DISSERTATION

THE IMPACT OF PUBLIC PRIVATE PARTNERSHIPS ON THE DELIVERY OF WATER SERVICE IN BOTSWANA:

THE CASE OF LOBATSE MANAGEMENT CENTRE

By

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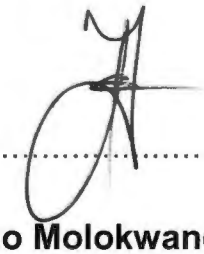
DECLARATION

I, the undersigned, Thekiso Molokwane, hereby declare that this thesis, entitled *The Impact of Public Private Partnerships on the Delivery of Water Service in Botswana: The case of Lobatse Management Centre,* for the degree Doctor Philosophy in Public Administration hereby submitted, has not previously been submitted by me at this or any other university, and that it is my own work in design and execution. All material contained herein has been accordingly acknowledged.



Signed: .....

Thekiso Molokwane

Date: .....August..... 2015

DEDICATION

My dearly beloved departed parents Mrs. Bonang Agnes Molokwane and Reverend Johannes Masitaoka Makaka Makomane Molokwane

and

my daughter Pelo

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ABSTRACT

THE IMPACT OF PUBLIC PRIVATE PARTNERSHIPS ON THE DELIVERY OF WATER SERVICE IN BOTSWANA

THE CASE OF LOBATSE MANAGEMENT CENTRE

Effective provision of water services in Botswana, especially in villages and rural areas remains a challenge to water authorities. The implementation of Water Sector Reforms (WSR) in 2009 has not yielded any improvements to the supply and distribution of water at the LMC as evidenced by recurring and prolonged water shortage in villages and rural areas.

This study assesses the applicability of Public Private Partnerships (PPPs) on the water sector in the Lobatse Management Centre (LMC) area which is part of the 15 water management centres. The research objectives are to: assess the performance of water supply and service delivery in the LMC; to identify factors that support or impede the implementation of PPPs in the LMC; to find out what can be done to improve service delivery in the LMC as well as to recommend a suitable PPP model/option for implementation in the LMC. The research was undertaken using the Grounded Theory method within the interpretivism paradigm, which was found to be most suitable for conducting research where there is an absence of theory to explain or support the state of events evidenced at the LMC prior to the commencement of the study. A total of eleven interviews were conducted with six in-depth interviews and five focus groups, all from the WUC.

The research revealed a downward trend in delivery of water services. The study also revealed that the infrastructure inherited by the WUC from the previous water authorities is obsolete and as such requires rehabilitation. The demand for private sector participation in the delivery of water service was also ascertained. Other findings show that the administrative and business processes used by the WUC are outdated. The Operations Support Contracts (OSC) model generated by the study is rooted in the findings of

the study. The WUC under the OSC remains the main provider of the service, while a PrivateCo is contracted to carry out a discreet task within the water sector.

Keywords: Public Private Partnerships, Private Companies, Operations Support Contracts, Water Sector Reforms

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ABBREVIATIONS

ADB	Asian Development Bank
BOO	Build Own and Operate
BOT	Build Operate-transfer
BOO	Build, Own and Operate
BOOT	Build, Own, Operate and Transfer
BPC	Botswana Power Corporation
BLT	Build Lease and Transfer
CCPPP	Canadian Council of Public Private Partnerships
CEO	WUC Chief Executive Officer
CTO	Central Transport Organisation
DBFO	Design, Build, Finance and Operate
DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
EU	European Union
FGD	Focus Group Discussion
GCC	Gaborone City Council
GWEU	Gaborone Water and Electricity Unit
IDA	International Development Agency
LC	Long-term Contract
NDP	National Development Plan
NPMP	National Privatisation Master Plan
NRW	Non-Revenue Water
NSWC	North-South Water Carrier
NWMP	National Water Master Plan
MLD	Million Litres per Day
MMEWAR	Ministry of Minerals, Energy and Water Resources
MSC	Management Support Contract
O&M	Operations and Management
OS	Output Specifications
PBP	Performance-based Payment

PF	Private Financing
PFI	Private Finance Initiative
PES	Poverty Eradication Scheme
PPPs	Public Private Partnerships
PRM	Presidential Road Map
PrivateCo	Private Company
PSP	Private Sector Participation
PPADB	Public Procurement and Asset Disposal Board Act
QDA	Qualitative Data Analysis
RSA	Republic of South Africa
RS	Risk-sharing
ROO	Rehabilitate-Own-Operate
RAC	Rural Administration Centres
SADC	Southern African Development Community
SPV	Special Purpose Vehicle
SSKIA	Sir Seretse Khama International Airport
VFM	Value for money
UNECA	United Nations Economic Commission for Africa
USA	United States of America
WWS	Wastewater Services
WUC	Water Utilities Corporation
WSR	Water Sector Reforms

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

This chapter introduces the research topic and provides an overview of the entire process undertaken through the study. The chapter begins by providing a background to the research, the research problem as well as the research objectives. Chapter 1 also introduces the concept of Public Private Partnerships (PPP) which is the foundation of this study. The chapter also discusses the significance of the study and closes with a brief outline of the thesis.

1.2 Background of the study

Universal access to basic water services is a fundamental condition for development worldwide. At the beginning of the 21st century, a billion people still lacked access to adequate drinking water (Kgomotso & Swatuk, 2007:1264), while 2.5 billion still did not have access to safe sanitation (Wolff & Palaniappan, 2004:1). In the 21st century, there are still large numbers of women and children in the developing world who are forced to collect untreated or impure drinking water from various sources, often having to travel great distances to reach it (Falkenmark & Rockstrom, 2004:26). This obvious failure of development is not necessarily a direct consequence of the physical scarcity of water, but of poor management (Kgomotso & Swatuk, 2007:1264).

Water has always been and remains an important but scarce commodity in Botswana. Its use is primarily for arable and livestock farming, household consumption and industrial development (Matlok, 2008:2). Botswana is a drought-prone country with limited water resources and potential sites for water-resource development. This situation is exacerbated by the low precipitation, limited groundwater recharge and very high evaporation rates from surface water resources (Kedikilwe, 2008:6), hence the need to look beyond the already known resources in addressing the water problem.

In Botswana, water, like other natural resources, is public property whose use and rights are defined and regulated by the Water Act (Chapter 34:01) and its subsidiaries, the Water Works Act (Chapter 34:03) as well as the Water Apportionment Act (Moyo, O'Keefe & Sill,1993). Water is therefore, controlled and allocated by the state.

In 2014, the supply and distribution of water as well as the management of wastewater is being carried out by the Water Utilities Corporation (WUC) throughout the whole country. This arrangement is a recent development owing to the implementation of Water Sector Reforms (WSR). In the early 1990s, the Government of Botswana developed its first National Water Master Plan (NWMP), which was reviewed in 2006 because government believed there were too many authorities responsible for water management (Mudanga, 2011). Following this review, the provision of potable water and wastewater services became the sole responsibility of the WUC, while the servicing of land for water was retained by the Department of Water Affairs (DWA) and District/Town Councils (Mudanga, 2011).

In 2008, the World Bank was engaged as a consultant to examine the recommendations of the 2006 NWMP review. It was found that the WSR were necessary (Mudanga, 2011). A Presidential Road Map (PRM) identified the WSR as a priority (WUC, 2011). The WSR project is in 7 phases. It began in May 2009 and is expected to be completed by 2014, covering both potable and wastewater. The project segmented the country into 15 management centres. The Lobatse Management Centre (LMC), which is the focus of this study, is in charge of 65 villages and one town, and these include Lobatse Town, the South-East District, Goodhope Sub-district and part of the Moshupa Sub-district (WUC, 2011).

Before the implementation of the WSRs, potable water was supplied by the DWA, District Councils and the WUC. The DWA operated in 17 major villages and formulated policy for the whole water sector. The 16 District Councils which fall under the Ministry of Local Government provided water

in rural villages while the WUC operated in six urban centres. The District Councils and the WUC also operated wastewater systems (Kgomotso & Swatuk, 2006:3; Mudanga, 2011). The next section of this chapter explains the development of private sector participation in the water sector.

1.3 Definition of Public Private Partnerships

Conceptually, there is no single, universally accepted definition of Public-Private Partnerships (World Bank, 2007:17). The UN Economic and Social Council views PPPs as a combination of a public need with private capability and resources to create a market opportunity through which the public need is met and profit is made (UNESCO, 2005:3). Bennett and Howard (2008:4) state that a public private partnership involves creating multiple "stakeholders" operating within a consortium. In this process, the critical ingredient for sustainability and success is the realisation of direct benefits for each of the stakeholders.

Partnerships Kosovo (2009:4) defines PPPs as forms of cooperation between public authorities and the private sector which aim to ensure the financing, construction, renovation, management, operation and/or maintenance of an infrastructure and/or the provision of a service. It is further mentioned that, at their core, all PPPs involve some form of risk-sharing between the public and private sector in the provision of an infrastructure or service.

The allocation of risk to the private partner is the key determinant in distinguishing between PPP and the more traditional, public sector model of public service delivery (Partnerships Kosovo, 2009:4). For purpose of this study, a PPP refers to "A cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards" (Canadian Council of Public Private Partnerships, 2001:v).

1.4 Statement of the problem

Most developing countries attribute some of their governance problems to poor infrastructure and service delivery. Chief among these are corruption (Harris, 2003:3, 4), administrative inefficiencies, macro-economic instability (Kinder & Wright, 2009:1), and weak policies (Sharma, 2007:628). According to Turner and Hulme (1997:151), excessive concentration of decision-making and authority within central government is another major obstacle to the effective performance of public bureaucracies. Public choice theorists argue that under the conditions of reasonably free choice, the provision of some basic goods is more economically efficient when a large number of local institutions are involved than when only the central government is the provider (Rondinelli, McCullough & Johnson, 1989:59).

The government of Botswana has taken a decision to centralise the management of water and wastewater services on the WUC. The centralisation is being implemented through the WSR in which the WUC is taking over water supply from all previous authorities. Prior to the reforms, the authorities responsible for provision of water and wastewater services were the DWA, which operated in 17 major villages, the WUC operating in six urban centres and 16 District/Town Councils operating in rural villages (Mudanga, 2011).

Upon implementation, the reforms sparked many negative media reports (Mmegi, 2011). The reports indicated that the take-over had had a huge bearing on consumers, particularly the indigent people living in villages and rural areas. The take-over also brought about a sharp increase in costs where connection fees went up from around P400 to P6000, a fee now higher than that of connecting electricity (Mmegi, 2011). The reports further observed that the WUC was having trouble with collection of owed tariffs as its billing system was not compatible with that of the DWA and District/Town Councils (*Sunday Standard*, 2012). There had also been

widespread reports on unreliable water supplies throughout the country (Mmegi, 2011).

Despite the WUC not providing new infrastructure such as pipe networks in areas that are not already serviced, most of the rural areas that WUC took over do not have serviced land (Sunday Standard, 2012).

Although other public sector reforms in Botswana have in the past been evaluated, little attempts have been made either by scholars or practitioners to assess the possibility of applying PPPs to the water sector. Much of the focus in the procurement of infrastructure and services in the past two decades has been on outsourcing, which surpassed other forms of procurement (Liou, 2001:391) yet in recent years, PPPs have become the preferred means of providing-publicly funded infrastructure and services.

There exists a knowledge gap in the PPP area of study in the water sector in Botswana, particularly the LMC. To this end, this study seeks to close this gap by examining the applicability of implementing PPPs with a view to improve the delivery of water services at the LMC.

1.5 Research questions

The objectives of the study were to:

i. to assess the performance of water supply and service delivery in the Lobatse Management Centre (LMC);
ii. to identify factors that support or impede the implementation of PPPsin the LMC;
iii. to find out what can be done to improve service delivery in the LMC; and
iv. to recommend a suitable PPP model/option for implementation in the LMC.

1.6 Research objectives

The principal aim of this study was to assess the water situation and the applicability of PPPs in order to improve the delivery of water service in the LMC. The following were the research questions the study set out to answer:

i) How have water supply and service performed in the Lobatse Management Area?
ii) What factors support or impede the implementation of PPPs in the Lobatse Management Area?
iii) What can be done to improve service delivery?
iv) Which PPP option may be implemented in the Lobatse Management Area?

1.7 Significance of the study

For the past few decades, the government of Botswana has implemented a number of public sector reforms with a view to improving delivery of services in various sectors. This study is important as it explores a relatively new area of public sector reforms in Botswana. Some of the specific aspects of the significance of the study are as follows:

- First, the this study will benefit the government of Botswana in that policy-makers will be able to weigh up retaining the current set up of having the water sector operating under a monopoly and liberalising the sector by implementing PPPs;
- Secondly, it will also assist policy-makers to make informed decisions when addressing issues of service delivery in general and the water sector in particular;
- Furthermore, it will generate opinions that will inform policy direction pertaining to PPPs in Botswana;

- Additionally, consumers of utility services, particularly water, will benefit from the study as they will be better informed about available alternatives to the current monopoly set-up of water utility services and may engage their legislators, where necessary, to consider exploring available alternatives;
- Finally, the study will contribute to the sparse literature on Public Private Partnerships in Botswana and, thus, benefit future researchers on the subject.

1.8 Outline of the thesis

This thesis is structured in six chapters. A synopsis of each chapter is presented here:

Chapter 1: Introduction and Background: introduces the debate on Public Private Partnerships (PPPs). The chapter provides background to the water situation in Botswana and discusses, broadly, reforms that led to a change from the previous water delivery set-up to the current situation where the WUC operates as a monopoly in the supply and distribution of water. The chapter also provides the thesis outline as well as research outcomes.

Chapter 2: Chapter 2 reviews literature on water in Botswana as well as service delivery in the area of PPPs. The chapter begins by exploring various issues investigated by writers on water, the WUC and service delivery in Botswana. The chapter also discusses the origins of the WUC indicating various stakeholders that took part in the establishment of the WUC. A brief discussion on the Water Sector Reforms in Botswana is also provided.

Chapter 3: The Theoretical and Conceptual Framework Review: Chapter 3 explores relevant literature detailing a paradigm shift from state control over the economy and parastatals towards a more private-sector led economy. The chapter further discusses PPPs, presenting various PPP options as well key mechanisms of PPPs. Chapter 3 reviews literature on the

practicality of implementing PPPS as well as how the impact of PPPs can be managed. The chapter closes with a brief history of the Water Utilities Corporation, a government parastatal which was selected as a case study. The chapter also illustrates the organisational composition of the corporation, indicating how it operates as well as the recent developments that led to it being a sole provider of water services in Botswana.

Chapter 4: Research Design and Methodology: The chapter begins with the research design and methods used to interrogate the research problem. Various research strategies are discussed and justification of the selected strategy is provided. The chapter also provides the debate on the concepts 'theory' and 'model', indicating varying views of theorists on the relationship between the two. The chapter further presents the Grounded Theory method and demonstrates how its key principles were applied in this study. Ways through which the credibility and rigour of procedures and results were ensured are also outlined.

Chapter 5: Presentation, Analysis and Interpretation of the Results: This chapter is the beginning of the development of a Grounded Theory which is generated up to Chapter 7. This chapter critically analyses the research findings and clusters the analysis under the four main research objectives outlined in Chapter 1. The chapter presents research findings of the study based on the emergent category labelled 'Reconnaissance'. Additional results are presented under the category labelled 'Aspect and Factor Identification'. The chapter includes aspects and factors that hinder and later those that support implementation of PPPs at the LMC as well as the recommended PPP option.

Chapter 6: Summary, Conclusions and Recommendations: Chapter 6 presents conclusions about the research problem as well as recommendations that have been derived from the research findings. The chapter also suggests areas of further research as the study could not cover all aspects of PPPs in the water sector.

Chapter 7: Implications and Contributions of the Study: This chapter examines implications of PPPs as well as issues that have a bearing on the implementation of the same. The chapter also presents the contribution to the body of knowledge, which includes contribution to both theory and practice. Chapter 7 is also an end process of theory generation where the substantive predictability Grounded Theory of 'Operation Support Contracts' is developed. The suggested theory posits that the government of Botswana can go into partnership without reversing the recent water sector reforms.

1.9 Summary

This chapter provided a background to the water situation in Botswana the chapter also dealt with the emergence of private sector participation signalling the significance of the same over the past two decades. The chapter also highlighted the preference of private sector participation by the public sector in certain areas of the economy. The development of PSP in Botswana was also discussed with projects constructed through PPP contracts mentioned. The next chapter reviews literature on PPPs. The review also discusses the WUC placing it into context with the water situation in Botswana. The next chapter reviews literature on PPPs. The chapter begins with a discussion on the traditional model of service delivery and moves towards a private sector led economy. The chapter also introduces the PPP debate citing various PPPs options as well as key mechanisms of PPPs.

CHAPTER TWO – WATER SITUATION IN BOTSWANA AND THE LOBATSE MANAGEMENT CENTRE

2.1 Introduction

This chapter discusses the water situation in Botswana with particular reference to the origins of the WUC. The WSRs, which are an outcome of the NWMP, developed in the 1990s, are discussed in this chapter. The reforms were implemented in 2009 following their prioritisation by the 2008 Presidential Road Map. The WUC would take over 495 villages with 16 management areas being created countrywide (WUC, 2011).

2.2 Publications on water and the WUC in Botswana: A review

Literature available shows that there is great scarcity of written sources, published or otherwise, which deal specifically with Botswana's WUC. Little information available is of general nature and deals is a summary way with the development of water resources and supply in Botswana but nothing specific related to PPPs in water sector, especially the LMC. For instance, Mabua (1994), wrote on the Ground Water vulnerability map of the Lobatse area.

In their book titled 'The History of Botswana', Tlou & Campbell (1984), discuss water development through drilling of boreholes and construction of dams such as those in Gaborone, Shashe and Mopipi. The authors, however, discuss neither the WUC nor forms of partnership in the water sector. The same can be said about Kgomotso and Swatuk (2007). Selitshena and McLeod (1989), in their book titled 'Botswana: A Physical Social and Economic Geography', deal with the water sources available in various parts of Botswana and the demand for water by various consumers. The authors identify consumers as urban centres and mining areas, major

villages and small settlements. They touch briefly on the problem of inadequate water supply. Like Tlou and Campbell (1984), Selitshena and McLeod (1989) mention construction of dams as one of the ways of meeting the increased demand Selitshena and McLeod (1989) note that WUC has been responsible for the management of water in Urban areas but they do not go beyond this (Bolaane, 1992:4).

While Bolaane (1992) provides a detailed history of the WUC, information in her study, however, is outdated. The study also lacks a discussion on PPPs and focuses mainly on broad issues namely the origin of the WUC, the structure, staffing, training and localisation, finance and pricing, consumer attitudes as well as problems faced by the WUC.

In his book, 'WUC: An Engine of Economic Growth', Malikongwa (1995) stipulates the terms of reference for the book, which are to: learn in the office environment about the different functions of different officers and offices; cover various functions of the goals of the organisation's relationship with other entities in its internal and external environment; identify the role, problems, strengths, success and weaknesses of the organisation and to evaluate the orgs performance along with the suggestions for improvement in light of any short comings identified. However, Malikongwa (1995) makes no mention at all of PPPs, the LMC or service delivery.

In 2015, the little information available on the WUC available can be found in government documents such as various pieces of legislation, the NDP and the National Privatisation Master Plan (NPMP) of 2005 and the Privatisation Act of 2000.

2.3 The Origin of Water Utilities Corporation

The WUC was established in 1970 through an Act of Parliament. The WUC's mandate was to manage a single project for the supply and distribution of

water in what was then called the Shashe Development Area (Republic of Botswana, 1970). The WUC was primarily set up to manage the water supply of the Shashe Project, which developed the new mines and township of Selebi Phikwe. Stipulated in the preamble to the Water Utilities Act, Cap 74:02 of 1970, is that 'an Act to provide for the establishment of a board to be known as the WUC for the supply and distribution of water within the Shashe Development Area and elsewhere and to provide for the matters incidental thereto and connect herewith (Republic of Botswana, 1970 preamble). About the same time, government appointed the newly established WUC as the water authority in Botswana under the Waterworks Act of Botswana (1967) to ensure that fees charged by the WUC are not arbitrary and consumers are not exploited (Republic of Botswana, 1967).

The Act gives the WUC wide powers to provide an efficient supply of water in its area (WUC. 1971:3)

The Shashe Project did not start its operations until late 1973. This means that from June 1970 to late 1973 the WUC did not have much to do in the areas of its primary concern and this was time for the WUC to prepare itself. In the meantime, the government of Botswana negotiated a big external loan from the International Development Agency (IDA) to develop the existing water supply systems in Gaborone and Lobatse. At this time, Gaborone and Lobatse were operated by a government body known as Gaborone Water and Electricity Unit (GWEU). It was decided that the WUC should take over the management of the Gaborone and Lobatse Water supply. So on the 1st of January, 1971 the ownership of the Gaborone and Lobatse water supplies was transferred to the WUC (Bolaane, 1992:5, 6).

From 1971 to 1973 the WUC operated on the basis of the use of agents. This was the beginning of 'public-public-partnerships' in the water sector. The WUC negotiated and made agency agreements with two main bodies, namely: the DWA and the Botswana Power Corporation. The Water Affairs

carried on behalf of the WUC the day-to-day operation and maintenance of water supplies, now owned by the WUC, and the Botswana Power Corporation (BPC) carried out the meter reading, billing and revenue collection on behalf of the WUC (Republic of Botswana, 1975:18).

In 1972-74 the WUC undertook the construction of the 70km Gaborone/Lobatse pipeline and a storage reservoir in Lobatse. The Ramotswa underground water system was tapped to supplement the Gaborone/Lobatse water system (Bolaane, 1992:24). The Gaborone/Lobatse area major resource developments were completed in the mid-1980s. The raising of the Gaborone dam wall by 8 meters and development of ground water resources at Lobatse and Ramotswa helped the WUC to meet the increased demand. The Metsimotlhabe Transfer Scheme (Bokaa Dam) was constructed in 1989 and the Molatedi Pipeline Scheme from South Africa which was commissioned in 1990 (Malikongwa, 1995:9). By 1995, the WUC endeavoured to construct a second pipeline to Lobatse to provide adequate water supplies. This was due to the increase in the population of Lobatse Malikongwa, 1995:10).

2.4 Water Utilities Corporation

In the forty-two years since its inception, its mandate has expanded to the supply of potable water to all the urban centres and villages in the country, as well as managing wastewater under the WSRs Programme (see item 1.2) which was effected in May 2009 and completed in April 2013 (Water Utilities Corporation, 2014). One of the outcomes of the WSR was to segment the country into two regions, North and South. Both regions are headed by an operational director known Regional Director. The Regional Director South is based in Gaborone, while the Regional Director North is based in Francistown. The seven Management Centres servicing the Capital city, towns and respective surrounding villages comprising the southern region include the city of Gaborone, Mochudi, Lobatse, Molepolole, Ghantsi,

Tsabong and Kanye. Within the northern region, there are five Management Centres servicing Botswana's second city, towns and surrounding villages. These include the city of Francistown, Mahalapye, Palapye, Serowe, Selibe Phikwe, Maun, Kasane and Masunga.

Table 2.1: List of the WUC Management Centres

Region	**Management Centre**
South	Gaborone
South	Mochudi
South	Lobatse
South	Molepolole
South	Ghantsi
South	Tsabong
South	Kanye
North	Francistown
North	Mahalapye
North	Palapye
North	Serowe
North	Selibe Phikwe
North	Maun
North	Kasane
North	Masunga

Source: WUC, 2011

Prior to the reforms, WUC's infrastructure included five dams: Gaborone (141MCM), Nnywane (2.3MCM), Bokaa (18.5MCM), Shashe (85.3MCM) and Letsibogo(100MCM) and the North South Carrier Scheme(NSC) comprising a 360km long pipeline, water treatment plants and associated pump-stations (Water Utilities Corporation, 2011). The aim of the NSC is to integrate the existing water resources in the north-east and south-east of Botswana

through the construction of additional dams to meet demand of towns and major villages located in the supply areas (Malikongwa, 1995:10).

Table 2.2: Dams and capacities

Dam	**Capacity**	**Management Centre**
Gaborone	141MCM	Gaborone
Nnywane	2.3MCM	Lobatse
Bokaa	18.5MCM	Mochudi
Shashe	85.3MCM	Selibe Phikwe
Letsibogo	100MCM	Selibe Phikwe

Source: Malikongwa (1995:10); WUC (2011)

The implementation of the WSRs project increased the WUC customer base from 80 000 at the beginning of 2009 to over 222 000 by March 2013. The WUC at present supplies over 66 million cubic meters of potable water annually to its total customer base. With a property, plant and equipment value of over P3.4 billion, the Corporation's infrastructure includes six dams, namely: Gaborone, Nnywane, Bokaa, Shashe, Ntimbale and Letsibogo as well as the North-South Carrier Scheme, which comprises a 360km long pipeline, water treatment plants and associated pump-stations. Additional dams, the Dikgatlhong, Thune and Lotsane are under construction (Water Utilities Corporation, 2014).

The WUC is governed through a Board of Directors appointed by the Minister of Minerals, Energy and Water Resources. The role of the Board is to determine corporate policy and provide strategic direction construction (Water Utilities Corporation, 2014). There are several Board Committees. One is the Audit Committee which assists the Board carry to out its duties based on the Corporation's accounting policies, internal controls, accepted financial practices. It also reviews budgets and the annual financial reports with Management as well as advises on corporate risk management.

Another, the Tender Committee, is responsible for the implementation of the policies laid down for the procurement of works, goods and services by the Corporation (Water Utilities Corporation, 2014).

The Permanent Executive Committee deals with policies relating to the management of human resources, including organisation structure, terms and conditions of service, remuneration, the appointment and dismissal of senior staff other than those appointed by the Board, pensions and any other matters delegated to it by the Board (Water Utilities Corporation, 2014). Regarding the Executive Management, the management and daily running of the Corporation is the responsibility of the Chief Executive with the assistance of the Corporate Management Team. The role of the Team, with the help of Section Heads, is to implement the strategic direction and objectives as set out by the Board within the confines of the corporate vision, mission and values (Water Utilities Corporation, 2014).

2.5 Water in Botswana

Universal access to basic water services is a fundamental condition for development worldwide. At the beginning of the twenty-first century, a billion people still lacked access to adequate drinking water (Kgomotso & Swatuk, 2007:1264), while 2.5 billion still did not have access to safe sanitation (Wolff & Palaniappan, 2004:1). In the twenty-first century, there are still large numbers of women and children in the developing world who are forced to collect untreated or impure drinking water from various sources, often having to travel great distances to reach it (Falkenmark & Rockstrom, 2004:26). This failure of development is not necessarily a direct consequence of the physical scarcity of water, but of poor management (Kgomotso & Swatuk, 2007:1264).

Water has always been and remains an important, but scarce, commodity in Botswana. Its use is primarily for arable and livestock farming, household

consumption and industrial development (Matlok, 2008:2). Botswana is a drought-prone country with limited water resources and potential sites for water-resource development. This situation is exacerbated by the low precipitation, limited groundwater recharge and very high evaporation rates from surface water resources (Kedikilwe, 2008:6), hence the need to look beyond the already known resources in addressing the water problem.

In Botswana, water, like other natural resources, is public property whose use and rights are defined and regulated by the Water Act (Chapter 34:01) and the Water Works Act (Chapter 34:03) as well as the Water Apportionment Act (Moyo, O'Keefe & Sill,1993). Water is, therefore, controlled and allocated by the state.

2.6 Water Sector Reforms in Botswana

Since 2014, the supply and distribution of water as well as the management of wastewater is carried out by the Water Utilities Corporation (WUC) throughout the whole country. This arrangement is a recent development owing to the implementation of Water Sector Reforms (WSR). In the early 1990s, the Government of Botswana developed its first National Water Master Plan (NWMP), which was reviewed in 2006 because government believed there were too many authorities responsible for water management (Mudanga, 2011). Following this review, the provision of potable water and wastewater services became the sole responsibility of the WUC, while the servicing of land for water was retained by the Department of Water Affairs (DWA) and District/Town Councils (Mudanga, 2011).

In 2008, the World Bank was engaged as a consultant to examine the recommendations of the 2006 NWMP review. It was found that the WSR were necessary (Mudanga, 2011). A Presidential Road Map (PRM) identified the WSR as a priority (WUC, 2011). The WSR project is in seven phases. It began in May 2009 and was expected to be complete by 2014, covering both

potable and wastewater. The project segmented the country into sixteen management centres: Gaborone, Molepolole, Lobatse, Kanye, Mochudi, Tsabong, Ghanzi, Francistown, Selebi Phikwe, Kasane, Maun, Letlhakane, Masunga, Mahalapye and Serowe. The Lobatse Management Centre (LMC), which is the focus of this study, is in charge of sixty-five villages and one town. These include Lobatse Town, the South-East District, Goodhope Sub-district and part of the Moshupa Sub-district (WUC, 2011).

Before the implementation of the WSRs, potable water was supplied by the DWA, District Councils and the WUC. The DWA operated in seventeen major villages and formulated policy for the whole water sector. The sixteen District Councils, which fell under the Ministry of Local Government, provided water in rural villages, while the WUC operated in six urban centres. The District Councils and the WUC also operated wastewater systems (Kgomotso & Swatuk, 2006:3; Mudanga, 2011). The next section of this chapter discusses the development of private sector participation in the water sector.

2.7 The development of private sector participation

The public sector has traditionally been the main actor in the production and distribution of public goods and services. Basic infrastructural projects such as provision of water, sewerage and electricity were long seen as typical cases of natural monopolies and public goods (Thoenen, 2007:1). The role of the public sector in development, however, changed substantially in many countries, especially from the mid-1980s (Ngowi, 2009:34). Public goods and services were now to be provided by the private sector. The rapid and widespread private sector participation (PSP) in the provision and financing of infrastructure became more apparent in the 1990s (Harris, 2003:1) with the role of the state now reduced to that of a facilitator for the private sector-led economic development and growth (Ngowi, 2006:3, 4).

In today's global economy, modern and efficient infrastructure and services are a necessary precondition for successful and sustainable economic growth (Partnerships Kosovo, 2009:1). A private sector-led economic growth and development has generally been more efficient (both productive and allocative efficiencies) and effective. In this evolution of provision of public goods and services, governments resorted to implementing Public Private Partnerships (PPPs).

PPPs, long-term agreements between a public authority and the private sector to provide public services, have become a popular approach to provide infrastructure development (Moszoro & Kryzanowska, 2011:1). The concept of PPPs entails various forms of collaboration between public and private sector organisations in service delivery (Ngowi, 2009:34). By implementing PPPs public authorities seek to benefit from cooperation with specialised partners (Batran, Essig & Schaefer, 2005:128). Under PPPs, resources, skills benefits and risks are shared. The aim is improved delivery of publicly funded goods and services (Dutz & Harris, 2006:1).

According to Rao and Voldolkova (2006:2,3), if implemented well, PPPs would help in the accelerated implementation of projects with new approaches and better management techniques. PPPs also empower local contractors and consultants through participation of the private sector and this paves the land, particularly in settlements that will be gazetted as villages in future (Republic of Botswana, 2005:158).

Presenting a contrasting debate, Kinder & Wright (2009:1) postulate that in spite of the desired need for the private sector to play a significant role in PPPs, international and local private organisations have now become reluctant to provide expertise and finance for infrastructure in the developing world. They cite the organisations claim that their experiences have been negative and that the risks have been too high. The authors also point to political and economic instability, inadequate legal, financial and regulatory frameworks, inappropriate procurement practices, poor project

documentation, inadequate risk allocation, poor support from ministries, a lack of clarity from politicians as to what their priorities are and how their NDPs should be implemented, the presence of vested interests in the economy which are opposed to reform, the inadequacy of protection of property rights and the lack of local engineering, management and other skills (Kinder & Wright, 2009:1).

Internationally, countries such as Argentina, Bolivia and the United Kingdom (UK) adopted PPPs in the 1990s (Izaquire, 1998:1). African countries such as Mali, Côte d'Ivoire, Burkina Faso and Gabon also experimented with PPPs in the water sector (World Bank, 2009a:1). In the Southern African Development Community (SADC) region, Mozambique, South Africa and Botswana are among countries that adopted PPPs (Farlam, 2005:20). About one-quarter of the populations living in rural areas and small towns in Africa are served through piped water (Water and Sanitation Programme, 2010:3). According to the Public-Private Infrastructure Advisory Facility (PPIAF), in Asia, Vietnam received financial support for two pilot projects in 2002 whose impact has been positive (Public Private Infrastructure Advisory Facility, 2010:1).

