok, 2005:2).

b. The IMF, World Bank and other IFIs as architects of the neo-liberal agenda impose water corporatisation on developing countries

The IFIs such as the IMF and the World Bank dogmatically believe that "water commercialisation and corporatisation is the proper course of action for developing countries" especially African ones (Hunter, 2010:5). The IFIs are guided by a neoliberal view, according to which "state abstention from economic protection of citizens' economic and social welfare is conceived as the foundation of the good society" (Spronk 2010: 160). Literature is not short on how the World Bank and IMF have become the primary instruments for the implementation of the neo-liberal agenda in developing countries (Simutanyi, 2006:2). The "neo-liberal prescriptions" are embodied in the stabilization and Structural Adjustment Programs (SAPs) as well as the Highly Indebted Poor Countries (HIPC) Programs of these institutions. The SAPs and HIPC laced with harsh conditionalities, have been used as preconditions for foreign aid and debt relief from the IFIs in most developing countries (Bayliss, 2002; Budds and McGrahan, 2003:109; McDonald and Ruiters, 2005). Water commercialisation has been pushed through as one of the conditionalities in African countries and there is a plethora of evidence that substantiates this. An evaluation of the WB and IMFs loan documents in over 40 countries, indicated that during the year 2000, IMF loan agreements with 12 borrowing countries such as Rwanda, Uganda, Ghana and others, included water commodification and full-cost recovery as a conditional requirement" and partial or full privatisation and corporatisation of water supplies is the vehicle through which this was to be attained (Grusky, 2001:3; Mwebe, 2005; Van Overbeke, 2004). Unfortunately, most developing countries (especially African ones) have little choice and have grudgingly adopted the prescriptions offered by the IFIs for fear of losing out on foreign aid and debt relief.

c. Corporatisation has raised public health concerns in some countries

A crucial point that opponents of water commercialisation raise is the inability of the corporatised entities to resolve public health concerns that arise from the non-availability of

water resulting from service cuts. According to Swatuk (2005:46), the proliferation of informal settlements as a result of recent massive influxes of people into urban areas coupled with punitive cost recovery policies that are aggressively promoted by corporatised services have set the scene for health emergencies such as epidemics of waterborne diseases (like cholera, dysentery) in the absence of proper water and sanitation. For instance, household disconnections for the non-payment of water charges led to an outbreak of cholera in Grootboom, in South Africa's Kwa-Zulu Natal province in 2001 (Flynn and Chirwa, 2005:72). This has also been evident in Cape Town and Durban, two South African cities, where the "commercial ventures and the stringent cost-recovery mechanisms" employed by the public water service provider for the cities culminated in "massive crisis in service cut-offs, jeopardizing the potential for millions of low income households to lead healthy and productive lives (McDonald and Ruiters, 2005). For the same reasons as above, in early 1999, Harare experienced a cholera outbreak (Mate, 2005:229).

Public health concerns as a result of commercial objectives and cost recovery mechanisms are not a situation unique to African countries. In the UK, following an outbreak of dysentery in the city of Birmingham in 1998, "the court outlawed the use of water meters or any other instrument that may cut-off the water supply from the consumer, irrespective of the circumstances" (Citizen, 2002:1). These instruments were later declared illegal under the U.K. Water Act 1998 (Ngwane, 2004:3). However, this research argues that the negative effects of water commercialisation and increased pricing are more severe in developing countries than developed ones, because access to water supply is closely linked with income and public health, particularly for underprivileged groups.

d. Corporatisation leads to monopoly in public service provision

One of the motivations for corporatisation is the claim that the state monopolised service provision, and as a result was ineffective and inefficient in service delivery. Minogue, 1998:21). As Hughes (2003) argues, corporatisation breeds competition which provides the incentive for both lowering costs and improving quality. In a competitive environment, utilities have to effectively meet the needs of their customers; otherwise "customers will show their dissatisfaction by withdrawing their patronage from one supplier and taking it to another" (O'Connor and Sacco, 1993:5). This argument definitely establishes that this type of competition is only likely when there are other businesses that compete for the same clients

by offering similar or better quality of services within the same market environment (O'Connor and Sacco, 1993:5). However, Parker and Kirkpatrick (2003:2) raise the fundamental point that for the water sector "the target market in many African countries (Southern ones) is very small for more than one supplier. Besides, it is difficult to have rival supply or competition as a result of the nature of water provision, for instance it is problematic if not impossible for one service area to have more than one piped water network. Hence monopoly is in some sense inevitable even under corporatisation.

2.11 Summary of Chapter 2

This chapter has dealt with the evolution of SOEs and the emergence of the neo-liberal agenda through the application of the NPM doctrine as a result of the purported failures in SOEs. It has illustrated how the reformation of the public service took two phases; the first phase which is widely associated with the proliferation of privatisation as an international reform strategy. This chapter also establishes that the World Bank and IMF have been in the forefront of promoting privatisation and imposed it on most African countries in exchange for debt relief and aid. The SAPs and HIPC programs since the late 1980s are the avenues which they have used to achieve this in Africa. However, the widespread failure recorded in privatisation projects across the world led to the rise of the second phase of reforms which is synonymous with corporatisation. The promotion of corporatisation is attributed to a variety of reasons such as state failure in water service provision, low levels of investments in the water sector and the need to classify water as an economic good, to mention a few. This view has not gone unchallenged and opponents of corporatisation have argued that it lacks a human face and raise the concern that despite being a human right and essential to the preservation of life, water will only be provided to the highest bidder and consequently corporatisation marginalises the poor. It has also been documented that water corporatisation has led to public health crises such as cholera in areas where adequate water is lacking as a result of disconnection from the water network for the non-payment of fees. However, it is important to note that a consistent critique of water corporatisation infers a retreat to public service provision and while this research acknowledges the shortcomings of water corporatisation it is not necessarily championing this view.

CHAPTER THREE: Background of Corporatisation in Zambia's Water Sector

3. Introduction

This chapter provides the background of corporatisation in Zambia. It begins with an overview of Zambia's background, particularly State Owned Enterprises, and proceeds to expound the challenges that spawned the introduction of commercialisation in the country's water sector.

3.1 Background of Zambia

Like many African countries, Zambia's transition from colonialism to self-rule in 1964 beamed with promise. At the time of independence, Zambia was a middle-income country. "Born with a copper spoon in its mouth," the production and export of copper formed the backbone of the economy (Dagdeviren, 2008:1). However, continuing foreign economic domination and "relatively absent local [indigenous] participation and entrepreneurship" were a politically volatile issue for the Zambian leadership (Musambachime (1999:15). According to the party of liberation, the United National Independence Party (UNIP), efforts to redress this included pursuing a programme of nationalisation.

3.2 Nationalisation and the establishment of State Owned Enterprises

The nationalisation of industries in Zambia involved "the state taking over the physical or financial assets found within its geographical boundaries from private enterprises, either domestically or foreign owned" (Burdette (1977:472). Thus, the establishment of State Owned Enterprises (SOEs) became the vehicle through which Zambia's nationalisation programme was to be achieved. The benefits associated with nationalisation included awarding the indigenous Zambian peoples the opportunity to participate in the economy (through the government). It was also felt that in the long term, a large private sector which had been established under the auspices of a colonial administration could not be trusted to operate in conformity with UNIP's policy objectives (Libby and Woakes, 1980: 34). Further,

more aligned with Marxist thinking, was the assertion that government's interventionist role was the best and surest way to accelerate economic growth (Musambachime, 1999:16). This point resonates well with President Kaunda's *Towards complete independence Matero* speech in 1969, where he voiced that "political independence without economic independence [was] meaningless" (Musambachime, 1999:16).

Armed with the above philosophy, in 1968 the UNIP government embarked on the "Mulungushi economic reforms" and thereby creating SOEs; by the mid-1970s most of the main enterprises in the economy were under state ownership (Craig, 2000: 357). The mining industry did not escape the euphoria of nationalisation; in fact, it was the target of the second wave of reforms that commenced in 1969 which led to the Zambian government acquiring majority holdings in the mining industry by 1970 (Walters, 2010). The only thing which distinguished the copper companies from the other industries in Zambia, which were also nationalised, was the dominance of the mining industry as an earner of government revenue and major source of foreign exchange for the country (Libby and Woakes, 1980:34). The third and fourth reforms followed in the mid-1970s, with the former related to the formation of a government-owned bank and the latter related to a take-over of building societies and insurance companies (Musambachime, 1999:16).

The SOEs were governed by a board of directors and chief executive director (CED) but their appointment was political as it was a prerogative of the President (Kenneth Kaunda). "Appointments were a reflection of the loyalty of individuals to the president and the ruling party" (Musambachime, 1999:17) as is evidenced by the high turn-over in the appointment and dismissal of Chief Executive Directors often without prior consultation of the board of directors. Budgetary/financial and recruitment decisions were also made at the discretion of the politicians who sat on the boards of the SOEs and sometimes overruled by the President himself. Suffice to say then, the SOEs lacked autonomy, be it administrative or financial.

The SOE sector achieved rapid growth and came to occupy a central position in the national economy (about 80%), accounting for over 50% of the total gross domestic product (GDP) per annum and one third of the workers in the formal wage employment (about 30-40% of the total labour force) between 1973 and 1979 (Musambachime, 1999:16). "The copper mining industry raked in more than 80% of the country's foreign exchange earnings, over 50% of

government revenue and at least 20% of total formal sector employment" in the late 1960s and early 1970s (Simutanyi, 2008:1).

However, in the early 1980s the performance of the SOE sector proved to be unsatisfactory and faced numerous constraints such as low profitability, colossal indebtedness and underinvestment (Musambachime, 1999:16). For instance, by 1985 the SOEs were contributing about 35% to the GDP, but expended 56% of the domestic investment and accounted for 13% of the country's external debt. According to the Zambia Privatisation Agency (1995:7) the situation worsened between 1985 and 1989 when the SOEs cost "US$455 million in hidden subsidies [in line with governments socialist agenda] against dividends of just US$22 million" (Musambachime, 1999:16) Other failures associated with the SOEs included the creation of unfair monopoly of services as a result of operating in sheltered markets, overstaffing, subjectivity to political interference, widespread corruption and nepotism, and their being used as a cloak for business elites to accumulate wealth through links to state capitalism (Simutanyi, 2008).

Opponents of nationalisation argue that "such results are the inevitable consequence of state ownership'' (Craig, 2000:357). However, considerable literature suggests that more concrete problems can be noted which justifies in large part, the experience of Zambia during this epoch. For instance, Zambia's nationalisation programme was ill-timed because it coincided with developments on the international stage such as the unprecedented increases in oil prices and decline in international copper prices; global prices of commodities were being dictated by the dominating Western capitalist nations (Burdette, 1977; Simutanyi, 1996). The latter was especially harmful for a country with such a high dependency on copper and was "exacerbated by the fact that government believed that prices would soon rebound" (Walters, 2010). This forced the government to treat the mining industry as a "cash cow" and borrow extensively to maintain its social expenditure with the negative corollary of increased indebtedness.

3.3 Reforming Zambia's State Owned Enterprise Sector: the beginnings of privatisation

The above-mentioned crises created a conducive environment for President Kaunda to succumb to the pressure of the IMF, World Bank and donor agencies and pursue an orthodox

Structural Adjustment Programme with the view of stabilising and restructuring the economy in 1983 (Cocq, 2005: 241). Also high on the agenda was resuscitating the SOEs via subsidies. However, the IFIs had other plans, in exchange for assistance and debt relief, Zambia had to accede to harsh conditionalities including the devaluation of the kwacha, trade liberalisation, cut-backs in social expenditure, cancellations on food and fertiliser subsidies, reduction of the labour force, a general wage freeze and the lifting of price controls on commodities and inputs (Simutanyi, 2008: 2). This had negative corollaries for the already ailing SOEs and by the late 1980s most SOEs were run down.

The overall effect of the SAPS was felt by Zambia's inability to finance social welfare programmes, such as education and health. In addition, people's living standards deteriorated; the cost of living escalated due to inflation and the prices for essential commodities like the staple maize meal skyrocketed, forcing urban dwellers to protest through demonstrations and riots in December 1986 (Simutanyi, 1996: 827). All this was done against and fuelled by a background of a one-party participatory democracy as President Kaunda had banned all parties except UNIP earlier in 1972 (Burdette, 1988:62). Burdened with the widespread display of discontent with the SAPS, along with pressure from labour, manufacturers and UNIP leaders, a desperate President Kaunda cancelled the IMF agreement on in 1987 (Cocq, 2008: 241). It was replaced by the interim New Economic Recovery Programme in 1988 which reintroduced pre-1982 controls such as price controls and subsidies based on the premise that the "IMF programme had brought pain, malnutrition and death to the people of Zambia " (Simutanyi, 1996: 827).

The subsidies dished out to SOEs during this period temporarily boosted the performance of the SOEs. However, this was short-lived. In the early 1990s President Kaunda was forced to make a major policy *volte-face* and announced the government's intention to partially privatise the SOEs (Walters, 2010). This was impelled partly by the crumbling of the Soviet Union which threatened his authoritarian regime and the third wave of democratisation sweeping across the globe in the 1990s (Simutanyi, 1996). More importantly, this move was prompted by the poor performance of the SOEs and the colossal debts the country had accrued as a result of subsidising them. Added to this was the collapse of Zambia's economy and increased discontent with the Kaunda regime. In 1991 Kaunda called for multi-party elections, in which he was defeated and this led to the installation of the Movement for Multi-

party Democracy (MMD) government with Frederick Chiluba inaugurated as President (Musambachime, 1999:16).