In the SADC region, the SADC PPP Network has been introduced. The mandate of the PPP Network is to serve as a platform for exchange of information and experiences to boost private and public sector capacity in PPPs across the region including providing guidance and support, facilitating policy programme and capacity building (SADC PPP Newsletter, 2013).

For Botswana, the need for PPPs has also been felt throughout the years. Being a middle-income country, Botswana is certainly not an exception when it comes to issues of infrastructure and service delivery. The water sector in Botswana is also experiencing problems of service delivery and these could be improved in many ways, including the introduction of PPPs, among others. By implementing PPPs, the government will be able to provide

infrastructure on un-serviced land, particularly in settlements that will be gazetted as villages in future. PPPs can also improve the reliability and affordability of water services.

2.8 Summary

The scarcity of publications on the WUC and the LMC remains a great challenge. This chapter, however, reviewed publications on the WUC in Botswana and demonstrated areas which the present writers focused on, either water in Botswana or the WUC. The chapter also discussed the origins as well the contemporary WUC. The following chapter provides a detailed review of literature with the substantive area of study being PPPs.

CHAPTER THREE: THE THEORETICAL AND CONCEPTUAL FRAMEWORK REVIEW

3.1 Introduction

This chapter reviews literature on Public Private Partnerships (PPPs). The chapter begins by appreciating the traditional model of public provision of goods and services moving towards the paradigm shift where the presence of the private sector is introduced. The review introduces the PPP debate and discusses key mechanisms of PPPs with particular reference to aspects such as VFM, Risk Sharing, Long Term Contracts, Performance-Based Payments, Special Purpose Vehicle, Private Financing and Output Specifications. The review also discusses the applicability of PPPs, with a discussion on managing the impact of PPPs.

3.2 From the traditional model to private sector-led service delivery

Over the years, the traditional role of the state has been to provide public goods and services. Hughes (1998:101-104) provides a wide range of basic functions of government which include: provision of economic infrastructure, provision of various collective public goods and services, resolution and adjustment of group conflicts, maintenance of competition, protection of natural resources, provision for minimum access by individuals to goods and services to the economy as well as stabilisation of the economy.

In the 1950s throughout to the 1980s, public enterprises (PEs) were popularly used as a vehicle for the provision of public goods and services (United Nations, 2007:25,26,75,76). According to Farazmand (1999:551), PEs have played a pivotal role in building infrastructure, providing operations and enhancing social and economic justice around the world. To Farazmand, PEs have been the engines of economic and social development in both industrialised and developing nations. They are considered essential for economic development almost everywhere in the capitalist and mixed

economies as well as in socialist nations. Despite their significant contributions, they have, since the 1980s, become the target of relentless privatisation by conservative right-wing governments of the West. Some of the liberal governments pursued privatisation in an undiscriminating way.

Concurring with Farazmand's (1999:551) argument, Hughes (1998:81) points out that in the 1970s most nations belonging to the Organisation for the Economic Cooperation and Development (OECD) undertook a re-assessment of the role of their public sectors. Those who believed in the model of free markets as the basis for a more dynamic economy argued that governments were involved in activities which were inappropriate and that the size and role of government should be cut back drastically. Turner and Hulme (1997:183) observe that this development continued into the 1980s where consensus among developing countries was that the state was over-extended, inefficient and needed to be rolled back.

Different scholars have suggested different reasons for the reduction of the role of the state, making way for privatisation (Turner & Hulme, 1997; Hughes, 1998). Farazmand (1999:553) points out that one of the reasons is alleged government inefficiency, stating that the goal of government is not to increase the bottom-line of profit but service delivery. This makes incentives for economic efficiency in the public sector weaker than in private enterprises. Another reason given is the waste and financial loss claimed to flow from some PEs around the world causing budgetary bailout. The third reason is the alleged monopolistic nature of PEs and government organisation that discourages competition.

By convention, the economy is divided between the private and public sectors (Hughes, 1998:82). However, McCraw (1986) argues that although the private and public sectors are usually seen as separate, the division of the economy into two mutually exclusive sectors may be artificial. Concurring with this view, Hughes (1998:83) suggests that there is so much interaction between the two sectors that setting up a strict dichotomy is

rather misleading. It could, therefore, in the view of Musgrave and Musgrave (1989:4), be argued that the modern capitalist economy is a thoroughly mixed system in which public and private forces interact in an integral fashion' and the economic system is 'neither public nor private, but involves a mix of both sectors.

Similarly, the view expressed by the United Nations Economic Commission for Africa (UNECA, 2005:98) is that neither the public sector nor the private sector alone can successfully address the problems of economic development, good economic management and corporate governance problems facing African countries. Close collaboration between the two sectors, therefore, is indispensable in creating a conducive environment. To this end, the private sector has now increasingly been seen as a partner of the public sector.

3.3 Paradigm shift

Until the 1980s, the provision of public infrastructure was pre-eminently the domain of governments (UNECA, 2005:98). However, the 1980s saw the introduction of the private sector in the provision of publicly-funded goods and services. The paradigm shift raised expectations of governments and their people alike as it was believed that the private sector had the potential to bring about change in the delivery of what was previously perceived to be public goods and services.

According to Cook and Hulme (1998:221-31), this new paradigm found expression in policies of liberalisation. Removing price distortions in product, labour and capital markets, reducing government expenditure, privatisation of PEs and creating a legislative-constitutional environment conducive to the private sector were now the key components of economic liberation. In short, proponents of privatisation argued against government involvement in the economy and favoured the market place for service (Farazmand, 1999:553).

As Hughes (1998:52) observes, this paradigm shift had a significant impact on public management where the 1980s and 1990s saw the emergence of a new managerial approach in the public sector. A trend developed where government functions were reduced through privatisation, other forms of market testing as well as contracting out and, in some cases, quite radically. Tobin (2012:3) observes that in some cases, privatisation meant selling a state entity to one private owner, a move that often met with a lot of criticism. For example, Kay and Thompson (1986:29) argue that the privatisation of large and dominant firms is at best pointless and possibly harmful in the absence of effective competition and no benefits to economic performance are likely to be achieved.

The authors argue further that privatisation of this kind would not, of course, be the first ineffectual restructuring of relationships between government and nationalised industries, which has had a lengthy history, but it is potentially more damaging because it makes it difficult for competitive incentives to be introduced in the future. Similarly, Hughes (1998:110) maintains that converting a public monopoly into a private one does not improve competition and can have the additional effect of making future competitive changes more difficult to bring about.

The involvement of the private sector in the provision of public infrastructure and services in developing countries, particularly in the late 1990s and early 2000s, became evident. In Uganda, government expenditure on roads and public works went from 8.3% in 1999/2000 to 8.9% in 2001/2002 and the share of government expenditure on water increased from 1.5% in 1999/2000 to 2.8 in 2001/2002. Senegal has continued liberalising and privatising its power and telecommunications sub-sectors, while Ethiopia has removed restrictions on private sector participation in energy generation and eliminated Government monopoly in telecommunications in preparation for privatisation (UNECA, 2005:98).

Despite these positive efforts, African countries have, however, not attracted as much private investment as other developing regions. Private investment in infrastructure in developing countries rose from $14 billion in 1990 to $117 billion in 1997, and then decreased to $89 billion in 2000 due to reduced demand for infrastructure services that resulted from the economic crises in Argentina, Brazil and East Asia (UNECA, 2005:98). Only 2% of the total private investment in infrastructure went to sub-Saharan Africa, while 49% went to Latin America and the Caribbean, 29% to East Asia and the Pacific, 11% to Europe and Central Asia, 6% to South Asia and 14% to the Middle East and North Africa. In general, African countries have been slow in adopting policies and putting in place institutions to ensure business competition (UNECA, 2005:99).

The private sector is increasingly seen as a partner of the public sector, but the institutions and mechanisms for this partnership are weak (UNECA, 2005:98). In general, African countries have been slow in adopting policies and putting in place institutions to ensure business competition (UNECA, 2005:99).

3.4 Private Sector Participation and PPPs in Botswana

Modern governments explore new ways of building infrastructure and financing projects with the aim of improving service delivery. Among many initiatives aimed at achieving this is the implementation of PPPs. Like many other developing countries, Botswana faces challenges of delivery in public services and infrastructure development, including maintenance and operational obligations. New infrastructure also needs to be provided and existing infrastructure upgraded or rehabilitated to deliver public services more effectively or extend access to services than at current levels (Rao & Voldolkova, 2006:4).

The government of Botswana carries out some of its projects through outsourcing to private contractors. The bulk of government projects outsourced continue to overshoot their budgets, thus draining government

resources. In April 2011, it was reported in a local publication that 200million Pula (P) was paid in the construction of the Kang-Hukuntsi road under questionable circumstances. In the same period, it was also reported that tax-payers may lose millions in the Sir Seretse Khama International Airport project (*Daily News*, 2011).

The inability to establish a vibrant private sector after independence resulted in government creating specialised agencies that would not only focus on specific areas, but would also help in avoiding a bureaucratic system of administration and facilitate a close relationship between the government and private sector (Simukonda, 1998:51). However, a trend visible in the history of parastatals in Botswana is that these institutions have been retained in spite of their weak performance and high reliance on government. Parastatals, therefore, continue to operate under government subvention requiring substantial funding from the government despite operating at a loss year after year.

In the 2009/2010 financial year, the Botswana Power Corporation (BPC) lost P1.57 billion. According to the Auditor General's end of year report based on an audit by Deloitte Certified Public Accountants, the operating loss was P 563.57 million for the same year (*Daily News*, 2011). Meanwhile, the government injected P 962 million revenue support for BPC for the 2010/11 and 2011/12 financial years (*Botswana Guardian*, 2011). To this end, the need for engaging the private sector in a more meaningful way in the development of the economy has increasingly become clear.

PPPs are a recent phenomenon in Botswana, having been first mentioned in the Privatisation Policy of Botswana (Republic of Botswana, 2000: iv, v). PPPs are regulated through the Public Private Partnership Policy and Implementation Framework, which was introduced in 2009. The government announced through the 2002/2003 Budget speech and NDP 9 that PPPs would be used extensively as a form of procuring and financing infrastructure projects in the public sector. This would ensure sustainable

investment in infrastructure as well as soundness in public finances and to bring down the budget deficit to a sustainable level (Republic of Botswana, 2009a:1).

In an effort to establish a strategic framework for PPPs, the government engaged a consultancy to undertake an assessment of the privatisation environment for PPPs with a view to establishing whether policies, laws and sustainable institutions existed that could facilitate implementation of projects. The consultancy was also entrusted with determining additional measures that could be required to create a conducive environment for PPPs in the country (Rao & Voldolkova, 2006:3). The initiative was undertaken in the association with PEEPA and SADC Banking Association, with financial support from the Canadian International Development Agency (Rao & Voldolkova, 2006:3).

The findings of the review were:

i) The general policy and legal frameworks in Botswana are considered less enabling to deal with PPPs although there are no major impediments that inhibit PPPs implementation;
ii) There are no standardised approaches and process guidelines to deal with the structure of PPP projects and no uniform framework to guide treatment of tendered and unsolicited proposals;
iii) The existing institutional set-up and the capacity to handle PPPs are inadequate. There is lack of co-ordination of PPP activities as well as lack of a clear role of government agencies and departments (for example, Public Enterprises Evaluation and Privatisation Authority (PEEPA), Ministry of Finance and Development Planning (MFDP), Ministry of Works & Transport and others.) in the implementation of PPPs, thus resulting in conflicting positions among government agencies and departments (Republic of Botswana, 2009a:2).

The PPP policy of Botswana has multiple objectives which include, among others, promoting or optimising the efficient use of economic resources of

the public and private sectors, creating a conducive environment that supports the establishment of stronger partnerships between the public and private sector for the public infrastructure and service delivery, and, promoting high quality public services and the efficient use of public assets by encouraging private sector innovation and risk sharing (Republic of Botswana, 2000:4).

The policy also defines its scope, stating that the government will, in its initial years of implementing the policy, focus on projects that are:

a) Sufficiently large to justify the transaction costs;

b) Not overly complex, thus having a fair risk profile;

c) Feasible to implement in terms of private sector capacity;

d) Amenable to citizen participation in accordance with government policy and;

e) Visible in meeting immediate end user and/or non-controversial in terms of where government has traditionally provided services (Republic of Botswana, 2000:6, 7).

The introduction of the PPP Policy and Implementation Framework came with its own challenges. The challenge includes absence of standardised approaches and processes guidelines to deal with the structure of PPP projects and uniform framework to guide treatment of tendered and unsolicited proposals. Furthermore, there is no clear role of government agencies and departments such as PEEPA, MFDP, and Ministry of Works and Transport, etcetera (Republic of Botswana, 2009a:2).

Botswana's PPP Unit is located in the Ministry of Finance and Development Planning (Republic of Botswana, 2009a). The unit was initially placed within PEEPA, a parastatal whose mandate is to evaluate the performance of

parastatals and advise on the commercialisation and privatisation of parastatals (PEEPA, 2005:2).

The time taken to fully operationalise the 'PPP' unit, however, aggravates the PPP implementation situation. PPP units usually perform a wide variety of roles. Most provide information and guidance on PPPs to government departments. This may include general resources such as international experience and customised guidance on the preparation of PPPs. Some of the PPP units provide funding to line departments and sub-national agencies developing PPPs (Dutz & Harris, 2006:2).

Despite slow progress regarding the implementation of infrastructure projects and provision of services through PPPs in Botswana, there still is a choice of carrying out future projects such as construction of the Trans-Kalahari Railway and the remaining phases of the Botswana University of Science and Technology under PPP arrangements. Power plants to be constructed in future such as the Mmamabula power plant can also be carried out under a PPP arrangement.

To date, PPPs have benefited only three construction projects in Botswana. These are the Ombudsman and Land Tribunal Office (OLTO), the SADC Headquarters building and the rehabilitation and maintenance of 827 kilometres of roads under the output and performance-based contract. There are, however, other PPP agreements such as management contracts (*Daily News*, 2012:2). PPPs in Botswana have also been implemented in the health sector. In 2004, the Initiative on Public Private Partnerships for Health conducted a study looking into how PPPs could improve access to drugs for HIV/AIDS-related issues. The main concern of the study was to assess the health and health systems impact of PPPs, looking in particular at issues of ownership, integration, co-ordination, implementation and impact with a focus on the benefits, challenges, risks and lessons learned in these PPPs as distinct from other programmes where drugs are competitively procured (Global Forum for Health Research, 2004:1). From its findings,

the study identified, among others, that partnerships certainly have contributed to increased access to HIV/AIDS drugs in terms of coverage and take-up rates of treatment programmes for anti-retroviral therapy, opportunistic infections and prevention of mother-to-child transmission of HIV (Global Forum for Health Research, 2004:2).

3.5 Introduction to Public Private Partnerships

In an increasingly competitive and globalised world, governments seek new ways of financing projects and building infrastructure. In order to bridge the gap between available resources, the cost of needed infrastructure and services as well as to ensure that infrastructure services are delivered as efficiently and cost effectively as possible, public authorities are now turning to PPPs (Partnerships Kosovo, 2009:3).

A number of scholars occasionally use the term PPP interchangeably with privatisation. However, it should be noted from the outset that not all forms of PPPs comprise or imply privatisation and *vice versa*. According to Hughes (1998:116), privatisation is largely seen as involving liberalising the market and the sale of state assets. Initiatives such as denationalisation, contracting out, self-management and de-regulation form part of privatisation (Turner & Hulme, 1997:190-191).

Providing economic arguments for privatisation, Hughes (1998:116) notes that privatisation includes the reduction of taxes by using proceeds from sales, exposing activities to market forces and competition and reducing both government spending and the government's share of the economic cake as well as reductions in the public sector borrowing requirements (PSBR) locally and overseas.

There are benefits or advantages to implementing PPPs. According to the Botswana's Privatisation Master Plan, the benefits include the delivery of greater VFM where assets are procured conventionally; expansion and maintenance of infrastructure and services through innovative and efficient

ways used by the private sector (Republic of Botswana, 2005:158). This provides government with an opportunity to focus on its core functions that include, among others, maintenance of the rule of law, governance and provision of public goods and services.

Rao and Voldolkova (2006:2, 3) assert that PPPs, particularly in Africa, would help in accelerating the implementation of projects with new approaches and better management techniques. They further state that PPPs empower local contractors and consultants through participation of the private sector, which paves the way for entrepreneurial development. Macquaid (2000:14) argues that the purpose of PPPs is, among others, to improve effectiveness or efficiency and attract additional resources into the area.

The importance of a well-developed, reliable and inexpensive infrastructure for economic development in general cannot be over-emphasised (UNECA, 2005:98). As observed by the World Bank (2009a:2), PPPs have had a positive impact on the expansion of access to piped water, mostly through residential connections (see item 1.5). Across West Africa, access to piped water has been increasing in recent years, with most Western and Central African countries (with the notable exception of Nigeria) making progress towards meeting the objective of halving by 2015 the percentage of urban population that had no access to safe water in 1990.

Renda and Schrefler (2006:1) as well as Corry, Le Grand and Radcliffe (1997:1) contend that today's PPPs are being extended to new areas and now taking new and significant forms, for instance, in the UK where (i) the private sector delivers the service, subject only to state regulation and control where demand is individualised. These services include postal services and traffic control; (ii) where the provider of the service is private, but the financier is the government; (iii) private finance initiatives, similar to contracting out are used, but the private sector not only provides the

service, it also finances the construction and running costs over a period of years.

According to Farlam (2005:ii), in cases where partnerships have been able to best deliver desired outcomes as shown in eight case studies from Botswana, Gabon, Mozambique, South Africa, Tanzania and Uganda, thorough planning, good communication, strong commitment from both parties and effective monitoring, regulation and enforcement by government have been present. This validates the argument that successful PPPs have been part of well-designed sector reforms with clear policies and strict adherence of governments to their policy commitments (World Bank, 2009a:3).

3.6 PPP range of options

According to Partnerships Kosovo (2009:4), there are two basic forms of PPPs: Contractual and Institutional. As indicated in Figure 3.1, PPPs fall somewhere in between the traditional public sector model of public service delivery and full privatisation. The order of spectrum of options is in the following order from left to right.

First, there is the traditional procurement; followed by management contracts; Lease Develop Operate (LDO) agreements; Build-Operate - Transfer (BOT), concession, Private Finance Initiative (PFI), DBFO agreements and divestitures. As one moves across the spectrum from traditional public works and service contracts towards divestitures and privatisations, private sector risks and responsibilities increase. For instance, with management contracts, public authorities retain ownership and investment responsibilities, but transfer management and operations to the private partner (Partnerships Kosovo, 2009:5).

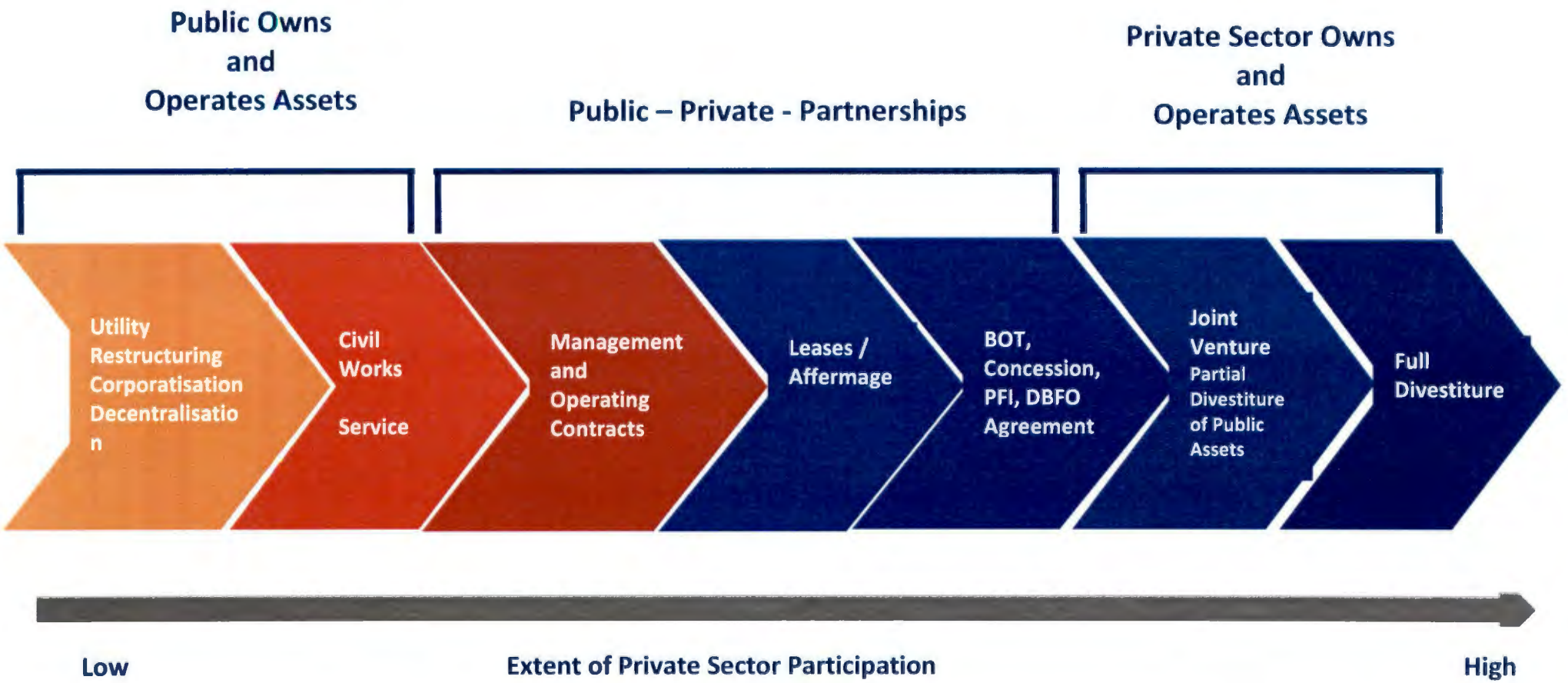
Further along the spectrum (Figure 3.1), with concessions, Build-Operate-Transfer schemes (including BOT, BOOT, DBFO, PFI and others) and long-term lease arrangements, public authorities retain ownership of

infrastructure, but transfer both investment and operations/management responsibility to the private partner. With BOO and divestitures, the ownership, operations and investment responsibilities are all transferred to the private partner, while the public sector only retains responsibility for regulation and strategic sector planning (Partnerships Kosovo, 2009:5). However, in some instances, under the BOO and DBFO, ownership of the asset remains that of the private sector.

The Asian Development Bank (ADB, 2008:27) provides six main PPP options that are available for consideration. These include: service contracts, management contracts, affermage or lease contracts, Build Operate-Transfer (BOT) and similar arrangements, concessions and joint ventures. Examples of PPPs include among others, the Build Own, Operate and Transfer (BOOT), which is commonly used in public works concessions contracts, through which private operators build, own and/or operate a facility for a specified period of time (Republic of Botswana, 2000:13).

Additional examples include the Build, Own and Operate (BOO), Build Lease and Transfer (BLT), Rehabilitate-Own-Operate (ROO) (Turner & Hulme 1997:193), Design, Build, Finance and Operate (DBFO) (World Bank, 2009a:8). Izaguire (1998:1) points out that, different countries have undertaken various project types when implementing PPPs. These include among others, greenfield projects, divestitures, management and operations contracts with major capital expenditure.

Figure 3.1: PPP Spectrum of Options



Source: World Bank, 2012

3.6.1 Service contracts

Service contracts are the simplest form of PPP, where the private sector is contracted to perform a specific service for a brief period of time (1-3 years) (ADB, 2008:29) or to complete a specific project. Examples include consulting assignments, construction contracts, and "contracting out" of services such as pipeline inspection, rehabilitation, laboratory services (Canadian Council of Public Private Partnerships, 2001:5), meter reading, revenue collection and maintenance of equipment (Republic of South Africa, 2007:24). Under service contracts, the "contracts" specify an agreed cost of the service and must satisfy agreed-upon performance standards (ADB, 2008:29).

Service contracts can have a significant effect on productivity and can be a means of transferring technology from the private to the public sector. These contracts are short-term (usually 1-3 years) and have low barriers to entry since only a discrete service is required and, therefore, it is not difficult for private firms to participate. There is also repeated competition since the contracts have short runs. Together, these features of the contract put pressure on the contractor to keep costs down (Canadian Council of Public Private Partnerships, 2001:5).

The selection of firms in a service contract is usually done through a competitive bidding process. Under this model, the government remains the main provider of the service and the private partner only plays a minor role. The private partner generally does not directly interact with the customer and is typically responsible for the project cost, but not the project revenue. In addition, the government bears all the commercial risks and finances any improvements to the system as required (Rashed, Alam & Toriman & 2011: 60).

With regard to project financing, under a service contract, the government pays the private partner a predetermined fee for the service, which may be based on a one-time fee, unit cost or another basis. Therefore, the

contractor's profit increases if it can reduce its operating costs, while meeting required service standards. One financing option involves a cost-plus-fee formula, where costs such as labour are fixed and the private partner participates in a profit-sharing system. The private partner typically does not interact with the consumers. The government is responsible for funding any capital investments required to expand or improve the system (ADB, 2008:29).

There are several potential strengths to this PPP model. Service contracts are usually most suitable where the service can be clearly defined in the contract, the level of demand is reasonably certain and performance can be monitored easily. As such service contracts, therefore, provide a relatively low-risk option for expanding the role of the private sector. Furthermore, this type of arrangement can have a quick and substantial impact on system operation and efficiency, while providing a vehicle for technology transfer and development of managerial capacity. By being short-term in their nature, service contracts allow for repeated competition in the sector, thereby making the barriers to entry low, given that only a discrete service is up for bid. Repeated bidding maintains pressure on contractors to keep costs low, while the low barriers to entry encourage participation in the competition (ADB, 2008:29-30). In general, service contracts enable governments to accomplish tasks for which there is insufficient demand to develop using internal resources (Canadian Council of Public Private Partnerships, 2001:5).

Regarding potential weaknesses, service contracts are not appropriate when capital investments are required from the private sector (Rashed *et al.,* 2011:60). The contracts may improve efficiency and, thus, release some revenue for other purposes, but the contractor is not under any obligation to provide financing. The effectiveness of the contractor may, in fact, be compromised if other sources of financing such as government or donors do not materialise (ADB, 2008:30).

The fact that the contractor's activities are discrete and segregated from the broader operations of the company may mean that there is no broader or deeper impact on the system's operations, but only discrete and limited improvements. Additionally, the public sector remains in charge of tariff setting and assets, both of which are politically vulnerable and critical to sustain the system (ADB, 2008:30). Lastly, service contracts do not bring in additional management expertise (Republic of South Africa, 2007:23).

For water and wastewater service delivery, a wide spectrum of water service PPP arrangements is possible, with the allocation of responsibility between the private and public sectors varying considerably. The alternative forms are shown in Table 3.1.

Table 3.1: Spectrum of Water Service PPPs

PPP Type	**Asset Ownership**	**Operations & Maintenance**	**Capital Investment**	**Commercial Risk**		**Typical Duration**
				Inputs	**Outputs**	
Service contract	Public	Public and private	Public	Public	Public	1-2 years
Management contract	Public	Private	Public	Shared	Public	3-5 years
Lease	Public	Private	Public	Shared	Private	8-15 years
Concession	Public	Private	Private	Private	Private	20-30 years
Build-Operate-Transfer	Shared	Private	Private	Private	Private	25-30 years
Full Privatization	Private or Shared	Private	Private	Private	Private	Indefinite

Source: Canadian Council of Public Private Partnerships (2001:4)

Countries where service contracts in the water sector are in place include the Democratic Republic of the Congo, Canada, Columbia, Gaza, Malaysia, Mexico, Puerto Rico, Trinidad and Tobago, Turkey and the United States. Private-sector water utilities provide 99% of the UK's and 75 % of France's population with water and wastewater services (Neal, Maloney & Mason, 1996). The UK's transfer, in 1989, of all water and wastewater assets to the private sector was driven by the huge need for investment created by impending European Union (EU) standards (Canadian Council of Public

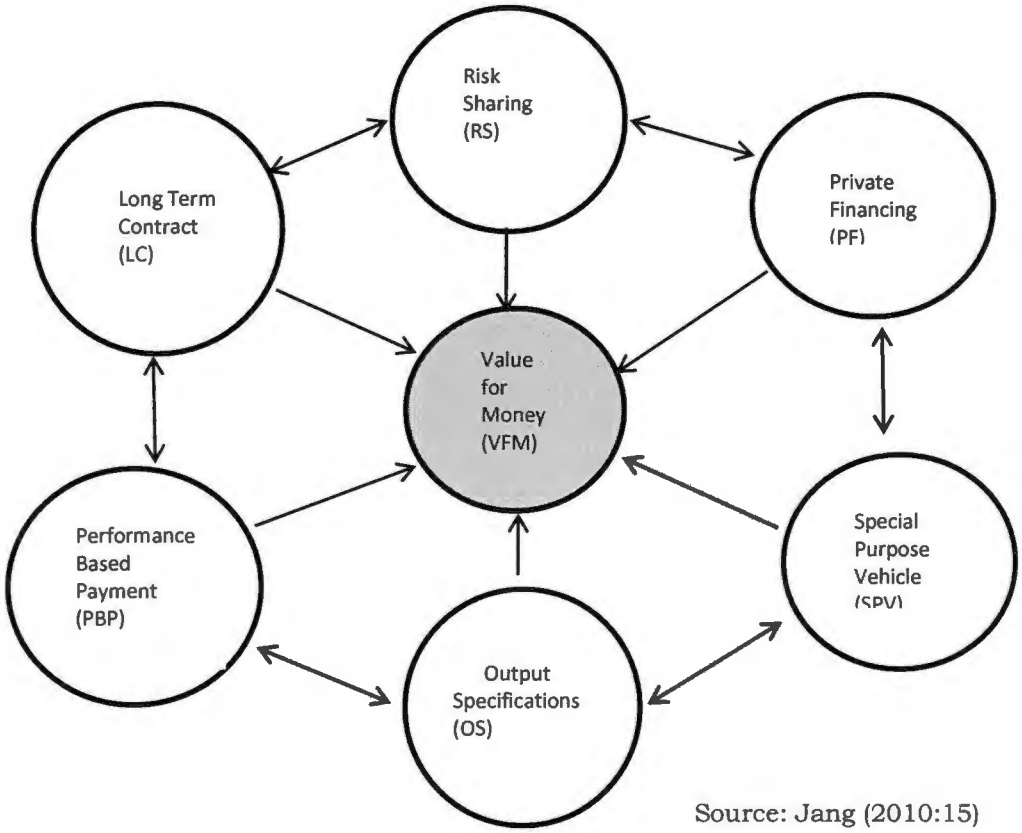
Private Partnerships, 2001:8). In Ontario, Canada, service contracts in the water sector have been found to offer additional sources of capital, operational efficiencies and cost savings and clear paths of accountability and remedy (Canadian Council of Public Private Partnerships, 2001:5).

In Malaysia, the City of Sandakan, which has a population of about 450,000, had one of the highest levels of non-revenue water (NRW) in the 1990s where the level was calculated at almost 60% of system input volume. The City's Water Board went into an NRW reduction contract with two private companies that was aimed at reducing real or physical losses from two directions, improving and expanding the current active leakage control activities and replacing the mains with the highest burst frequencies. This contract was for a period of 30 months. During the course of the project, about 2,100 leaks were located and repaired. At the end of June 2005, physical losses had been reduced by almost 17.5 million litres per day (Mld) against the target of 15 Mld. About 11 Mld have been saved through active leakage control and 6.5 Mld by replacement of the mains. This represented a saving of 20% of the total volume of treated water produced (Pilcher, 2005).

3.7 Key mechanisms of PPPs

According to Jang (2010:14), good PPP/PFI procurement embodies six key mechanisms to create Value for Money (VFM). These include: Risk Sharing (RS); Long-term Contract (LC); Special Purpose Vehicle (SPV); Private Financing (PF); Output Specifications (OS) and Performance-based Payment (PBP). As shown in Figure 2.2, the PPP mechanisms RS, LC, SPV, PF, OS, and PBP bind tightly to create PPP core VFM. RS is the basic mechanism for PPP and is performed through LC. LC contracted with other sub-contracts needs to be controlled and managed under SPV. SPV needs to get funding to ensure project performance to meet OS through PF. SPV needs to repay PF through good PBP, according to the conditions set out in OS. It will create good VFM for PPP if all the six mechanisms can be incorporated to work smoothly (Jang, 2010:14) and in a synchronised manner.

Figure 3.2: PPP key mechanisms



Source: Jang (2010:15)

3.7.1 Value for money

Contemporary researchers in the area of PPPs accentuate VFM as a core component in PPPs. VFM does not simply equate to selecting the cheapest bid or lowest price for an asset; it means opting for the best long-term solution for service delivery. It involves analysing the total long-term costs (life-cycle costs) of service delivery and evaluating the concomitant benefits to the public at large (Partnerships Kosovo, 2009:8).

The achievement of a VFM outcome in the use of public funds is an overarching consideration in the procurement and delivery of each public investment project. VFM is, therefore, a consideration for the sponsoring agency throughout the procurement process and its achievement should be

continuously at the forefront in all aspects of the project (Public Private Infrastructure Advisory Facility, 2010:1). If significant risks throughout the project's life cycle are not transferable to the private sector, then the project is likely not to be an appropriate candidate for delivery via PPP (Brown, Pieplow, Driskell, Gavin, Gaj & Holcombe, 2009:25).

It is necessary to note that not all projects are suitable for PPP. Partnerships Kosovo (2009:8) contends that public-private-partnerships should provide equivalent or better VFM than a 100% public-sector approach. VFM is, therefore, a key driver in PPPs. Partnership Kosovo (2009:8) further maintains that when compared to a public sector approach, incremental benefits of PPP may accrue from:

- speedier implementation of infrastructure projects;
- better service and coverage;
- customer service orientation;
- life-cycle focus of service delivery/reduced life-cycle (long-term) costs;
- improved efficiency, cost saving and innovation; and
- risk-sharing designed to create incentives to succeed (Partnerships Kosovo, 2009:8).

According to Hayford and Utz (2006:3,4), VFM drivers for privately financed projects (PFPs) are typically stated to be the following:

a) **Risk transfer** - PFPs allow government to transfer risks to the private sector, where the private-sector party is better able to manage risks at a lower cost than government, thereby reducing the overall cost of the project to government;
b) **Whole-of-life costing** - The long-term nature of PFPs often requires the private-sector party to assume responsibility not only for the design and construction of a facility, but also for its operation, maintenance and refurbishment. This provides a commercial incentive for the private sector to adopt design and construction methodologies

which will minimise the overall cost of building, operating and maintaining the facility throughout its life;

c) **Innovation** - PFP projects focus on output specifications, thereby providing private-sector bidders with the opportunity to develop innovative design and other solutions so as to meet government's requirements at lower cost;

d) **Asset utilisation** - Some PFP projects provide opportunities for third-party use of the facility, thereby generating revenues which would not be derived if the facility were built, owned and operated by government (due to the absence of commercial motivation). These third-party revenues can reduce the cost government would otherwise pay as a sole user of the asset or open up opportunities for upside revenue sharing.

3.7.1.1 Value for money and affordability

The assessment of whether a PPP project represents VFM is a separate consideration from whether or not the project is affordable. Affordability is considered from the point of view of the budget and other financial criteria relating to the sponsoring agency: can it meet the cost of the PPP project within the resources available to it? VFM in the context of a PPP project involves, *inter alia,* consideration of the overall impact that the project could have on the Exchequer or other sources of public funds. PPP projects that provide VFM solutions may not be affordable and vice versa. The sponsoring agency should ensure that all PPP projects fulfil both of these criteria (Public Private Infrastructure Advisory Facility, 2012:1).

3.7.2 Long-term contract

The contract sets out the terms of the agreement between the public authority and the service provider for the contracted services (4Ps, 2005:16). The long-term contract (LC) is designed by officials for risk-sharing and allocation between the public and private sectors. A PPP infrastructure project is long-term with a specified concession period, usually up to 30

years or more, depending on the nature of the facilities and services to be delivered. The contract length typically extends the entire economic life of the asset, including the operation stage. This ensures that the private sector partner evaluates asset development in a whole life-cycle context. The contractor (the private partner) will then manipulate the asset in innovative and cost-effective ways over its entire economic life. In this way, both the cost of the project and VFM, are maximised (Jang, 2010:18).

3.7.3 Risk-sharing

According to Quick (2003:1,2), the primary objective of any contract is to allocate the risk between the parties. Consequently, the appropriate allocation of risk is the key requirement in achieving VFM in PPP projects. Jang (2010:iii) indicates that PPP infrastructure projects are generally very complex and have highly dynamic, interdependent risks and uncertainties that occur over a life cycle of a project. In Quick's (2003:2) view, PPP projects are arguably more efficient than standard government forms of procurement because certain risks in which the private sector has expertise, such as design construction, allocation of capital or industrial relations management, are transferred to the private sector contractor.

Concurring with the above view are Hayford and Utz (2006:2), who state that undertaking infrastructure business involves many risks and problems that are due mainly to differences in legal systems, market conditions and culture. They observe that one of the key VFM drivers in a PPP transaction is the transfer of risks to the private sector. However, this transfer of risk comes at a price and attempts to transfer risks which the public sector is better placed to manage than the private sector can damage the VFM proposition of a PPP deal. The transfer will only improve VFM if the price charged by the private sector to manage the risk is less than what it would cost government to manage the risk itself.

Generally, risks vary in type. Chiu and Bosher (2005) provide a range of risks with particular reference to the water sector. They state that risks

associated with water and wastewater projects include design and construction, which are normally associated with the procurement of treatment or water distribution; operational and maintenance risks that arise when the assets are in service. They further state that compliance risks usually refer to externalities imposed by the law, environmental agencies or the regulator, while market risks refer to the security of the service provider.

Tariff risks are normally associated with tariff adjustment mechanisms as well as the method of economic regulation such as the rate of return or price. Financial risks arise when there is change in the cost of capital to the utility. Other risks include transaction risks, which are usually incurred whenever a transfer of assets or human resources takes place. Legal and regulatory risks are associated with the specific country or project agreement. Finally, political risks concern the stability and socio–economic behaviour of the society, the trustworthiness of the government and the general political environment (Chiu & Bosher, 2005).

Farlam (2005:42) identifies demand risk as a major risk in both the public and private sectors. The author states that demand risk is the possibility that consumers will not buy the product or service at sufficient volume to make the PPP viable at established prices and refers to a toll road as an example where road users might shift to other modes of transport such as rail transport. In some instances, some motorists may also resort to other modes of transport such as buses, cabs or taxis that provide public transport.

3.7.4 Private financing

Under private financing (PF), a private-sector party generally raises project funds both in equity and debt finance for a PPP. The concessionaire is usually owned by one or more equity investors. Some of these shareholders may be contractors in the consortium, carrying out construction, design or facilities management work on the project. An equity investor benefits from

a PPP project only after successful completion as the public-sector participants involved in the project start paying or the private sector participants start to get revenue from the end-users when the asset becomes available. Another source of capital is debt finance in the form of bank loans or bonds raised to pay for construction and operation of the project (Jang, 2010:19).

Private financing became popular in the UK after the introduction of the Private Finance Initiative (PFI) in the early 1990s. PFI refers to the situation where (i) the government is responsible for a service or facility which involves the use of significant buildings or other assets; (ii) the management of the service or facility is entrusted to the private sector under a contract; and (iii) the private sector provides capital for the project. Since 1984, 86 industrial developing countries have privatised 547 infrastructure companies worth $357 billion and, at least, 574 private new investment projects worth $308 billion are under way in 82 countries (Rosenau, 2000:1004).

The majority of developing countries fund their infrastructure expenditures directly from fiscal budgets. However, several factors, such as macro-economic instability and growing investments requirements, have shown that public financing is unpredictable and often does not meet infrastructure expenditure requirements sufficiently. Reinvigorating the supply of infrastructure investments within developing countries requires supplementing traditional sources of official finance with new sources of equity (World Bank, 2014:2) and debt finance because infrastructure projects often have high debt to equity ratios. Sourcing long term loans proves difficult, in most cases.

Private infrastructure projects usually access debt financing on a non-recourse or limited recourse project finance basis. In non-recourse project finance, creditors rely solely on the income and assets of the project itself for repayment, rather than on credit of the project sponsors. Under limited

recourse finance, the project sponsors have limited liability with respect to the project company's obligations such as timely completion of the project but do not provide a full guarantee of the project company's debts, especially after commercial operation begins. The inherent risks associated with financing infrastructure projects are compounded by the fact that most investments are very large and capital recovery is achieved over a very long period.

3.7.5 Special Purpose Vehicle

With PFI schemes, particularly those of any significant value, it is usually the case that a new limited company will be created specifically for the purpose of entering into the contracts relating to the scheme in question. This is the SPV. The benefits of this approach for the private sector derive primarily from isolating any risk liabilities arising from the project within one company. Where a number of parties have joined together to make a bid on a project, an SPV is also a relatively simple way of addressing issues of participation and ownership between the parties (Rosenau, 2000:3004).

3.7.5.1 Key features desired in an ideal Special Purpose Vehicle

According to Investopaedia (2012:3,4), based on international practices, an SPV should satisfy the following key characteristics:

(a) An SPV must be capable of acquiring, holding and disposing of assets;

(b) It would be an entity, which would undertake only the activity of asset securitisation and no other activity;

(c) An SPV must be bankruptcy remote, for example, the bankruptcy of the originator should not affect the interests of holders of instruments issued by SPV;

(d) An SPV must be bankruptcy proof, that is, it should not be capable of being taken into bankruptcy in the event of any inability to service the securitised paper issued by it;

(e) An SPV must have an identity totally distinct from that of its promoters/sponsors/constituents/shareholders. Its creditors cannot obtain satisfaction from them;

(f) The investors must have an undivided interest in the underlying asset (as distinguished from an interest in the SPV which is a mere conduit);

(g) A SPV must be tax-neutral, for instance, there should be no additional tax liability or double taxation on the transaction on account of the SPV acting as a conduit;

(h) An SPV must have the capability of housing multiple securitisations. However, an SPV must take precautions to avoid co-mingling of assets of multiple securitisations. In case of transactions involving various kinds of assets, they should restrict the rights of investors to the specific pool;

(i) The SPV agreement may not release its employees or trustees from their responsibility for acts of negligence and a wilful misconduct.

3.7.6 Output specifications

According to Jang (2010:20), the OS is a tool used by the public sector officials to define the required private sector services and outputs for PPP projects. The OS is the document in which officials from the public sector delineate, in output terms, what they need from the long-term services and any associated facilities. The OS, defines what the required services are. For example, it defines the service requirement of a poverty eradication programme in terms of roll-out, capacity and benefits without necessarily

stating how it is to be achieved. A well-drafted output specification is essential to the successful delivery of long-term services.

Roger (2003:2) contends that if a PPP project is efficient it is because appropriate risks are appropriately transferred to the contractor. The author argues that, rather than the traditional procurement model in which the government authority specifies the inputs required, to be performed or supplied by the contractor, a PPP is output-focused. The authority specifies the required outputs, such as the ability of a road to carry a certain number of axle movements per day, rather than specific design and construction. However, because of this output-based approach, the authority must be careful not to transfer the risk of the project back to itself by taking a 'hands on' approach and prescribing how the service should be delivered.

3.7.7 Performance-Based Payment

In practice, performance payments complement other payment methods such as usage or availability. The scheme sets charges for performance failures which are deducted from unitary payments. Alternatively, the contract could establish 'bonuses' to be rewarded if and only if certain target performance levels are reached (Iaossa, Spagnolo & Vellez, 2007:46). When structuring payment mechanisms that are based on service performance, care needs to be taken to ensure that the payment mechanism is both simple and flexible, and based on measurable objectives and outcomes. The payment mechanism must set out clearly the consequences of any failure by the contractor to perform to the standard required by the output specification. The payment mechanism should further establish a direct link between the seriousness of failure, the number of points attributed to the contractor and the financial deduction taken from the unitary payment to the contractor (Republic of Ireland, 2000:41).

3.8 The Practicality of applying Public Private Partnerships (PPP's)

According to Kgomotso and Swatuk (2007:1264), the lack of access to clean potable water globally is caused by poor management and not the actual inadequacy of water resources. The observation made by Kgomotso and Swatuk (2007:1264) is contentious and raises a whole new debate regarding availability or lack thereof of water, particularly potable drinking water in Botswana. One of the key objectives of this study was to assess the performance of water supply and service in the area under study, a development that either support or negate this particular observation by Kgomotso and Swatuk (2007:1264).

Botswana, like many other developing countries, faces challenges of delivery of public services and infrastructure, including maintenance and operational obligations. New infrastructure needs to be provided and existing infrastructure upgraded or rehabilitated to deliver public services more effectively or extend access to services than at current levels (Rao & Voldolkova, 2006: 4). A good example is that of parastatals that require hefty funding from the government despite operating at a loss year after year (Simukonda, 1998:58). Clearly, there is a need for government to, at least, consider the PPP option with regard to delivery of services and not to limit itself only to the provision of infrastructure.

The question of PPPs being applicable to the water sector in Botswana is quite unique in that provision of water was initially carried out by government through its agencies. The centralisation of the service under the WUC has resulted in, among others, a steep increase in connection fees in a bid to recover costs. This development, particularly the increase in connection fees and bills, does not recognise the plight of the indigent. In other countries, social connection programmes have made individual connections affordable for many poor people. These have been designed by governments and implemented by private operators (Fall, Marin, Locussol, & Verspyck, 2009:28).

Reverting to the debate on efficient delivery of services, the importance of a well-developed, reliable and inexpensive infrastructure for economic development in general, and for attracting private business in particular, cannot be over-emphasised. In fact, one of the crucial differences between developed and developing countries is the development of physical infrastructure (UNECA, 2005:98).

Achieving reliability, sustainability and affordability is as important as expanding access to basic services. The service provided has to be reliable. The supply of water, for instance, has to be on a continuous basis under a minimum pressure and its quality has to be of international standards. There also has to be financial sustainability of the service where the systems operated are in an efficient manner so as to keep costs at a low level. The services provided also have to be affordable and low-income customers have to be given access to a minimum consumption of piped water at charges compatible with their revenue (Fall *et al.*, 2009:23).

Where there has been a lack of thorough planning, PPPs in the water sector have not had much in the way of the desired results in Africa. Several schemes, especially in West Africa, have had a "negative impact on the poorest of the poor by restricting their access to clean supplies due to high tariffs" (UNESCO, 2005:4).

Regarding pricing, Harris (2003:25) maintains it is often argued that the high profits and returns sought by private investors will inevitably increase prices for infrastructure services. The nominal cost of capital faced by private firms is, higher than that faced by governments. The author states, however, that the lower cost of borrowing by governments does not reflect superior capabilities to choose or manage projects. It reflects, instead, the recourse that governments have in terms of taxpayers who, de facto, provide open-ended credit insurance to the government. In general, the difference between public and private costs of capital reflects the contingent liabilities that tax-payers bear, although tax-payers are not remunerated for bearing

these risks. *A priori,* therefore, is that there is no reason to expect the social costs of private finance to be any higher than the social costs of public finance. Indeed, were governments genuinely to face lower costs of capital than the private sector, it would be beneficial for the public sector to extend finance to all sectors of the economy, not just in infrastructure (Harris, 2003:25).

3.9 Managing the impact

3.9.1 Managing the partnership

Given that the PPP contracts observed ranged from 25 to 50 years with the typical term from 30 to 40 years, the relationship between the public and private sectors is indeed a long-term one. This circumstance puts managing the partnership at the forefront. Clearly, the partnership arrangement most tangibly manifests itself in contract management practices. These practices are split into the capital delivery and operations phases. During design and construction, all the host nations employ an independent verifier who serves as an objective third party to administer (certify pay requests) and review (check compliance with requirements, make onsite visits) the project (Brown, *et. al.,* 2009:25).

Payment policies for the independent verifier vary among countries. In most cases, the government and the PPP contractor share this cost. In one case, however, the PPP contractor covers this cost up to a threshold amount, above which the cost is shared. Since verifiers are often paid on a fee basis, the logic is that higher verification costs indicate inadequate performance by the contractor, so bearing this cost serves as an incentive. While management of capital delivery is certainly important, the crux is contract management during the operations phase (Brown *et al.,* 2009:25).

3.9.2 The risk factor

The appropriate allocation of risk has been said to be a key driver in government attaining VFM. According to Hayford and Utz (2006:11,12), for government to better manage risk, measures which government and other PPP participants can take to better manage the challenge of risk allocation include the following:

3.9.2.1 Not losing sight of the basic principles

Government agencies need to be careful when drafting the contractual documentation on which bids will be based not to lose sight of the principles of efficient risk allocation. The fact that government is often in a strong bargaining position at the start of the tender process exacerbates this temptation. One of the risks government agencies run when they adopt such an approach is that bids incorporate pricing that reflects the allocation of unmanageable risks to the private sector.

3.9.2.2 Pricing the risk

Where a party considers that the allocation of a particular risk to it offends the principles of efficient risk allocation, it should be prepared to separately price the risk and advise the other party of the price. This would enable the other party to make an informed VFM assessment. Too often, it seems that bidders are unwilling to separately price government's preferred allocation of a particular risk, making it difficult for government to assess whether the bidder's preferred risk allocation does, in fact, represent a better VFM outcome (Hayford & Utz, 2006:11,12).

3.9.2.3 More precise drafting

More precise drafting (for instance, avoidance of the "catch-all") can often turn the objectionable into the acceptable, thereby reducing negotiating time and costs. This is particularly the case with the government's tendency to

include broad indemnities at the back end of the project agreement (Hayford & Utz, 2006:11, 12).

3.9.2.4 Alternative risk transfer

Effective risk management requires smarter thinking and investigation of alternatives to what usually happens with delivery risk (Hayford & Utz, 2006:11, 12).

3.9.3 Social connection programmes

According to the World Bank (2009a:4), successful PPPs have often included social connection programmes for low-income households. Such programmes, which typically offer small-gauge connections to eligible households against payment of a small portion of the total connection cost, began in Côte d'Ivoire in the mid-1970s and were later replicated in Senegal, Niger and Burkina Faso.

3.9.4 The role of government

Whilst countries, particularly those in West and Central Africa, might wish to further their PPP experience, logically the evolution of the schemes could be to transfer increased financing responsibilities and risks to private partners. Doing so would require detailed consultation with key stakeholders and a detailed analysis of the impact of customer tariffs. It would also require a thorough review of existing financial markets and water supply sector structures (Fall *et al.*, 2009:47). Governments must carry out their part of the partnership. Clear statements of responsibility have played an important role in successful PPPs. Documents clarifying the short and medium-term commitments of the government and the public agency granting operation contract seem to have been an important element of the initial success of PPPs in Western and Central Africa (Fall *et al.*, 2009:23).

3.10 Summary

Chapter 3 reviewed relevant literature citing examples of PPPs from various countries across the world. It illustrates various PPP options and demonstrates why some of the PPP projects failed, while others were a success. The chapter also discussed PPPs in Africa and provided insight on the PPP trajectory in Botswana. The chapter contained a discussion of the water situation in Botswana indicating the origins of the WUC as well as its mandate. The following chapter presents the research design and the methodology used to collect data along with the justification for using these.

CHAPTER FOUR: RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

The previous chapter reviewed literature on PPPs, explaining various forms that PPPs can take. The chapter further reviewed literature on the water situation in Botswana. This chapter provides the methodological approach to the study, including the research design, methods used to collect and analyse data as well as ethical considerations. The methodological approach, titled Grounded Theory Method, is discussed in detail with its key principles used to demonstrate how the method was implemented throughout the study.

4.2 Research design

Creswell (2009:3) defines a research design as consisting of plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. For Collins and Hussey (2003:113), research design is the science and art of planning procedures for conducting studies so as to get the most valid answers. To Yin (2003:20) research design is the logical sequence that connects the empirical data to a study's initial questions and, ultimately, its conclusions.

Kia (2004:79) cautions that the choice to use qualitative research methods should not be confused with the choice of a research strategy while Yin (2003) opines that researchers should acquaint themselves with various research strategies in order to apply a relevant strategy. These strategies include surveys, experiments and case studies.

Designs in qualitative research may also include the use of narrative biography, ethnography, phenomenology and Grounded Theory (De Vos, Strydom, Fouché & Delport, 2005:312-323). Yin (1994) also argues that the choice of an appropriate research strategy depends on the question that the

research seeks to answer, the control over the phenomenon studied and whether the phenomenon is historical or contemporary.

The decision by the researcher to acquaint himself with various research strategies helped in choosing a relevant strategy for this study. A discussion of each of these strategies follows.

4.2.1 Survey design

Kasunic (2005:3) defines a survey as a data-gathering and analysis approach in which respondents answer questions or respond to statements that were developed in advance. Survey research methodology grew from social science where it is often used in business, marketing, politics and economics (Hatch, 2009:1). Surveys have always been an efficient way of collecting data, especially for the quantitative aspect of research as it provides quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population. It includes cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection with the intention of generalising to a population (Babbie, 2013:229; Creswell, 2009:12).

According to Neuman (2007:167), the survey is the most widely used data-gathering technique. Survey researchers sample many respondents who answer the same questions. They measure many variables, test multiple hypotheses and infer temporal order from questions about past behaviour, experiences or characteristics. One of the key requirements of a survey is that it should have a relatively large sample. According to Ross (2005:4), a sample is often described as being representative if certain percentage frequency distributions of element characteristics within the sample data are similar to corresponding distributions within the whole population.

Given that data were collected through in-depth interviews and focus groups, a survey was not considered to be suitable for this study. These methods provide for data-collection from a relatively small population

contrary to Hatch's (2009:1) views, which hold that subjects most suited to survey research are those who can be accurately measured by subjective response.

4.2.2 Experimental design

According to Seltman (2013:3), experimental design refers to a careful balancing of several features, including power, generalisability, various forms of validity, practicality and cost. Fisher (1935:8), cited in Kirk (2009), observes that experiments are only experiences carefully planned in advance and designed to form a secure basis of new knowledge. According to Kirk (1995:1), experiments are characterized by : (1) manipulation of one or more independent variables; (2) use of controls such as randomly assigning participants or experimental units to one or more independent variables; and (3) careful observation or measurement of one or more dependent variables.

Kirk (1995:23) further observes that the design of an experiment involves a number of inter-related activities. These include the formulation of statistical hypotheses that are germane to the scientific hypothesis; determination of the treatment levels (independent variable) to be manipulated, the measurement to be recorded (dependent variable), and the extraneous conditions (nuisance variables) that must be controlled. Specification of the number of experimental units required and the population from which they will be sampled as well as specification of the randomisation procedure for assigning the experimental units to the treatment levels also part of the activities.

Experimentation encompasses many different designs, including pre-experiments such as a pre-*test, post-test, no control group design*; quasi-experiments such as the *non-equivalent pre-test-post-test-no control group design* and time series analysis and true experiments such as the Solomon Four Group Designs (Fawcet & Downs, 1986:6).

The experimental design was deemed unsuitable for this study as the method provides for the researcher to focus sharply on causal relations. The pure logic of an experiment has an experimenter intervene or induce change in some part of social life, then examine the consequences that result from the change or intervention (Neuman, 2007:201). Such a development limits experiments to the how and what questions, which are typical of descriptive and exploratory types of research, respectively. According to Neuman (2007: 202), the experiment is usually best for issues that have a narrow scope or scale.

4.2.3 Case study

A case study is a research strategy which focuses on understanding the dynamics present within the single settings (Eisenhardt, 1989:534). Creswell (2009:13) defines a case study as a strategy of enquiry in which the researcher explores in an in-depth manner a programme, event, activity, process or one of more individuals. A case study focuses on a single instance of some social phenomenon.

A case being studied might be, for instance, a period of time rather than a group of people. Using the Grounded Theory method, case studies can also form the basis for the development of more general, monothectic theories (Babbie, 2013:338). Babbie (2013:338) further notes that Burawoy and his colleagues (1991) have suggested a somewhat different relationship between case studies. For them, the extended case study method has the purpose of discovering flaws in, and then modifying, existing social theories (Babbie, 2013:338).

4.2.4 Grounded Theory Method

Many authors writing on Grounded Theory agree that, in a Grounded Theory study, one collects and analyses data before using any theory (De Vos *et al.*, 305). For Babbie (2013:536) Grounded theory, is an inductive approach to the study of life attempts to generate a theory from the constant comparing

of unfolding observations. According to Sbaraini, Cartel, Evans and Blinkhorn (2011:1, 2), the Grounded Theory tradition is now diverse and somewhat fractured, consisting of four main types.

Types one and two are the work of the original authors: Barney Glaser's 'Classic Grounded Theory' and Anselm Strauss and Juliet Corbin's 'Basics of Qualitative Research'. Types three and four are Kathy Charmaz's 'Constructivist Grounded Theory' and Adele Clarke's Post-Modern Situation Analysis. Charmaz and Clarke were both students of Anselm Strauss. The fifth, emerging variant is 'Dimensional Analysis', which is being developed from the work of Leonard Schaztman, who was a colleague of Strauss and Glaser in the 1960s and 1970s (Sbaraini *et al.*, 2011:1,2).

Goldkulh and Stockholm (2003:1) explain that Glaser came to attack the Grounded Theory variant developed by Anselm Strauss and Juliet Corbin in which the latter developed new techniques in the form of canons, procedures and evaluative criteria moving away from the classical grounded theory. Table 4.1 illustrates some differences between Glaser and Strauss's variants of Grounded Theory.

Table 4.1 A comparison of the two schools of thought on Grounded Theory

'GLASERIAN'	'STRAUSSIAN'
Beginning with general wonderment (an empty mind)	Having a general idea of where to begin
Emerging theory, with neutral questions	Forcing the theory with structured questions
Development of a conceptual theory	Conceptual description (description of situations)
Theoretical sensitivity (the ability to perceive variables and relationships) comes from immersion in the data	Theoretical sensitivity comes from methods and tools
The theory is grounded in the data	The theory is interpreted by an observer
The credibility of the theory, or verification, is derived from its grounding in the data	The credibility of the theory comes from the rigour of the method
A basic social process should be identified	Basic social processes need not be identified
The researcher is passive, exhibiting disciplined restraint	The researcher is active
Data reveals the theory	Data is structured to reveal the theory
Coding is less rigorous, a constant comparison of incident to incident, with neutral questions and categories and properties evolving. Take care not to 'over-conceptualise', identify key points	Coding is more rigorous and defined by technique. The nature of making comparisons varies with the coding technique. Labels are carefully crafted at the time. Codes are derived from 'micro-analysis which consists of analysis data word-by-word'
Two coding phases or types, simple (fracture the data then conceptually group it) and substantive (open or selective, to produce categories and properties)	Three types of coding, open (identifying, naming, categorising and describing phenomena), axial (the process of relating codes to each other) and selective (choosing a core category and relating other categories to that)
Regarded by some as the only 'true' GTM	Regarded by some as a form of qualitative data analysis (QDA)

Source: Jones and Alony (2011:99,100)

While Noble (2002:60) chose to apply only Glaser's classical grounded theory, which he terms 'Orthodox Grounded Theory' in his study, Sbaraini *et al.*, (2011:2) argue that a Grounded Theory study should have all components appearing in all types as they are complementary.

A Grounded Theory study should be characterised by certain features and procedures. Its strengths include the support of a systematic work as well as emphasis on theoretical process that aims at discovering variations among concepts and to enrich categories in terms of their properties and dimensions (Goldkulh & Stockholm, 2003:1). Ultimately, the aim of Grounded Theory is to develop a substantive theory that is grounded in data (De Vos *et al.*, 2005:318).

In this study, the author combined Glaser and Strauss and Corbin's types of Grounded Theory. The study used the Grounded Theory method to understand the possibility of applying PPPs to the water sector in the LMC. The method was also applied to assess the impact of implementing PPPs to the LMC, simultaneously establishing factors that support or impede the implementation of PPPs delivery of water services at the LMC. By using the Grounded Theory method, the researcher sought to generate a theory from an analysis of the patterns, themes and common categories discovered in observational data as the aim of Grounded Theory is to develop a substantive theory that is grounded in the data or faithful to the evidence (De Vos *et al.*, 2005:201; Neuman, 2007:31).

As with other qualitative research methods, Grounded Theory has its own critics. The method has been criticised for not being scientific (deductive) in its analysis of the data, but based on inductive conclusions from superficial analysis of data (Gasson, 2014:85). It has also been seen to have a potential problem of how to cope with a large amount of data. This is said to likely result in risking data collected being taken for granted and also being unfocused (Goldkulh & Stockholm, 2003:2, 3).

4.2.5 Theory and model: A synopsis

There have been debates on the dichotomy between theory and model. While some authors have used the two terms interchangeably, some remain adamant that they differ. Goldfarb and Ratner (2008:92) theorise that the terms 'theory' and 'model' are incapable of carrying the diverse characteristics economists ascribe to them. The authors define a model as "a system of functions and conditions that yield formal results, such as classes of equilibra within a model". Liu (2004:7), however, maintains that there is a need for a study on the relationship between models and theory. Goldfarb and Ratner (2008:92) cite and concur with Klein and Romero (2007, 243-244) that the terms 'models' and 'theory' have been used interchangeably in the profession. They reject this equating of the two terms, asserting that a "model is neither necessary nor sufficient for theory".

Goldfarb and Ratner (2008:93) further agree with Klein and Romero's (2007, 243-244) notion that "theory" has a higher normative status than "model" and that a theory does not require a "model". Liu (2004:5) is of the view that a theory may consist of many models – tens of thousands. This is why Barker (2003:276) concludes that "the model springs from a theory". Conclusively, there is no consensus on this debate.

For the purpose of this study, the study subscribes to the school of thought that provides for a theory being separate from a model. Eisenhardt (1989:532) posits that the development of theory is a central activity in organisational research. The author further observes that, traditionally, authors have developed theories by combining observations from previous literature, common sense and experience. Eisenhardt (1989) cites Perrow (1986) and Pfeffer (1982), who maintain that it has been difficult to tie actual data to the development of a new theory. Concurring with Eisenhardt (1989:532) and Glaser and Strauss (1967), the researcher is of the view that it is the intimate connection with empirical reality that permits the development of a stable, relevant and valid theory.

4.2.6 Triangulation and methodological triangulation

The literature indicates that there are several types of triangulation and these include: data triangulation that involves time, space and persons (Molefhe, 2011:99); investigator triangulation, which uses multiple observers (Eisenhardt, 1989:538); theory triangulation that uses more than one theoretical perspective to interpret the study phenomenon (McCreary, Seekamp, Cerveny & Carver, 2012:475) and methodological triangulation, which involves using more than one methodological strategy during data collection (Bryman, 2006:105; McEnvoy & Richards, 2006:71-76; Schell,1992:15,16).

Triangulation is defined as "a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study" (Creswell & Miller, 2000:126). Triangulation has raised an important methodological issue in naturalistic and qualitative approaches to evaluation in order to control bias and establish valid propositions because traditional scientific techniques are incompatible with this alternate epistemology. Triangulation further provides in-depth data, increases the confidence in research results as well as enables different dimensions of the problem to be considered (Golafshani, 2003:603).

This study focused mainly on methodological triangulation. The researcher was left to consider the complementarity of two methods, namely: case study and the Grounded Theory method. The nature of Grounded Theory is, in itself, a limitation to this research as the study is inductive and proposes a substantive theory that can be disproved. A substantive area of enquiry is the application of PPPs to the water sector at the WUC-LMC in Botswana. A detailed discussion of the choice of methodological triangulation is provided under the heading 'selected research design'.

4.3 Selected research design

This study combines the use of a case study and the Grounded Theory method. Glaser (1998:40-42), however, cautions that utmost care must be exercised to ensure that the canons of case study research do not distort the true emergence of theory generation when combining the case study and the Grounded Theory method. The following discussion begins explaining the choice of the case study design followed by the Grounded Theory method.

Yin (2004:6,7,8) provides three basic steps in designing case studies. The first step involves defining the 'case' to be studied. The second step calls for deciding whether to do a single case study or a set of case studies. The term 'case study' can mean either a single or multiple case studies. Yin (2004) maintains that focusing on a single case will force the researcher to devote careful attention to that case. The last step involves whether to use or not to use theory development to help select one's case(s), develop one's data protocol and organise one's initial data strategies. Yin (2009:93) maintains that single case studies are relevant for critical cases in order to test theory or to analyse cases that may be extreme, typical, revelatory or longitudinal. It is based on the foregoing, that a single case, namely the LMC, was chosen for this study.