Once in office, the MMD proceeded with a more rigorous implementation of the 1989 adjustment agreement signed with the IMF and in line with their party ideology, embarked on an aggressive programme aimed at liberalising, restructuring and resuscitating the economy "by focusing on the engine of growth being through private initiative and private sector development" (MMD, 1993; Cocq, 2005: 42). Driven by this neo-liberal agenda and taking advantage of the early euphoria of its victory the party pushed through fast-paced reforms (Cocq, 2005:46). Exchange controls were removed; major cuts were made to public expenditure and the public service was restructured.

A reform that was particularly outstanding was the adoption of the Privatisation Act of 1992 (or Act Number 21 of 1992) which provided for the privatisation (divesture) of most SOEs. Efforts to privatise Zambia's SOEs began under the UNIP era but gained impetus in the MMD government). Privatisation was taken up with great fervour such that between 1993 and 1998 more than 250 SOEs representing 85% of the Zambian economy was privatised (this led to a substantial reduction in government expenditure) (Larmer, 2005:5). This included the privatisation of the "golden goose," the mining conglomerate Zambia Consolidated Copper Mines (ZCCM), as it was claimed there were no cows to be sacrificed in the privatisation process (Simutanyi, 2008:3).

The Zambian privatisation story has been praised in many quarters with the most influential assessment coming from the World Bank. In their opinion, Zambia's privatisation programme was the 'most successful' and provided many examples of 'best practice' that should be emulated by other countries. According to White and Bhatia (1998:4), "despite Zambia's small size it outperformed other countries pursuing privatisation policies" and late President Chiluba has been on record as stating that "privatisation was an essential feature of Zambia's economic recovery (Musambachime, 1999:7).

Along with this positive version of the Zambian privatisation process is a conflicting version which depicts the programme as a deeply flawed process. Craig (2000: 361) points out that this second version has been more influential locally and among academics and NGOs in contrast to the positive version which is extensively accepted at the international level. Some

critics regard privatisation as a deliberate move by the World Bank, IMF and donor agencies to "roll back" the achievements of the public sector such as bridging the class cleavages created by the colonial era and government's social responsibility to provide subsidised services like water (Musambachime, 1999:25). According to Craig (2000:363) the privatisation process in Zambia simultaneously created the conditions for re-colonisation of the economy by foreign capital and concentrated local capital accumulation and political power. Szeftel (1982:2000) confirms this when he states that the levels of investment and technical expertise required to manage these enterprises were beyond the reach of the indigenous business class, while the political elite did everything in their power to gain direct ownership of productive assets. The World Bank itself conceded that Zambian citizens account for only 5% of the privatisation sales (Cocq, 2005:243). This had subsequently led to a loss of control of key industries to foreign control and management, which Musambachime (1999: 26) argues, threatens the national security and sovereignty of a country- as a result Zambia became a dumping ground for mediocre products subsidised by multinationals which did not embrace local products. However, Cocq (2005: 243) points out that the Zambian government under the leadership of President Mwanawasa became more cautious of wholesale privatisation, stressing instead the role of 'private sector participation' and 'partnerships.

A disparate collection of interests have also been opposed to privatisation. Both opposition parties and members of the MMD party itself have criticised the privatisation process on the premise that it was not transparent (Craig 2000: 363). This is in contrast with the evidence revealed in White and Bhatia's (1998:156) study which noted that "Zambia was the one country in which not one interview revealed any concern about the transparency of the [privatisation] process." The labour movement's dissatisfaction with privatisation is evident in their authorisation of a massive strike in 2004 (Times of Zambia, 2002). Several indigenous NGOs have also been critical of privatisation. For the most part they have rejected the idea of privatisation and condemned any relationship with the World Bank and IMF, blaming it for the escalation of unemployment, while others have merely pointed to problems of process. However, Cocq (2005:244) makes the fundamental observation that the debate around privatisation has largely been "limited to questions of *who* gets to dictate private sector-led development (the government or the World Bank), rather than *whether* private sector-led development is the correct policy option for Zambia."

3.4 Zambia's water sector reforms and corporatisation

While Privatisation has been the common method of the NPM reform for most of Zambia's SOEs (under the MMD rule), it has not been the case for the water services sector. Zambia's water sector has undergone tremendous transformation over the years. This section of the research will outline some of the legislative, institutional and financial moves that have shaped the landscape of the country's water sector since the early 1990s.

Prior to the 1990s, the provision of water and sanitation services was the responsibility of municipal authorities but the infrastructure was owned and maintained by central government (Chitonge, 2006: 2). On the Copperbelt province, a different arrangement existed where ZCCM owned and ran the water network and supplied water to the mines, its employees and other residents in the mine townships (Dagdeviren, 2000). Water tariffs in all the urban centres of Zambia were heavily subsidized by the government with charges paid as part of housing rentals (consumers did not get separate water bills for water consumed every month).

From the late 1980s, economic decline took a toll on essential services including water supply. The crisis in the sector deepened with Municipal companies facing financial constraints brought about by poor revenue collection and low billing, exacerbated by years of dwindling government funding as a result of the recessionary conditions of the 1970s (Cocq, 2005:244). This meant that water service provision could not be extended to meet the increased demand. The crumbling infrastructure further led to excessive losses in terms of leakages and became difficult for municipals to achieve cost recovery (Senkwe, 1999). Adding to this plethora of deficiencies was the country's institutional set-up which was poorly coordinated, resulting in the "duplication of duties and tension between the various ministries over roles and jurisdictions" (Chola, 2003:17). It is as a result of and as panacea to this situation that the reforms in Zambia's water sector commenced.

a. Legislative changes

The most monumental legislative reform in Zambia's water sector was the adoption of the National Water Policy (NWP) in 1994 which formed the cornerstone of the water sector reform by stipulating the guiding principles for the reform process. Seven principles were enshrined in the NWP which can be summarised as follows (GRZ, 1994):

- The separation of water resources functions between water supply and sanitation;
- separation of regulatory and executive functions within the water supply and sanitation sector;
- devolution of authority to local authorities and private enterprises;
- achievement of full cost recovery for water supply and sanitation services (capital recovery, operation and maintenance) through user charges in the long run;
- Human resources development leading to more effective institutions;
- appropriate to local conditions;
- and increased government spending in the water sector.

The most notable transformation introduced through this policy was the reclassification of water (from a social good to an economic good), the embracing of full cost recovery and the corporatisation of all of Zambia's water utilities (NWP, 1994:28). Another policy introduced was the Water Supply and Sanitation Act No. 28 of 1997, which made provision for the creation of a national regulator in the water sector i.e. NWASCO (GRZ, 2000). This is discussed in further detail under institutional changes.

Zambia's water sector reforms where implemented in three phases as the following table illustrates.

Table 4 Phases of water sector reforms in Zambia

Main reforms	Period	Key outcomes	Status
Legislative & Policy development	1994-1998	National Water Policy National Water and Sanitation Act Decentralisation Policy	Completed
Establishment of new institutional framework	1998-2000	Separation of Water and Sanitation Services from Water Resources Management Establishment of National Water Supply Regulator Establishment of CUs	Completed
Rehabilitation & expansion of infrastructure	2000- present	Establishment of Devolution Trust Fund Department of Infrastructure and Support Services takes over infrastructural development	On-going

Adopted from Chitonge (2011:3)

b. Institutional changes

While the general mood towards improving the performance of SOEs was full privatisation and even though the 1997 Water and Sanitation Act permitted it (and public private partnerships), it did not feature in reforming the water sector. Instead Zambia adopted corporatisation because of the detrimental consequences of full privatisation that the country was still nursing. Further, the privatised utilities were still associated with sluggish performance and poor service delivery. Added to this was negative experiences that had been documented in most African countries regarding water privatisation and as a result "no private sector investors were willing to invest in the water sector" in the early 2000s (Chitonge, 2010:14). The closest Zambia came to involving the private sector in water service provision was the management Contract awarded to the AHC in the mining towns of the Copperbelt[1] from 2000-2005. The World Bank facilitated this through a loan to the Zambian government but the contract was cancelled in 2005 on the grounds that it did not outperform the public utilities. Hence the service was transferred to another public utility on that Province, Nkana Water and Sewerage Company (Dagdeviren, 2000).

Armed with the philosophy that corporatisation in the water sector would achieve cost recovery, improve access to water, increase accountability and encourage the responsible use of water by consumers, Zambia began corporatizing its water services rigorously in 2000 and by 2009 the country had successfully corporatised all of its Water Utilities (11 in total) (NWASCO, 2010:5). The exceptions were Lusaka WSC and Eastern WSC which had been corporatised in a pilot project earlier in 1989 and 1992, respectively (Dagdeviren, 2000).

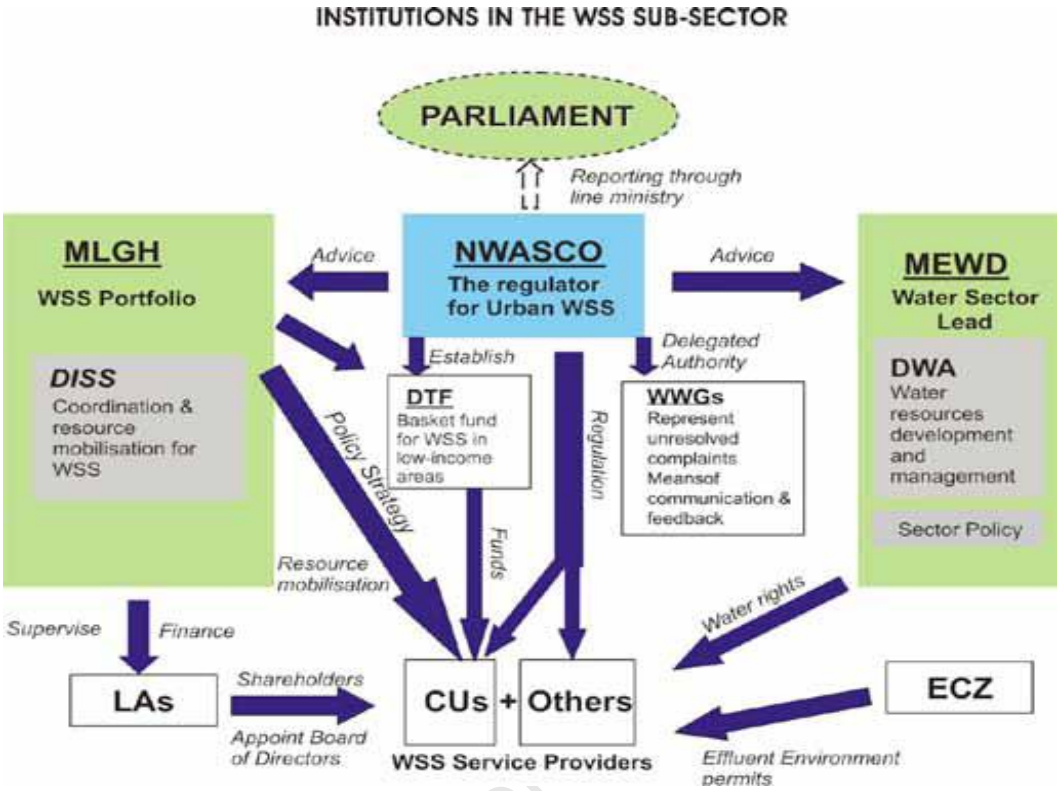
In the Zambian case, CUs are operated as separate commercial entities registered under the Companies Act and "regulated by private company law and not public law or statutes" (Chitonge, 2007; 2011:5). These Commercial Utilities have regional or provincial monopoly in water supply and distribution, for instance, each province has a CU except for the Copperbelt which has 3 CUs, which all operate in different territories. The CUs have Boards and a management which is competitively recruited from the market by the former. So all processes are handled just like private companies (i.e. financial and budgetary oversight,

[1] The contract was awarded to AHC-MMS, a local subsidiary of SAUR.

strategic plans, etc. lies in the hands of management). As for the Boards, each CU has a 10 member board. The members are nominated by the municipal councils who are the shareholders in the Water Service Companies, accountable to the Ministry of Local Government and Housing (Dagdeviren, 2000). The composition of the Board is prescribed by the said ministry, a cross section of members and two appointed by the Minister. CUs (Management) report to the Boards who, in turn, are accountable to the shareholders who are accountable to government (Mbilima, 2012).

Since the proliferation of corporatisation in 2000 in Zambia, donor agencies have been the major source of funding to the water sector and accordingly have come to bear immense clout and influence in "policy formulation and choice in programmes" (Chitonge, 2011). This point is reiterated in a country report by the Water Aid (WAZ, 2009) which indicated that the state contributes only 10% of the overall funding to the water sector while donors still provide 90%. Figure 1 illustrates some of the institutional changes that took place during the reorganisation of Zambia's water sector.

Figure 1: Institutions in the Zambian Water Supply and Sanitation Sector post Water Sector Reforms



Source: NWASCO (2010)

Table 5 lists the current CUs in Zambia.