Different researchers follow different designs guided by either their research objectives, purpose of the study, research problem or a combination of any of them. Given that this research was carried out to, among others, assess the water situation, identify factors that could contribute to the implementation of PPPs as well as those that could hinder the same, and identify a suitable PPP model for implementation in the LMC, the case study strategy was seen as suitable to investigate the research problem.

Yin (1994:28) contends that 'theory development prior to the collection of any case study data is an essential step in doing case studies'. This argument is appropriate in some case study research. However, Yin's (1994:28) contention defies key principles of Grounded Theory that provide

for simultaneous data collection and analysis, with theory development seen as an end process. This, calls for caution where a researcher chooses to combine case study and Grounded Theory as the researcher must, from the onset, specify clearly the methodology to be used in their study.

The study also sought to generate a new theory using the Grounded Theory method. To this end, a new theory detailing various components regarding the relationship between public and private partners was generated. The suggested theory provides a model that illustrates possible corrective measures for possible implementation at the LMC. Babbie (2013:536) defines Grounded Theory as an inductive approach to the study of life that attempts to generate a theory from the constant comparing of unfolding observations. Essentially, the Grounded Theory method attempts to derive theories from an analysis of the patterns, themes and common categories discovered in observational data.

Borrowing from Glaser and Strauss, Calman (2013:2) asserts that the aim of Grounded Theory method is to generate or discover a theory. For De Vos *et al.* (2005:318-320) and Neuman (2007:31), the aim of Grounded Theory method is to develop a substantive theory that is grounded in the data or faithful to the evidence, rather than being a theory in itself. Grounded Theory method, therefore, focuses on generating theory based on the study of social situations.

According to Eisenhardt (1989:534), Glaser and Strauss (1967) detailed their comparative method for developing the Grounded Theory method. This method relies on continuous comparison of data and theory beginning with data collection. It emphasises both the emergence of theoretical categories solely from evidence and an incremental approach to case selection and data gathering. This means that the methods of sampling, data collection and data analysis should not be considered as separate procedural steps in the research process, but rather as a continuous cycle of data collection, analysis and sampling (Elliott & Lazenbatt, 2005:50).

The choice of the Grounded Theory method is rooted in the study's preliminary research, which revealed that the WUC-LMC did not have a definite, written arrangement of partnership relating to the WSR. The choice of Grounded Theory method was also triggered by the purpose of the study and the research objectives. The suggested theory was generated for possible implementation at the WUC-LMC. This would enable the corporation to have a clear relationship with the private companies, illustrating the dynamics of such a relationship(s). The model would also facilitate several key performance areas such as access (new connections), supply (regular) and distribution (equitable).

4.4 Case selection, criteria and justification

The WUC-LMC was selected as the single case to be studied in this research, because it is the sole supplier and distributor of water in Botswana. WUC employees were selected to solicit their views of the corporation regarding the performance of the WUC, causes of water shortage and engaging the private sector to perform certain functions for the WUC. The sampling unit, however, was solely of technical and management staff and excluded staff from corporate services such as clerks, human resources officers, finance officers, messengers, drivers, gardeners and cleaners.

Purposive sampling was used to select respondents. As Neuman (2007:142) points out, purposive sampling is used in situations where a researcher uses judgment in selecting cases with a specific purpose in mind. Three situations that apply to purposive sampling make this approach relevant to the study. First, purposive sampling is used to select unique cases that are especially informative; second, to select members of a difficult-to-reach, specialised population; and third, to identify particular types of cases for in-depth investigation. In purposive sampling, the purpose is less to generalise to a larger population than is to gain deeper understanding of types (Neuman, 2007:143).

During its implementation, this study dealt with five focus groups and six in-depth interviews. When carrying out interviews, the final decision that saturation or redundancy had been reached was based on data saturation. The decision was facilitated through constant comparison of data. This is to say, the researcher proclaimed that he had saturation grounded in the empirical confidence attained from repeatedly comparing data to additional data (Tuckett, 2004:8).

According to Tuckett (2004:2), there are no hard and fast rules regarding sample size in qualitative research. Studies in the field of old age and ageing used experimental cell sample size from 10 to 100 with clustering around 50. Others suggest 12 to 20. Borrowing from Guest, Bunce and Johnson (2006), Mason (2010:3) notes that for all qualitative interviews, 15 is the smallest number acceptable. For Zickmund (2010:3), thematic saturation consists of a minimum sample of around 15 to 20 respondents. For Creswell (1998:64) 20 to 30 interviews are sufficient when using the Grounded Theory method. Alder and Alder (2013:8), however, observe that at the low end of "how many" questions, numerous well-respected and even classic studies have been produced using the single case study with some of the studies having relatively few people such as between 6 and 12 respondents. Alder and Alder (2013:8) validate the sample size for this research.

4.5 Data-collection methods

This study used various methods of data collection. The methods are discussed below.

4.5.1 Quantitative versus qualitative

Based on the nature of the research problem, this study adopted a qualitative approach for both data-collection and analysis. This approach was seen as compatible with the Grounded Theory method as it enabled the study to come up with a detailed examination of complex issues pertaining to PPPs through constantly comparing data in order to acquire more detailed

responses. The approach was further compatible with the case study strategy selected for this study.

Available literature shows that the debate on the use of quantitative and qualitative methods remains contentious to date. Regardless of whether the quantitative or qualitative paradigms are considered commensurable or compatible, there is no question that the approaches emphasise different priorities (Arnkoff, Glass, Elkin, Levy & Gershefski, 1996:269).

The quantitative approach stems from positivism, which has a realist orientation and is based on the idea of God's view or an independently existing reality that can be described as it really is (Slevitch, 2011:76). The qualitative tradition however, is based on interpretivism and constructivism, both of which stem from the idealist outlook (Deshpande, 1983:101-110; Sale, Lohfeld & Brazil, 2002:44-53 cited in Slevitch, 2011:76).

In quantitative research, a deductive approach is usually followed as the approach works from the general or abstract idea (Burney, 2008:4) following with a measurement procedure and ending with the empirical data that represent the ideas (Neuman, 2007:111). Qualitative research, however, is usually used in an exploration of a subject area in which only a limited amount of knowledge exists. The objective is to gather and analyse information from which knowledge can be deduced (Rintala, 2004:78).

A number of scholars are of the view that qualitative research often precedes quantitative research, hence it is often called hypothesis-generating research (Fellows & Liu, 1997). Quantitative database collectors have disapproved of qualitative research on several grounds. One of the most popular criticisms of qualitative data is that it is too subjective and impressionistic. Analysts assert that the methodology depends too much on the researchers' own unsystematic viewpoints and on what they see as important (Bryman & Emma, 2007). Furthermore, qualitative data-collection methods can be expensive and time-consuming, although it can be argued

that qualitative data in business research provides a more 'real' basis for analysis and interpretation (Collins & Hussey, 2003:163).

Researchers also observe that qualitative data are subjective and rely on the originality of the researcher and that qualitative data cannot be replicated, hence it can only do justice or help the specific case being studied. This is largely because the data collected are based on what is decided by the researcher. Therefore, what is observed can only help bring clarification to that particular case, and not others, because the specific findings cannot, in any way, be applied to other scenarios as this would otherwise be generalisation (Collins & Hussey, 2003:163).

4.5.2 In-depth interviews

The researcher conducted one-on-one semi-structured interviews. The interviews were carried out mainly with key informants. These included the General Manager for the LMC, the LMC Engineer, Superintendents and Foremen heading the Distribution, Networking, Wastewater as well as Customer Care and Service divisions. In-depth interviews permit the researcher and respondents the liberty to explore issues within the framework of a guided conversation, while simultaneously maintaining focus.

In-depth interviews, however, have their own limitations. Critics of in-depth interviews argue that interviews are often poorly executed, inadequately reported, overlook critical details, let important insights slip without notice and report results haphazardly. Those in favour of this view often dismiss in-depth interviews in favour of objective data from surveys and quantitative analysis. One of the roles of in-depth interviews is to manage the research process by supporting the interpretation of results from surveys and other quantitative methods (Prairie Research Associates, 2013:1). It is for this reason that focus group interviews as well as a survey were conducted to augment in-depth interviews.

4.5.3 Focus groups

The other data-collection method used in this study was the focus group discussion (FGD). Focus groups have been defined as group discussions usually based upon stimuli (topics, visual aids) provided by the researcher (Silverman, 2013). Focus groups are undoubtedly valuable when in-depth information is needed about how people think about an issue, their reasoning about why things are as they are and why they hold the views they do (Bell, 2010:167).

The difference between FGD and in-depth interviews is that the latter is individually targeted, while a FGD is group-centred. The FGD brings together a small group of between 4-10 people who are united by shared values and experiences, especially occupational and gender communities, among others, who are then interviewed together (Iowa State University, 2004:2). In this research, small groups comprising WUC employees were interviewed. The FGDs were guided by an interview schedule prepared before the discussion.

During the discussions, the researcher recorded the proceedings on paper with the aid of an assistant, while the researcher acted as a moderator of the discussions. During the deliberations, the researcher identified respondents with domineering personalities and requested that they share the floor so as to prevent dialogue and monopoly of the discussions. The FGD provided the researcher with an opportunity to obtain varying views regarding performance of the WUC and perspectives on PPPs, including whether private companies should be included or not as well as what can be done to remedy the current water situation.

4.5.4 Documentation

This study used various public records both from government and the WUC. The NWMP provided a deep insight into the entire process of the recent WSR. Most of the documentation could not be sought from the WUC owing

to confidentiality of the records. It was, however, anticipated that content sensitivity would be an issue with regard to accessing these documents. The researcher decided to maximise utilisation of records made available.

4.6 Credibility and validity issues in a Grounded Theory study

It is recognised that Grounded Theory is open to the possibility of error in similar ways to other qualitative research approaches. This may include misinterpreting of the data by the researcher, thus threatening the accuracy of the emergent theory. Within qualitative research, however, the researcher relies on member validation which involves returning the individual participants to check the accuracy of the interview transcripts (Elliott & Lazenbatt, 2005:51).

On credibility of a theory, Strauss and Corbin (1990:16) raise doubts about the applicability of usual canons of rigour as proper criteria for judging the credibility of theory based on the use of the Grounded Theory method. They suggest that criteria for judgment be, instead, based on the detailed elements of actual strategies used for collecting, coding, analysing and presenting data when generating a theory.

This study placed much emphasis on observing requisite basic principles of the Grounded Theory method, namely: categories, coding, constant comparison analysis, negative case analysis, theoretical sensitivity, theoretical sampling and memo writing. Adherence to these principles is demonstrated under item 4.7 of this chapter.

To further ensure validity rigour in this study, the researcher guarded against inaccuracies and misleading interpretations through various means that included comparative analysis, investigation of different slices of data, and integration of theoretical concepts.

4.7 Data analysis: Applying the key principles of Grounded Theory to the Emergent Theory

Rintala (2004:89) notes that there are three approaches to data analysis and these include language-based analysis, descriptive or interpretative analysis and theory building. Language-based analysis looks at how language is used in the source data. It also focuses on meaning that is attached to the language. With descriptive or interpretative analysis, researchers seek to formulate a holistic view of the processes being studied. This is done based on the premise that people are involved in the process. Theory building attempts to develop a theory based on collected data. As discussed under item 6.1, this study set out to develop a PPP model using Grounded Theory method. The study, therefore, applied theory-building analysis.

4.7.1 Coding in Grounded Theory

According to Allan (2003:1), Grounded Theory coding is a form of content analysis used to find and conceptualise underlying issues amongst the 'noise' of the data. In this study, data analysis, which began with coding, was done manually. As espoused by the Glaserian approach of Grounded Theory, the interpretative, contextual and emergent nature of theory development is reliant on an 'open coding' approach which starts by scrutinising the field note or interview "line by line' or word by word' with the eventual aim of producing concepts that 'fit the data' (Kelle, 2007). It was during this process where the researcher was alive to words and phrases that highlighted issues of interest to the study.

The researcher noted this in short phrases. The same process was carried out on transcripts from subsequent interviews as other respondents echoed similar sentiments using words and phrases mentioned by previous respondents in responding to interview questions. The short phrases were then analysed for commonalities where themes emerged.

The manual way of conducting data analysis involved the researcher deeply into the study, allowing for rigour, as opposed to where software programmes such as Nvivo or Atlas-ti would have been used.

4.7.2 Categories

When coding the interviews, care was taken not to code the actual content of the responses only, but also to capture the context in which the responses were made. As noted by the Soul City Institute of Health and Communication (2003:43), when analysing qualitative data, researchers have to pay particular attention to the issues of importance versus prominence. The frequency of responses in qualitative research does not mean the same as in quantitative data analysis.

Something that is said only once is as important as that which has been repeated many times. Researchers further have to distinguish between prominent themes and less prominent themes by seeing whether the themes are repeated across different interviews. Themes can be interpreted and presented based on an analysis of the weight of the theme.

4.7.3 Negative case analysis

During data analysis, several instances where data did not fit were found. Responses that tended to sway in a different direction from others demanded particular attention and data could not easily be discarded they would otherwise be useful in later interviews. Such data were temporarily shelved, some of which emerged in subsequent interviews and could be used to form new categories. Examples include the emergence of red tape as a factor contributing to low performance of the WUC. This was raised in a focus group interview at the Ramotswa sub-station and had never been raised before (see Chapter 5). This was integrated into additional questions in subsequent interviews.

4.7.4 Constant comparison

The use of Grounded Theory method entails a dynamic relationship between sampling, data collection and analysis. This means that the methods of sampling, data collection and data analysis should not be considered as separate steps in research, but as part of a continuous cycle of data collection, analysis and sampling (Elliott & Lazenbatt, 2005:50). Data were collected over a period of 18 months. The Grounded Theory method enabled the use of various ways of collecting data, which included books, observation, videotapes and audio tapes of interviews, among others. The researcher began interacting with personnel from the WUC-LMC as well as residents who were its customers in 2012.

Both structured and semi-structured interviews were carried out with individuals from the aforementioned categories. Observation was made various issues regarding water supply in more than twelve villages in the LMC. As such, data collected were periodically analysed to seek emerging categories with additional categories sought through the process of theoretical sampling. Emerging categories were then compared constantly with those from other stages of data collection. This was in line with the observation by De Vos *et al.* (2005:318) that constant comparison refers to the interactive process of comparing data incidents and categories continuously and repetitively with one another during the stages of data analysis, which are in operation simultaneously throughout the analysis.

4.7.5 Theoretical sampling

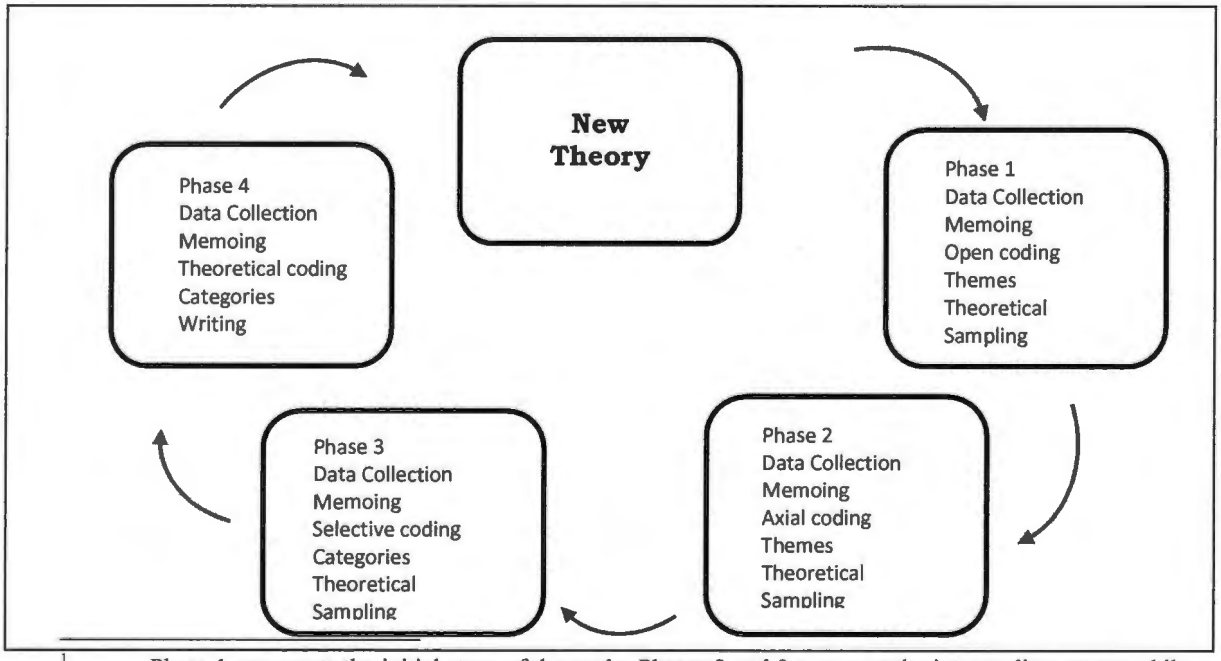
Theoretical sampling means seeking pertinent data to develop an emerging theory. The main purpose of theoretical sampling is to elaborate and refine the categories constituting a theory (De Vos, *et al.,* 2005:319). Concurring with De Vos *et al.,* (2005:319), Allan (2003:51), notes that Grounded Theory uses 'theoretical sampling' to sample events that are indicative of categories, their properties and dimensions so that they can be developed and conceptually related. The objective of theoretical sampling, therefore, is not

to increase the number of respondents, but rather to try and find out if new categories will emerge from additional data. In this study, theoretical sampling was conducted in three stages. The first stage involved sampling of respondents at Lobatse office, to seek initial information. This was done until basic categories were established through the use of open coding. The second stage involved a search for new concepts and properties of the already-existing categories. Theoretical sampling also involved seeking new categories as well.

4.7.6 Theoretical saturation

Towards the end of 2013, six in-depth interviews were conducted with key informants from the WUC as well as five focus groups on technical staff from various divisions. These were meant to augment data already collected in the previous months in three phases (see Figure 4.1). It was from these that a point at which no new categories were emerging was reached as there was no new information coming forth. At this point, data-collection ceased and data analysis was concluded.

Figure 4.1 – An illustration of data collection and analysis phases[1]



[1] Phase 1 represents the initial stage of the study. Phases 2 and 3 represent the intermediate stages while phase 4 represents the advanced stage of the research.

4.7.7 Writing memos

Clarke (2005:85) describes memos as 'intellectual capital in the bank'. For Corbin (2007:117), memos are a specialised type of written records-those that contain the products of the researcher's analysis. Memos are usually written by the researcher to contain the researcher's thoughts when conducting a Grounded Theory study. As such, they vary in subject, intensity, coherence, theoretical content and usefulness to the finished product (Birks & Mills, 2010:10).

In this study, memos were written throughout the stages of report writing. A case in point was during coding, that is, initial, intermediate and advanced stages as one could not have predicted when a particular memo would be of significance (see Figure 4.1 footnote). Birks and Mills (2010:10) further observe that memos do transform into Grounded Theory method findings over time. As a result, memos helped during the process of axial coding where the relationships between coded elements of the data were searched for. The use of memos also guided in determining the point of saturation when collecting data (Tuckett, 2004: 8).

4.7.8 Transcriptions

All interviews from in-depth and focus group interviews were recorded using a digital electronic recorder. The recordings were made in the interview language (Setswana) as this accorded the respondents the liberty to express themselves without having English as a barrier to their expressions. The interviews were transcribed verbatim into English and then checked for quality. Quality checks included a comparison of the translated transcripts by a language expert from the Department of English at the University of Botswana's Faculty of Humanities. In this way, language translation errors were reduced as far as possible.

4.8 Ethical considerations

This research adopted a number of precautionary measures so as to observe research ethics. Consent was sought from respondents through a letter of request. The letter had a clear, brief statement assuring respondents of anonymity of their contribution as well as their right to withdraw from the interview whenever they deemed it fit to do so. The letter also stipulated that information provided would be treated with the highest levels of confidentiality. No respondent was coerced or tricked to participate in the interviews. Letters of authorisation from the WUC Head Office in Gaborone and the Office of the President were also presented to assure the respondents that the research was authorised.

Cognisance was taken of Neuman's (2007:50) observation of some important laws and codes of ethics that recognise clear prohibitions. These prohibitions include: never causing unnecessary or irreversible harm to subjects, securing prior voluntary consent and never unnecessarily humiliating, degrading, or releasing harmful information about specific individuals that was collected for research purposes.

4.9 Lessons learnt from the study, research gaps and research questions

A number of lessons were learnt from this study. The lessons are tabulated in Table 4.2, with the left-hand column containing the research questions and the middle column showing the research gaps. Lessons learnt are indicated in the right-hand column of the table.

Table 4.2: Lessons learnt from the study, research gaps and research questions

Research questions		Research gaps	Lessons learnt from the study
ii)	How is the performance of water supply and service in the LMC?	There is a need to ascertain the level of performance of the WUC in the LMC so that we are able to determine the exact need and type of intervention	- There is a relationship between the performance of the WUC and service delivery - The water situation in Botswana is deteriorating
iii)	What factors support or impede the implementation of PPPs in the LMC?	There is a need to identify factors influencing bad performance as well those that can facilitate the implementation of PPPs	- Addressing specific factors in the operations of the WUC could improve service delivery in the LMC - Specific factors contribute to the selection and implementation of a particular PPP option
iv)	Which PPP option may be implemented in the LMC?	There is a need for the WUC to implement a suitable PPP option in the LMC	- There are various PPPs options to consider in providing a solution to a problem; -A sector diagnostic is requisite to selecting a particular PPP option; - A sector diagnostic also provides clarity on the type of intervention required at the LMC.
v)	What can be done to improve service delivery in the LMC?	- There is a need to examine the type of intervention(s) required for the LMC. - The need for requisite measures to address the water problem in the LMC is eminent	Elsewhere (e.g. Canada, West Africa, France and UK) various PPP options such as affermages and service contracts have been implemented to address the water problem

4.10 Selection of a research paradigm

In research, researchers often believe, view and interact differently with their environment. This leads to various studies being conducted differently. There are standards and rules that guide these beliefs and actions and they are referred to as paradigms. Taylor, Kermode and Roberts (2007:5) define a research paradigm as "a broad view or perspective of something". To Göktürk (2005:2) a paradigm is a set of assumptions, concepts, values and practices that constitute a way of viewing reality for the community that shares them, especially in an intellectual discipline.

Most kinds of research fall into one of the following paradigms: descriptive, evaluative, prescriptive, exploratory or predictive. Providing clarity between the concepts paradigm, methodology and methods, Kinash (without date:6) argues that paradigms are the theoretical mind-sets or collections of beliefs that underlie our approach. Methodologies are discipline-specific approaches and processes of our research. Methods are the specific ways in which we go about collecting our research data.

It is upon every researcher to clarify their structure of enquiry and methodological choices. Table 4.3 tabulates the research paradigm and methodology selected for this study. The framing of this research was written within the interpretive paradigm, while the selected methodological approach was that of triangulating the Grounded Theory method and the case study.

Table 4.3 - Selection of a Research Paradigm

Paradigm	**Ontology**	**Epistemology**	**Methodology**	**Methods of data collection and analysis**	**Report-writing style**
Interpretivism	-The real world can be discovered by means of a systematic, interactive methodological approach -Our view about what is real	-Knowledge arises from an understanding of symbols and meaning (symbolic interactionism) -How we come to know what we know	Grounded theory Case Study	Data is gathered by means of participant observation, human documents and interviewing, and are analysed systematically	The researcher provides insights into the behaviours displayed and the meaning and interpretations that subjects give to their life worlds

Source: De Vos *et.al.*, (2007:311)

4.11 Summary

This chapter explained the research design, strategy and methods used for data-collection and analysis as well as the types of research instruments used. The chapter briefly discussed the lessons learnt from the study and their corresponding, research gaps and research questions. The research method used, namely the Grounded Theory method, was introduced with all its principles being discussed. The chapter demonstrated how the principles were applied in developing the substantive theory. The next chapter presents the results of the study. The chapter also analyses the results and provides interpretation as well as discussion of the results.

CHAPTER FIVE: PRESENTATION, ANALYSIS AND INTERPRETATION OF THE RESULTS

5.1 Introduction

Chapter 4 presented the results of the study. A detailed discussion and analysis of the key findings are also undertaken in this chapter. The chapter has segmented the presentation of results into four sections with each being in line with the research objectives (see item 1.7). as in other previous studies (see for example Rakgoasi, 2010:68; Rodon & Pastor, 2007; Birks & Mills,2005:10; Meyer, 2005:225-228), in order to achieve validity and credibility of the results, the research presents the responses from the respondents verbatim. Discussions of these responses are done prior to the responses. Each response is identified with a number of the interview in which it was extracted (see interview schedule in annexes).

The methodological process of this study relied heavily on constant comparison of the data as they emerged at every phase of data collection. This initial process of data analysis in Grounded Theory led to the identification of categories (see Figure 4.1 and item 4.12.). The selection of the responses in all the sections were not selected using the discretion of the researcher but were rather grouped in terms of similarities after being made sense of. Theoretical properties were developed after data saturation was attained. The selection of the responses was further done using the grounded theory method in which the researcher began identifying certain properties using coding (see Figure 4.1 and item 4.7.1).

By applying the principle of constant comparison (see item 4.7.4), the researcher was able to filter and categorise all themes under the relevant research objective. The next section presents results and discussion of the first research objective.

Given the foregoing, this research generated the substantive theory from data to avoid the theory being considered speculative. As demonstrated

above and in Chapter 4, the study follows the principles of Grounded Theory, ensuring that the research and its subsequent theory are credible. The study combined the Glaserian and Strausian (see item 4.2.4 and Table 4.1) types of grounded theory. Given this combination, parts of the substantive theory emerged from data, while some parts have been structured to reveal the theory.

5.2 Coding and category development from the in-depth interviews and focus group discussions

5.2.1 An assessment of the performance of water supply and service delivery in the Lobatse Management Center

The development of the substantive theory in this study begins with an assessment of what obtained in 2011 at the LMC with regard to the water situation. Outputs from both in-depth interviews and focus group discussions were exposed to open-coding primarily to excerpt possible explanations and meanings under the identified themes.

For purposes of theory development, the assessment stage is labelled 'reconnaissance'. Reconnaissance is carried out in an effort to understand the gravity of the water problem in the LMC. Further to this, the water situation provides an insight into the performance of the water supply as its availability or lack thereof is solely the responsibility of the WUC. Reconnaissance here is seen as an activity, while the process for conducting it is an assessment. For the purpose of theory generation, the WUC is hereafter referred to as the 'organisation'.

In the first instance of the reconnaissance, an assessment of an organisation's performance in terms of water supply and service should be made. When conducting the reconnaissance, an organisation makes itself conscious of its state of well-being or lack thereof, thus according itself an opportunity to make better decisions in response. Organisations introspect for various reasons. This can be out of the desire to improve the delivery of

services, improve corporate image, restructuring or to cut costs, among others.

Issues emanating from data and their conceptual labels are presented in Table 5.1. These issues are grounded in questions during interviews. The questions sought to establish the status quo in relation to the performance of water supply and service at the LMC over a three-year period.

Table 5.1: Open Coding analysis for the Lobatse Management Centre

Issue	Conceptual label (s)	Key question (s)
Performance in terms of Water Supply & Service	Supply is inadequate and performance is unsatisfactory	• How is the performance in terms of Water Supply & Service?
Sources of water	Dams and Boreholes	• What is the main source of water in your area
Causes of water shortage	Drought and closure of pipes limiting water supply	• During shortages, what was the cause of water shortages/interruptions?
Other causes of water shortage	- Low rainfalls and obsolete infrastructure	• How has the water situation been like in the LMC in the past three years? • One year? • Three months?
Water problems	Reducing water levels in dams and reservoir, inadequate pipe coverage in newly occupied areas and high water bills	• How has the water situation been like in the LMC in the past three years? • One year? • Three months?
Public Education	- Public alerts	• What was the form of intervention during the water shortage
Other interventions	Water rationing and restrictions	• What was the form of intervention during the water shortage?

Table 5.1 illustrates conceptual elements and the emergent categories coming out of the coding process.

Table 5.2: Development of categories from research objectives: Reconnaissance

Cluster	Conceptual aspects	Emergent categories
1	Take over	Performance in terms of Water Supply & Service
2	- Dams - Boreholes - Use of community self-made dams - Re-opening of closed boreholes	Main sources of water
3	- Botswana drying up - Water pump breakdowns - Closure of pipes limits water supply	Main causes of water shortage
4	- Obsolete infrastructure - Vandalism of both pipes and boreholes - Power cuts - Engine breakdowns	Other causes of water shortage
5	- No pipe coverage in newly occupied areas - Poor quality pipes - Misuse of water by public - Water billing - Backlog in new connections - Shortage of transport and JCBs	Water problems
6	- Public alerts	Public Education
7	- Water rationing - Water restrictions - Connection of additional villages to the existing pipeline	Other interventions

Categories that emerged during this open coding exercise included the following:

- Performance in terms of Water Supply and Service
- Main sources of water
- Main causes of water shortage
- Water problems
- Public Education
- Other interventions

The key concern emanating from the data at this stage relates to a decline in the water supply due to various factors that include breaking down of pipes, deteriorating infrastructure and operational inefficiencies at WUC. The emergent categories seen in Table 5.2 are itemised under a core category titled 'reconnaissance', which basically refers to the assessment of the water situation at the LMC.

5.2.1.1 An overview of the reconnaissance stage

The reconnaissance stage describes the initial action to be taken by organisations prior to entering into a partnership. The situation on the ground within an area managed by a water authority should not be assumed. As such, there is need for scouting of the environment of the contracting party who is, in the many instances, a public organisation.
The reconnaissance is triggered, in most cases, by the level of performance of an organisation, which acts as a dashboard indicator. Besides conducting reconnaissance in-house, organisations that do not perform well often engage consultants to carry out the exercise for them. A report that details the status quo of events with recommendations is usually produced. In the case of a water authority, it is crucial to determine the level of water supply and related services. The first phase involving performance is labelled 'water supply and service'.

Customers may also be included in the reconnaissance to seek perspectives on the services they receive. Organisations may also identify assets or resources labelled 'sources of water' that are under their management. The sources may increase over a period of time by way of drilling new boreholes and constructing new dams and reservoirs. The sources may also decrease as some of the boreholes may run dry.

There is need to assess the general situation relating to water issues, which is labelled 'water situation'. This assessment can provide information on causes of water shortage as well as other problems associated with

wastewater supply. The response to water shortage by an organisation is labelled 'interventions during water shortage'. This intervention may include among others, water restrictions and rationing.

A thorough reconnaissance will often create a solid basis for decision-making with regard to whether private companies (PrivateCos) are required to provide certain services. Areas where private participation is a requisite will also be explicitly known. The following section presents a detailed discussion of the aforementioned key phases of the first conceptual label together with their properties.

5.2.1.2 Water supply and service

This section presents the findings of the study with regard to performance in terms of water supply and service. The section involves making a reconnaissance on issues relating to water supply at the LMC. A key issue used to assess water supply and service is the take-over of water services which is an action emanating from the WSRs. The findings are as follows:

5.2.1.2.1 Performance in terms of water supply and service

- Take-over

Since the take-over began, it is evident that the current performance of water supply and service in the LMC has been undergoing strain. This is attributed to the take-over of water services from both DWAs and Councils. The take-over left the WUC with a number of challenges. It should be noted however, that any public sector reform is bound to experience some residual challenges. Turnaround time to repair leakages, borehole repairs, obsolete networks that are not well managed in rural areas, shortage of manpower are some of the challenges that indicate performance is low at the LMC.

The minimal existence of the challenges would indicate that the WUC is performing well as it would be responding to the challenges timely that is, having them clandestinely concealed and not affecting customers in a

manner that they would obviously notice. In experiencing such challenges, an organisation may contract PrivateCos in an effort to ease the magnitude of work to be done. In elaborating their concerns regarding the take-over, a group of respondents mentioned that:

> *The other major challenge was that we as the WUC were initially responsible for supplying water to urban centres and did not supply water to villages, now what I observed from last year and this year, we are placed under pressure due to that we now supply the entire country with water so we have really not managed yet because when we took over, we found that our service was different from that of other previous authorities. It appeared that because other areas we supplied water by Government and water supply to Government is not business. Government just supplied water without necessarily basing the collection of revenue tariffs on business; the collection was only to cover some of the maintenance costs. Water supply has always been business on our side. But now it is difficult. It is difficult particularly this year as water has dried up. We were not used to supply water from boreholes; we were also not used to bowse water using trucks.* ***(Interview 5)***

5.2.1.3 Sources of water

Identification of sources of water is a crucial step as an organisation is able to, at any given time, know the total number of sources of water as well as the types of sources. In the case of boreholes, for instance, in addition to knowing the number of boreholes, an organisation should know the levels of all these boreholes. A scheduled reconnaissance exercise can assist in monitoring the levels as this will inform the organisation as to where there is adequate ground water recharge or whether the borehole levels are continuously dropping.