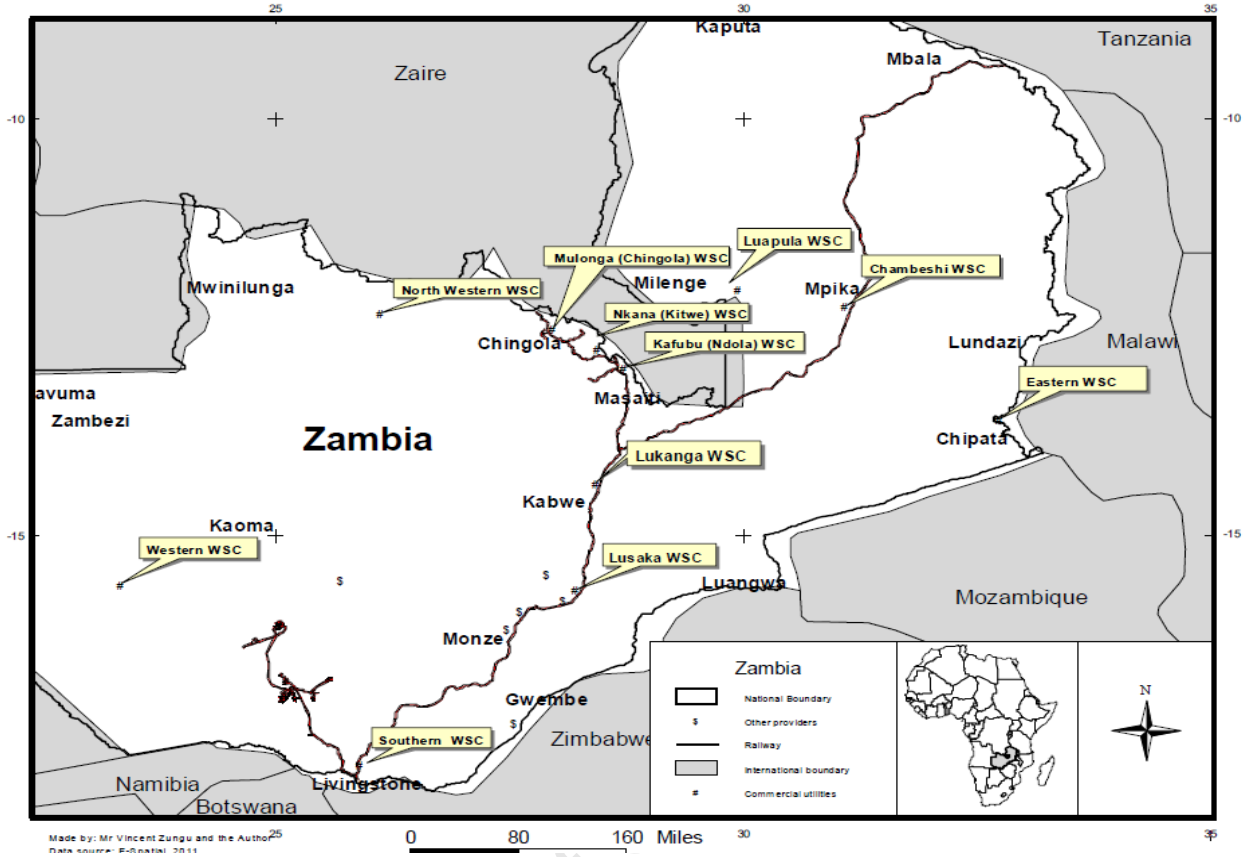
Table 5 Profile of Commercial Water Utilities in Zambia

Utility	Start of operations	Province	Town HQ	Number of Towns served	External support	Level of economic activity
Lusaka	1989	Lusaka	Lusaka	4	World Bank	High
Nkana	2000*	Copperbelt	Kitwe	3	ADB	High
Kafubu	2000	Copperbelt	Ndola	3	Denmark	High
Mulonga	2000	Copperbelt	Chingola	3	-	Medium
Lukanga	2006	Central	Kabwe	6	ADB	Medium
Southern	2000	Southern	Choma	17	-	Medium
Chambeshi	2003	Northern	Kasama	12	Irish Aid	Low
North Western	2000	NorthWestern	Solwezi	7	-	Medium
Eastern	2009**[2]	Eastern	Chipata	8	Germany	Medium
Western	2000	Western	Mongu	6	Denmark	Low
Luapula	2009	Luapula	Mansa	7	-	Low

Source: Adapted from 2010 NWASCO sector report, pg. 3

It is important to note that despite some CUs servicing a large number of towns, it does not necessarily mean that they cover a wider population. On the contrary, CUs like Lusaka WSC, Kafubu WSC and Nkana WSC (which only service 4, 3 and 3 towns respectively) are known as the 'Big Seals' because they service large numbers of Zambia's population. Figure 2 below shows the geographic location of Zambia's eleven Commercial Utilities.

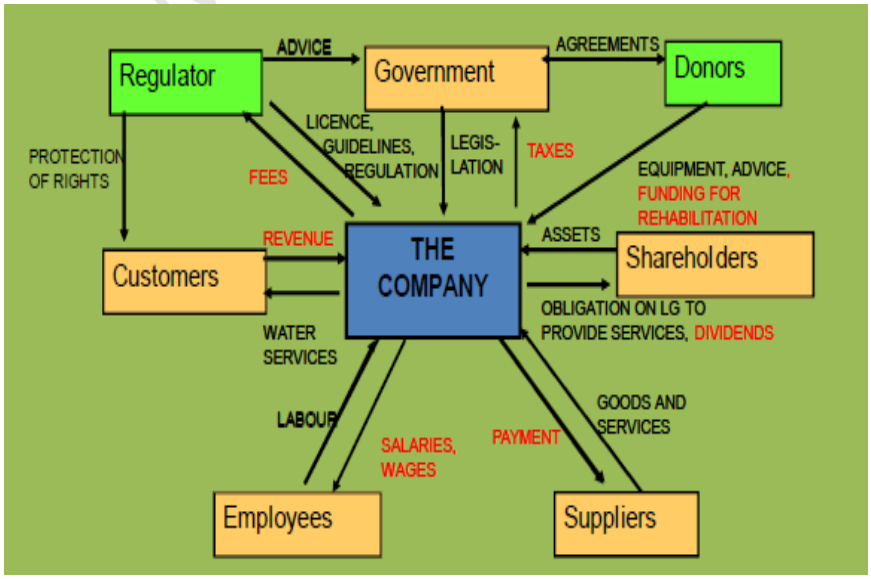
Figure 2: Geographic Location of Water and Sewerage Companies (WSC) or CUs



Adapted from Chitonge (2011:7)

Further, the Commercial Utilities in Zambia have adopted the following CU Business Model.

Figure 3: Zambia's Commercial Utility Business Model



Source: Adapted from Masupha (2010:2)

According to Figure 3, a CU has a unique relationship with each actor in the water sector. For instance, a CU is obliged to pay its taxes to government which is the creator of legislation all CUs conform to. The latter has agreements with donors concerning funding for rehabilitation, equipment and advice to the CUs. Government also acts on the advice of the regulator and the latter ensures that CUs adhere to regulations and guidelines such as licensing and compliance with service delivery benchmarks. Meanwhile, the CUs remit fees to the regulator in addition to data indicating their performance. The regulator also acts as the protector of consumer rights, by virtue of the consumer providing the CUs with revenue in exchange for water services. The CU is obliged to deliver local government services and is accountable to the shareholders who enjoy the dividends from the CU. To enable the operation of the CU, labour is needed in the form of employees who are remunerated for their services. A similar arrangement is also seen from suppliers who provide goods and services to the CUs who in turn pay for such services. The clear roles of each actor mentioned above are what propel commercialisation.

Another fundamental change prompted by the reform process was the establishment of the water sector regulator NWASCO in 2000 as provided for by the Water Supply and Sanitation Act No.28 of 1997. NWASCO's major role is to act as a watchdog in Zambia's water sector. Its full range of responsibilities includes "developing guidelines for service provision, tariff setting, and for the establishment to licensing and monitoring of commercial utilities" (NWASCO, 2000). NWASCO is also mandated by law to create and manage a Devolution Trust Fund (DTF) that will provide grants to support utilities with commercialisation. NWASCO is not only tasked with ensuring government policy is implemented but also ensuring the withdrawal of the state (both national and local) from direct involvement in water service provision. This is a trend not unique to Zambia. The withdrawal of the state from public service provision is a global approach which has been supported by conventional economic policy and promoted by donors and international development agencies since the early 1980s (Bayliss and McKinley, 2007; Chitonge, 2010).

The organogram of NWASCO is occupied by representatives from specific government ministries as well as "the Chamber of Commerce and Industry, the Environmental Council, the Consumer Protective Agency, the Competition Commission, members of the private sector and from the public, all of whom are appointed by the Minister of Local Government or NWASCO itself" (Cocq, 2005:246). Further down at the grassroots level, in order to bring

the interests of the consumers on board and monitor service provision, NWASCO has established community based and Water Watch Groups (NWASCO 2002). It is also crucial to point out that the presence of NWASCO has facilitated the collection of data on the performance of the 11 CUs in light of the poor records of management at the start of the commercialisation process. Further, NWASCO, through regulation, seeks to emulate the effects of competition. This is despite claims that NWASCOs regulatory strength is compromised by virtue of its financial viability being dependent on the licence fees of CUs (Cocq, 2005:347).

3.5 Triggers of corporatisation

Apart from the need to restructure the water sector, this research observes that there are several other dynamics that prompted Zambia's water sector reforms and corporatisation in particular. The following sections unpack in greater detail the forces that have shaped the moves towards corporatised water supply and sanitation since the early 1990s.

a. Deterioration of water services

As earlier mentioned, prior to 1994, the provision of water and sanitation lay in the hands of local authorities in both urban and rural areas. However, by the late 1980s the local authorities became increasingly incapable of delivering water services particularly in urban areas which were marked by rapid population growth and inadequate financial investment for the operation and maintenance of existing water service systems (Senkwe, 2000: 4). This was exacerbated by the existence of crumbling infrastructure in the water service system across the country which was more pronounced in major cities and towns. According to the country's Fifth National Development Plan (FNDP) (2006) and NWASCO (2005) the collapse of infrastructure was as a result of using "infrastructure installed in the 1940s meant to serve a population of 200 000 people and was still being used to serve a population of close to two million people" by the early 1990s. A study conducted by *Water Aid* in 2009 revealed that population increase without corresponding infrastructure upgrading and expansion coupled with reduced funding to the water sector made it impossible for local authorities to operate efficiently. Thus, ageing infrastructure was the sectors' biggest challenge.

According to a German Technical Aid (2004) report, "low capacity, erratic payment of municipal workers and inability to attract skilled personnel from the labour market" ensued in the deterioration of water and sanitation services to the extent that some of the municipalities could not even provide and maintain basic level services. The rapid deterioration of water and sanitation services prompted the Zambian government to embark on rigorous reforms in the water sector. Thus corporatisation may be viewed as both a result of and solution to the deteriorating water and sanitation services in the country.

b. Low investment levels

Another factor that triggered corporatisation was the low levels of investment present in the water sector. This point is reiterated by Dagdeviren (2008:183) who observes that "fiscal concerns were the main incentives driving the reform process." According to Bayliss (2003), in numerous developing countries (Zambia inclusive), the water sector is viewed as a high risk area and seldom profitable. Thus, the sector struggles to attract private capital investments. This is not a trend unique to Zambia. Most developing countries have experienced the same difficulties in attracting private investment and even worse, attract increased government funding to the water sector. Meanwhile, in countries where this private investment has been secured, the GTZ (2004) point out that it has been almost negligible. This is despite the common assertion that private sector investment in the water sector has been a lucrative venture in certain parts of the world (McDonald and Ruiters, 2005).

For the Zambian government in particular, it has been documented that funding to the water sector had been dwindling prior to corporatisation, adversely affecting local authorities as they battled to cope with the growing demand for water services (WSP, 2004). It is imperative to point out that, while the government tightened its hold on public expenditure, it did so unwillingly; it was dictated by the IFIs as a way to reduce budget deficits in exchange for aid and debt relief (Simutanyi, 1996:12).

c. The realisation that water is an economic good

The corporatisation of water services in Zambia like in many other countries is supported by the commodification of water which means the recognition of water as an economic good. This view became popular following its entrenchment in the Dublin Statement (1992, Principle No.4) and Agenda 21 (1992, 18.8) which acknowledged "water [as] an economic good, whose value should be realised through correct pricing." This point resonates well with Zambia's 1994 National Water Policy (1994), which emphasises treating water as an economic good and simultaneously appreciating its social and cultural value. Further the predicament (in the 1990s) in the water sector, the policy argues, was instigated by poor cost recovery ensuing from a "perception of water as a cost-free social good rather than as an economic one", and, as such, "tariffs must 'reflect both the cost and true economic value of a commodity' in order to 'provide the right signals' to consumers and bring adequate returns to the supplier." Therefore, commercialisation through cost recovery is viewed as a vehicle through which this is supposed to be realised (Chitonge, 2011). This view is cemented by the realisation that water is a scarce resource that needs to be protected and utilised carefully especially in the light of climate change and pollution.

d. Decentralisation

It is also crucial to note, that the reforms in the water sector were linked to other major reforms the country was undergoing at that time such as the Public Sector Reform Programme (PSRP), which encouraged decentralisation, downsizing the civil service and structural adjustment measures all adopted under the auspices of the World Bank (Phiri cited in Cocq, 2001:11). Notably, decentralisation was not a trend only common to Zambia but the world over. In both the international and Zambian context, decentralisation of political and economic power was meant to transfer power from the centre to the periphery (local levels of government) and the water sector was not spared.

e. Global water management trends

During the same period, global water management trends like "corporatisation" of water services (insisted on by the World Bank, IMF and donor agencies) were sweeping the globe and Zambia also came under increasing pressure to follow suit if it was to retain any assistance from the World Bank, IMF and other donors (Phiri cited in Cocq, 2005: 32).