5.2.3.1 Main sources of water

- Dams

The LMC is dependent mainly on water from Gaborone Dam, which receives water from Notwane River. The dam also receives water from other areas in the northern parts of the country through the North-South Water Carrier (NSWC) pipeline. The water routed through the NSWC is from dams such as Letsibogo, which has the largest storage capacity. Nnywane Dam, which is within the LMC, is another source of water for the area located just a few kilometres from the town of Lobatse. Molatedi Dam is adjacent to Gaborone Dam and located in the neighbouring Republic South Africa. The dam provides a quota of its water to Gaborone Dam.

Boreholes are the next major suppliers of water in the majority of villages after dams. While some respondents mentioned reservoirs as their alternative source of water, it is common knowledge that a reservoir is just a storage facility and the real source of water, in their case, is boreholes. Only a few respondents mentioned that they draw water from streams when their water supply is disrupted. Arguably, some members of the community whose nearest borehole is 10 km away and beyond find it difficult to fetch water and, as a result, rely on fellow villagers who fetch water on donkey carts for sale.

The LMC area receives about 90% of its water from Gaborone Dam, while 10% of the water comes from Nnywane Dam, which is located in the LMC area. This was elucidated by a respondent who mentioned that:

> *eh hey, you know we are struggling, there water has been there, until, ehm, I take it that you know that we at Lobatse receive 90 percent water supply from Gaborone water and 10 percent from our dam that is Nnywane dam, but when it has failed as it has, we receive 100 percent of water from Gaborone which receives water from dams such as Letsibogo, up north and then is Molatedi which is in South Africa and there is Bokaa dam. Now we have a challenge of Letsibogo dam*

especially the North South Water Carrier because of the material that the pipe is made of, so sometimes we have that challenge when the pipe has a burst we end up having a supply problem in Lobatse but like I said, we depend on Gaborone dam for supply. ***(Interview 11)***

Although water was reported to come from Gaborone Dam and other dams in the North, it was reported that water levels are low within the Dam, a factor that sometimes leads to water shortages in the LMC area.

Reservoirs in the Goodhope area were also said to acquire water from the dam in Gaborone where the water is said to be stored before it is ultimately distributed to individual customers. The disparity in the information received with regard to water from either Gaborone or Lobatse is that the water is supplied only to the Goodhope Senior Secondary School, while the rest of the village and other areas are supplied with water from a borehole at the nearby village of Kgoro. Other respondents, however, indicated that water from Gaborone or Lobatse is served to villagers as well.

5.2.3.2 Use of boreholes

Boreholes are a conventional source of water in both urban and rural areas. However, some of the boreholes at the LMC were said to be not operating. Reasons advanced range from some having gone dry, being contaminated, capped and vandalised. Whereas some areas have various water supply sources, some places in the area were said to be solely supplied by water from boreholes, a factor that is now problematic since a number of boreholes have dried up. Water in such areas is currently supplied through bowsers as well as tanks. Controversy arising from boreholes emanates from data provided by residents of the LMC including ***'Dikgosi'*** and ***'Dikgosana'*** (village Chiefs and Headmen) who were adamant that some of the boreholes can still produce adequate water despite being capped by the water authority. These sentiments were more perceptible in the villages of Goodhope, Molapowabojang, Digawana, Otse, Mogojogojo and Pitsane.

Re-opening of closed boreholes

The demand for re-opening capped boreholes in the LMC area so as to augment the current water supply in the concerned villages was repeated throughout a number of interviews. In some of the villages the ***'Dikgosi'*** and villagers indicated that some of the boreholes were capped despite yielding water. A case in point is villagers in the villages of Mogojogojo and Molapowabojang who mentioned that several boreholes within the vicinity of their villages had been capped when the take-over began in 2011. Staff at WUC indicated that they were, however, not sure of the state of availability of water in some of the boreholes in this manner:

> *Well there are some boreholes although I am not sure what state they are in but I know there is an attempt to operationalize them.* ***(Interview 3)***

5.2.4 Water situation at the LMC

The water situation in the LMC area remains a major cause for concern. A number of problems can be attributed to the current state of affairs in the LMC area water situation. The problems are outlined below.

5.2.4.1 Main causes of water shortage

- Botswana drying up

A lot of water in dams is lost through seepage into the ground, thus contributing to dams drying up. Botswana also has one of the highest rates of evapo-transpiration in the region. In the 2012, 2013 and 2014, Botswana experienced one the most severe droughts in recent years with water scarcity affecting both citizens and animals countrywide. Consequently, the saying ***'Botswana o a kgala',*** loosely translated as 'Botswana is drying up', became synonymous with a lack of water. Referring to the situation as one of the major causes of water shortage, one of the respondents indicated that:

And the third thing is that "Botswana o a kgala" (Botswana is drying up), water at the dams such as Gaborone dam is lost through seepage into the ground and this has now resulted in a huge loss on the part of the corporation due to lack of manpower. ***(Interview 5)***

While the demand for private sector participation is pretty certain, caution must be exercised where partnerships can be entered into during periods of drought. Some of the respondents outlined this position in this way:

On the issues of private companies, we can say that the water situation used to be better and the main problem began just now on this era of ***"Botswana o a kgala"****, (Botswana is drying up) so private companies can be given tenders but they should be given tenders only in areas where the WUC does not manage well such as to bowse water but the contracts should be only for a certain period.* ***(Interview 5)***

- Water pump breakdowns

The breaking down of water pumps also contributes immensely to the shortage of water in the LMC. Where pumps have broken down, the organisation is forced to ferry water to customers through bowsers, as one respondent said:

We try to bowse although we have a problem currently as one of the pumps at Boatle is not functioning hence less water is reaching Lobatse. We made an arrangement last night to bowse water to Delta 1 and Delta 2 areas as well as Pitikwe in Lobatse. ***(Interview 5)***

- Closure of water pipes to limit the water supply

Water supply limitation has similarly been instigated where there is a shortage in the water supply and where applicable, water pumps are shut down to limit water consumption. The rationing of water is scheduled on different days in all villages at the LMC. The practice is planned to continue until water availability, particularly at the dams, improves.

There has been shortage in the past before the decision to ration water was taken. You would find that water would sometimes be available in one part of the village and not available in the other. This would have

been done by way of closing pipes within a network to repair pipes in the other side of the network. This is usually in emergency situations. ***(Interview 4)***

5.2.4.2 Other causes of water shortage at the LMC

- Obsolete infrastructure

As indicated several times in this chapter, the WUC mentions that it inherited obsolete infrastructure from the DWA and Councils. The capacity of the infrastructure is further reduced as it was previously intended solely for towns. To now service villages as well makes the corporation to perform below capacity or at capacity level.

> *The demands are high, the infrastructure was designed to cater for the town of Lobatse but as we went on with the boreholes drying up in the villages on the periphery of Gaborone but falling within the LMC, we began having connections on the very pipeline that was designed solely for the town of Lobatse. We started having connections for Ramotswa, Mankgodi, Manyana villages getting water from Gaborone. They get at least 8 mega litres per day from that pipeline. That is their demand but basically we are able to supply up to 6 mega litres.* ***(Interview 11)***

- Vandalism of both pipelines and boreholes

Vandalism of pipelines and boreholes also interrupts the water supply. Members of the public were said to steal WUC property such as borehole engines and fittings in the LMC area.

> *Yes it happens, some naughty members of the public steal borehole engines at our borehole sites. We have had diesel stolen at our borehole sites. Some of the local farmers break our appurtenances; that will be fitting in terms of air valves because they know that if they break it they would be able to water their cattle there. They do these especially where the pipeline is surfaced and goes through the lands.* ***(Interview 11)***

Some are alleged to punch pipelines that run on the surface so as to water their livestock. This was said to happen in remote areas where a pipeline

would go through the bush from one village to another. A case in point is the pipeline that runs from the town of Lobatse to Goodhope.

- Power cuts

Botswana relies heavily on electricity purchased from the neighbouring RSA. In the recent past, shortages of power in the RSA have resulted in a decrease in the supply to Botswana and, as such, all operations relying on electricity were disrupted. One such area is the LMC. Power cuts can affect the supply of water as most pump stations with water pumps and generators are electrically operated. The fact that water supply for the LMC is from Gaborone through Taung Station near Ramotswa, means power cuts at any of these locations equally affect supply to the LMC. Some of the respondents attributed water cuts to power outages and said:

> *Usually they (water cuts) are caused by power cuts. We source water from Gaborone hence if there is no power in Gaborone we experience water shortages.* ***(Interview 8)***

Power cuts also cause problems in the greater LMC area. Villages around Lobatse cannot be supplied with water during power cuts for the water pumps would not be functional.

Engine breakdowns

At times, villages are reported to go without water because engines used to pump water from boreholes in such areas would have broken down. To the villagers, it is not the breaking down of boreholes that is problematic. The main problem, according to them, is the turnaround time taken to repair the borehole engines. They alleged that some engines go for long periods of time without being repaired despite reports being made.

5.2.4.3 Water supply problems

- No pipe coverage of newly-occupied areas

Where the infrastructure is non-existent, new customers are bound to pay high fees. An organisation will often measure the distance from the new plot in which a connection is to be made to the nearest pipeline. Areas with no pipe network are those that are newly-occupied.

In Botswana, the disparity between un-serviced land and the demand for water connection by customers emanates from the reality that land servicing is a mandate of the DWA, not WUC and, as such, customers often find themselves having to wait for long periods of time for land to be serviced. As a result, customers have to pay huge fees as the nearest pipe from which they can be connected would be located far from their households.

An organisation can adopt various ways of connecting new clients to an existing pipeline. One such effective way is by going into partnership with a PrivateCo as this can bring about efficiency in the delivery of services. Since WUC initially serviced towns, while other areas were serviced by other authorities such as the DWA and Councils, such areas have a good ripe network. However, since the take-over, the arrangement that each individual has to dig his own trench has been abandoned. There is lack of pipeline coverage in newly-established plots, a factor that is not helped by lack of manpower in the WUC, leading to backlogs in new connections.

- Poor quality pipes (leading to bursts and leakages)

The use of poor quality pipes often results in bursts and leakages. At the LMC, some of the pipes in the network are of poor quality material. These pipes often lead to recurring bursts and leakages, contributing immensely to

water shortage. The repeated bursts and leakages have been consistently attributed to the poor infrastructure inherited from the DWA.

- Misuse of water by the public

Although Batswana know that there is shortage of water in the country, some still continue to misuse and waste water. While respondents acknowledged that pipe bursts and leakages result in water shortages they blamed the WUC for .

- Water billing

The current water billing system has been criticised by members of the public as producing water bills that are too high. The WUC management, however, stated that the difference between the current billing system and the previous one is that WUC depends on tariffs to break-even, whereas the previous authorities could spend months without billing their clients. The current authorities bill clients on a monthly basis and apply certain measures to recover costs from the public such as disconnecting meters and the like.

PrivateCos may be engaged in the billing aspect of water service. Parastatals such as postal services can serve as pay points for customers so that customers do not have to travel far to pay their bills. Residents of the LMC are, however, not aware of the fact that the billing system belongs to the WUC and not any other party that serves as a pay point. As such, it is the billing system at the WUC that issues high bills, resulting in customer discontent.

Backlog in new connections

The water situation was reported to be made worse by delays in new connections, a factor exacerbated by the fact that the present authority utilises its resources to dig trenches for individuals, as opposed to

previously where customers were allowed to dig their own trenches. This arrangement made water connections faster. Currently, private companies are engaged to dig trenches and this has proved to be a little problematic as WUC members have to supervise such companies despite having shortage of staff.

- Shortage of company vehicles including JCBs

When the WUC took over water services, some of the equipment and assets were left behind with the previous authorities, including vehicles. Consequently, the WUC experiences serious shortages of transport despite efforts to purchase new vehicles for use after the take-over. The shortage of vehicles was evident at all three WUC stations within the LMC. In addition to shortage of transport, it was also observed that there is shortage of water bowsers, machinery, excavators and tanks. It was mentioned that there is only one JCB servicing the entire LMC.

A number of remedies to curb the problem of shortage of vehicles in the LMC area were advanced. The respondents suggested that people from the villages should excavate trenches and that the corporation should contract employees with vehicles to use their vehicles for WUC business. This idea was proposed this way:

> *We do have backlogs but the main challenge is shortage of transport. It would help if the WUC could contract employees with vehicles to use their own vehicles to conduct the business of the corporation.* ***(Interview 7)***

The shortage of an excavator was also identified as a problem. There were contrasting views that there really was no shortage of vehicles within the corporation as one vehicle could be utilised to ferry more than one crew.

5.2.5 Interventions during water shortages

5.2.5.1 Public education

- Public alerts

Communication is key in any organisation, particularly those that have a wide client base. Where there are interruptions in the provision of services, organisations should have a clear communication strategy and a well-built communication mechanism. Announcements can be made via radio stations. However, addressing the public directly using PA systems on vehicles is much more effective. While residents of the LMC insist that no announcements are made to them when there are water cuts, it has been observed that public announcements are utilised to inform the public of impending water cuts when maintenance is carried out in a bid to have them prepared for the short period when water will be unavailable. Respondents explained this in the following way:

> *We make announcements to our customers if there is a water shortage caused by pipe bursts. We also inform the customers that the pipe would be undergoing maintenance. We spread the announcements using various means. We do this to prepare our customers for the shortage.* ***(Interview 7)***

5.2.5.2 Other interventions

- Water rationing

Where water levels continue to drop beyond expectations, an organisation can implement water rationing. This can be done in various ways. However, scheduled rationing, coupled with public announcements, can prove very effective. Customers will know well in advance when water will not be available in their area and prepare for the outages by way of storing enough water until supply is resumed.

In light of water shortages at the LMC, it was reported that the corporation had put measures in place to reduce water use. First the corporation introduced a water rationing exercise where water is shut down during stipulated hours. This action saves water. The water rationing was said to be exercised between 08:30 and 15:30 hours and the schedule included the town of Lobatse and villages on different days. A senior manager explained the rationing schedule by stating that:

> *...But further we have gone to what is now called water rationing whereby we supply water to areas intermittently. Twice a week we shut down Lobatse demand centre which includes the Town of Lobatse and surrounding villages, twice a week we shut down Ramotswa and its villages and we also shut down the Otse line twice a week... We close at 08:30 hours and open at 15:30.* ***(Interview 11)***

- Water restrictions exercise

Organisations can develop a water restriction programme as a first attempt to reduce the amount of water consumed. The programme, however, has to be a comprehensive one with a strict monitoring and enforcement mechanism. The programme can also have punitive measures that would act as a deterrent to customers who misuse water by way of using it on activities that are more of a leisure nature and not essential.

At the LMC, the WUC has introduced water restrictions with a view to save water. The public has been notified of such restrictions which include no watering of lawns, washing cars and filling swimming pools. The programme is derived from a national one, which is now implemented throughout the year as opposed to periodic implementation as previously done. The monitoring enforcement of the programme, however, is not as strict as it was planned to be due to lack of capacity.

- Connection of additional villages to the existing pipeline

The drying up of boreholes resulted in a decision to connect areas previously supplied solely with water from boreholes to the main pipeline that runs

from Gaborone to Lobatse. This greatly affects the capacity of the infrastructure. The increase in the number of villages connected to the main pipeline strains the supply itself as the size of the main line has not been increased. While supply was previously done at manageable capacity, the situation has now changed to put the pipe at full use all the time.

5.3 Factors that support and impede the implementation of PPPs

Results in this section have been grouped in line with the second research objective (see item 1.7). Upon conducting a reconnaissance, an organisation should identify both factors that support and impede the implementation of PPPs. The identification of these factors is facilitated by data from the reconnaissance. By knowing the level of its performance, main sources of water within its area, how the water situation is as well as forms of intervention taken when there is water shortage, an organisation is well placed to identify these factors.

The factors will vary in nature, scope and magnitude. Some factors may be operational, while others are purely administrative. In the same vein, some of the factors may have strong business components, while others are policy related. It is, therefore, crucial for an organisation to be able to classify these factors in the evolution of a PPP.

5.3.1 An Overview of the Aspect and Factor Identification

Table 5.3 illustrates categories grouped through the process of coding. The categories are clustered to be in line with the second research objective. Various sub-categories appear under the two core categories, namely: 'factors that impede PPPs' and 'factors that support PPPs'. A detailed presentation of results follows Table 5.3.

Table 5.3: Aspect and factor identification: categories and related properties

Cluster	Conceptual aspect(s)	Emergent categories
1	▪ Red tape ▪ No value for money for services ▪ Resistance to the implementation of PPPS	➢ Factors that impede PPPs
2	▪ Preferential engagement of former WUC employees ▪ Technicalities in hiring PrivateCos ▪ Institutional capacity ▪ Demand for private sector participation ▪ Monitoring of PrivateCos	➢ Factors that support PPPs

5.3.2 Factors Impeding the Implementation of PPPs

- Red tape

This is one factor that arose at the third stage of data collection. Previous encounters with participants revealed no concerns on red tape as much focus was on other issues. Red tape was reported to impede staff from being proactive in performing their duties. As with any reform, there were changes in administrative and procurement procedures after the take-over at the LMC.

The sourcing of spare parts and tools used for repair by technical staff now involves longer channels and additional paperwork. Members of staff now feel that these changes have disempowered them as, unlike with previous authorities, they can no longer make prompt individual decisions to attend to problems. A case in point is two crew that mentioned a similar point to the effect that when they saw a water leakage while driving either to or from their intended destination, they could not attend to it immediately as they were now required to drive back to their office to do the necessary paperwork to attend to the leakage. The concern regarding red tape was explained this way:

(Intercepts) the other thing is restriction which disempowers us to attend to any work until the rightful person authorises such. When we worked for Councils we would attend to breakdowns immediately more especially because we would be having a huge tool box containing all fittings. It was not like at present where one has to request for fittings first. If you were driving and spotted a pipe burst, you just park the car and attend to it, there and then. If a person came to report a leakage we were in most cases in a position to go with them at that moment. ***(Interview 9)***

- Shortage of manpower

Shortage of manpower leads to delays in providing service. Recruitment policies vary per organisation. At the LMC, however, the WUC follows a policy that provides for newly-hired staff to be posted to where they have been hired. This policy neglects the worker demand prompted by workload.

Public sector reforms usually result in organisational restructuring and one of the end processes is retrenchment. At the LMC, the take-over resulted in retrenchment of staff, particularly from the previous two authorities. Some employees were, however, integrated into the WUC. This development nonetheless, resulted in a shortage of manpower, a factor contributing to delays in provision of services such as pipe connections and repairs.

A transition period is one of the stages leading to complications in the delivery of services. In the case of water supply and distribution, customers may experience a decline in service as the new authority would be in the process of putting its house in order. There will be staffing issues as well as other issues that relate to resources such as vehicles. As such, customers will complain about the quality of service rendered to them. It is no secret that some people are afraid of change.

Where individuals, either within or outside an organisation, are left behind and not taken on board with regard to changes, particularly by way of alerts and education, there are bound to be complaints. It is the duty of the new authority to ensure that members of staff are given counselling regarding

staffing changes. The counselling should, in fact, be given to employees who are likely to be retrenched prior to retrenchment. Customers should also be informed or educated about a process that will result either in the merger or split of organisations that provide a particular service to them.

Lack of manpower planning can also result in other aspects of work experiencing delays. An example is that of pipe-fitters who are required to do pipe-fitting as well as new connections. Contracting a PrivateCo may, however, be desirable as this would mean that more space, in terms of new connection is covered thereby reducing and, ultimately, doing away with backlogs. Contracting a PrivateCo will also accord personnel at WUC the chance to attend to specific emergency issues such as responding to breakdowns and pipe bursts.

Shortage of manpower can also cause the existing workforce to be overstretched, that is, spread thinly over a wide geographical area. This also results in backlogs, as is the case at the LMC. The magnitude of work has to be proportional with the numerical strength of the workforce. Where there is a heavy workload and too few personnel, the existing personnel will be placed under pressure and will be less likely to manage current workloads.

It is crucial for organisations to strive for consistency even during times of reform. While employees of an organisation will experience a change in management style, leading to discontent among some, the same should not apply to customers in terms of changes within the organisation affecting them in a negative way. As some of the respondents commented, the change in management under the new authority at the LMC is different from that of old authorities.

New ways of conducting business deprive WUC customers of the freedom to make decisions as they would under previous authorities. They allege that as a result, there is an increase in incidents of water leaks and pipe bursts. They further allege that time taken to respond to the same is longer, costing both the organisation and its clients. This explains why complaints have

been frequenting newspapers and radio stations about the service under the new authority.

Employees at the LMC are overburdened with work as they are few, but expected to accomplish multiple tasks such as new connections and repairs. This often leaves new connections in the lurch as the same crew of pipe-fitters has to service many villages in the area, creating a backlog in other areas.

No value for money for services rendered

The issue of engaging private partners was seen by some of the respondents as lacking in VFM. An organisation cannot enter into any agreement with a PrivateCo to bowse water as the supply of water through a water bowser is not a permanent service. It would, therefore, not be financially prudent for private water suppliers to go into an unpredictable business. In the same vein, the WUC would not, under normal circumstances, go into business where there is no VFM in the service to be rendered. Being a state monopoly, the WUC, however, finds itself providing some services at a cost that is not of any benefit to the corporation. For instance, it was indicated that digging trenches required a lot of labour, while the fee charged to customers for providing the service was very low:

> *There is a fee but the charge is very little looking at the magnitude of work for instance labour costs for a trench measuring from the WUC office to BMC. You may also find that this could be just one application charged P1, 500.00 with a company needing about 20 people to dig a trench; hence this could be costly.* ***(Interview 6)***

- Resistance to the implementation of PPPs

One other factor which could be viewed as a form of hindrance to the implementation of PPPs in the LMC area is resistance to PrivateCo engagement by some WUC workers. The respondents indicated that there was no need to engage external bodies in WUC business as the current

employees were capable of executing all their assignments. They did indicate, however, that the policies currently followed within the WUC delayed progress.

> *If private companies are contracted it would mean that we are not capable of doing work. We are very capable of doing work. It has also been said that there are no funds so if a company is contracted where will the money used to pay it emerge from. That will just be wasteful. Policies that were used at the Councils and the DWA should be the ones practiced. The current policies are the ones causing underperformance of employees.* ***(Interview 9)***

5.3.3 Factors supporting the implementation of PPPs

Various factors were identified that would support the implementation of PPPs at the LMC. Once implemented, these factors will lead to ***'increased efficiency'*** at the LMC.

- Technicalities in hiring companies

Contracting private companies to enter into partnership with an organisation requires careful consideration as there are some technicalities to look out for. The WUC agrees that some of its work requires partnerships with private parties. However, the corporation is equally cautious not to go into partnerships that will have negative outcomes. In hiring a PrivateCo, the WUC considers the magnitude of the applications, while identifying areas of work that have most applications. A case in point is that of the town of Lobatse, where there was a long list of applications. The WUC would contract a PrivateCo for new connections and, by doing so, accord a PrivateCo a chance to demonstrate its capabilities. The company is provided with distances to cover and time it is expected to complete the work provided. In this way, the WUC is able to determine the cost of doing work thereby establishing, whether the contract has VFM. The contract ends when work is complete. When there is another piece of work to be done, an

advertisement is published in local newspapers and a new bid is opened. One manager cautioned about partnering with private parties without taking due caution:

> *We do have scope for some of the work to be hived off to private companies what remains is technicalities, for example if you take your core business of serving people with water, and hive it off, you will end up being in a situation of G4S in South African prisons, they were used to securing premises and other place, but when they decided to expand into prison services cause the South African Government gave them a chance, they came from the UK with international experience. But clearly they were mismanaging the prison because that was core business of prisons department you see what I mean.* ***(Interview 11)***

- Institutional capacity

Before 2009, the government realised that the institutional set-up and capacity to handle PPPs in Botswana was inadequate. Activities between the public and private sectors were not well-co-ordinated. With many authorities responsible for government business with the private sector, it was also not clear as to which authority was responsible for a particular activity, resulting in conflicting positions among government agencies and departments (Republic of Botswana, 2009a:2).

Despite the introduction of the Privatisation Policy and Privatisation Master Plan in 2000 and 2005 respectively, it was found that there were no standardised approach and process guidelines to deal with the structure of PPP projects and no uniform framework to guide treatment of tendered and unsolicited proposals (Republic of Botswana, 2009a:2). It was then that the Public Private Partnership Policy and Implementation Framework was introduced in 2009 to augment the two previously mentioned policies. This means that the country is now in a better position to enter into PPPs as there is a legal and regulatory framework.

- Demand for private sector participation

The advantage of engaging PrivateCos to carry out certain functions cannot be over-emphasised. In Chapter 4 and, indeed, Chapter 5, indications have been that PrivateCos should be contracted. Some of the managers admit that contracting a PrivateCo can bring about efficiency and effectiveness. It is this willingness from within an organisation that is a critical factor in supporting the implementation of PPPs. As a matter of fact, one senior manager acknowledged that the organisation is experimenting with a number of arrangements with PrivateCos. While the lack of a definite model is not a good factor, the fact that PrivateCos are contracted is a positive sign for PSP demand. Explaining this position, the manager said:

> *Theoretically, bringing those companies in to do the job is supposed to save us in terms of manpower hours in terms of resourcing and maintenance of those boreholes. The reality is that your own in-house staff is not always geared to deliver as compared to someone whom you have held against a contact whose payment is based on performance. But calling a third party is not always a solution as they also require serious supervision because if you do not monitor and evaluate their performance, which then takes your time and resources to do, they tend to make baseless claims or they cut corners. So what we are doing not is not total hiving off work to third parties. Because we are operating on pilot basis, we are practicing a bit of a mixture which we change anytime when we get an opportunity to. The way the contract is that you call them in to come as you see fit. It is not automatic that they will service all your boreholes or engines. So some work you reserve for yourself and some work you hive off to third parties.* ***(Interview 11)***

Buttressing this point, one respondent had the following to say;

> *It's just that this water service is complex. I am of the view that Government policy has really placed a burden on the WUC. It would be better if private companies would be engaged to assist in certain areas. Restrictions should be lessened in terms of allowing private participation in the water services. The only challenge is that there would be a need for us to be around when these companies work so that we are able to better monitor their work. At first it was better*

because there were three authorities hence the WUC was responsible only for urban centres. The previous arrangement favoured the WUC as the infrastructure in urban centres was of better quality. ***(Interview 8)***

5.4 What can be done to improve service delivery?

This section presents results that have been clustered under the third research objective. The core category in this section titled ***'Contracting of PrivateCos'***. It is argued that if PrivateCos are contracted, the **WUC will be able to focus on its core functions**. A detailed presentation of the results is shown in Table 5.4.

Table 5.4 What can be done to improve service delivery?

Conceptual labels	**Emergent category(ies)**
• Rehabilitation of pipe network • New connections • Boreholes (combined efforts) • Need to lessen restrictions in private participation • Setting up of fuel points • Casual workers employed to dig new trenches • Companies to be contracted to bowse water • Companies to be contracted for new connections • Contracting for expertise • Maintenance and repairs	➢ Contracting of Private Companies

5.4.1 Contracting of private companies

- Rehabilitation of pipe network

Private companies can be contracted to specifically rehabilitate the pipe network. This effort will be geared towards assisting the maintenance department whose personnel often have to be spread thinly over the vast area of service provision. By doing this, an organisation will not only be entering into partnership with private parties, but will also be providing ground for and empowering local citizens with capacity to maintain services. At the LMC, some members of staff suggested that such arrangement should be initiated and that they be given preferential treatment in terms of contracting once they form their own companies. They were of the view that once they retire to form their own private companies, they could handle maintenance work better as they would be familiar with the existing network. This point was expressed in this way:

> *Private companies can also be engaged in the maintenance department because they might need external help as they experience many problems as when their pumps have broken down they outsource. They even need assistance with repairing big valves as well as the North South Water Carrier bursts very often.* ***(Interview 6)***

- New connections

Related to maintenance is land servicing. Although this function basically falls under the DWA, some of the staff at WUC were of the view that it should be relocated to the WUC. They felt that land servicing would be better implemented under PPP arrangements. The demand for engaging private companies was, however, established as it was also called for when doing new connections. This demand was prompted by backlogs in new connections caused by shortage of manpower. A senior manager expressed this view:

> *But if there is a possibility where they can provide labour only like in terms of connections we have outsourced connections as we had a huge*

backlog on connections and our challenge ranges from our fleet being down to huge numbers backlog. We do have meters and pipes in stock. We just need somebody who has the capacity to undertake excavations and do excavations and the laying of pipes under our supervision. So that is labour only, in connections yes we have engaged people for labour only and gave them material. ***(Interview 11)***

On the contrary, some of the respondents claimed that they had no knowledge of PrivateCos contracted to assist in the delivery of water at the LMC. One respondent said in amazement:

Hmmm, private companies can be contracted in the construction of new lines because in our daily work it would be difficult to engage them as there are many requirements demanded by the corporation before we can think of engaging them. ***(Interview 8)***

While some of the respondents said they were not aware of private PrivateCos being contracted at the LMC, others explained that PrivateCos had already been contracted for maintenance of pipes, boreholes and other property within the LMC area. Clarity was provided on the aforementioned issue as follows:

The answer is yes, we have already done that, we did contract some for new connections, when we took over people applied in large numbers, ehm so it meant that we had to contract some companies, we can also contract some for maintenance particularly with pipe repairs, and we can contract these companies to deal with repairs. ***(Interview 2)***

Other respondents actually suggested areas where such PrivateCos could be contracted. They stated that PrivateCos:

Can help in so many areas...An example is new connections and not like in Lobatse where there is only one JCB used for digging trenches for new connections for all the villages. ***(Interview 6)***

- Boreholes (combined efforts)

The respondents were of the view that the LMC area could improve service delivery by contracting private companies to drill boreholes and build reservoirs. This would, in turn, improve the water situation in the concerned areas:

> *Even in faraway villages these companies may help in the area of boreholes...they can be allocated clusters for instance where there is certainty of underground water being available, private companies should be contracted to drill boreholes and the WUC should fit the pipes in the boreholes. They should also construct reservoirs; the WUC would then get water from boreholes and supply customers.* ***(Interview 6)***

- A need to lessen restrictions in private participation

The bureaucracy, in engaging private companies in the water services results in delays in service provision. In expressing the need for reduction of restrictions on private participation, the participants stated that:

> *It's just that this water service is complex. I am of the view that government policy has really placed a burden on the WUC. It would be better if private companies would be engaged to assist in certain areas. Restrictions should be lessened in terms of allowing private participation in the water services. The only challenge is that there would be a need for us to be around when these companies work so that we are able to better monitor their work. At first it was better because there were three authorities hence the WUC was responsible only for urban centres. The previous arrangement favoured the WUC as the infrastructure in urban centres was of better quality.* ***(Interview 8)***

- Setting up of fuel points

The WUC does not have fuel points of its own and sources fuel from independent private fuel stations. The excerpts that follow show that as much as it is desirable, the WUC does not immediately need to have fuel points of its own. It was mentioned that plans are at advanced stage to erect fuel points for the WUC in the LMC.