3.6 Summary of Chapter 3

This chapter has provided an overview of Zambia's public service provision since independence. It outlines how the country was driven by nationalism and how that ultimately led to the poor performance of SOEs, including water utilities. It subsequently explores the liberalisation policies that the country introduced in a bid to remedy this and how the country was radical in implementing privatisation. However, privatisation did not feature in the country's water sector, instead all of the country's' urban water services were corporatised. The Chapter outlines various reasons why corporatisation was introduced in Zambia including state failure in water service delivery; low investment levels in the water sector coupled with deterioration in water services as a result of increased population and no matching expansion of the water system; and the realisation that water is an economic good. Another important observation is that the triggers of corporatisation in Zambia's water sector mostly emanated from within the country's borders, as much as there are indications of external influence. This Chapter sets the scene that instigators of corporatisation in Zambia envisaged that corporatisation of urban water services would improve water service delivery.

CHAPTER FOUR: A Critical Analysis in terms of the Improvement Indicators

4. Introduction

This chapter offers a critical analysis of "corporatisation" as an option of NPM in Zambia in terms of the "Indicators of safe piped water services delivery improvement" as discussed earlier in chapter One.

4. 1 Key performance indicators and benchmarking

For the purpose of this research, the NWASCO benchmarks will be used as a scoreboard for progress in the Zambian water sector. Notably, these benchmarks are within the range of appropriate benchmarks used by other countries (World Bank, 2006). According to NWASCO (2010:39), benchmarking encourages competition among water service providers by incentivising a CU to improve its own previous performance as well as outperform the others. Each performance indicator discussed and analysed in this section will be accompanied by a corresponding benchmark table.

4.2 Commercial Water Utility Clusters

While this research will be taking a holistic approach to the analysis of the CUs performance, it is crucial to mention that the comparative performance of CUs consistently attracts contestations and debate due to the differing characteristics of the CUs. Markedly, the CUs operate under "varied conditions in terms of geographic coverage, level of economic activity in the area of operation, state of infrastructure and level of external support" (NWASCO, 2010: 40). As such, the CUs are usually clustered on the basis of certain criteria such as "water production volumes, number of connections and population size in the service area" which NWASCO argues, enables comparison of performance within the same category and across the board. The clusters have been established for large, medium-sized and small companies in the table below:

Table 6: Commercial Utilities' Clusters

Cluster	Commercial Utility	Total population in service area as at 2011	Number of connections	Water Production (Million m3)	Number of towns/cities serviced
1	Lusaka	1,937,630	76,749	98.6	4
	Nkana	701,870	45, 983	55.9	3
	Kafubu	653,299	48, 807	55.5	3
	Mulonga	446,719	43,330	60	3
2	Lukanga	376,574	15,403	24.8	6
	Southern	339,735	31,535	20.8	17
	Chambeshi	286,493	14,288	15.2	12
3	North Western	236,157	7,661	3.9	7
	Eastern	224,379	10,316	4.8	8
	Western	179,124	9,257	7.6	6
	Luapula	177,363	2,929	3.6	7
Totals	**11 CUs**	**5,559,343**	**306,258**	**351**	**76**

Adapted from NWASCO sector reports 2001-2011

4. 3 Indicators: improvement in terms of reasonable access

Table 7: NWASCO benchmark for reasonable water service coverage

Performance indicator- Service coverage	Very Good	100%
	Good	>90%
	Acceptable	80-90%
	Unacceptable	<80%

Adapted from NWASCO sector reports 2001-2011

Table 7 indicates that the acceptable range of water service coverage is 80% and above.

Table 8: Access to water across CUs in Zambia, 2002-2011

CU	Number of connections / percentage of water services coverage by year										Number of people per connection	
	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	01	10
Lusaka	34,814	34,514	37, 252	41,145	46, 152	48, 676	52, 488	71,417	73, 240	76, 749	31.6	25.0
	34%	70%	80%	79%	65%	64%	67%	68%	70%	75%		
Kafubu	25, 251	26, 898	36, 844	36, 901	36, 206	35, 135	45, 598	41,110	48,365	48, 807	16.4	13.1
	63%	84%	90%	93%	95%	92%	88%	84%	86%	87%		
Nkana	28, 601	27, 751	31, 191	23, 966	73, 656	75, 364	41, 174	41,403	43, 805	45, 983	16.2	15.6
	81%	92%	79%	62%	84%	85%	82%	85%	88%	90%		
Mulonga	18, 080	20, 984	20, 635	20, 591	20, 341	21, 083	45,001	40,242	41,600	43,330	13.6	10.3
	86%	91%	90%	86%	89%	91%	84%	87%	89%	90%		
Southern	18, 664	18, 814	20, 041	21,629	23, 734	24, 461	25, 629	26, 579	29,529	31, 535	15	11.1
	49%	54%	41%	63%	82%	83%	85%	89%	89%	92%		
Chambeshi	-	-	7, 353	7, 693	8, 292	9,480	12, 311	11,533	12,344	14, 288	-	22.3
	-	-	46%	39%	46%	47%	50%	58%	63%	66%		
Lukanga	-	-	-	-	-	10, 610	11, 383	12,706	14,360	15, 403	-	25.5
	-	-	-	-	-	40%	42%	65%	66%	66%		
Eastern	4,306	4, 659	5, 279	5, 078	5,266	5, 522	5, 842	6,102	9,903	10, 316	23.7	22
	71%	71%	57%	69%	60%	59%	68%	79%	58%	65%		
Western	7,040	5, 606	6, 607	6 ,628	6,616	7, 409	8, 155	8,339	9,775	9, 257	31.4	18.1
	28%	30%	29%	47%	46%	47%	55%	57%	58%	51%		
North	3769	3, 959	3, 992	4, 412	4,426	5, 587	5, 806	6,230	6,882	7, 661	-	-

Western												
	36%	31%	27%	15%	62%	60%	58%	63%	69%	73%		
Luapula	-	-	-	-	-	-	-	-	3,993	2, 929	-	43.4
	-	-	-	-	-	-	-	-	19%	15%		
Total connections	182,649	185,000	193,000	167543	213,053	243,322	253,387	265,661	293,796	306, 258	22.6	19.6
simple mean	56	65	59.8	61	69	66	67	73	68	70%		

Adapted from NWASCO sector reports 2001-2011

[-] no data available

NB.: the simple mean is used instead of the median because of the absence of outliers

Table 8 indicates that there has been significant improvement in the number of connections between 2001 and 2011 for most of the Zambian CUs. Generally, the number of connections rose from 182, 649 in 2001 to 306, 258 in 2011. Three CUs (Lusaka, Mulonga, and Eastern) in particular stand out and have more than doubled their number of connections in the period of reference while the rest (with an exception of the Luapula CU) have shown tremendous progress. This shows that there was concerted effort to increase connections to broaden the customer base.

This translates to more people being connected to the piped water system since the start of corporatisation in 2000. Only Luapula has shown deterioration regarding the number of connections. However, it is important to note that this CU has only been in existence for 2 years and therefore, it would be too soon to judge its performance harshly. A close examination of the number of connections in Table 8 reveals that of the 11 CUs, 5 had a small network with less than 15,000 connections in 2011. This is a far cry from the minimum size of efficient operation of water utilities in other developing countries estimated at 100,000 connections (Foster, 2005). According to Chitonge (2011:8), the magnitude (small) of the network makes it difficult for the realisation of economies of scale for the CUs. However, 5 CUs out of the 11 recorded over 30, 000 connections.

Another factor crucial to examining the extent of coverage levels in the service area as well as the spread of the water network is the number of persons per connection. Table 9 further down indirectly indicates that while there has been an increment in the number of

connections the number of people per connection is still high (from 22.6 in 2001 to 19.6 in 2011), and indicates that perhaps the improvement made over the decade has been modest. It is also imperative to point out that there is no telling whether the increase in the number of connections to the network recorded over the past decade in Zambia's water sector is a result of expansion or merely the reconnection of once disconnected households. However, NWASCO (2011) argues that most CUs have embarked on database cleaning exercises over the more recent years in a bid to remove duplication connections.

Generally table 8 suggests an upward trend in the percentage of people with service coverage (proportion of the population in service area with access to services) across the CUs from 56% in 2001 to 70% in 2011. Over the decade (2011-2011), though there has been stabilisation towards the 70% mean, there has been mixed progress in this regard. Seven CUs recorded increases in coverage levels with Lusaka, Western and North Western WSCs doubling their coverage ratio between 2001 and 2011. Two CUs (Eastern and Luapula) recorded a decline in coverage in the same period, with the latter at the bottom of the barrel with a mere 15%. With regards to Eastern WSCs decline in coverage ratio it is imperative to factor in the transformation it underwent in 2009 (from Chipata WSC to Eastern WSC) which resulted in the incorporation of areas formerly serviced by Local Authorities into Eastern WSC.

Table 8 also illustrates that coverage for some CUs has been fluctuating while in some CUs, coverage ratios have remained fairly stable, with most CUs recording an increasing trend over the last 5 years. Despite this progress, table 8 also indicates that only 3 CUs (Southern Mulonga and Nkana WSCs) have sustained their service coverage ratio and met the NWASCO benchmark of 80% and above as at 2011 (NWASCO Sector report, 2011). The sluggish progress recorded for service coverage could be a reflection of both the rising population pressure and low investments for infrastructural development in the water sector.

4.4 Indicators: Efficiency

4.4.1 Unaccounted for Water

Unaccounted for Water (UFW) is a measure of technical efficiency that is used for the purpose of analysis in this research. According to NWASCO (2008:36) UFW is "the measure

of water lost in the distribution system" or the "difference between the quantity of treated water distributed in the network and the quantity of water that is actually billed." UFW comprises technical losses (e.g. due to leakage) and commercial losses (unbilled customers, illegal connections and wastage on un-metered customers' premises) (NWASCO, 2008:36). While any loss of revenue is unacceptable in business, a benchmark of 25% is considered as an acceptable loss, according to NWASCO. This is point is reiterated in the table below.

Table 9: NWASCO Benchmark for Unaccounted for Water

Performance indicator- Unaccounted for Water	Good	<20%
	Acceptable	20-25%
	Unacceptable	>25%

Adapted from NWASCO sector reports 2001-2011

The table above suggests that UFW of 20% is the NWASCO benchmark for all CUs, though anything between 20 and 25% is acceptable and any UFW above 25% is considered undesirable.

Table 10: Unaccounted for Water trends across Commercial Water Utilities, 2002-2011

Commercial Utility	UFW by percentage (%) by year										Metering ratio Percentage (%)	
	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	2001	2011
Lusaka	58	58	52	55.8	55	51	50	51	48	43	32	62
Kafubu	50	59	58	57.3	57	58	48	46	45	49	4	52
Nkana	59	50	50	45.5	37	35	40	38	42	51	59	41
Mulonga	57	52	59	61	59	56	42	42	42	40	17	60
Southern	52	50	51	56	55	43	40	40	39	35	9	74
Chambeshi	-	-	60	60.3	60	54	53	50	46	44	-	41
Lukanga	-	-	-	-	-	61	58	52	48	58	-	78
Eastern	25	27	32	29.1	26	31	30	33	51*	48	100	80
Western	67	51	57	44.2	40	47	42	47	52	45	18	14
North Western	40	49	40	45	40	36	33	31	34	34	2	100
Luapula	-	-	-	-	-	-	-	-	62	67	-	0
Simple mean /median for metering	**51**	**49.5**	**51**	**50.4**	**47.6**	**47.2**	**43.6**	**43**	**46.2**	**46.7**	**17.5**	**60**

Adapted from NWASCO sector reports 2001-2011

[-] no data available

[*] indicates that the UFW for Eastern WSC dramatically increased from 25% in 2001 to 51% in 2010 and is still reasonably high because of the transformation it underwent in 2009, when what used to be Chipata WSC was transformed into EWSC by adding areas which were formerly serviced by Local Authorities.

Regarding UFW across all CUs, Table 10 reveals that there has been improvement; the amount of water lost has declined from an average of 51% in 2001 to 46.7% in 2011. But, in 5 of the 11 CUs, UFW remains very high and has in some cases increased or doubled (as in the case of Eastern WSC with an UFW percentage of 67% in 2011). With an overall UFW percentage of 46.7% and in some individual cases (over 50%), about half of the water produced by CUs is unaccounted for. This also means that on average, CUs bill less than or about 50% of what they produce. This adversely affects the availability of the commodity to other needy areas. These high levels of UFW also have severe repercussions for the CUs in

terms of cost recovery (Komives et al, 2005) and makes it problematic to realise equity objectives or some semblance of sustainability (Foster, 2005).

A closer look at table 10 also suggests that the metering ratio improved significantly for most CUs over the past 10 years. In 2001 it was recorded at an average of 17.5% and it increased to 60% in 2011. Notably the median is used here due to the presence of outliers. Metering is essential for monitoring and managing water services, and it contributes significantly to the reduction of UFW (Komives et al., 2005). The argument this research makes is that the installation of prepaid meters in communities enables consumers to monitor their consumption and thus making it more likely for them to use water carefully. However, despite the doubling of metering ratio for most of the CUs between 2001 and 2011, this research argues that it has not led to what the CUS expected; instead the percentage of UFW remains very high, suggesting that perhaps there are other factors that contribute to UFW, such as leaking pipes due to lack of maintenance and poor infrastructure.

Table 11: Collective lost revenue as a result of UFW, 2004-2011

All CUs	Year							
	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11
UFW in Million Kwacha	114, 546	136, 469	144,264	186, 766	201,262	198,570	285,563	338,278
Total Billing in Million Kwacha	113, 670	133, 335	146,641	204,293	210, 592	302,635	346,967	384,667

Adapted from NWASCO sector reports 2001-2011

US$1=K5, 181 in 2012

According to Chitonge (2010) and Dagdeviren (2008) illegal connections coupled with fixed payments and uncollected bills are contributing factors to water wastage and unmeasured consumption. CU's annual reports and Water Sector specialists also attribute high levels of UFW to "vandalism, ineffective accounting and monitoring of customer databases" (AHC-MMS, 2002, 2003; Nkana WSC, 2003). In order to appreciate the enormity of the problem the water losses (UFW) were translated into monetary terms, as shown in Table 11. Ideally this should incentivise each CU to come up with a strategy of realising some of this revenue.

Table 12 also indicates that the problem is escalating and the revenue lost on UFW is almost on par with, and in some cases even more than, the revenue collected from billing (i.e. in 2004 and 2005).

Given the plethora of reasons for high UFW rates, the remedies warrant a multi-faceted approach. However, what remains paramount to all solutions is "up-front investment in the renewal, maintenance and extension of the existing network [infrastructure], in metering, in systems of monitoring and in human resources" Dagdeviren (2008:189) argues. This has the positive corollary of reducing the costs of maintenance and UFW and making better use of economies of scale in the sector.

4.4.2 Number of staff per 1000 connections

For the purpose of this research, the main indicator used to measure staff efficiency is the number of "staff per 1,000 connections or the number of employees responsible for 1000 water connections. Comparing different CUs by means of such indicators requires some additional considerations. For instance, smaller CUs and those that are spread over a larger region are usually not able to "realize the same economies of scale as larger companies when it comes to personnel cost" (NWASCO, 2011:57). It has been argued that the lower the number of staff per 1,000 connections, the higher the staff efficiency of the company. For instance, European countries like the United Kingdom or France, the norm is about 2 or 3 staff per 1000 water connections (Bakker, 2006).

Table 12: NWASCO benchmark for staff per 1000 connections

Cluster 1	Good	5
	Acceptable	6-8
	Unacceptable	>8
Cluster 2 and 3	Good	9
	Acceptable	10-14
	Unacceptable	>14

Adapted from NWASCO sector reports 2001-2011

Table 13: Number of staff employed per 1000 water connections across CUs, 2002-2011

Commercial Utility	Number of staff per 1000 connections										Total number of staff	
	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	01/02	10/11
1 Lusaka	14	15	14	12	11	13	12	11	11	11	493	819
Kafubu	10	9	7	8	8	8	8	9	7	7	246	318
Nkana	10	11	10	13	9	8	9	9	8	8	291	347
Mulonga	9	8	8	7	8	8	7	8	7	7	165	309
2 Southern	12	13	13	11	11	10	10	10	9	8	225	268
Chambeshi	-	-	19	18	18	19	15	16	15	13	188*	182
Lukanga	-	-	-	-	-	18	18	15	13	12	192*	190
3 Eastern	13	12	11	11	11	12	13	11	11	12	58	182
Western	15	16	15	14	14	13	15	14	10	11	103	100
North Western	15	14	14	12	12	12	12	13	13	11	56	88
Luapula	-	-	-	-	-	-	-	-	14	17	56*	50
Totals											1637	2853

Source: Adapted from NWASCO sector reports 2001-2011

[1, 2, 3] cluster number

[*] as at time of establishment

According to table 13, there has generally been a decrease in the number of staff employed per 1000 connections across CUs in all the clusters over the period 2001-2011. It is important to note that in the years following corporatisation most CUs still struggled with distorted employee figures due to the unresolved question of seconded staff and the inclusion of casual workers. In 2011 all CUs with the exception of Lusaka and Luapula met the benchmark in their respective clusters. However, for the former, table 13 reveals a trend of failure to meet the benchmark since 2001 and this is despite Lusaka WSC being given a head start by being corporatised as early as 1989. Meanwhile, the inability of Luapula WSC to meet the benchmark has been attributed to the reduction in the number of water connections (NWASCO, 2011:58).

An interesting observation to make is that while the number of staff per connection has decreased across all CUs, the number of staff CU has generally increased since 2001 (from 1637 to 2853) as table 13 indicates. A possible reason for this is that more staff have been employed to cater for the increase in the number of water connections over the decade. This is however, not the route envisioned for the corporatised utilities, as one of the reasons for establishing CUs was to ensure leaner and consequently more efficient utilities.

4.5 Indicators: Service quality

4.5.1 Quality of water

The significance of water quality cannot be overemphasised given the health impact it has on consumers. The compliance level used by the CUs and NWASCO not only factors in the number of samples conducted but also in the percentage of results meeting water quality standards. As such, low compliance might imply deficiency in the required rigorous tests or "adherence to water quality standards" (NWASCO Sector Report, 2011: 47). Water is thus subjected to bacteriological and physiochemical tests to ensure that it is safe for human consumption. Thus it is no surprise that Table 14 below reveals a stringent benchmark of 95% and above.

Table 14: NWASCO benchmark for water quality, 2001-2011

Benchmark for water quality	Acceptable	>95%
	Unacceptable	<95%

Adapted from NWASCO sector reports 2001-2011

Table 15: Water Quality Compliance across CUs, 2005-2011

CUs	Overall water quality compliance (%)						
	04/05	05/06	06/07	07/08	08/09	09/10	10/11
Lusaka	74	81	80	79	84	85	89
Kafubu	86	60	93	93	93	98	92
Nkana	100	91	70	81	84	98	97
Mulonga	91	90	8	95	92	92	95
Southern	94	80	94	93	93	95	97
Chambeshi	50	60	10	31	45	91	87
Lukanga	-	-	71	70	76	93	95
Eastern	93	95	58	20	70	80	86
Western	90	49	13	85	90	80	89
North Western	90	95	69	97	97	100	99
Luapula	-	-	-	-	-	-	79
Simple mean	82		57		70		91

Source: Adapted from NWASCO sector reports, 2005-2011[2]

According to table 15, on average there has been a modest increase in the quality of water supplied to consumers across the CUs from an average of 82% in 2005 to 91% in 2011. Table 15 also reveals that over the last six years very few CUs have met, let alone sustained, the NWASCO benchmark of 95%. The same is true of 2011 where only Nkana, Mulonga, Lukanga and North Western WSCs met the NWASCO benchmark of 95%. This shows that the remaining CUs have recorded low compliance and consequently deficiencies in adhering to NWASCO's water quality standards. At certain times water quality has dipped to such dangerously and unacceptably low levels such as 8% in the case of Mulonga WSC, 10% for Chambeshi WSC and 13% for Western WSC in 2007. This may have negative ramifications on the health of consumers of such water. However, it is imperative to note that most CUs are taking strides in the right direction as can be seen from table 16 where they are all moving towards the 91% average.

[2] A system of monitoring the CUs' compliance to water quality standards was only put into place in 2005 by the introduction of NWASCO's water quality guideline. This obliged all CUs to not only carry out rigorous tests but also publish water testing results. Thus Table 15 only has data from 2005 onwards.

4.5.2. Hours of supply

As earlier mentioned in the research, the *hours of supply* will be considered as another indicator of service quality. Below is a table that indicates the service hours that are deemed acceptable in the supply of water across households in Zambia.

Table 16: NWASCO Benchmark for Hours of Water Supply/Service

Performance Indicator- Hours of water service/supply	Good	>18 hours
	Acceptable	18 hours
	Unacceptable	<18 hours

Adapted from NWASCO sector reports 2001-2011

From the above table, it is evident that 18 hours of service is the NWASCO benchmark for all CUs and any number of hours below 18 is considered unacceptable.

Table 17: Hours of water service per day across CUs, 2001-2011

CUs	Hours of service by financial year									
	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11
Lusaka	12	15	16	15	11	15	16	16	17	18
Kafubu	16.5	15.3	16	14	15	15	15	15	16	15
Nkana	12	16.5	18	18	19	20	16	16	16	16
Mulonga	15	16	17	16	15	17	17	17	17	17
Southern	8	12.1	16	16	17	14	14	18	19	20
Chambeshi	-	-	8	11	8	9	11	12	16	16
Lukanga	-	-	-	-	-	15	16	17	19	21
Eastern	24	12	24	24	24	24	22	21	21	17
Western	19	19.3	19	17	11	8	8	8	10	10
North Western	11	12	12	19	15	20	20	22	23	23
Luapula	-	-	-	-	-	-	-	-	4	6
Simple mean	14.7	16.3			15	15	15.5	16.2	16.1	16.2

Source: Adapted from NWASCO sector reports 2001-2011

[-] data not available

Table 17 reveals that there has generally been slight progress regarding the hours of water supply for the CUs over the past 10 years – from an average of 14.7 hours in 2001 to 16.2 hours in 2011. Thus, on average, service hours increased by 1.5 hours per day between 2001 and 2011. While the table suggests this overall increment, it also indicates that there has been a modest convergence of most CUs towards meeting the NWASCO benchmark of 18 hours of supply/service per day. Out of the 11 CUs, only 4 CUs (Lusaka, Southern, Lukanga and North Western Water and Sewerage Companies) were able to meet the benchmark in 2011. Meanwhile, Western and Luapula Water and Sewerage Companies were at the bottom of the barrel, with the latter failing to reach even half of the NWASCO benchmark.

Also noticeable is a slight deterioration over the years for 3 CUs (Kafubu, Eastern and Western Water and Sewerage Companies) in terms of the number of hours when water is available to the public. According to table 17 the above mentioned CUs recorded lower hours of supply in 2011 than in 2001, a year into their corporatisation. Chitonge (2011:10) raises the crucial observation that, it is not meaningful "to count the number of connections if the water connections have no water for most of the day." Further, it is also imperative to point out that the reflected hours in table 17 do not take into consideration the service supply interruptions characteristic of low income and peri urban areas

4.6 Indicators: Tariffs, collection efficiency and cost recovery

Due to the fact that the above mentioned factors are inter-connected (i.e. they all determine the profitability and hence ability of continuity for CUs), the analysis of the effect of corporatisation on these factors cannot be separated. The table below shows the benchmarks set by NWASCO regarding Operational and Management (O&M) costs and collection efficiency. A CU is said to realise cost recovery if it can cover its O&M costs as much as possible from the money it collects from water charges- i.e. the percentage of collection efficiency.

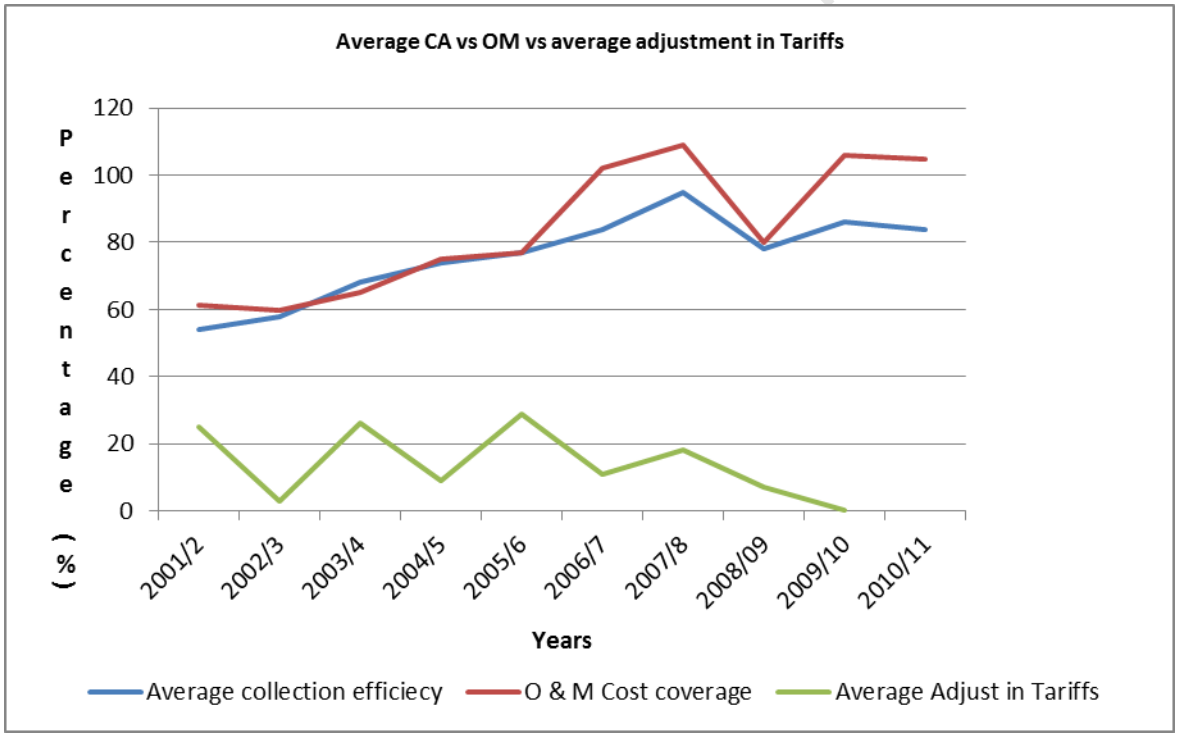
Table 18: NWASCO benchmark for coverage of O&M Costs & Collection efficiency

Benchmark for coverage of O&M Cost as a %	Good	>150%
	Acceptable	100 – 150 %
	Unacceptable	<100%
Benchmark for Collection efficiency as a %	Very Good	>95%
	Good	90-95%
	Acceptable	85 – 90 %
	Unacceptable	<85%

Adapted from NWASCO sector reports 2001-2011

According to table 18, the benchmark for O&M costs as a percentage of collection efficiency is 100% while the benchmark for collection efficiency itself is 85%.