The corporation has various arrangements for sourcing fuel from privately-owned fuel stations. These arrangements, however, have their own challenges. For instance, one of the respondents mentioned that:

> *Fuel points are not much of a hindrance because we have working agreements with fuel companies out there ranging from prepayment of fuel to paying in arrears. Fortunately there are enough privately owned fuel stations throughout the country for us to have a choice so fuel points are not a problem. But owning a fuel point can be both an advantage and disadvantage at the same time.* ***(Interview 11)***

The lack of a functioning fuel station at the Lobatse office was attributed to the impending Environmental Impact Assessment (EIA). Adding to the preceding explanation, the respondent further said:

> *So we do have a mixture of both services, we do have a fuel point but it is not active as we had not done the necessary Environmental Impact Assessment I hear, so we have done it and we are now in the process of operationalizing this fuel point. Other areas that do not have fuel points such as Goodhope and Ramotswa satellite offices will also have their own fuel points. I have budgeted for those and the budget is currently being reviewed. In some areas you may find that there are no fuel stations, those with some close at night and during other times when we are working. In some stations fuel runs out and all these place us at a disadvantage hence the need to have our own fuel point.* ***(Interview 11)***

Another manager explained efforts made by the WUC in an attempt to improve fuel supplies. He indicated that:

> *We have improved the situation, the challenge was only to identify filling stations somewhere near where most of the boreholes are located especially Goodhope so we identified one in Metlojane village.* ***(Interview 2)***

Explaining why the fuel point at Lobatse office was not working, one manager had a different view from the other (interview 11). His explanation was that:

Yes, ehm, it would help a lot (thinking...), it would help a lot, and the only problem is that fuel suppliers demand that our fuel points should not be less than 9000 litres, if it is less they would not supply us. We have a filling point here at Lobatse office. ***(Interview 2)***

- Casual workers employed to dig new trenches

Engaging casual labourers to dig trenches is a viable solution as it can provide VFM. This form of partnership with the community can be seen as a way to fast-track new connections (United Nations Development Programme, 2006:78, 126). It is advisable, however, to keep the technical work of pipe installation or pipe-fitting a task of WUC pipefitters. This will maintain accountability at the WUC as the corporation will remain answerable for any leakages and pipe bursts. The main concern for some of the respondents was that partnerships with private companies are time-bound and once a contract for a particular company has elapsed the maintenance of the network would remain the responsibility of the WUC. Elaborating this point, one respondent said:

Yes, but what I see important, if there is private participation, we could perhaps engage casual labourers to assist pipefitters who do the fittings to hasten their work because if the connections are done by pipefitters and there is a problem, whatever happens thereafter it is the pipefitters who would be accountable compared to contracting a private company and then after approximately 3 years you experience a problem resulting from the company not doing things according to your specifications. ***(Interview 3)***

- Companies to be contracted to bowse water

The water shortage reached its apex in 2012. The saying ***"Botswana o a kgala",*** meaning that 'Botswana is drying up', was conceived and publicised to caution consumers against misusing water. The respondents suggested that private companies could be engaged to bowse water to areas beyond the capacity of the WUC. The respondents further stated that the contracts would be time-bound:

> *On the issue of private companies, we can say that the water situation used to be better and the main problem began just now in this era of* ***"Botswana o a kgala"****, (Botswana is drying up) so private companies can be given tenders but they should be given tenders only in areas where the WUC does not manage well such as to bowse water but the contracts should be only for a certain period.* ***(Interview 5)***

In addition, the other respondent cautioned that should the WUC buy water bowsers in large numbers, the trucks would become redundant if the water situation improved. The respondent suggested that sourcing water bowsers from private companies would be better as the arrangement would relieve the WUC the burden of buying trucks that could end up being parked when the situation improves.

- Companies to be contracted for new connections

The WUC does have partnerships with some private companies such as those supplying consumables. These consumables include protective clothing, stationery and office equipment, among others. The demand for partnerships in the delivery of water was ascertained as one senior officer suggested ways in which private companies could play a role and these include plot connections. A middle manager explained his understanding of partnerships with PrivateCos this way:

> *We do have private companies in the supply of various items that are consumed by the WUC as we do not manufacture. I am of the view that private companies operating within the water sector can play a role. The role to play can include improving our service as we have many functions. The corporation can outsource plot connections.* ***(Interview 4)***

Adding onto new connections, respondents also decried the huge volume of new connection applications. The respondents reiterated the need to engage private companies in the connection of new plots. Engaging private companies is seen as a form of empowerment to citizens. The respondents also indicated that they had already engaged the WUC management to offer them contracts once they leave the corporation to form their own private

companies. They suggested that their companies should be given preferential treatment once they are available for business as they (employees) have the requisite technical knowledge. Suggesting this point, it was said that:

> *With regard to lines, the work of new connections is a never ending job even now this morning there is a customer who is applying for a new connection. Now this is one of the functions that we were of the view that they could be outsourced and if possible, private companies could sign 3 years contracts with the WUC. You know when things are like this, you are giving the citizens some form of empowerment such as we the employees who have been doing this type of work for so many years and we are also the people who know the ins-and-outs of this work. We had discussed this with management before suggesting that they could give us 3 to 4 year contracts. They could give us a grace period of 2 years and if they are satisfied with our work they could then give us an additional period. This would allow us to grow and compete with other companies in the market.* ***(Interview 5)***

- Contracting for expertise

The WUC had, at the time of the study, engaged private companies to carry out various jobs. These include highly technical work such as the installation of fittings in boreholes and telemetry. One respondent stated that:

> *As we speak there are private companies contracted to install fittings in boreholes. They are helping us. Others have been contracted to install telemetry in pump stations...It is important because some of the activities are those that we cannot do....They specialise.* ***(Interview 7)***

- Maintenance and repairs

Regarding maintenance and repair of pump stations and boreholes, an organisation has an option of doing this in-house or outsourcing the services to PrivateCos. Both options, however, do have benefits and shortcomings. If repairs and maintenance are done in-house, an organisation can save a lot of money as it would be using available

personnel at its disposal. The pump stations and boreholes can be attended to as and when needed, at the shortest possible time, ensuring that turnaround time for repairs is kept short. This option however, requires adequately skilled personnel.

If an organisation is to outsource maintenance and repairs, this would cost it dearly as PrivateCos would want to maximise profits, especially under outright outsourcing. Entering into partnerships, for instance, may curb high fees charged by PrivateCos as there would be a contract that runs from a stipulated period of time such that PrivateCos are assured of business. Under outsourcing, there is no guarantee that during the next circle of maintenance or repairs a particular PrivateCo will be engaged as competitors in the market could beat its price.

At the LMC, the WUC engages private companies in the repairs and maintenance of pump stations and boreholes. The respondents revealed that the WUC does have the necessary expertise, but is seriously constrained in terms of capacity. Some of the equipment such as big pumps and generator sets are therefore sent to manufacturers in Gaborone and South Africa for repairs.

The repairs at pump stations and boreholes are, however, carried out by the water utilities staff. The need to contract private companies where the WUC is over-stretched was highlighted:

> *Well for those really we contract private companies. They mostly carry out repairs and maintenance. We do have expertise within the WUC to carry out those functions but we do not have capacity to carry out maintenance of pump stations and boreholes because boreholes are just too many. In the LMC we have about 61 boreholes which our staff cannot manage, even engines; we send them out for repairs to other workshops.* ***(Interview 10)***

Another respondent also mentioned a number of related issues regarding maintenance and repair. This is what he said:

Yes there are a lot of things we contract out Mr. Thekiso. Like I said it is based on the availability of expertise and capacity within the corporation. Even if our maintenance undertakes normal maintenance, when they are overwhelmed there is need to bring in external parties to assist us. Say pump stations, some of them can only be repaired by their manufacturers. If a pump gives us a problem we take it to SOULSA that is in RSA. For other electrical issues we get electrical companies to come in to replace something but some of our products are very specific to the manufacturer. If a generator set is coming from Barloworld and has their trademark on it, it is best to appoint Barloworld to repair it. Other areas include painting, if we have only one painter who carries our minor maintenance in our premises and there is a job to paint the whole pump station, then you take out the job. We have also contracted out periodic maintenance of boreholes. You know if the boreholes have worked for a certain period, the oils must be changed; the filters must be changed, so yes we contracted some private companies to carry out the maintenance. ***(Interview 11)***

The comments on maintenance and repairs were substantiated by the other speaker:

We have our maintenance section and it is our staff who undertakes daily maintenance of boreholes and pump stations. The maintenance may also be planned or periodic. Where we do not have capacity we outsource. ***(Interview 11)***

5.5 PPP Option(s) for Implementation in the LMC

The results in this section have been clustered in line with the fourth research objective. The core categories in this section includes 'Suitable PPP option(s) for implementation in the LMC' and the 'Reform of the Water Sector Policy'. The implementation of the subcategories listed in Table 5.4 will lead to ***'increased efficiency'*** at the LMC. Table 5.5 depicts conceptual elements as well as their respective emergent categories. A detailed discussion on selecting a partnership follows below the table.

Table 5.5 Suitable PPP option(s) for implementation in the LMC

Cluster	Conceptual aspect(s)	Emergent categories
1	• Companies to be licensed by WUC • Hiving off companies • Need to hire companies in different areas to reduce costs • Contracting of vehicles	Suitable PPP option(S) for implementation in the LMC
2	• Companies can be contracted to help with the network • Companies should be contracted for a given period • Public education • Owner-driver initiative	Reform of the Water Sector Policy

5.5.1 Suitable PPP option(s) for implementation in the LMC

- Companies to be licensed by WUC

As discussed earlier in this chapter (see item 5.3.2), an organisation should regulate PrivateCos in order to have control over the mushrooming of PrivateCos. Pricing of services provided by the PrivateCos should also be regulated. The significance of licensing trucks that either bowse water or drain septic tanks for wastewater stems from the fact that private parties were unregulated. This lack of regulation made customers vulnerable to private companies that charged them high fees for draining septic tanks because there was no standardised way of charging customers.

> *(Intercepts) this is why we say we would want to have it authorised by the WUC, because we are the authority we are going to be licensing them. We are going to be monitoring and evaluating them keeping them to a specific range just like people in the bus industry, they are aware that they cannot charge more than x amount for a particular trip. That will be a condition for their licensing if they violate the contract; we would then revoke the licence.* ***(Interview 11)***

- Hiving off companies

A senior manager clarified that hiving off of some of the activities carried out by the water utilities was not equivalent to the outsourcing aspect of privatisation. He was adamant that by hiving off he meant a form of partnership that comprised giving responsibilities to a private party(ies). To him, the WUC is not yet at a stage where it can privatise any of its activities. As a matter of fact, any form of privatisation in the water sector is not ideal, at least not for now. A case in point drawn into the discussion was that of wastewater drainage from septic tanks. It was clear that the corporation was losing financially on this activity as its policies seemed to be outdated. By relating the problem to how the Councils address it, clearly the policy affecting this activity is one of those that were never updated during the takeover.

> *Which is why I was saying hiving and not using the terms outsourcing or PPPs. We will have a mixture because remember that we are trying these things out, and observe what works and keep the arrangement as we go along, for example, to work an area such as Lobatse draining the septic tanks is not a headache, but leaving Lobatse to far away villages such as Mabule is a big headache. I would rather have somebody stationed in Mabule who has local advantage to this job but sanctioned by the WUC rather than open the job to private entities from all over. That is what Councils were doing. They had this service but what they did then was that they were giving this service to third parties informally meaning that they would be sanctioned by the DWNPC and Councils would sign off...* ***(Interview 11)***

- Need to hire companies in different areas to reduce costs

Some of the respondents were either economical with information or not aware of the type of information they were requested to provide. A senior member of staff alluded to the fact that the WUC-LMC has not formed partnerships with private companies. The respondent, however, advocated private participation signifying its importance. He held a strong view of

localisation through private company engagement. To this respondent, sourcing of private companies should go beyond limiting the contracts to companies operating within the LMC area. According to the respondent, the companies should be sourced within the clusters comprising the LMC, namely: Ramotswa, Lobatse and Goodhope. A case in point would be to contract companies within a certain radius of the Goodhope satellite station for duties required for partnerships with private companies at the Goodhope satellite station. Secondly, to him, the contracting of private companies within a cluster would reduce travelling costs.

> *Well it is not that the arrangement has been done before, but I can only conceptualise a suggestion. I take it that for starters, the WUC might begin with identifying talent or expertise that is in an area because areas are now vast. This arrangement can reduce costs such as travelling costs. Companies in different villages as long as they have expertise, they can be contracted as and when the need arises.* ***(Interview 4)***

- Contracting of vehicles

The backlog of new connections was attributed, to among others, the shortage of transport. Vehicles from previous water authorities were not handed over to the WUC during the take-over. In taking over responsibility of water services nationwide, leaving behind a crucial resource such as transport was not a profitable decision. There was controversy between a senior manager and some of the respondents from focus groups regarding the WUC policy on the boarding of open vehicles such as vans ***(See interview 5 in annexes)***. While the senior manager said he authorised the sharing of vehicles within a particular satellite station, other respondents said they were barred from boarding open vehicles. Regardless of who was correct among the respondents, the shortage of transport clearly costs the WUC both time and money.

Emphasis was put on the difficulty experienced by the WUC in service provision. Although some respondents (*see interview 4*) would not support

partnerships in the area of water bowsing, the service was nonetheless suggested as a potential area for partnership. A solution was suggested in this manner:

> *Let me also add on to say that the WUC is overburdened. For some of the activities it should request organisations with capacity to help it such as private companies more especially looking at the bowsers. The corporation will buy these in large numbers and when the situation improves they would just be parked here with no use but if they are privately owned, they won't be a burden of the corporation and can always be redirected to areas that require the service.* ***(Interview 5)***

It was evident that the shortage of transport was not limited to one satellite station. The respondents from another station raised the same concerns. They were also quick to point out that a remedy for the situation was imminent. To this station, an important observation was made regarding an excavator, which was said to be only (one) servicing a vast area.

5.5.2 Water Sector Reform Policy

Regarding the centralisation of water service, one of the key informants clarified that the rationale behind centralising the service was to prepare and position the WUC for the inevitable partnership with the private sector. A senior manager mentioned that partnerships would ultimately relieve the WUC of the pressure of doing everything on its own, particularly secondary functions of water provision. He likened the outcome of WSR to other countries in the African continent where the water service is efficient.

- Companies can be contracted to help with the network

Dealing with a pipe network that covers a large geographical area can prove challenging to an organisation that operates as a monopoly. As a way of resolving the anomaly, an organisation can contract PrivateCos in the maintenance and rehabilitation of a network. Commenting on the matter, the respondents remained optimistic that private companies could improve

the water situation. One of the respondents was of the view that the lack of a water network in the areas that were initially under the care of previous water authorities required a much more detailed approach to serving customers and this would include engaging private companies. Where networks existed, it would appear that they were either obsolete or unknown. This caused problems, as indicated below:

> *Allow me to add onto the issue of water situation and supplying water to rural areas, I am of the view that contracting private companies can improve the situation looking at that water network in those areas was non-existent hence it is difficult for the current personnel to know what was being done those areas they are faced with huge tasks to understand the state of affairs in specific localities. It is a lot of work and it takes time to understand the situation.* ***(Interview 5)***

- Companies should be contracted for a given period

The issue of fixed contracts is of significance. The assertion is that when contract periods are specified and kept relatively short, it allows for new entrants in the form of private companies to deliver services.

> *It is important that when the contracts are awarded they should specify the contract period so that the contract doesn't benefit only one company.* ***(Interview 5)***

Concurring and adding to what the other respondent said, another respondent suggested that the contract period should be, at least, one year. He said this would relieve the WUC of excess work:

> *Yes I was going to echo the same sentiments but I can however add on to say, the companies should be given at least one year to assist in whichever field so that the WUC should not be seen to be overburdened.* ***(Interview 5)***

- Public education

Public education is considered an important aspect in making service delivery in the LMC area a success. This is an activity that is easily overlooked as it is overshadowed by other activities that appear urgent and require immediate response. The public should be adequately consulted prior to initiating any reform in the water sector. Public education should not end there, but be extended to the implementation phase of the reforms. Evidently, this is one aspect that was missing when this study was conducted which led to much speculation and conclusion on the delivery of services by both the WUC staff and customers.

Policy development in Botswana traditionally involves engaging citizens including those at grassroots level who are usually consulted mainly at the **"Kgotlas",** which are found in each and every village. One prominent conclusion made by WUC customers is that water bills are visibly higher under the administration of WUC compared to that of the DWA and Councils. There is also a belief that water rates have been standardised as part of the WSRs.

A senior manager, however, proclaimed that the public requires education about billing. He mentioned that the fragmented nature of water authorities meant each authority could make individual decisions and that some of the previous authorities did not bill their customers because they were led by politicians who would make such decisions in order to gain political mileage.

- Owner-driver initiative

In an attempt to instil responsibility for company assets by those in charge of operating them, an organisation can introduce the owner-driver initiative on assets such as vehicles. The initiative is one aspect that can potentially remedy the transport problem at the WUC. Vehicles that are rendered obsolete are boarded and sold through a public auction, a development that

denies staff an opportunity to purchase the vehicles ahead of external buyers. One foreman suggested that vehicles that are boarded should be sold to them under an arrangement that would allow them to simultaneously use the vehicles on duty. They were of the view that the arrangement would be helpful in improving service delivery in the LMC.

5.6 Analysis and discussion of the results

Below is a detailed discussion and analysis of the results. The discussion and analysis are also presented in line with the research objectives.

5.6.1 Performance of the water authorities regarding water supply and service in the LMC

Performance at the WUC experienced continued decline over a period of three years. Similarly, the water situation deteriorated across the LMC in the period under study. Factors causing this decline are twofold. First there are the operational and infrastructural factors. Second, there are administrative and business processes that appear to be out-dated.

As illustrated by the findings of the study, majority of the respondents indicated that the water situation over three years had been much better than it is at present. The respondents explained with passion the kind of service provided by the two previous water authorities, namely: the DWA and District Councils, emphasising the level of seriousness which the two authorities exercised in executing their duty of providing water.

An interesting cause of water shortage, which has a direct impact on the performance of the WUC in the LMC, was identified in a number of villages. In one of the villages, majority of the respondents including their ***'Kgosi'***, complained that their borehole operator was not performing his task as expected. The respondents noted that they often ran short of water because the operator would have either come late for work or absconded from work.

A similar, but peculiar, observation was made at a WUC satellite station where borehole operators and maintenance personnel covered a number of villages, some beyond 50 kilometres from the station. Raising a complaint, one of the respondents mentioned that some villages as close as 30 kilometres to the same satellite station had their own borehole operators. This administrative oversight is one of the issues that raise controversy over the real causes of water shortages to the residents of LMC.

Repairs and maintenance of boreholes and pump stations have proved to be problematic and take time, particularly where spare parts are to be sourced externally. As some of the respondents concluded, the turnaround time for borehole repairs with the previous two authorities was much shorter than it currently is. They argued that borehole operators working for the previous two authorities were constantly in contact with the people they served hence they performed much better than those in the current set up. It was also mentioned that the borehole operators under the old arrangement felt that they were accountable to the people they served rather than the authorities that employed them, as is the case at present.

Majority of the respondents at the Goodhope and Ramotswa satellite stations raised a shortage of transport as a major concern. Transport shortages impact negatively on daily operations. It also affects the performance of the satellite station as teams responsible for meter-reading, attending to leakages, new connections and borehole repairs or maintenance among others, require adequate transport to carry out their duties effectively. The shortage is clearly an administrative issue which should not negate the primary mandate of the WUC of providing a reliable service of water supply and distribution.

At Goodhope station, shortage of fuel was said to be another issue as there was serious shortage of the product to use for both vehicles and borehole engines. Upon enquiry, it was established that the shortage of fuel was solely due to ineffective planning and procurement processes. The WUC

Goodhope satellite station sources fuel from privately-owned fuel stations competing for the product with the general public and private businesses. Moreover, the private fuel service stations in the area have low storage capacities and experience frequent shortage of fuel. The shortage of fuel for daily operations, as a result, impacts negatively on the performance of WUC in the area.

The provision of back-up power supply is another critical performance issue. Without power, pump stations do not operate. At the time of conducting the study, a private company interviewed revealed that it had no form of formal agreement such as 'service-level agreements' with the WUC regarding the supply and maintenance of power generators. The two parties operate without a contract under an ordinary supply and payment arrangement. As such, the acquisition of generators was done on a normal purchasing arrangement.

While the private company supplied the generators based on the requisitions from the WUC, it was revealed that payments to the suppliers were often delayed. This delay caused frustration to the suppliers and, as a result, the suppliers became strict regarding the supply of newly-purchased generators. The lack of a formal agreement between the WUC and its suppliers of generators clearly has a bearing on its performance, especially when the region experiences the now routine and formalised power load shedding in areas where the pump stations are located.

Still on the issue of power back-up, it became evident that the WUC had not explored other alternative means of providing back-up power such as solar or wind energy. While there is an opportunity to invest in wind energy, Botswana has an abundance of solar energy available for the country to tap on, particularly at industrial level. It is, therefore, only logical that the WUC explores this opportunity to use not only for back-up purposes, but also for cutting costs as the procurement and use of electricity and fuel remains costly.

The bursting of main pipes and leakages of smaller pipes as major causes of water shortage are also a clear indication that the WUC is incapacitated in terms of capital, yet another key factor impacting negatively on the WUC's performance. Lack of capital implies that the corporation cannot provide water effectively. This calls for measures to be put in place to address water leakages. In this situation, the WUC is faced with a challenge of raising capital through other means than subvention from the fiscal budget to reduce water leakages as well as to replace its dilapidated infrastructure.

Closely related to water leakages is water infrastructure. The WUC uses pipe networks previously intended to service towns only, which now services the villages as well. New connections of additional villages to the main pipeline running from Gaborone to Lobatse, for instance, greatly reduce the capacity of the infrastructure. This results in under-performance.

The connection of additional villages now compels the WUC to operate at maximum of capacity. The result is constraints on the WUC as it fails to maintain the desired 80% of fresh water that is supposed to exist at any given moment in the storage tanks for easy supply without sourcing from the treatment plant. This stored water is meant to be available for supply for a period of 48 hours should there be a breakdown. There is need to replace existing smaller pipes with those that carry larger volumes of water.

The current water billing system has been criticised by members of the public as producing high water bills. The explanation from the WUC, however, is that previous authorities did not bill customers consistently and accurately. Political expediency was also blamed for low tariff setting as Councils were led by politicians. This was said to contribute to government (DWA and Councils) being too considerate when setting tariffs and collecting payments as water is naturally a public good. Although no WUC staff corroborated claims made by members of the community when they said they were billed despite water not running in their taps, a primary concern

is that some of the bills seemed too high for an area faced with serious water shortage.

While red tape is a common challenge within governments in developing countries, the WUC is a parastatal mandated to operate commercially. It was surprising to find that red tape was actually a cause for concern regarding performance. In view of the foregoing, it can be concluded that the performance of the WUC is below customer expectations compared to that provided by the previous two authorities, namely: the DWA and the District Councils.

Conversely, there are also factors supporting the performance of the WUC in its effort to deliver services. One such factor is the technical expertise required to run a water provision organisation. The WUC-LMC has, among others, engineers, pipe-fitters, borehole mechanics, ground water technicians, network attendants and laboratory technicians at its disposal and is benefiting immensely from this diverse technical labour force.

Although the two former water authorities also had this cadre of personnel, the WUC enjoys more prominence in terms of such expertise as it is a parastatal that was set up to operate on a commercial basis, differentiating it from the two previous authorities. It is understood that remuneration packages at WUC are much better than those provided at the other former two authorities, making it attractive for people with higher expertise and experience. While the WUC-LMC enjoys this diversity of expertise in the technical staff, the centre experiences shortages in terms of the adequacy of staff. As mentioned by management at the LMC regional office, this shortage contributes seriously to the poor performance of the entire centre.

Following the world economic recession in 2008, the Government of Botswana encouraged the public service to do more with less. This development resulted in the freezing of recruitment for a considerable length of time coupled with releasing of employees at certain cadres at a specified rate within ministries over a five-year period. If the reasons for the WUC not

to increase its staff complement are based on this recommendation, then the problem of service delivery could also be attributed to lack of full exploitation of its limited, yet skilled and experienced staff.

The delays in new connections are linked to business processes that call for the digging of trenches to be done only by the WUC as opposed to the previous arrangement where customers were allowed to dig their own trenches. This arrangement makes water connection faster. In some instances, however, PrivateCos are engaged to dig trenches.

That the WUC contracts PrivateCos for the repair and maintenance of boreholes and pump stations is a clear sign that PPPs can be successfully implemented in the LMC. The missing factors are policy, as well as institutional and legal frameworks at the level of the WUC LMC to ensure that the centre adopts a systematic way of contracting PrivateCos. At national level, a PPP Policy and Implementation Framework introduced in 2009 supports the implementation of PPP hence there is need, at local level, for organisations to tap into this policy to design policies and guidelines governing their relationships with PrivateCos.

Based on the findings of the study, the preference of private sector participation was ascertained. Clearly, there is a need to develop policies regarding the contracting of PrivateCos. That the WUC is still experimenting with ways to contracting PrivateCos is evidence of a lack of a model or policies that could otherwise protect the interest of the WUC. Some respondents were sceptical of the WUC's openness to open bids to companies throughout the country, denying local companies' priority within the LMC. Preferential treatment is practised widely where the market appears to be competitive and suffocating local businesses. The policies or model will also stipulate clear processes to be followed when contracting.

Lack of formal agreements such as 'service level agreements' between the WUC and private parties impacts negatively on its operations and, ultimately, on performance. The supply and maintenance of power

generators, for instance, are carried out under a "supply and payment" arrangement. Payments to suppliers are often delayed, putting a strain on the relationship between the WUC and its suppliers.

The findings also reveal that hiring private companies does not really mean that the corporation has free time to utilise elsewhere as there is need for supervision of PrivateCos, which takes away WUC staff from other corporation duties. Although this observation was stated as a negative factor towards the implementation of PPPs, the findings are in line with the ADB's assertion that a successful PPP depends, in large part, on the capacity of the government to keep the contract on track (ADB, 2008:1). This entails setting clear requirements of the partnership, monitoring the performance of all parties to the contract, reporting on results and enforcing contract provisions that are not met.

5.6.2 Factors supporting and impeding the implementation of the OSC at the LMC

The research findings reveal a number of factors that contribute to the implementation of the OSC in the LMC. This section begins with a discussion of factors that support the implementation followed by those that impede the implementation of PPPs in the LMC.

Factors that support the implementation of PPPs in the LMC include: the demand for private sector participation by residents of the LMC, availability of supporting legislative and regulatory framework, specificity of areas where a private company should be engaged as well as the opportunity to sponsor project implementation through private financing.

As indicated earlier, the OSC is suitable where the requisite service can be clearly defined and demand for the same service is practically certain. The findings of the study clearly demonstrate that there is a need for engaging a private party in the delivery of water service in the LMC. Both the WUC personnel and residents of the LMC supported the notion of contracting of

private companies in the provision of specific services in the delivery of water.

Regarding distributing of water within villages, some of the respondents actually explained that water is occasionally available at different standpipes during different days, signalling that water was available and that the problem is its distribution. Some stated that water shortage was restricted to a particular part of a village, an observation that indicated a distribution problem as well.

Botswana has in place legislation supporting the implementation of PPPs, making it feasible to implement the OSC at the LMC. The PPP Partnership Policy and Implementation Framework (2009) provides for the institutional framework.

Ministries and government departments responsible are primarily accountable for their projects and expected to implement and manage them. The role of MFDP under this policy is to, through the PPP Unit, provide technical expertise to the sponsoring institutions, advocate and build capacity as well as coordinate PPP projects. The legal and regulatory framework for the procurement aspect of the OSC is compatible with the Public Procurement and Asset Disposal Board (PPADB) Act.

Regarding sponsorship of projects, a common response put forward by authorities in government is lack of funding. The OSC provides government with an opportunity to undertake a project without funding it. Addressing the Water Pitso Symposium in the town of Selebi Phikwe on 9th June 2011, under the Theme 'Water Supply in Urban Areas, Take-Over of Rural Areas and Wastewater Management', the WUC Chief Executive Officer (CEO), Mr. Mudanga, indicated that, like any other government project, the development of water supply infrastructure has to compete with other national programmes for funding. He further noted that due to the 2008 global financial crisis a number of projects in the government's development budget, including the WUC's programme to improve security of supply by

constructing three more dams in the eastern part had to be deferred (Mudanga, 2011).

Although the WUC CEO's observation was at macro-level relating to the construction of new dams, the findings of this study reveal that the main reason for water shortages related issues such as the regular leakages and bursting of pipes. This problem has been occurring for a number of years. Similar observations were made by the WUC CEO in 2008, who mentioned that water supply infrastructure in villages is in a poor state of maintenance, resulting in serious supply disruptions, failure to meet water quality standards and huge water losses (Mudanga, 2011).

While the WUC's main source of funding is the fiscal budget, research has shown that public financing is volatile and, in many countries, rarely meets crucial infrastructure expenditure requirements in a timely and adequate manner (Tangkitsiri, Ogunlana, Oyegoke & Oladokun, 2013:2). This case is also true for Botswana. Elsewhere, research has further shown that equity is a more readily available component in the financing of infrastructure projects as raising large amounts to finance large scale projects is a challenge to most debtors (OECD, 2014:9). As a result, engaging a private company to provide infrastructure for water delivery in the LMC is a viable option given the limited finance on the part of government. In addition to providing infrastructure, other aspects such as water bowsing, inspection and replacing of malfunctioning water meters as well as additional pump stations can be provided under PPP contracts.

Factors that hinder the implementation of the OSC at the LMC at present include absence of service agreements. The absence of agreements with private companies supplying power generators is a crucial factor that has a significant impact on the performance of the WUC. There is an absolute and immediate need for the WUC to have a service level agreement with each private company detailing the responsibilities of each party.

Recurring power cuts were most prominent in 2013. Consideration of alternative sources of power did not go beyond backup generators. With abundant solar energy, it is only logical that the WUC considers installing solar panels to operate some of its boreholes and pump stations in order to cut the cost of procurement and use of electricity and fuel, which remain costly. While the commitment to use solar power has always been there, not much has been done to implement it (Republic of Botswana, 2009c:11; UN System in Botswana, 2007:29).

The information regarding failure to source power back-up generators timeously is usually not availed to the public although the impact of such administrative inefficiency on the part of the WUC affects the public directly. Ideally, failure to have a service level agreement in place or to honour any part of it by either the WUC or private company should not affect the consumers. However, the findings of this study reveal that this is true.

5.6.3 What can be done to improve service delivery at the LMC?

This section does not seek to provide recommendations based on the findings, but rather attempts to discuss and interpret the findings in areas that appear to be significant in identifying what can be done to improve performance in the LMC. To this end, this study has identified five key performance areas that require attention in order to improve performance of water supply in the LMC. These areas include: adequate resourcing of satellite stations, contracting private companies, reviewing the WUC billing system, initiating agreements with private companies and resuscitating alternative sources of water.

The primary causes of water shortage are water leakages resulting from dilapidated pipes. A Republic of Botswana (2009b:13) report documented water loss through pipe leakages, pipe bursts-unaccountable water usage was at 24 percent in 2007. The problem still persists in 2013/2014. Water loss reduction seems to be the most viable solution to this problem.

A practical example elsewhere is the Malaysian City of Sandakan in which physical losses were reduced by almost 17.5 million litres per day (Mld) following a 30-month contract (Pilcher, 2005). The key factor is to identify the number of leakages particularly per cluster, and reduce real or physical losses as well as replace the mains with the highest burst frequencies.

As indicated in item 5.6.1, the Goodhope satellite station decried shortage of transport as well as fuel. At the WUC Lobatse office, indications were that performance was affected by shortage of personnel. Resourcing all three WUC offices in the LMC with requisite transport, fuel and adequate staff will capacitate the operations of the offices and lead to an improvement in service delivery.

The second key performance area is contracting of private companies to carry out specific tasks. From the interactions with residents of the LMC, majority of the respondents indicated that they would like private companies to be contracted in the delivery of water. A few respondents, however, said they did not see the need to contract private companies. Members of the community indicated that they had confidence in private companies, citing efficiency as the main reason for their choice. Some indicated that they were aware that a private company could demand higher charges, while some likened the WUC to a private company, compared to previous authorities (the DWA and District Councils). It is concluded that there is a need to contract private companies so as to improve the delivery of water services in the LMC.

The WUC billing system is the third area in which performance at the LMC can be improved. Majority of the LMC residents indicated that they were not happy with their billed amounts. Associated with the billing system is the lack of access to bills as well as convenience in paying bills. Establishment of service points in some of the villages can help improve the delivery of services.

The fourth performance area for consideration is initiating agreements with private companies. The lack of any form of agreement between the WUC and private companies providing generators or servicing either pump stations or borehole engines places the performance of the corporation at risk.