Graph 1: Coverage of O&M costs & levels of collection efficiency



Adapted from NWASCO sector reports 2001-2011

Graph 1 reveals that on average, most CUs have been struggling and even unable to cover their O&M costs over the decade (2001-2011). Over the past 4 years however, a trend has emerged where an average CU has been able to cover its O&M costs. This is evidenced in the increase of the O&M cost coverage by collection from 61.1% in 2001 to 105% in 2011. This

translates to an average CU being able to cover 105% of its O&M costs from the revenue it collects. This has been propelled by an increase in collection efficiency since 2001 from 54% to 84% in 2011. This means that most CUs are in a position to realise cost recovery, an objective that corporatisation advocates for.

However, the tariff adjustments in graph 1 reveal that for an average CU, the ability to cover its O&M costs is not solely as a result of operational efficiency but an increment in water charges/tariffs as well. Chitonge (2011:12) holds a similar view and argues that where there are "noticeable efficiency gains, these gains are usually translated into a reduction in the O&M costs which, in turn, result in a gradual decrease in average tariffs."

Table 19: Cost of operation breakdown by percentage

CU	Breakdown of operational costs (out of a 100%)							
	Personnel		Chemicals		Energy		Other	
	01/02	10/11	01/02	10/11	01/02	10/11	01/02	10/11
Lusaka	30	36	5	5	30	15	35	44
Kafubu	30	51	3	8	54	19	13	22
Nkana	15	45	9	10	19	20	57	25
Mulonga	12	44	9	11	25	20	54	25
Southern	45	48	11	8	29	14	15	30
Chambeshi	-	54	-	3	-	19	-	24
Lukanga	-	52	-	2	-	24	-	22
Eastern	61	55	3	3	16	12	20	30
Western	23	50	6	2	59	13	12	35
North Western	50	54	4	1	26	5	20	40
Luapula	-	58	-	4	-	13	-	25

Adapted from NWASCO sector reports 2001-2011

However, what is apparent from table 19 is that there has been a steady increment in both O&M costs and the tariffs. While one may argue that water service delivery has improved over the decade as evidenced in the increment of hours of service, water quality and access among most CUs, it is not justified to assume that it warrants a yearly increment in tariffs. However, it is meaningful to argue that the high levels of UFW (technical losses) recorded over the years absorb whatever operational gains the CUs have made. While certain segments

of Zambia's population have registered discontent with the yearly increment in water tariffs, it has never manifested in any public protest (Chitonge, 2011:12). Suffice to say then that the public are content recipients of the current services. While it can be seen that corporatisation has led to a general improvement in cost recovery resulting from better collection rates among CUs, it is important to look at the individual CUs and see which ones are really lagging and which ones are on their way to full cost recovery. Appendix I shows the performance of individual CUs in this regard.

While most CUs are able to achieve cost recovery through collection efficiency, it is still crucial to identify the areas which take up most of the revenue. According to table 19, overall personnel costs continued to be the highest component of O&M costs across all CUs with an exception of Eastern WSC which has registered a decline in the personnel costs as a percentage of operational costs. Nkana, Mulonga and Western, have actually doubled personnel associated costs. A possible reason for this is the increase in the number of staff over the decade as was earlier established in this research. In addition to this certain CUs, NWASCO (2011: 52) argues, have experienced high staff turnover which "necessitated the paying of terminal benefits/gratuities and recruitment of new staff," thus the increase in personnel costs as a share of the O&M costs. This may have negative ramifications for improving water service delivery in the sense that personnel costs are catered for to the detriment of other areas which are paramount.

4.7 Indicators: Affordability

While many factors may justify the increment in tariffs, this research is particularly concerned with the effect that this may have on the affordability of water charges for low income and indigent households. A study undertaken by NWASCO (2007:34) to assess the impact of tariffs on Zambian households revealed that 80% of those surveyed spend on average 8% of their monthly household income on water and sanitation services and hence "water is indeed affordable for every Zambian." This is further evidenced in the fact that most consumers are willing to pay much more for luxuries such as calling air time and alcohol than water (NWASCO, 2007:34). However, this says little about what constitutes an affordable tariff.

While there are numerous measures of affordability, this research adopts Chitonge's (2011:12) definition as the "share of a monthly water bill in total household expenditure/income." The World Bank's benchmark suggests that "no households should spend more than 5 per cent of its monthly income on water" (World Bank, 2001). In the UK this figure is set at 3% (Sawkins and Dickie, 2005). Thus, a *Human Development Report* (UNDP, 2006) suggests any expenditure on water services exceeding 5% as likely to cause affordability problems on a household. Moreover, Komives et all (2005) add, "households should be able to pay for water without jeopardising their ability to pay for other goods and services, regardless of how much the household is willing to pay."

Table 20 below provides a clear picture of the share of water bills in the average household expenditure/income. While the World Health Organisations' (WHO) recommended basic consumption of water is 6m3 per month for a family of six, this research adopts 10m3 instead as it is reflective of "a reasonable average consumption level for an average household with six members in developing countries" (Howard and Bartram, 2003; Barnerjee et al., 2008). According to the Central Statistics Office Census 2010 report, the average household size estimates in Zambia is 5.1. Notably, monthly income per capita is used here instead of monthly household income due to the absence of updated and reliable household income data. The percentage of the cost of 10 m3 of water in mean monthly household expenditure/income is calculated by multiplying the cost of 1m3 by 10 (since this research is using 10 m3) and then multiplying the product by 100 per cent and dividing it further by the mean monthly household income as the following equation illustrates:

$$\textit{Consumption of water as a \% of household income} = \frac{\textit{Cost of 1m3} \times 10}{\textit{Mean monthly income per capita}} \times 100\%$$

For example for year 2009 this is equal to:

$$\textit{10m3 as \% of household income} = \frac{0.50 \times 10}{80.8} \times 100 = 6.18 \text{ (rounded off to 6.2)}$$

Table 20: Percentage of 10 m3 of water in mean monthly household /expenditure income

Year	2001	2005	2009
Cost of 1m3 (US$)	0.14	0.21	0.50
Mean monthly income per capita (US$)	25.8	41.7	80.8
10m3 as % of household income	5.4	5.1	6.2
Daily per capita income	0.80	1.40	2.7
Poverty ratio @US$ 1.25	-	64.2	-
Poverty ratio @US$ 2	81.5	81.5	-

Source: Adopted from Chitonge (2011)

[-] No data

According to table 20, the cost of 10m3 of water as a percentage of the mean monthly household income has increased from 5.4% in 2001 to 6.2% in 2010. This translates that in 2001 the water bill took up 5.4% of the average monthly household expenditure/income and this has risen to 6.2% in 2011. Despite the steady increment in per capita income over the years, the significant increase in the water charges over the decade poses affordability challenges for even an average household. This is mainly because households in higher income brackets tend to spend less than their counterparts in low income brackets or indigent households. This is reiterated in the fact that indigent households that are not directly connected to the water network may pay more per unit cost of water and subsequently the share of the water bill may be a greater proportion of their household income (Chitonge 2006).

Further, using the US$2 per day measure as a benchmark, Table 20 also reveals that the income levels of over 64% of Zambian population is below the US$1.25 per day and this means that for many households at or below this income, the water bill of 10m3 is certainly higher than 5% of their monthly household income. This generally means that the majority of households in Zambia are likely to face affordability challenges and particularly so because the state does not provide any direct subsidies to indigents. In a country like Zambia where poverty is widespread, the rising cost of water is particularly a pressing issue for consumers including government officials, even though there are no public displays of protest. Often times, indigent households resort to drawing water from unsafe sources such as streams and wells when they are disconnected from the water network for the non-payment of

water charges. While it is useful for CUs to strike a balance between improving water service delivery and the affordability of the services, it is crucial to point out that water charges are crucial to the sustainability of most CUs especially those that are unable to realise cost recovery due to poor collection efficiency and technical losses through UFW.

From a regional perspective, the results are even more interesting. A study by Dagdeviren in 2008 revealed that Zambia has some of the lowest water charges in Sub-Saharan Africa. This revelation is a possible reason why stakeholders (mostly CUs) in the water services sector advocate for further tariff increments. This finding presents Zambian policy makers with a paradox; 64% of the country's population find the water charges unaffordable even though the average tariffs are already low in comparison to other countries in the Sub-Saharan region. What is apparent from this situation is that any reliance on tariff increases for generating funds for investment across the CUs will not bring about the cost recovery or the extension of water services to unserved areas most CUs aspire to (Dagdeviren, 2008)

4.8 A decade of corporatisation: developments and challenges

This section of the research seeks to consolidate the data presented above by expounding a number of factors that need to be taken into account when constructing a score card on the outcome of implementing corporatisation in Zambia's water sector. As the previous section has revealed, 10 years of corporatisation has yielded not only positive developments but enduring challenges as well.

4. 8.1 Positive Developments

a. Reorganisation of the water supply services

Perhaps the most prominent development corporatisation has brought about since its implementation is the reorganisation of water supply services. As earlier established in this research, prior to the 1994 reforms and subsequently corporatisation, the provision of water services was "clouded in uncertainty and lacking direction" (Chitonge, 2011:15). This stemmed from the absence of clear responsibilities allocated to institutions and consequently the strained relationships it evoked between them which further made it impossible to

coordinate efforts aimed at fine-tuning the sectors performance. A report by the Second PRSP (2004) revealed the severity of this problem and argued that often times it was difficult even to allocate and trace funds to the sector due to the multiplicity of actors involved.

Thus, corporatisation is perceived to have brought stability to the water sector through the establishment of Commercial Utilities which "facilitated the clarification of roles and functions" among the myriad of actors in the water services sector (Chitonge, 2006:9). For instance, as things stand, it is clear that the CUs are tasked with the provision of water services, the watchdog NWASCO is responsible for ensuring that the service providers (CUs) conform to stipulated standards and regulations, whilst the issues of policy and resource mobilisation for the water sector lie in the hands of the Ministry of Local Government (Chitonge, 2006:9; 2011:15). The extent to which these roles are fulfilled is a different question altogether.

b. Improved capacity of the Commercial Utilities

Corporatisation has also had a positive effect on the capacity of the CUs to meet their objectives. Capacity here infers the ability of CUs to provide water services as well as improve service levels. From the data presented above, it is evident that while most CUs have not met the benchmarks, they are taking strides in the right direction, e.g. increasing the number of people with access to water services, the reduction in UFW, an increase in the number of hours of water supply and increased revenue collection.

Capacity also refers to the calibre of staff recruited and maintained by the CUs. A teething problem that CUs experienced with the exception of Eastern and Lusaka Water and Sewerage Companies, was that of inheriting personnel from the former employers, the Local Authorities. This induced a number of challenges for the CUs, for instance, the bulk of the council workers were not in possession of professional qualifications and seldom received proper skills development from their previous employer and this impacted negatively on efficiency (NWASCO, 2002: 8). This was exacerbated by the trend of measly and irregular remuneration from their employers which did little to incentivise them to work hard and instead instilled in them a poor work ethos (Chitonge, 2006: 17). However, over the past 10 years there has generally been moves by CUs to adopt a professional approach to recruitment through "attracting suitably qualified personnel at market-related wages," in addition to

"frequent performance assessment of workers" (Chitonge, 2011: 15) as table 21 shows However, this has mostly been at the managerial level. This in turn has led to improvements in productivity for most of the CUs. However, this research is quick to point out that placing too much importance on efficiency and competence may have the negative corollary of overshadowing other important goals such as affordability, equity and providing services to poor communities.