The last is the option of increasing alternative water sources. The WUC has to explore increasing alternative sources of water and ensure equitable distribution of water in the LMC. According to majority of the respondents from both the WUC and Community categories, Gaborone Dam is the main source of water known to them. However, other respondent mentioned dams such as Letsibogo, which has the largest storage capacity while some mentioned Nnywane Dam, which is within the LMC, a few kilometres from the town of Lobatse. Respondents were, however, not aware that Molatedi Dam in the neighbouring Republic of South Africa provides a quota of its water to the Gaborone Dam.

Boreholes are the next major suppliers of water in the majority of villages, after dams. While some respondents mentioned reservoirs as their alternative sources of water, it is common knowledge that a reservoir is just a storage facility and the real source of water, in their case, is boreholes. Only a few respondents mentioned that they draw water from streams when their water supply is disrupted. Arguably, some members of the community whose nearest borehole is 10 km and beyond find it difficult to fetch water and, as a result, rely on fellow villagers who fetch water in donkey carts for sale. One unit of water (approx. 20 litres) costs P20 (approximately R19) at the time of data collection in most villages.

Regarding water shortages, the majority of the LMC residents indicated that they look for water themselves when there is no supply. This development was witnessed in some of the villages such as Pitsane, Molapowabojang and Mogobane at the time of conducting the study. It is crucial that capped boreholes be opened for re-use.

5.6.3.1 Areas where private companies can be contracted

Responses were provided for all options given in the interview schedule by the WUC personnel. Repair and maintenance of boreholes were at the forefront of the options provided. For the WUC personnel, the area which caused concern was the provision of new pipes linking villages which frequently had leakages due to dilapidation. The next preferred area which respondents felt should be contracted to private companies is water bowsing when there is a shortage. In fact, members of the community strongly felt that there were individuals within the villages who could, if financed, purchase water bowsers and then provide water to their villages.

The second area which members of the community would like to have contracted to private companies is the distribution of water within villages. This strong view is testified to by other studies (Sunday Standard, 2012) which reveal that water shortage in some villages is actually not the main problem but rather the distribution is the problem.

The third area is where the WUC staff felt could be contracted to private companies is billing. Billing, particularly in urban areas, is the largest reported concern to the WUC superseding shortage of water. Members of the community shared the same sentiments. In villages, overrated bills seem to appear worrisome too, especially with frequent water shortages.

Anecdotal evidence is that of some respondents in Goodhope, Pitsane, Mogobane and Digawana alleged that when their taps are opened, the meter continues to run even if there is no water coming out but just air. Meter readers in Goodhope mentioned that they were occasionally refused drinking water by clients whilst out to read meters – the clients decried high bills despite lack of water. Similar anecdotal evidence in the village of Moshopha, in Tswapong area, has it that residents refused to pay water bills since they claim they never had any water flowing from their taps.

5.6.4 The OSC as the best PPP option for implementation in the LMC

The implementation of the WSR was an ambitious project of large magnitude which did not, among others, take into consideration the aspect of time. The implementation was done in a rushed manner and gave birth to undesirable outcomes. An interim measure during the takeover of the water service by the WUC was, therefore, necessary. The takeover implied that there would be a transition phase where government would be relocating the water services from the DWA and District/Town Councils to the WUC.

Given the foregoing, there was a need for contracting private companies to provide services of requisite activities such as maintenance and repair of boreholes as well as reduction of leakages during the transition period. The initial action by the government of Botswana to undertake a sector diagnostic of the water sector throughout the country, which produced the National Water Master Plan (NWMP), was a positive one. However, the sector diagnostic was carried out at a macro-level. A specific sector diagnostic was necessary at micro-level to address the implementation issues that the WUC encountered during the take-over. A sector diagnostic provides a realistic assessment of current constraints in the water sector and subsequently creates a basis for possible solutions. According to the ADB (2008:50), a sector analysis provides clarity on legal, regulatory and policy frameworks, technical issues, institutional and capacity building and commercial, financial and economic issues, among others. Solutions to the water problem in Botswana, therefore, can vary in size or nature.

Based on the findings of the study, the Predictability Theory of the OSC is suggested as a suitable PPP option for implementation in the LMC. The model provides a relatively low-risk option, comprises of short-term contracts, is cost effective and has no impact on the WSR policy.

Compared to other PPP options, the OSC is a relatively short-term type of contract where a private party is partly responsible for project funding. This

essentially eases the burden of government providing funds for a project of this nature. The conventional way of project funding in Botswana is through the NDP (Lekorwe, 1998:173-184). Some projects, however, have often found their way into the NDP based on the immediate need and justification by departments for their provision. The one-to three-year term nature of the OSC provides government with a perfect solution for contracting a private company to carry out a discrete service such as reduction of leakages, management of pump stations and replacing dilapidated pipes.

In a conventional PPP contract, a project may be subject to a variety of risks ranging from political, legal, government credit, market demand change, inflation, product price, poor management forecast, contract, financing, absence of support infrastructure and technical risks (Ameyaw & Chan, 2013:165).

The implementation of the OSC means that commercial risks lie with government. With regard to political risks, Botswana's political landscape has virtually been predictable for forty-eight years. The ruling party has been in power since independence in 1966 and the chances of the party being defeated have, through the years, remained minimal. The situation is influenced largely by a weak political opposition (Maundeni, Mpabanga, Mfundisi & Sebudubudu, 2007:22). It is not very likely that political influence will play a role on water issues, resulting in change in party politics.

The researcher is further mindful of the fact that the government of Botswana implements its policies based on advice from bureaucrats and on needs basis, rather than political basis. As opposed to what is done in some countries in the region, the distribution of resources and infrastructure in Botswana has been reasonably equitable as services and infrastructure such as education, health, electricity and water can be found in all districts. Political risk is, therefore, less likely to affect the decision to implement the

OSC as politicians often go for a solution that best favours their constituents in order for them to gain political mileage.

The OSC, just like the service contracts option of PPPs, provides a relatively low-risk option for expanding the role of the private sector. Like service contracts, the OSC can also have a quick and substantial impact on systems operation and efficiency and provide a vehicle for technology transfer and development of managerial capacity (ADB, 2008:29).

Regarding project financing, it has been suggested that the OSC is a cost-effective means for providing a public funded project by a PrivateCo. The fact that a PrivateCo pays a predetermined fee compels the same to maintain low operating costs so as to gain profit. The WUC, however, has to maintain strict monitoring to ensure that a contracted company meets the set standards. Unlike in long term contracts, it is not anticipated that under the OSC a PrivateCo will be able to renegotiate its contract for any reason as it is short term. According to the Canadian Council of Public Private Partnerships (2001:5), this is also made possible by the repeated competition as the contracts are short run.

The implementation of the OSC in the LMC will not have an adverse impact on government policy to centralise the supply and distribution of water services. The creation of a monopoly in the supply and distribution of water clearly demonstrates government's decision to move away from privatising the aforementioned service. As such, a suitable solution to the problem that will not work against the government policy is desirable. The WUC under the OSC, remains the main provider of the service, while a private company is contracted to carry out a minor task.

The occasional bursting of the North-South Water Carrier (NSWC) pipeline, which supplies water from dams in the north to the south, results in low pressure to no supply at all in many parts of the southern part of the country. While the impact at the LMC is normally experienced in places such as Lobatse and Goodhope, the problem also affects the city of

Gaborone and its surrounding localities. The water cuts are sporadic and often protracted, prompting customers to look for water in other parts of the city. In places where the water is bowsed, long queues can be seen as people frustratingly queue for water. The situation also prompts the need to implement the OSC for NSWC as leakage and bursting of the pipes affect some areas within the LMC.

5.6.4.1 Selecting a partnership

In order to select a partnership that will provide a service, the contracting party needs to take into consideration a number of aspects. This study began by identifying aspects and factors influencing decisions to be made in order to improve service delivery. Indeed, the role of the contracting party has to be succinctly clarified. It should also be acknowledged that defining the form of partnership that the contracting and contracted party will enter into is not an easy task. Given the foregoing, aspects and factors to be considered in the WUC's effort to improve service delivery will vary in nature and scope.

Organisations have to consider various factors when beginning the process of selecting a partnership. This stage begins with the identification of areas that can be considered for partnership. The number of areas is not the primary factor, but rather that there is an area that shows traits of potential partnership. For instance, in this study, there are areas that were identified as showing potential for partnership (see item 5.6.3.1). It was based on the premise that an organisation will usually evaluate within each area the magnitude of work to be done, the ratio of available personnel against the magnitude of work, the level of expertise of the in-house personnel, the capacity of the personnel to complete work to be done and resources available to carryout work to be done.

Following the identification of potential areas for partnership, an organisation should determine a suitable PPP option for implementation. To do this, an organisation can sample a number of potential areas for

partnership or any other areas of work and assess if the challenges encountered in that area can be addressed using a particular PPP option. For instance, a long-term project or service will require a long-term PPP. The same can be said for medium and short-term projects or services.

Lastly, an organisation should assess policy implications of a selected PPP option. For instance, in Botswana, the advent of WSR signified the government's will to have a single authority in the water sector, hence the creation of a state monopoly. The only suitable PPP option, therefore, will be that which enables a state organisation to involve private companies in a way that does not warrant privatisation of either state assets or services. To this end, a PPP surfaces as the most viable option of involving PrivateCos to undertake public projects and services.

5.7 Summary

This chapter presented the results of the study. A trend was established showing a decline in service delivery over a three year period. Factors that impede the implementation of PPPs at the LMC as well as those that support the same were identified. Several solutions to the water problem at the LMC were advanced.

Chapter six which follows, presents the summary, conclusions as well as the recommendations of the study. The chapter also presents various issues that may be researched by future researchers as they could not be covered in this study.

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The previous chapter presented the key findings of the study. The chapter also provided the analysis, interpretation as well as discussion of the results. This chapter summarises the main arguments, conclusions and the resulting recommendations. It also presents issues that were not dealt with due to limitations emanating from the research objectives.

6.2 Summary of the findings

The water sector in the LMC and the rest of Botswana was hard hit by a severe drought in 2011, 2012 and 2013. The rainfall patterns were at their most unpredictable status leading to insufficient water in rivers and dams. The underground recharge was also weak, with most surface water lost through evapo-transpiration. While the WUC stepped up water restrictions and rationing, the water situation deteriorated over a three-year period. Anecdotal evidence suggests the drying up of Nnywane Dam and most of the boreholes in the LMC.

The replacement of obsolete infrastructure requires funding. Public projects are budgeted for. However, sourcing funds can prove to be a difficult and lengthy process. As such, PPPs can provide an alternative source of capital. The WUC is unable to timeously replace obsolete infrastructure. Consequently, pipe leakages are the most frequent cause of water shortages. Lack of transport appears to be a serious stumbling block to good performance of the WUC. Contradictory claims were made by both the management and technical staff. While management stated that they had met with staff and suggested that staff share vehicles, members of staff maintained that management did not allow them to board open vehicles for

safety reasons. Either way, transport remains a serious impediment to performance and requires immediate attention.

Unfriendly business and administrative procedures lead to red tape and, ultimately, under-performance. Perhaps this is because of the take-over, which saw personnel from previous two authorities integrated into the WUC. The organisational cultures of Councils and the DWA, which are part of the local and central governments, respectively, differ greatly from that of WUC, which is operated on commercial basis. Adaptation proves difficult as majority of personnel from previous authorities maintain that service provision was better under the old authorities.

A key component of water supply is backup generators during power cuts. Consideration of alternative sources of power such as solar energy could relieve the WUC of the pressure to purchase either electric or diesel generators, which require high maintenance.

Backlogs in new connections remain a daunting challenge. While the WUC sources additional labour from local communities, some areas require heavy plant to remove rocks during the digging of trenches. With only one JCB to service the entire centre, it is evident that backlogs will remain unless alternative measures such as contracting private companies are implemented. In a bid to reduce backlogs, the WUC contracts some private companies, but evidently this arrangement bears minimal returns. The WUC does not have capacity to effectively monitor contracted companies because of shortage of manpower, which has an effect on the quality of the service provided.

The lack of a clear arrangement for partnership with PrivateCos is a critical issue in PPPs as this negates the goals and objectives of improving service provision. The WUC currently experiments with a number of arrangements with the hope of adopting what works best. There is a need for the WUC to adopt a definite model in providing services. The model can be adopted holistically or with modifications. In this way, it can be known beforehand

with whom the ownership, finance, risk and management responsibilities lie. In addition to the afore-mentioned, there is bureaucracy in contracting PrivateCos. There are many restrictions that make it difficult for PrivateCos to be effectively contracted in key areas that can lead to improved service provision.

6.3 Conclusions

The implementation of the WSR was an ambitious project of large magnitude, which did not seriously take into consideration, among others, the aspect of time. The implementation was started in a rushed manner and gave birth to a host of undesirable outcomes. An interim measure during the takeover such as PrivateCos to provide services of requisite activities like maintenance and repair of boreholes and reduction of leakages was necessary. The takeover implied that there would be a transition phase where government would be relocating the water services from the DWA and District/Town Councils to the WUC.

The lack of a specific sector diagnostic at micro-level was a serious impediment to addressing the implementation issues that the WUC encountered during the take-over. These findings corroborate the ADB's position (ADB, 2008:11) that a sector diagnostic provides a realistic assessment of current constraints and subsequently creates a basis for possible solutions. Furthermore, a sector analysis provides clarity on legal, regulatory and policy frameworks; technical issues; institutional and capacity building; and commercial, financial and economic issues, among others (ADB, 2008:50).

Failure to adequately and timeously address the frequent bursting of main pipes and leakages of smaller pipes as major causes of water shortage are also a clear indication that the WUC is incapacitated, in terms of capital. Lack of capital implies that the corporation cannot provide water effectively. This calls for measures to be put in place to address water leakages. In this

situation, the WUC is faced with the challenge of raising capital through means other than subsidy from the fiscal budget to finance the reduction of water leakages and replace dilapidated infrastructure.

Regarding project financing, governments usually fund a project ahead of its implementation (ADB, 2008:29). Implementing the OSC will be a cost-effective means of providing a public-funded project by a PrivateCo. As documented by the Canadian Council for PPPs (2001:5), the fact that government pays a predetermined fee compels the PrivateCos to maintain low operating costs so as to gain profit. The WUC, however, has to maintain strict monitoring to ensure that a contracted company meets the set standards. Unlike in long-term contracts, it is not common in shorter term PPPs, such as the OSC, for a PrivateCo to renegotiate its contract seeking a supplement to its initially agreed fee. This is also made possible by repeated competition as the contracts are short run.

While the WUC's main source of funding is the fiscal budget, research has shown that public financing is volatile and, in many countries, rarely meets crucial infrastructure expenditure requirements in a timely and adequate manner (OECD, 2014:44-50). Elsewhere, research has further shown that equity is a more readily available component in the financing of infrastructure projects (OECD, 2014:9) as raising large amounts to finance large-scale projects is a challenge to most debtors. As a result, engaging a PrivateCo to provide infrastructure for water delivery in the LMC is a viable option given the limited finance on the part of government. In addition to providing infrastructure, other aspects such as water bowsing and additional pump stations can be provided under PPP contracts.

Performance-based payments are a crucial tool for performance in PPPs. Lack of existence of PBPs in the LMC provides ground for potential conflict between the WUC and PrivateCos on payments.

Policy-wise, the implementation of the OSC in the LMC will not have an adverse impact on WSR policy. The centralisation of water supply and

distribution on the WUC clearly demonstrates government's decision to move away from privatising the aforementioned service. As such, hence a suitable solution to the problem that will not work against the government policy is desirable. The WUC under the OSC, therefore, remains the main provider of the service, while a PrivateCo is contracted to carry out a minor task. A study by Ameyaw and Chan (2013:165) validates these findings by revealing that the OSC provides a relatively low-risk option, comprises of short-term contracts and is cost-effective. In a conventional PPP contract, a project may be subject to a variety of risks including political, legal, government credit, market demand change, inflation, product price, poor management forecast, contract, financing, absence of support infrastructure and technical risks.

On staffing, the WUC enjoys prominence of technical expertise across cadres as it is a parastatal set up to operate on a commercial basis. It is understood that remuneration packages at WUC are much better than those provided at the other two former authorities, making it attractive for people with higher expertise and experience. While the WUC-LMC enjoys this diversity of expertise in technical staff, the findings reveal that the Centre experiences shortage in terms of the adequacy of staff. As mentioned by management at the LMC regional office, this shortage contributes substantially to the poor performance of the entire Centre.

6.4 Recommendations

This section presents the conclusions of the research, recommendations and issues for further research. The recommendations made relate specifically to the applicability of PPP to the water sector at the LMC. They are based on the findings of the study and should be understood to be relevant to the time during which the study was conducted. It is advised that in implementing these recommendations, caution be exercised as some may not be valid in future. At the point the reader accesses this research, the

implementing authorities may have already implemented some of the programmes or actions relating to the following recommendations.

Recommendation 1

It is crucial for the WUC to have a definite model to follow in contracting PrivateCos.

With a model in place, the WUC can, among other things, easily determine value for money, expedite the process of contracting and have clarity on ownership, financing and management responsibilities beforehand.

Recommendation 2

The WUC should implement an OSC in the maintenance and repair of boreholes and pump stations.

This should be done especially where the WUC does not have capacity to respond to breakdowns within a short period of time. It has become a norm that supplies of water are cut from a particular location and, in some instances, more than one village for periods ranging from hours to weeks. Moreover, the consumers often find themselves in a situation where they have to find water for themselves when there is no supply. This provides for consideration of PrivateCos to be contracted.

Recommendation 3

The WUC should have clear contracts with all its suppliers of generators used at its pump stations.

It has been observed that some of the suppliers did not have any binding contract with the WUC, which affects the relationship between the two parties, particularly where payments are delayed from the WUC to the supplier. The impact is obviously felt by the customers whose water supply is reliant on generators.

Recommended 4

There is a need for an OSC to replace dilapidated pipes and reduce leakages.

Under service contracts, all commercial risks lie with government. The private company is responsible for the project cost and efficiency is achieved as repetitive bidding increases competition. Additionally, service contracts are short-term in nature and can have a quick and substantial impact on system operation and efficiency, while providing a vehicle for technology transfer and development of managerial capacity. They enable governments to accomplish tasks for which, there is insufficient demand to develop using internal resources (Canadian Council of Public Private Partnerships, 2001:5).

Recommendation 5

The WUC should carry out a sector diagnostic prior to entering into a PPP contract.

This is in line with the ADB (2008:14), which stipulates that for a PPP to be successful, it must be built upon a sector diagnostic that provides a realistic assessment of the current sector constraints. Specifically, the diagnostic should cover technical issues; legal, regulatory, and policy frameworks; and commercial, financial and economic issues.

A sector diagnostic helps government to assess the status quo, identify gaps and weaknesses, develop a sector reform strategy or road map that outlines the tools and activities required for reform. In view of the foregoing, a sector diagnostic should enable the WUC to compile reports on the water supply data of each village and draw up a planned long term solution accordingly. The solution may comprise of a 20 to 30-year future plan.

Recommendation 6

The WUC should have a strong monitoring mechanism to ensure quality service provision for contracted out services.

A strong monitoring mechanism will ensure equitable distribution and efficient utilisation of resource at the LMC. This mechanism will further help to ensure that things are done right. It will also help to answer the question: are the right things being done?

Recommendation 7

The WUC-LMC should review its business and administrative processes so as to improve service delivery.

By reviewing its business and administrative processes, the WUC will consequently discard those processes that are outdated. Equally, the WUC will introduce new processes that are up to date with modern day business and administrative operations.

Recommendation 8

It is imperative that the WUC sets up its own fuel points in the LMC.

Having own fuel points will reduce transaction time of securing fuel from afar and costs the WUC.

Recommendation 9

Manpower and transport shortages need to be addressed as a matter of urgency.

While the two resources require funding, consideration of service contracts in the two areas could prove economic to the WUC.

Recommendation 10

Unused and capped boreholes should be rehabilitated and re-used.

Most dams constructed on rivers are intended for urban water supplies. Groundwater resources are used throughout the country for livestock, domestic use and small areas of irrigation. The resources are geologically old and quality is often affected by salinity and concentrations of fluorides, nitrates and other elements (Matlok, 2008). It is estimated that over 21,000 boreholes exist in the country, but many are not used and are capped. Groundwater supplies two-thirds of the water consumption (Matlok, 2008), while the rest are provided by other sources.

It is important that capped boreholes be rehabilitated for abstraction of water. The problem of water shortage in areas with capped boreholes goes beyond the LMC. A case in point is Molepolole village and the entire Kweneng District as well as Maun and the Ngamiland District, which are hard hit by shortages of water.

Recommendation 11

Consideration should be given to having a PPP contract in the form of an OSC in the supply, installation and operation of solar-powered power stations in areas where electricity is not available as well as for power back up.

Coincidentally, in Botswana the ministry responsible for water supply is the same ministry responsible for energy. Considerations should be done in-house at the Ministry of Minerals, Energy and Water Resources (MMEWAR) to provide power by establishing solar-powered power stations in areas where there is no electricity or where there is acute shortage of fuel. Solar power could be used for power back-up at pump stations. The WUC has to improve its procurement of stand-by generators as well.

Recommendation 12

Desalination plants and additional treatment plants should be constructed at all WUC Centres. The plants could vary in design and size as guided by specific factors to be considered before construction.

Factors to be considered in constructing these facilities may include population size of a particular locality and availability of additional water sources such as dams within a specific WUC Centre. The construction of the plants may also be done using PPPs.

Recommendation 13

Consideration should be given to provide tariffs for the indigent. The poor often cannot afford tariffs due to their condition of being unemployed and having no alternative source of income.

The standardisation of tariffs subsequent to the implementation of the WSRs clearly left the poor helpless as they were unable to afford high tariffs and connection fees. From the outset, the WUC was created to operate in a similar manner as a private company with profit as its primary motive.

The decision to increase connection fees as well as tariffs may, to a considerable extent, be alluded to as the reason, although the corporation maintains that its primary reason for the increase is driven only by cost recovery. It should be made clear that the WUC monopolises the supply and distribution of water in Botswana. According to Rosenthal and Alexander (2003:35), the economies of scale with a monopoly give the incumbent company 'market power' to charge prices higher than it could command under competition.

Recommendation 14

The WUC should reform its administrative processes and procedures governing the operations of its satellite stations.

It is evident from the study that the cause of frequent water interruptions in most villages is shortage of resources as well as administrative inefficiency on the part of the WUC. As indicated in Chapter 4, some of the borehole operators have not performed their duties effectively, leading to water shortage. There were also reports of diesel shortage. Diesel is used in fuelling both borehole engines and vehicles used in the daily operations of satellite stations.

Shortage of vehicles used for various activities was also mentioned as well as the unreliability of the few vehicles available as they would often be taken for service or repairs, leading to interruption of daily activities. Shortage and lack of standby generators at pump stations is another cause for interruption of water supply as the service is interrupted when there is power outage.

Recommendation 15

There is a need to develop a fully-fledged and operational PPP unit in the relevant ministry.

Since its inception, Botswana's PPP Unit operates with skeletal staff and has not yet been staffed to operate at full scale. This administrative deficiency renders Botswana's PPP environment unprepared for stronger procurement of projects, services and projects through PPP contracts. Procurement of projects and services at present remains fragmented across a number of government departments despite the existence of the procuring entity in the form of PPADB.

Recommendation 16

The WUC should hire a borehole operator to operate boreholes within a radius of ten kilometres.

The borehole operators should be equipped with means of communication such as cell phones or transport so that they are able to communicate with the satellite station whenever the need arises. The operators should also have spare parts for borehole engines within reach so that the turnaround time for repairing boreholes is shortened to a maximum of 24 hours.

Recommendation 17

The WUC should construct fuel storage within the premises of each of its satellite station.

The rationale behind this is to avert consequences brought about by fuel shortages, particularly in areas where fuel supply is dependent on privately-owned fuel stations. Fuel stations, in most cases, have low storage capacity and run out of fuel frequently. Construction of fuel points in satellite stations will enable WUC to source fuel directly from fuel suppliers locally or outside the country. The model will be similar to that of government where the Central Transport Organisation (CTO) has set up government-owned fuel stations throughout the country.

It should be noted, however, that the construction of fuel stations may bring about residual problems such as theft of the fuel as well as the new stations themselves running out of fuel, thereby disrupting the operations of the stations. It is incumbent upon the WUC to devise measures to address all problems that are likely to come with the construction of fuel stations.

Recommendation 18

Public education on water conservation should be stepped up. At present, the WUC implements water restrictions and rationing during periods when dams have low levels of water.

Public education on water conservation is carried out simultaneously with the water rationing exercise. However, indications are that water consumption reduces minimally, forcing the WUC to step up water rationing. Areas that initially did not experience water cuts have now been included in the list. The WUC should improve on its water conservation education strategies to achieve the desired results.

Recommendation 19

The WUC should have a clear response strategy to water shortages and ensure that the strategy is fully implemented at all times.

The strategy should include announcing the shortage to the public in the villages or towns affected. Where the WUC does not have capacity to provide water using a water bowser, the corporation should contract a private party to bowse water. The WUC should play the role of a regulator to ensure that the private party complies with all obligations of the contracts, including those relating to the safety of water.

As security of water is key, the WUC should devise strict controls regarding the handling of water by private parties, while simultaneously carrying out regular inspections of the water bowsers.

Recommendation 20

The billing system of the WUC should be reviewed to see if it can be changed if, indeed, it has operational shortfalls.

Customer interface is a key stage in the value chain of the water sector. The WUC current billing system is clearly problematic and needs to be replaced. In the early stages of the take-over, the WUC attributed the exorbitant bills charged to customers to the lack of collection of meter readings and billing systems used by the previous two authorities.

About two years later, however, the WUC still experiences long queues in its service centres, with customers filing complaints on high water bills. The review of the billing system is an area where there is potential for a PPP contract.

Recommendation 21

The WUC should introduce additional service centres within reach and for the convenience of its clients.

The service centres could be introduced in the form of mobile stations, porter camps, renting of space in the Rural Administration Centres (RAC) or property belonging to individual owners.

Recommendation 22

Awareness of the general public should be raised regarding the implementation of WSR which brought about government's decision to centralise the supply and distribution of water in the WUC.

The formulation of the WSRs did not cascade down well to the general public. Their implementation equally caught the general public off guard. Lack of information on the part of customers regarding what the WSRs are and what they were formed for seriously placed the customers at a

disadvantage as the policy lacked the necessary buy-in from the general public.

It is incumbent upon the WUC to ensure that there is sufficient awareness among the public regarding the implementation of the WSRs. To date, the general public is not aware of why the DWA and Councils were relieved of the service of supplying and distributing water. Educating the public about the need to have one authority would have provided some level of understanding and, possibly, toned down the complaints regarding service provision.

Recommendation 23

Public education regarding PPPs should be carried out among government officials and the political leadership.

Lack of clarity as to what PPPs are is discernible among government officials and politicians. This is an issue of concern which equally calls for education to be provided to officials in position of power. Education on PPPs will elucidate previously unclear issues such as confusion of PPPs with general privatisation.

Should government decide to implement a service contract in the LMC, there will be a need to educate the public about PPPs and their significance of together with their likely impact on their lives.

Recommendation 24

There is need for the WUC to have service level agreements with each private company detailing the responsibilities of each party.

A contract of this nature will safeguard interests of each party, motivate fulfilment of the contract by both parties and minimise conflict.

6.5 Limitations

Despite being assured of confidentiality and anonymity, some WUC staff members raised concerns regarding confidentiality of the information they would provide. This development posed a threat to the credibility of the responses that the respondents would provide as some lacked objectivity. The researcher, however, was quick to identify such cases and reassured them of confidentiality as they had already been told that they would remain anonymous.

6.6 Issues for further research

6.6.1 Long-term PPPs in the water sector

Due to the limitation imposed by the objectives of this study, long-term PPPs in the water sector were not discussed. Upon analysing the findings, the service contracts option of PPPs was seen to be the closest solution to the water problem at the LMC. The service contracts were, however, found to have serious shortcomings as some of the factors supporting or impeding the implementation of PPPs at the LMC would not be addressed through service contracts. The need to have a tailor-made PPP model emanating from a new theory emerged.

It must be understood that the water problem in Botswana is bigger than just supply and distribution. To this end, it may be valuable in future to investigate how long-term PPP options can be used in improving the delivery of water services, particularly for projects of large magnitude that are bound to take longer periods of time to complete.

6.6.2 PPPs and wastewater

This study did not also discuss PPPs in the area of wastewater. The lack of discussion in this area was imposed by the objectives of the study. The provision of Waste-Water Services (WWS) is solely vested in the WUC across the country, a decision further compromising service quality as the

consumer is not given a choice. Initiating the project to cover all previously uncovered parts of urban centres, the City of Gaborone recently underwent a major installation of sewage lines leading to the phasing out of pit latrines. The installation of sewer lines was outsourced to private companies. There is a need for a study to establish, among others, if the management and maintenance of the sewer lines would be either efficient under private companies or the WUC. With Botswana developing, semi-urban areas will, ultimately, be included in the sewage project. An evaluation of the current contractual arrangement between the Gaborone City Council (GCC) and private companies will be necessary so as to establish if the arrangement can be used in future or requires change.

6.6.3 PPPs and the indigent

Another area of importance is that of PPPs and the poor. This area is of interest as research has shown that in the majority of instances, PPPs are undertaken with the primary purpose of achieving efficiency in the provision of public infrastructure and delivery of services. Often times, the private sector is accused of its profit-making motive when it goes into partnership with government. It would be interesting to find out what future research would reveal regarding the use of PPPs to provide services to the poor in Botswana.

This research has revealed that, contrary to the previous billing system where tariffs for a particular region in the country were set by the authority in charge, the implementation of the WSR led to tariffs adjustment, including connection fees.

The uniformity of water tariffs throughout the country means that the poor have been placed at a disadvantage. This development has raised controversy in some quarters where certain government policies such as the Poverty Eradication Scheme (PES) that initially took off with huge campaign for the poor to create backyard gardens, face serious implementation challenges as the beneficiaries of the scheme are expected to use water for

irrigation, while the scarcity of the resource continues to rise and tariffs are unaffordable to them.

6.7 Summary

This chapter provided a summary of the results. The chapter also discussed the conclusions and presented recommendations. The recommendations were based on the findings of the study. The chapter ended by suggesting issues that future researchers in the field of PPPs in the water sector can conduct research on. These are areas that the study could not cover due to limitations imposed by the research objectives. The results are presented in line with the objectives.

A number of issues emerged from the data due to the rigorous process of constant comparison where areas of similarity and difference were identified. The data revealed, among others, a trend on the declining delivery of service in the provision of water and a rising dissatisfaction among the WUC clients. The results have also shown that there is demand for PSP. The next and final chapter presents the implications and contributions of the study.

CHAPTER SEVEN: IMPLICATIONS AND CONTRIBUTIONS OF THE STUDY

7.1 Introduction

The previous chapter summarised key aspects of the research findings. The chapter also provided conclusions and subsequent recommendations which will be available for use by future researchers, policy makers as well as authorities at the WUC.

This chapter presents the implications and contributions of the study. The chapter begins by interrogating the implications of a public sector organisation entering into a partnership with a private partner. Typical academic studies, dictate that, contribution be made to the body of knowledge. It is also crucial for the nature of the contribution to be succinctly explained so as to let the reader appreciate the novelty of the research. Following is the contribution that this study makes to the body of knowledge.

7.2 Scholarly and managerial implications

This research is the first in Botswana to be conducted on PPPs in the water sector and research makes a number of contributions for scholars, executive management of organisations and policy-makers. The suggested theory does not advocate for a change in or reversal of the recent WSR. Second, the research weighed alternative PPP options, the practicability and the lack thereof of implementing other PPPs options within a single water authority. In a conventional PPP arrangement, partnership between government and a private party appears to be in the middle of the two entities. Often times, the arrangement leans towards the outsourcing option of privatisation.

7.3 Contribution to the body of knowledge

This study makes two contributions to the body of knowledge. First is a detailed contribution to theory where a theory is developed (see Chapter 7). Second, is contribution to practice where a discussion is provided on both business and administrative processes of the WUC.

7.3.1 Contribution to practice

The research presents findings that have implications for future policies in the water sector. It has been established that the WSR policy was neither understood nor did it have the essential buy-in of the general public who are also the WUC's clientele, hence the WSR policy has credibility problems to it. Regarding operational efficiency, it has been found that water supply can be improved if the capped boreholes are reused. Supply can further be improved if the distribution problem within villages is balanced.