Table 21: Capacity in terms of Personnel Qualifications

CU	Degree/diploma as % of total number of employees	
	03/04	10/11
Lusaka	10	14
Kafubu	14	14
Nkana	25	19
Mulonga	10	30
Southern	4	15
Chambeshi	15	15
Lukanga	-	20
Eastern	10	16
Western	11	12
North Western	9	28
Luapula	-	25

Adapted from NWASCO sector reports 2001-2011

[-] no data

Another improvement in capacity is exemplified by the manner in which the CUs relate with the public which it serves; 'an increased degree of certainty in the services offered.' Whilst, water supply interruptions are still prevalent, they are consistent in the sense that the CUs ensure that their customers are notified beforehand via various media including radio and television announcements, newspapers, fliers and sometimes mobile communication vehicles (Chitonge, 2011: 15). This ensures that customers are not caught unawares but can prepare for the service interruption by storing enough water for the day. Meanwhile, a NWACSO (2011:37) report revealed that the factors that continue to hamper consistent water service delivery and result in unplanned interruptions across the country are sometimes beyond the control of the CUs, for instance, load shedding and unstable power supplies (power outages).

c. Depoliticisation of the water supply services

Another positive development associated with corporatisation in Zambia is the reduction of political interference in the water sector. In order for commercialisation to flourish, first of all there must be an independent regulator in the sector which will subsequently promote the independent operation of and competition among CUs. The regulator acts as a referee and ensures that the rules of the game are adhered to by both the water service providers and policy makers and consequently yield intended fruits. In order for the regulator to do this it must enjoy a certain degree of autonomy and be free from interference from politicians and stakeholders, a practice which was rampant prior to the reform process when the local authorities ran the show (GTZ, 2004). In the absence of this independence, a number of issues such as "licensing, tariff review procedures, settlement of disputes between providers and customers or among CUs, implementation of standards and monitoring compliance of service providers" become compromised (Chitonge, 2006: 11).

The extent to which the regulator is autonomous is dependent on many factors, but perhaps the most important one is the source of its operational funds, whether they are derived from government or not. Literatures suggest that "if operational finances for a regulator are sourced from government, the probability of political interference is higher than if the funds are sourced from outside government circles" (Chola, 2003:23). This point is reiterated in a study of regulatory systems in the water sectors of Sub-Saharan countries' which revealed that "in order to curb the risk of political influence, a regulatory body should not be funded through government institutions but instead the fees collected from the providers through a tariff surcharge" (GTZ, 2004).

In the case of Zambia, all CUs are mandated to remit a percentage of their annual tariff charges in addition to their licence fee to the regulator which covers the bulk of the latter's operational costs (75%) (NWASCO, 2004b). This funding is supplemented by a small grant from government and donor aid. The affirmation that NWASCO has attained and maintained high levels of autonomy was illustrated in 2001 when it approved tariff increases a few months prior to general elections (GTZ, 2004: 25). However it is important to point out that too much autonomy comes with negative repercussions such as the inability of government to control the regulator even though it may exhibit inappropriate behaviour.

This aside, the autonomy of the water regulator has had positive corollaries for the independent operation of the CUs in Zambia. For instance, although political interference has not been entirely weeded out, most CUs being private companies enjoy a certain level of autonomy and discretion in making decisions regarding recruiting staff, what wages to pay, control over budgets and how to run the company (Mbilima, 2000). Furthermore, corporatisation has intensified the ability of water service providers to be self-sufficient and autonomous by virtue of being financially ring-fenced. According to Chitonge (2011:16), this minimum level of autonomy is crucial in ensuring that CUs desist from being involved in a tug-of-war by the various interest groups.

4.8.2 Enduring Challenges: factors inhibiting successful corporatisation

a. The subtle disappearance of the state in the water sector

One of the major challenges that corporatisation has spawned is the vacuum created by the retreating state in the water sector. This is a view shared by Chitonge (2006:19) who argues that there has been a "subtle disappearance of the state from being the guarantor and protector of people's right of access to water." Numerous literatures argue that by no means should the service providers and the regulator supplant the state in the quest to achieve equal and adequate access to water. In the Zambian scenario, Chitonge (2006:19) makes the interesting observation that the state has apparently "withdrawn behind the curtains acting as a spectator, watching and peeping once in a while to see how the CUs are managing the crisis." Even though NWASCO the water regulator was established by an Act of Parliament, the only role government plays in the water sector is to provide guidance and mobilise resources-the latter which it has not been able to do diligently. The absence of the government in the water sector is also evident at local government level; most municipalities have adopted a wait-and-see approach because they are no longer responsible for providing water services. According to Chitonge (2006:17) some officials from the local authorities who sit on the boards of the CUs and have access to their annual reports claim that this is a sufficient contribution from them.

b. Dwindling government funding to the water supply services

The subtle disappearance of the state from the water sector is further evident and exacerbated by the funding gap that has emerged in Zambia's water sector. This has created a multitude of problems, particularly low investments and the speedy deterioration of infrastructure. One of the reasons why CUs have been unable to increase their production capacity to match the growing demand is the lack of sufficient funds. This is further exacerbated by the fact that most CUs are barely meeting their Operational and Maintenance costs as well as making a profit as the data in the previous section has shown. The regulator NWASCO (2011) shares this view and identifies the lack of capital investment as being a major impediment to the development of the water services sector. This point ties in with a view brought up earlier in the research concerning the source of funding to the water services sector, with government only providing less than 10% of the total expenditure of the sector (Water Aid Zambia, 2009). A more recent report confirms this and indicates that investments in the sector by the government have been low, with allocations in the National Budget of less than 3% of the total (NWASCO, 2011:12).

From this viewpoint, corporatisation has in some subtle way led to the states abrogation of its responsibilities. It is evident that a more aggressive funding model is urgently needed in Zambia's water services sector if the modest successes recorded over the past 10 years are to be sustained and improved on. Clearly, the state should not narrow its role to mobilising resources, but also play an active role in ensuring that the CUs work towards achieving the set objectives for the reforms, especially extending coverage to unserved communities.

c. Crumbling infrastructure

The establishment of CUs occurred at a time when Local Authorities were experiencing operational and sustainability problems. Unfortunately, when CUs took over the provision of water services they inherited a plethora of problems that were inherent in the old system. One of the biggest problems inherited was that of crumbling infrastructure. Generally, the infrastructure handed over to CUs by LAs was built between the 1960s-1970s [over 40 years ago on average] with little or no renovation or upgrading (Kazembe, 2003:17). Dagdeviren (2008) points out that even though donor grants or loans were provided to some CUs at the beginning of the corporatisation process they were not sufficient to fully rehabilitate the existing water networks, with the exception of Chipata WSC where investments were funded

by the German Technical Development organization, GTZ. This explains why Chipata had the lowest UFW (26%) among the CUs in 2006 (NWASCO, 2006).

Even NWASCO (2011:66) acknowledges the severity of the problem and claims that major investment in infrastructure continues to elude the water supply sector. With the present state of affairs of decaying infrastructure in most of the CUs, colossal investments are required in the sector to improve the performance of the CUs. The current infrastructure capacities have been exceeded and the need for new investment is heightened by the growing demand due to a growing urban population and or the mushrooming of new development areas in all major towns with no corresponding level of service provision (NWASCO 2011:66). For instance, according to the Zambia Census Report of 2010, the country has registered population growth over the past 10 years (from 9.8million in 2000 to 13million in 2010) and the majority of this population dwell in urban areas. Moreover, while corporatisation has propelled a clear institutional set-up in the water sector, there is inadequate consultation and co-ordination among stakeholders when it comes to land development and as a result consumers are not at the receiving end of satisfactory services in new development areas. According to a NWASCO Sector report (2011:31) "allocating land without first providing services has resulted in planning in retrospect" and the CUs still do not have readily available investment funds to meet the current demand for services.

The existence of weak or inadequate legal and institutional frameworks, a situation which does not generally stimulate private investment is another major challenge. Particularly the government, has not led by example, for instance despite being a "major consumer of water and sanitation services, it defaults in settling bills at will" (OECD, 2012:113). However, government has recognized the need to address the deficits in infrastructure development by reinforcing public management and financial accountability amongst the Ministries and Spending Agencies. Furthermore, the Government has put in place a deliberate public investment policy for the water and sanitation sector so as to increase funding and address the undercapitalisation of CUs (OECD, 2012:113). Despite the good intentions corporatisation may have they can prove futile in the absence of financial resources for investment in the restoration and extension of the existing infrastructure (Dagdeviren, 2008).

d. Reluctance to extend services to Low Income Areas and vulnerability of the poor

It has also been revealed that there is a tendency for CUs throughout the country to focus on servicing the high income neighbourhoods at the expense of peri-urban and low income areas, which have remained the "areas beyond the cities network' (Chitonge, 2011:16). Dagdeviren (2008) argues that most CUs are reluctant to extend their services to the latter based on the premise that they are "unprofitable due to low collections and payment levels," and Chitonge (2007) adds that the "risks of vandalism and default are high while consumption volumes are too low". This is not a situation unique to Zambia; there has been a common trend for private or commercial water companies to shun poor communities (Hall and Lobina, 2006; Marin et al., 2010; McDonald and Ruiters, 2005).

As such, in the Zambian case it has been challenging to persuade the CUs that it is their duty to ensure that residents of such areas are recipients of clean and adequate water (DTF, 2005). This is despite the Devolution Trust Fund (DTF) providing incentives for service providers to enable them to become interested in extending their water services to peri-urban and low income areas. Prior to corporatisation when the LAs provided water services to these areas, they did not do so on the basis of the profitability of such an exercise but as a social responsibility. On the contrary, Chitonge (2006:17) argues, for CUs "the profit aspect has to be factored into the decision to provide service to low income areas." This has ultimately led to acute disparities in the level and quality of service between high income areas and low income areas. This point is further reiterated in NWASCO's customer complaint database which indicates that residents from low income areas claimed that they were treated like second class citizens. For instance, employees of water service providers respond promptly to complaints from high income areas, while the response to complaints from low income areas is very slow, if any. Also, employees of water service providers' tend to be less lenient with them when it comes to disconnection, compared to customers in high income areas (Chitonge, 2011:17).

The introduction of CUs has also increased the vulnerability of indigent households to exploitation and they often find it hard to afford water services. The CUs shunning of poor communities has resulted in indigent households buying water from their neighbours or unscrupulous tap owners often at exorbitant prices per unit than those connected to the network (Chitonge, 2010). This is less common in areas with communal taps. However, areas

with communal taps face an equally unique problem such as that most tap attendants only sell water up to 6 pm after which the taps are closed and those knocking off from work late are forced to buy water from their neighbours often at twice the cost or more of the water sold at communal taps or water kiosks (Chitonge, 2006:17). Thus corporatisation has prompted the exploitation of indigent households by their neighbours, vendors or tap attendants and made it difficult for them to access this basic right, water.

This raises the fundamental point that the establishment of these CUs (one in each province, except for the Copperbelt which has three) has created monopoly is terms of service provision and customers who cannot afford the water charges are merely disconnected from the water network as the CUs are not in the business of wooing clients as it is the case when services providers compete for the loyalty of customers.

e. The Missing Link: Indigence Policy

The reluctance of most CUs to extend services to poor communities is further aggravated by the absence of an indigence policy in Zambia's water sector. Following corporatisation, a number of social welfare programmes aimed at alleviating discrepancies in water services by meeting the needs of the vulnerable in communities (senior citizens, the physically challenged, orphans, widows, child-headed families) disappeared. These vulnerable groups may not always have money to buy water even at K50 ($0.009) per 20 litre container. According to Chitonge (2006), previously these vulnerable groups fell under the umbrella of the social welfare programmes under the Ministry of Community Development and Social Services. However, following corporatisation this is an entirely different story; the CUs instead are believed to have incorporated this service. However, there has been no evidence of the CUs upholding their end of the bargain. South Africa for instance, has a water lifeline policy that ensures that indigent households are served with 6 kilolitres of water for free every month (commonly known as Free Basic Water). However, if they consume more than 6 kilolitres, they still need to pay. This is not to say that there has been no concerted effort by the Zambian government to make water accessible to all. There have been moves to create a successful approach to water service provision for the poor through the establishment of Kiosk Systems which serve to mitigate the vulnerability of the poor. These systems are the initiatives of the Devolution Trust Fund (DTF), a financing instrument basket established

under the purview of NWASCO and International donors. The arrangement in place is that the CUs provide bulk water to water vendors who sell it in peri-urban areas or areas beyond the water networks. However, no amount of water is given for free at all.

4. 9 Summary of Chapter 4

Chapter Four is a critical analysis of "corporatisation" as an option of NPM in Zambia in terms of the "Indicators of safe piped water services delivery improvement." Some of the indicators include the reduction in UFW, increased access to water, increase in the number of hours water is supplied to consumers, affordability of water charges and the number of staff per 1000 connections.

This research established a number of trends across the CUs concerning the performance indicators mentioned. For instance, there was an improvement in UFW albeit, slightly. In 2001 it stood at 51% and in 2011 at 46.7%. This is despite the increase in metering ratio over the decade. Thus, the high level of UFW may be attributed to not only leaking pipes and vandalism but also unmeasured consumption, illegal connections and uncollected bills. In terms of increased access to water, this research has established that most CUs have recorded successes over the decade. However, much still needs to be done to ensure that the service is extended to unserved areas. With regards to the number of staff employed, the analysis above revealed a reduction across CUs in all clusters but it is crucial to note that the number of employees' in each CU has increased over the years. This may have negative consequences for the efficiency of the CUs.

Water quality across all CUs also seems to have improved on average from 82% in 2005 to 91% in 2011. It is crucial to mention that more measures have to be put in place to ensure that all CUs improve water quality as it has a bearing on the health of consumers. Regarding the number of hours water is made available to the public, there been slight progress over the decade from an average of 14.7 hours in 2001 to 16.2 hours in 2011. However, there has been a modest convergence of most CUs towards meeting the NWASCO benchmark of 18 hours of supply/service per day. Furthermore, although most CUs initially struggled with raising their collection efficiency the past 4 years have registered improvement. This resulted in most CUs realising cost recovery although there is an increment in water tariffs. Regarding

affordability, this research established that a significant proportion of Zambia's population cannot afford water charges as the water bill takes up at least 6.2% of the mean household monthly income/expenditure. As such most indigent households have resorted to unsafe water sources.

Chapter Four has also discussed some of the enduring challenges the CUs have faced which include the lack of infrastructural investment which has precipitated the decay of infrastructure and the inability of CUs to extend their services to unserved areas. Other challenges include the disappearance of the state in the water sector, the reluctance of CUs to extend their services to low income communities, increased vulnerability of the poor and the monopoly-like nature of the CUs.

CHAPTER FIVE: Summary of Findings and Conclusion

5. Summary of Findings

The main objective of this research was to assess whether the corporatisation of urban water services improved water service delivery in Zambia. This research begins by discussing the evolution of State Owned Enterprises including their failures which led to the emergence of neo-liberal models of service delivery under the umbrella of the New Public Management doctrine. The research also highlights the shift from privatisation as a dominant reform strategy and option for public service delivery to corporatisation as a result of the numerous negative experiences the former leaves in its wake. Specific emphasis has been placed on the forces at play in African countries as well as the role of IFIs such as the World Bank and IMF in promoting corporatisation. The research has also explored, albeit not in depth, the effect of corporatisation on water service delivery in countries where it has been implemented.

On a more specific note, the research focused on the reforms and consequently corporatisation of Zambia's urban water services which were prompted by the proliferation of the NPM trends in the Sub-Saharan countries in the early 2000s. The research established that the Zambian government came under increasing pressure from the World Bank and other IFIs to commercialize its urban water services in exchange for debt relief and continued financial support. This research also identified a plethora of internal factors that prompted corporatisation such as the disarray in the water sector, the inability of Local Authorities to extend water service provision to meet the increasing demand, crumbling and ageing infrastructure which led to excessive losses in terms of leakages and the inability of LAs to realise cost recovery. The implementation of corporatisation was thus seen as a panacea to the aforementioned problems.

The question this research sought to answer was whether the corporatisation of urban water services has improved water service delivery in Zambia since its introduction in 2000. While Lusaka and Eastern Water and Sewerage Companies were corporatised way before 2000, the datasets used throughout this research range from 2001-2011 due to the lack of adequate and reliable data prior to the period of reference. Furthermore, the period of reference coincides with the proliferation of NPM principles such as corporatisation and privatisation in the water sectors of African countries. The analysis in this research was made possible through the

selection of some key performance indicators of safe piped water services delivery improvement which included; increased access for people who were not previously connected to the water network, the reduction in Unaccounted For Water (UFW), the reduction in the number of staff employed per 1000 connections, the increase in the quality of water, the increase in the number of hours of water supply and the affordability of water charges (tariffs).

A critical analysis of the corporatisation of Zambia's urban water services over the decade (2001-2011) reveals that there have been both positive outcomes and enduring challenges. Some of the positive outcomes of corporatisation include the reorganisation of Zambia's water sector where the myriad of key institutions/actors in the sector have clear roles and functions, the depoliticisation of the water supply services, improved capacity of the CUs and their staff and stability and consistency of services. These positive achievements have manifested themselves in terms of improved performance indicators such as increased water connections, consistent water supply, increased metering ratios, systematic and credible billing and accessible pay points. However, these positive achievements have been concentrated to high-income areas while low-income areas have recorded minute improvements. Moreover, most of the positive outcomes have been diluted by the modest progress recorded on fundamental performance indicators such as water service coverage, hours of supply and UFW. Accordingly, on one hand the aftermath of corporatisation is associated with modest progress in the core service areas such as the expansion of the water network and availability of services while on the other hand it has recorded success in areas related to Operations and Management (O&M).

Following are the findings:

With regards to the accessibility of safe piped water in Zambia, this research has established that the number of people who have access to this basic need has been increasing since the commencement of corporatisation. For instance, the access to safe piped water in Zambia increased from 56% in 2011 to 70% in 2011. %). The research also reveals that the number of connections to the water network has increased tremendously and almost doubled during the period of reference, from 164, 569 connections to 306,258. This increase is about 20% on average (i.e. 76%-56%=20%). However, this research has also considered it plausible that this increased access of water connections is not solely as a result of the creation of

corporatised water utilities. It could have been as a result of the reconnection of previously disconnected households. As such, if Zambia is to meet the UN MDGs goal of halving the number of people without access to water by 2015, it has to make more concerted efforts to reach this goal.

In terms of reducing the levels of UFW by the corporatised water utilities, this research has established that generally there has been an improvement in UFW (reduction from an average of 51% in 2001 to 46.7% in 2011). However, this achievement is modest as among the 11 CUs, UFW remains dangerously high and in some cases it even increased or doubled. This translates to about half of the water produced by CUs not only wasted but unbilled, which in turn has significant repercussions for the CUs in terms of cost recovery. Notably, most CUs have resorted to metering to alleviate the problem but the high levels of UFW indicate that perhaps there are other factors that add to UFW, such as leaking pipes due to crumbling infrastructure, unmeasured consumption as a result of illegal connections and vandalism.

In terms of reducing the number of staff employed per 1000 connections, this research has found that CUs in all clusters have recorded a slight decrease over the decade (2001-2011). Following the commencement of corporatisation, most CUs struggled with reducing the number of staff employed per 1000 connections as they were burdened with seconded staff they had inherited from their precursors, the Local Authorities. As of 2011, only Lusaka WSC exhibited consistent failure to adhere to the benchmarks set by NWASCO regarding the number of staff employed per 1000 connections.

With regards to hours of supply, this research has established that there has been slight progress for the CUs over the decade evidenced by an increase in the national average from 14.7% in 2001 to 16.2% in 2011. However, this is not to say that all CUs are meeting the set benchmark of 18 hours per day. Others still have recorded a decline in the number of hours of water services. A crucial point to raise here is that the number of hour's water services are made available to the public is very crucial and perhaps it is not meaningful to count the number of connections at all if the customers do not have access to water for most of the day. Added to this is the argument that the data presented in this research does not account for the water service interruptions typical of low income areas. That aside, this research has established that the problem of erratic supply has been minimised by ensuring that all customers are informed about any planned interruption in service prior to its occurrence.

In terms of water quality, this research has found that most CUs have increased the quality of water supplied to consumers, albeit slightly. Over the decade, water quality has risen from an average of 82% in 2005 to 91% in 2011. However, over the past six years only a handful of CUs have sustained the NWASCO benchmark of 95%. This means that the majority of CUs have displayed low compliance and deficiencies in meeting the acceptable water quality standards, with two CUs, for instance, recording levels as low as 8% and 13% in 2007. This may have serious repercussions for the health of the consumers, with the heightened likelihood of contracting waterborne diseases such as cholera and dysentery.

This research also established that on average CUs were struggling to stay afloat as a result of modest collection efficiency. This is evidenced in their inability to cover their O&M costs over the decade and consequently realise cost recovery. However, over the past 4 years a trend has emerged where collection efficiency has been rising and an average CU has been able to cover its O&M costs and consequently realise cost recovery. While this has been the case, this research has also established that the ability of an average CU to cover its O&M costs is not only as a result of operation efficiency but also due to an increment in water charges/tariffs over the years. What is unclear is whether the improvements recorded in the water services sector such as increased hours of service and water quality; to mention a few, warrant the increment in tariffs over the years. However, whatever efficiency gains the average CU makes; these are undermined by some of the technical losses e.g. the high rate of UFW.

With regards to affordability, this research established that a significant proportion of Zambia's population cannot afford the water charges. This comes as no surprise given the widespread nature of poverty in the country with more than 64% living on less than US$1.25 per day. The cost of 10m3 of water as a percentage of the mean monthly household income has increased from 5.4% in 2001 to 6.2% in 2010 and this is higher than the 5% benchmark recommended by the WHO. The consistent increment in tariffs further exacerbates the situation. However, it is crucial to note that because CUs on average have merely met the set collection efficiency benchmarks, their operation and maintenance costs are jeopardised if they do not make up for it in tariff increments. Thus tariff increments are necessary to realise cost recovery and further the sustainability of CUs particularly those that suffer colossal

technical losses i.e. UFW. However any reliance on tariffs alone to improve water service delivery is a far fetched idea.

In terms of the challenges prompted by and inhibiting the implementation of corporatisation over the past decade, the subtle disappearance of the State in the water sector, dwindling infrastructural investment coupled with crumbling and ageing infrastructure, reluctance to extend services to low income areas, the increasing vulnerability of the poor as a result of the growing affordability burden, inability to meet growing demand for water services commensurate with population growth, stand out. Other factors that have inhibited the realisation of the objectives set out in the corporatisation process are manifested in the CUs inability to expand the water network to unserved areas (peri-urban and rural areas), abrupt water service interruption, and unresponsiveness to customer complaints, defective house connections, wrong billing and the denigrating attitude of CU employees targeted at residents of low-income areas.

Another concern is the lack of commitment exhibited by the state in the funding of the water services sector. It is important to note that a consistent critique of the CUs as water service providers infers a retreat to the state actually providing the services to the people. This is not the view this research is championing, instead it argues that the state should put in place proper monitoring mechanisms and provide oversight to ensure that all its citizens have access to this human right (water). Providing adequate infrastructural capital to maintain and expand the existing network is one way of guaranteeing this. Further, more energy needs to be channelled into incentivising CUs to extend their water services to the residents in the peripheries of the towns they serve.

In conclusion, as the above summary of findings reveal, the corporatisation of urban water services has marginally improved water service delivery although problems of affordability still exist. However, it is imperative to note that a number of factors have also influenced the observed achievements as has been established above such as the donor funding that has been made available to finance a number of CU projects.

5.1 Some areas of future research

Based on the findings of this research, the following gaps were identified as areas for future research.

- As this research takes a holistic approach on the performance of the CUs in Zambia, future research can be done to find out just how much individual CUs have changed in their day to day operation. This should target areas such as capacity building among the staff as well as what technology the various CUs have adopted over the period under corporatisation.
- Related to the above gap, a potential area of research would be the performance of private schemes.
- It would also be important to research the effect of the CUs' performance and the growth of investment in their operating areas as one of the important components for how a city/town tends to attract investment in manufacturing is its ability to provide utility services such as water and electricity to industries.
- Future researches should endeavour to compare the effect of corporatisation among different cities in different countries.

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Appendix I

Summary of tariffs, cost recovery and collection efficiency by Commercial Utility, 2002-10[3]

Lusaka

Year	Cost recovery (%)	Collection efficiency (%)	Change in Tariff (%)
2002/3	76%	66%	25%
2003/4	76%	80%	0%
2004/5	74%	77%	0%
2005/6	84%	81%	60%
2006/7	102%	83%	63%
2007/8	111%	95%	0%
2008/09	91%	73%	15%
2009/10	106%	80%	27%

Southern Water

Year	Cost recovery (%)	Collection efficiency (%)	Change in Tariff (%)
2002/3	68%	48%	0%
2003/4	54%	49%	0%
2004/5	65%	57%	0%
2005/6	78%	90%	0%
2006/7	93%	102%	33%
2007/8	104%	108%	17%
2008/09	113%	121%	14%
2009/10	106%	96%	9%

Mulonga

Year	Cost recovery (%)	Collection efficiency (%)	Change in Tariff (%)
2002/3	50%	39%	0%
2003/4	52%	52%	0%
2004/5	59%	58%	70%
2005/6	89%	59%	18%
2006/7	94%	64%	25%
2007/8	111%	77%	4%
2008/09	134%	89%	8%
2009/10	136%	93%	0%

[3] The data for 2001 and 2011 is absent as the data present was on overall performance. The same goes for the 3 CUs that have been left out.

Nkana

Year	Cost recovery (%)	Collection (%)	Change in Tariff (%)
2002/3	50%	52%	60%
2003/4	68%	63%	0%
2004/5	76%	81%	0%
2005/6	84%	78%	25%
2006/7	103%	80%	20%
2007/8	105%	88%	8%
2008/09	78%	63%	15%
2009/10	92%	77%	0%

Kafubu

Year	Cost recovery (%)	Collection (%)	Change in Tariff (%)
2002/3	45%	30%	60%
2003/4	63%	52%	0%
2004/5	95%	65%	6%
2005/6	109%	58%	6%
2006/7	114%	85%	22%
2007/8	128%	96%	14%
2008/09	60%	68%	12%
2009/10	104%	73%	7%

Western

Year	Cost recovery (%)	Collection efficiency (%)	Change in Tariff (%)
2002/3	81%	73%	0%
2003/4	64%	94%	0%
2004/5	61%	76%	55%
2005/6	69%	90%	0%
2006/7	86%	108%	53%
2007/8	78%	82%	0%
2008/09	71%	81%	0%
2009/10	90%	96%	0%

North-Western

Year	Cost recovery (%)	Collection efficiency (%)	Change in Tariff (%)
2002/3	50%	108%	0%
2003/4	45%	97%	67%
2004/5	52%	94%	180%
2005/6	67%	87%	0%
2006/7	90%	85%	39%
2007/8	77%	87%	36%

2008/09	104%	88%	28%
2009/10	85%	103%	3%

Eastern

Year	Cost recovery (%)	Collection efficiency (%)	Change in Tariff (%)
2002/3	50%	47%	42%
2003/4	84%	78%	0%
2004/5	79%	81%	0%
2005/6	99%	83%	0%
2006/7	114%	121%	0%
2007/8	82%	108%	0%
2008/09	76%	76%	35%
2009/10	72%	91%	10%