An additional contribution to practice is that this study identifies some out-dated business processes as contributing to poor performance. A case in point is the dysfunctional billing process. Most organisations have embraced modern technology in conducting their business; the need to do so by the WUC is compelling. Planning, staffing and procurement processes at Lobatse and satellite stations are also a clear indication of poor business processes. Lastly, the research provides guidance on the development of future research in the field of PPPs.

Majority of the respondents who called for change gave clear accounts of how the situation had been better when the water authority was either their district councils or the DWA. They were of the view that the take-over had brought with it many negatives such as retrenchment of some of the reliable personnel and the difficulty in which the WUC finds itself to timely respond to situations such as borehole breakdown.

7.3.2 Theoretical contributions of the study

The study makes a significant contribution to theory by generating a substantive theory titled the predictability Grounded Theory of the 'Operations Support Contract' (OSC). A detailed discussion follows.

This research is the first to be conducted on PPPs in the water sector in the LMC. The research makes a number of contributions for scholars, executive management of organisations and policy-makers. It has revealed the feasibility of implementing PPPs within a monopoly sector. It has been shown that the model can actually be implemented without necessarily changing or reversing this recent WSR. Secondly, the research weighted alternative PPP options against the OSC, interrogating the practicability and the lack thereof of implementing other PPPs options within a monopoly set-up. To this end, a model suitable for the WUC-LMC was developed. The model is discussed in section 7.4.1. Figure 7.1 depicts a simple illustration of a conventional PPP arrangement. Under this arrangement, a partnership between government and a private party appears to be in the middle of the two entities. Often, the arrangement leans towards the outsourcing option of privatisation.

Figure 7.1 Conventional PPP Contract

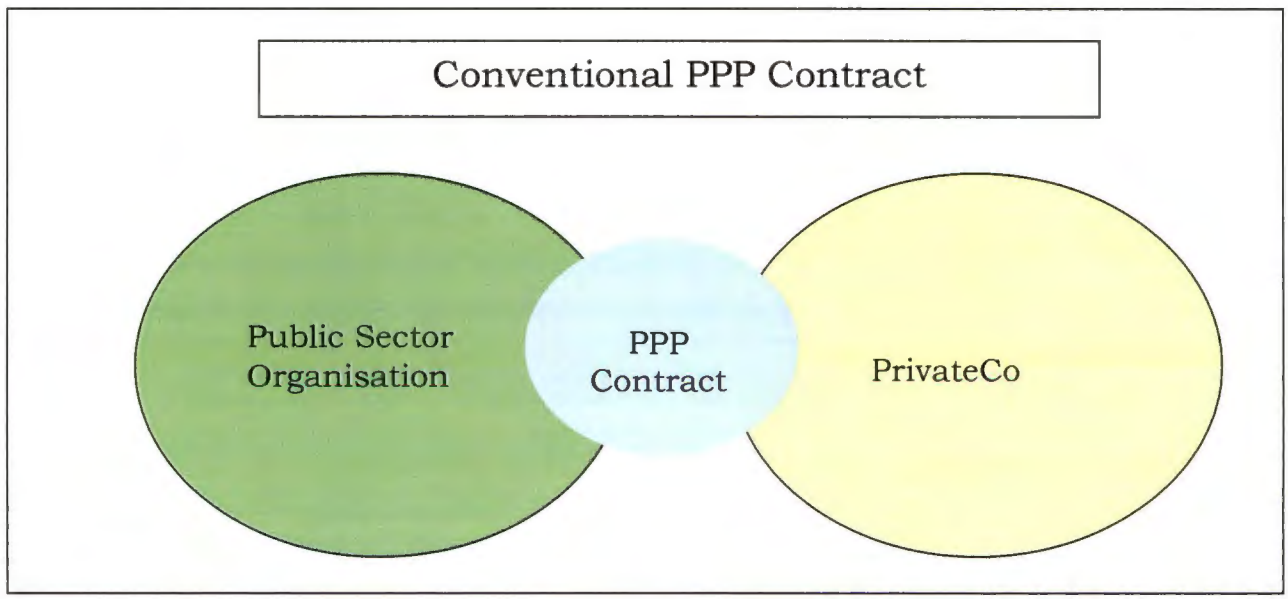
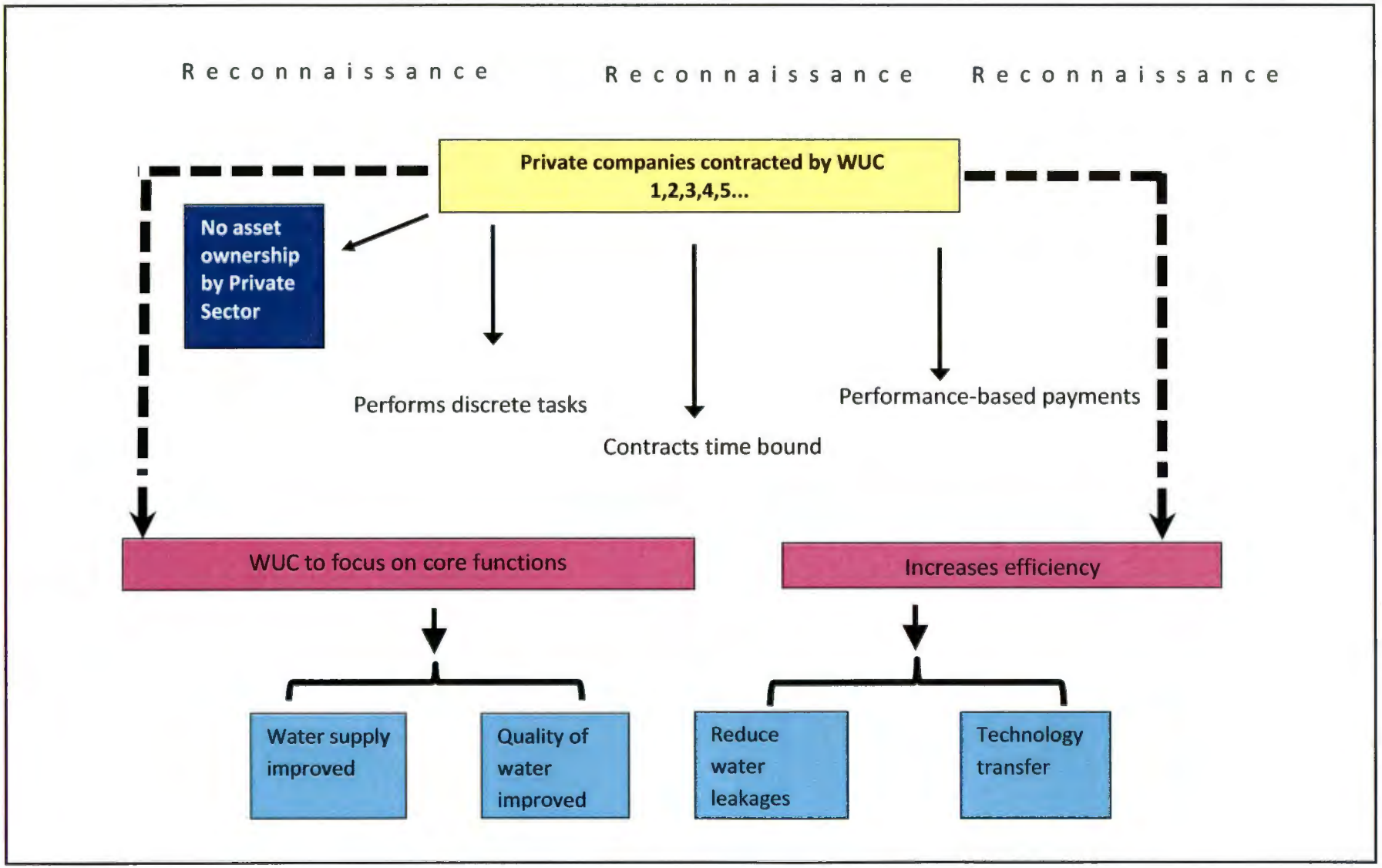


Figure 7.2 Suggested model for the Botswana water sector - The predictability of Grounded Theory of operations support contracts



The predictability of Grounded Theory of Operations Support Contracts, as depicted in Figure 7.2, suggests that a reconnaissance be done prior to the implementation of the PPPs. A reconnaissance exercise basically enables the WUC to assess the situation on the ground regarding water supply and distribution in a particular locality.

The other key feature of the OSC is the simultaneous contracting of multiple private companies. The PrivateCos will be contracted to perform discreet tasks, their contracts will be time bound and their payments performance based. This allows for each PrivateCo to carry out a distinct function in a separate contracting area such as supply of fuel or repair of pumps used at pump stations. PrivateCos may also carry out similar functions, but at different localities within the LMC.

It is anticipated that the contracting of multiple PrivateCos will allow the WUC to focus on core functions. The focus on core functions will lead to improved water supply and distribution mitigating concerns on water shortage. By focusing on core functions, is it posited that the quality of the water supplied will improve. It is also anticipated that the contracting of multiple PrivateCos will lead to increased efficiency. This will essentially result in pertinent issues such as significant reduction in water leakages and transfer in technology. PrivateCos are widely believed to have expertise that can be harnessed by WUC employees during the contract period.

Ownership of assets under the OSC remains that of the public sector (see Fig. 7.2). This is largely because, as Ameyaw and Chan (2013:161) confirm, most assets are buried underground and this presents difficulties for private investors to obtain detailed information on the state of physical assets. The private party may, under agreed terms, provide project vehicles to utilise in the project where the public sector is short of transport. The provision of transport by a private company naturally eases the transport burden on the side of government. However, where privately provided vehicles are obsolete, there is a risk of poor performance. Such risks can be controlled by

including a performance-based payment (PBP) clause in the contract coupled with a strong monitoring mechanism.

7.4 The operational mechanisms of the model

The model suggested is limited only to minor works such as new connections; inspection and replacement of meters; borehole fittings; connecting villages, replacing network pipes, constructing a new network, and construction of reservoirs. This model may not be used on larger projects such as construction of dams, which are long-term and may require more suitable models such as the Build Operate and Transfer (BOT).

The OSC takes more meaningful cognisance of the public-private relationship and argues that while both parties are in partnership, one has contracted the other. The relationship is basically like that of an employer and employee, providing the contracting party with more control over the contracted party. The model places more emphasis on the public getting the desired outcome and paying the right price.

The monopolistic nature of Botswana's water sector cancels prospects of competition at the national level. This has resulted in operational inefficiency due to the large-scale management of the water service in the entire country. The result is poor service delivery. However, in countries with similar arrangements such as the Republic of South Africa (RSA) (Farlam, 2005:21), the United States of America (USA), Europe, particularly France and the United Kingdom (Neal, *et. al.,* 1996; Izaquire, 1998:1), where the population is higher, water is provided by several companies which are in partnership with either municipalities or a number of state-owned companies. In view of the foregoing, this research suggests a unique form of PPP, namely: the OSC. Thoenen (2007) identifies two main forms of service contracts: the Management Support Contract (MSC) and Operations and Management (O&M). The OSC has the following features:

7.4.1 Management responsibilities

The study found that the current contracting arrangement of private companies by the WUC does not provide for private management of the WUC assets. Among others, the WUC treats water as a 'security asset' and has very little confidence in allowing the private sector to manage this commodity. The same can be said for dams, which store water. Similarly, under the OSC (see Figure 7.2), the private party has no management responsibilities over public assets.

This is based mainly on the premise that the nature of contracts is short term. Transferring management responsibilities to a private company will invoke residual connotations to the relationship between the two parties such as commercial risks. In a conversional service contract, commercial risks lie with government (ADB, 2008:28) and this is one of the traits that make this PPP option appealing. The transfer of assets from the WUC to a private company and vice-versa will also raise higher legal risks. Such transfers may therefore be cumbersome on the part of the WUC.

7.4.2 Project financing

The findings of the study indicate that private companies are given 'orders' to complete a certain activity such as new connections in a particular area. Subsequent to completion of the activity, companies invoice the WUC and it processes payment. Given the financial difficulties that governments have gone through in the past decade because of repeated market recessions, the OSC model provides for shared financing of a project with the private party recovering its initial capital at the end of the project. The private party basically provides the initial half on the budget and starts the project. This aspect of financing ensures that a contracted company is committed to the project as no company would invest its own capital in a project that would fail. By financing the initial half of the project, a company is likely to demonstrate seriousness in implementing the project to avoid unnecessary losses.

During the mid-term review of the project, the public sector finances the remaining part of the project. This enables governments to begin sooner, projects such as reduction of water leaks, which require immediate attention. The government of Botswana finances projects from its National Development Planning. As such, including a new project within an already running NDP is a long and tedious process that requires time.

7.4.3 Payment method

The payment mechanism of the OSC will be based on contracts. Clear agreements will be outlined in a contract to stipulate how the OSC contract will be designed.

7.4.4 Contract period

At present, the contract period for companies contracted to carry out work at the WUC is either tied to the magnitude of work given or agreed to by both parties prior to the commencement of the project. Companies provide quotations as well as the estimated time of project implementation.

The contract period for a standard OSC should range between one and three years. Although similar short-term contracts such as service contracts as seen in West Africa (Marin, Mas & Palmer, 2009:49; World Bank, 2009a:1) lasted for seven years, the OSC provides for three years as the maximum because projects to be undertaken under this model are for comparatively minor projects. An additional reason for a three-year maximum is that contracts rely largely on availability of projects. Any period longer than three years may not be economically prudent to the public sector. The public sector may, in addition, not derive VFM. The model further takes into consideration political risks of possible change of governments. Most governments are in office on average for five years. The five-year term allows the incumbent government to implement the OSC within one term.

It is anticipated that the OSC will have a direct impact on various aspects of the WUC's daily operations. The following areas have been identified as having room for improvement if the model is adopted by the WUC.

7.4.5 Contractual obligations

It has been established that there is no definite contract between the WUC and some of the PrivateCos. According to Noble (2006:280), managers will usually seek out alternative governance mechanisms such as the use of ad-hoc agreements between individuals and only revert to the use of contract for major issues of difference or when mutual trust and respect dissipate from personal relationships. The OSC does not subscribe to this position and, therefore, provides a basis for the existence of a contractual arrangement between the water authority and PrivateCos. As shown in Figure 7.2, the contracts should be time bound (between 1 and 3 years).

7.4.6 Procurement procedures

The WUC currently purchases fuel through different arrangements. These include purchasing through prepayments as well as in arrears. Implementing the OSC in the procurement of fuel will fit the current arrangement as the model does not provide for the idea of signing long-term contracts with any private party. Fuel supply contract period between the WUC and a PrivateCo will range between one and three years.

7.4.7 Billing

Although billing is a secondary component of water delivery, it is equally significant as it provides revenue that enables the WUC to carry out its core mandate of providing water. The findings of the study indicate that contrary to reports from private media, tariffs have not yet been standardised. It has further been found that the outcry related to billing was, in fact, caused by the fact that most of the customers who had previously been serviced by the DWA and Councils were not billed regularly. They saw the constant billing

under the WUC as a burden. The WUC also attempts to recover debts resulting from lack of billing by the former authorities and this explains some of the huge bills received by customers since the take-over began. The WUC is progressively moving towards standardising tariffs.

The implementation of the OSC will enable billing and may include the WUC contracting private parties to deliver bills to individual households. The current contract that the WUC has with Botswana Post includes payment of bills at the latter's establishments and use of mailboxes. Several companies are already providing door-to-door delivery services. Such services can relieve customers, particularly in the villages where access to bills is problematic.

7.5 The OSC vis-à-vis other PPP Options: An Evaluation of the Grounded Theory of OSC

Conventionally, the choice of a contract is determined by various factors. The following discussion is an evaluation of the OSC, comparing it with other PPP options available for implementation at the LMC.

7.5.1 Affermages

A study carried out by Fall *et al.,* (2009:35) on reforming urban water utilities in West Africa identified the *'affermage'* model of PPPs to be flexible and resilient. The model emerged during the last ten years based on affermage contracts, which combine private operation of the service with public financing for developing the infrastructure and sharing the commercial risk between private and public partners. Further to this, under affermages, the operator retains the operator fee out of the receipts and pays additional surcharge that is charged to customers, to the awarding authority to go towards investments that are the awarding authority makes or has made in the infrastructure (Public-Private-Partnership in Infrastructure Resource Center, 2015: 1). Taking into consideration the objectives of the WSR in the LMC, an affermage PPP contract is deemed unsuitable because

with this arrangement the operator has the right to a fixed portion of unit of water sold.

7.5.2 Management contracts

Management contracts extend the responsibility of the private sector into the operation and maintenance of government-owned infrastructure or operation of government-owned businesses. Management contracts further transfer greater authority for operational decision-making to the private sector (Canadian Council of Public Private Partnerships, 2001:5). These types of practices go against the objectives of Botswana's WSR. The model is, therefore, seen as unsuitable for implementation in the context of the LMC.

7.5.3 Concessions and lease contracts

Regarding other PPP contracts, long-term arrangements such as concessions and 'lease contracts' can never be desirable to the LMC because under these arrangements, a private operator has the right to all revenue in excess of a fixed fee it pays to government and does not usually have obligations to invest (Rosenthal & Alexander, 2003:39). Given the government's decision to concentrate the provision of water services on the WUC, it is unlikely that government can undertake lease contracts and concessions as it stands to lose control over revenue. Botswana's finance cycle is such that all revenue is deposited into central coffers. The proceeds are then redistributed equitably through a national budget guided by estimates from various ministries.

7.5.4 Service contracts

Service contracts enable the public sector to contract a private company to perform specific service for a relatively short period of time (1-3 years) (ADB, 2008:29) or to complete a specific project (Canadian Council of Public Private Partnerships, 2001:5). Under service contracts, the "contracts"

specify an agreed cost of the service and must satisfy the agreed upon performance standards (ADB, 2008:29). Service contracts, therefore, can have a significant effect on productivity and serve as a means of transferring technology from the private to the public sector. They have low barriers to entry since only a discrete service is required. There is also repeated competition since the contracts are short run. Together, these features of the contract compel the contractor to keep costs down (Canadian Council of Public Private Partnerships, 2001:5; ADB, 2008:29-30). In addition, the government bears all the commercial risks and finances any improvements to the system as required (Rashed, *et. al.*, 2011).

Furthermore, service contracts are usually most suitable where the service can be clearly defined in the contract, the level of demand is reasonably certain and performance can be monitored easily. They, therefore, provide a relatively low-risk option for expanding the role of the private sector (Canadian Council of Public Private Partnerships, 2001:5). These types of contracts are, however, inappropriate when capital investments are required from the private sector (Rashed *et al.*, 2011:60). Service contracts are the most appropriate model for implementation in the water sector in Botswana. An ideal version of the model has been developed and is presented in the next section.

According to Thoenen (2007), a conventional Service Contract PPPs model has two basic forms: the "Management Support Contract" (MSC) and "Operation and Management" (O&M).

The MSC basically provides technical and human resources against a fee. Ownership and some management responsibilities remain within the sphere of public authority. The O&M places more responsibility in private hands. Under this form, a private contractor is responsible for maintaining the facility and paid according to the achievement of agreed performance criteria.

By far, service contracts are the closest PPP option that could be implemented at the LMC. The option, however, has limitations in that it does not cater for some of the challenges identified at the LMC. By its nature, the Grounded Theory method raised challenges that are unique to the LMC, making it difficult to identify a pre-existing model to be used in addressing these challenges. Based on the foregoing, it was relevant for a tailor-made theory to be generated to describe the water situation at the LMC and provide a possible solution.

7.6 Rigour in the Predictability Theory of the OSC

According to Glaser (1978), Grounded Theory has its own criteria for assessing the rigour or quality of the study. While this study has explained how rigour was ensured (see item 3.6), the following are further discussed with a view to demonstrate rigour.

7.6.1 Workability

According to Gordon, Cutcliffe and Stevenson (2011:25), workability means that the theory informs the everyday practice of those involved in the substantive area. To Glaser (1978:4), workability refers to the integration of the categories into the core category that emerges. This is to say, a theory should, upon being developed, have the capacity to explain deviation patterns in everyday behaviour of participants under study. The theory should further have capacity to say how the concerns of those affected by the phenomena under study can be resolved.

The OSC provides a clear account of variations in patterns of events of the water situation at the LMC. For example, subsequent to a reconnaissance, the water situation may be found to be satisfactory, somewhat satisfactory or not satisfactory at all. The reconnaissance stage describes the initial action to be taken by organisations prior to entering into a partnership. It is suggested that a thorough reconnaissance can create a solid basis for decision making with regard to contracting PrivateCos.

The theory also provides a detailed explanation of factors that impede and support PPPs. These patterns include, among others, administrative processes, business processes as well as technical expertise related factors. The theory further suggests what an organisation can do when it lacks any of these.

7.6.2 Fit and relevance

Fit and relevance refer to how well the categories relate to the data and derive from constant comparison and conceptualisation of the data (Glaser, 1978). According to Gordon *et al.*, (2011:25), a relevant theory provides explanations that make sense of what is going on in the substantive area. Given the foregoing, relevance in this study is particularly evident in chapters on the generation of the substantive theory (see Chapters 4, 5, 6 & 7). The fact that majority of the respondents evidently showed interest and understanding of the substantive area of study and did not ask for explanations, increased the researcher's confidence in using the Grounded Theory method. The researcher was immediately able to judge the relevance of the Grounded Theory method upon realising the grab the method had on participants, mainly those from the WUC. Key respondents were particularly helpful in this regard as they articulated their views eloquently on the substantive study area.

With regard to fit, the researcher is confident that the theory corresponds to the phenomenon under study as it was generated purely from themes, sub-categories and categories emerging from the data. This is in line with Gordon *et al.* (2011:23), who explain that fit of theory describes theory that is substantively congruent or fitting the study phenomenon.

7.6.3 Modifiability

According to Glaser (1978), modifiability refers to ensuring that all the concepts that are important to the theory are incorporated into it by the constant comparison process. A modifiable theory can be altered when new

relevant data are compared to existing data. To Gordon *et al.* (2011:23) modifiability refers to the non-finalised nature of the theory, which can be expanded with new information. In developing the OSC, the researcher had an open mind that the theory cannot be incontrovertible and will remain open to scrutiny, criticism as well as expansion. The researcher further did not set out to build a theory so attractive that it would coerce the reader into academic submission. The fact that the OSC can be applied beyond the water sector demonstrates modifiability of the substantive theory and is an important measure of rigour.

7.7 Final remarks

This study assessed the applicability of PPPs to the water sector in the LMC. It also identified factors that support or impede the implementation of PPPs in the delivery of water services in the LMC and possible solutions have been suggested.

Undoubtedly, PPPs have emerged as the panacea for provision of public infrastructure and services. Countries have so far experimented with various methods of privatisation and the results have often been disappointing, especially in the developing world. That PrivateCos can assume substantial financial, technical and operational risks in design, financing, building and operation of projects is an appealing feature that makes PPPs preferable.

This study has also highlighted the preference of private sector participation by the public sector in certain areas of the economy. The development of PPPs in Botswana has also been discussed with projects constructed through PPPs.

The methodological approach used was the Grounded Theory method which enabled the researcher to interact with emerging findings on a continuous basis. The method also allowed for the simultaneous analytical process.

One of the key findings of the study, was, a trend on the declining delivery of service in the provision of water and a rising dissatisfaction among the WUC clients. The results show that much as the scarcity of water is a problem on its own, the WUC is using out-dated administrative and business processes. This is a major contributing factor to the unsatisfactory service delivery. The study also found that in implementing the WSR, the WUC is experimenting with various ways of engaging private companies, hence the need for a definite model to implement in dealing with private parties.

Given the foregoing, this study generated a theory and designed a model, "OSC", through the use of Grounded Theory method. The model is firmly rooted in the study findings and stipulates its benefits to the water sector at the LMC vis-à-vis other PPP options.

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APPENDICES

Appendix 1: Interview guide

PHD IN PUBLIC ADMINISTRATION

TOPIC: THE IMPACT OF PUBLIC PRIVATE PATNERSHIPS ON THE DELIVERY OF WATER SERVICE IN BOTSWANA THE LOBATSE MANAGEMENT AREA

Position of key informant/FG department:.....
Interview date:.....
Specific area of informant's specialisation:.....

1. What is the main source of water in your area?
2. Are there alternative sources of water?
3. How has the water situation been in the past three years in your area?
4. Have there been any water shortages in the past three months?
5. What was the cause of water shortages/interruptions?
6. What was the form of intervention during the water shortage?
7. How is water supplied when there is a water shortage in your area?
8. Who carries out repairs of the pump station supplying water in your area?
9. Should the private companies be contracted to assist the Water Utilities in the provision of water services?
10. If yes, how should the private companies be contracted?
11. What is your understanding of Public Private Partnerships?
12. How happy are you with the delivery of water services in your area?

Thank you very much for your cooperation. I really value the time you have availed me for this important project. Please be assured that your responses will remain confidential.

APPENDIX 2: INTERVIEW TRANSCRIPT NO. 1

Place	**: Lobatse**
Date of interview	**: 14/10/2013**
Venue	**: Lobatse Management Centre Office**
Interviewer	**: Thekiso Molokwane**
Age Group	**: Males 32-42 years old**
Setting	**: Round table**
Transcriber	**: Thekiso Molokwane**
Number of respondents:	**Eight (8)**
Date of Transcription	**: 14/10/2013**
Respondent Dept	**: Distribution and Networking**
Interview	**: One (1)**

Key:
R= Respondent **I**= Interviewer **G** = Group

Introduction done before interview

I: Could you tell me what the main source of water for area is?

R: We supply water that comes from Gaborone dam through a pipeline to a plant in Lobatse. The water is then stored in reservoirs at different sites before being distributed to individual customers.

R. The water supplied in our area is from Gaborone dam. The water is pumped from Gaborone dam to Nnywane dam which is within the LMC. The water is treated in a treatment plant in Gaborone. There are reservoirs in Lobatse and Ramotswa such as the one at Rankepe reservoir.

R: There is a tank between Lobatse and Ramotswa. This tank is located at Boatle.

R: The problem with Nnywane dam is that it has small capacity. The WUC should expand Nnywane because if it happens that the NSWC is improved and pumps enough water to Gaborone. There might be a need to pump the water further down south to Nnywane.

R: Are there alternative sources of water in your area?

R: Boreholes are the main alternative sources of water. Most of the boreholes are however not used and they are capped.

R: I other villages such as Mogobane, there are small self-made dams. These dams are very helpful during rainy season, they however dry up when rain is scarce.

I: How has the water situation been in the past three years in your area?

R: The water situation in the past three years has been somewhat fine. The only difference is caused by the availability or lack of rain. When government handed over water services to the WUC, there was mention of funds not being available but the corporation however does its best to supply water.

R: There has not been any change during the past three months regarding water situation the main reason being that the water levels at Gaborone dam are low. The use of water is high while the water levels at the dam are low.

R: The water situation is worsening. The leadership is now rationing water. Nnywane dam has also since gone dry. This affects water supply in the LMC drastically.

I: When is the water rationing done?

R: In Lobatse, water rationing is carried out from 08:30 hours in the morning to 14:30 in the afternoon. The rationing is done on Wednesdays and Saturdays.

R: The rationing is done to save the limited water at Gaborone dam the supply from Letsibogo dam is also low as the NSWC also experiences frequent bursts.

R: Before the water rationing exercise, government implanted water restrictions.

I: What did they entail?

R: People were told not to use portable water to wash their cars, water their lawn, to make bricks and building.

R: I think boreholes should be opened. This will increase supply of water where there is shortage.

I: How do residents access water when there is shortage?

R: Areas hit by water shortage are usually supplied through a water bowser. The corporation has now decided to carry out water rationing to augment water restrictions that have been in place for a number of years now.

R: Water rationing is done also so as to stockpile water at the plant in Lobatse as well as in reservoirs across the LMC.

R: There has been shortage in the past before the decision to ration water was taken. You would find that water would sometimes be available in one part of the village and not available in the other. This would have been done by way of closing pipes within a network to repair pipes in a other side of the network. This is usually in emergency situations.

R: Do you think that private companies should be contracted to undertake some work in the provision of water service, if so where?

R: I would like the WUC to engage a private company to assist in new connections. We have a huge backlog and this affects our performance greatly.

R: Under the previous authorities, individuals would dig a trench themselves where the pipe would be laid. In the new arrangement under the WUC however, customer are no longer allowed to do that. It is the WUC that digs the trenches. I believe this is another cause for backlogs. Contracting a private company will assist great in this area.

R: We also get regular queries from customers who are sometimes erroneously left out during connections.

R: The other cause of water shortages is the power cuts. Since the power situation improves, we now rarely get power cuts due to power cuts. Most of our boreholes use electricity.

I: Who repairs pump stations and boreholes in your area?

R: We carry out repairs. We have personnel from the mechanical department who do this work. Big pumps however and things like telemetry are contracted out to private companies. You find that a certain pump will be repaired by its manufacturer. Although this is expensive, it is efficient.

R: Regarding the issue of private companies, I think the WUC should allow some of us who have worked for the corporation for many years to start our own companies and commit to contract us at least the first few contracts. This way, the corporation will benefit from its long term investment which is us the employees. We have all the necessary technical skills.

R: We can also group ourselves and purchase water bowsers to bowse water when there is shortage. Water shortage seems to be an indefinite problem. In the 1980s we had recurrent draughts just like in the 2000s. The situation should have naturally improved given that the economy of Botswana has progressed well over the years. With water however, it appears that government has chosen to learn the hard way and it appears will continues to have this problem even in the next 20 years.

I: Which areas do you think the WUC should focus on in terms of improving its service of water provision?

R: We have a serious problem of transport. There is need for the corporation consider alternative means of sourcing additional vehicles to enable us to do our work effectively. We are at times told to share a vehicle between two crews. This is something that can be done but what does it say to the efficiency and effectiveness. An excavator is something that moves at very low speed. If there are a number of excavations to be done in villages sparsely located, there are often delays as it takes time travelling between villages. It is high time that WUC engages private contractors to carry out excavations.

R: We also have a problem of an excavator. There is only one excavator for the whole Lobatse cluster. Even the people from villages can excavate.

R: Are there any other issues that we may have left behind?

[Long silence]

I: If there are none I thank you for the time given for this interview.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 2

Place	**: Lobatse**
Date of interview	**: 15/10/13**
Venue	**: Lobatse Management Centre Office**
Interviewer	**: Thekiso Molokwane**
Age Group	**: Males 44-52 years old**
Setting	**: Round table**
Transcriber	**: Thekiso Molokwane**
Number of respondents	**: One (1)**
Date of Transcription	**: 27/02/10- 01/03/10**
Respondent	**: Superintendent – Lobatse Cluster**
Interview	**: Two (2)**

Key: **R**= Respondent **I**= Interviewer

Introduction done before recording

I: I could begin by asking how the water situation has been in the past three years, from the year 2011 up to date.

R: eh hey, you know we are struggling, there water has been there, until, ehm, I take it that you know that we at Lobatse receive 90 percent water supply from Gaborone water and 10 percent from our dam that is Nnywane dam, but when it has failed has it has, we receive 100 percent of water from Gaborone which receives water from dams such as Letsibogo, up north and then is Molatedi which is in South Africa and there is Bokaa Dam. Now we have a challenge of Letsibogo dam especially the North South Water Carrier because of the material that the pipe is made of, so sometimes we have that challenge when the pipe has a burst we end up having a supply problem in Lobatse but like I said, we depend on Gaborone dam for supply.

I: Are there any other water sources in the Lobatse Management Centre, safe for Gaborone and Nnywane dams,

R: emh, for Lobatse?

I: Yes Sir

R: really, the town of Lobatse is mainly supplied by Nnywane dam which receive water from Gaborone but other sources but for other clusters such as Goodhope and Ramotswa we have boreholes, and emh, some villages around Lobatse have boreholes that are used when there is no supply, like

at present there is no water supply hence we are resuscitating some of the boreholes so that they can be used to supply these villages.

I: most of the times when these boreholes are closed what would be the reasons for the closure?

R: Well, at times it would be because there is sufficient supply of water, but in some instances the borehole engines or the pump elements would have broken down.

I: is there any other time when you have water levels in the boreholes causing closure?

R: Yes, they are often closed, as we speak, boreholes for the Mmathethe area which is under Lobatse, have dried up and so we are bowsing water to the area including Digawana, in a nutshell, we bowse to majority of these villages with water from the town of Lobatse.

[Office phone rings in a low tone. The respondent looks at it once and ignores it]

I: what is the situation regarding Mogojogojo borehole, I noticed that the borehole at Mogojogojo is like that of Kgoro Village supplying many villages?
R: Mogojogojo borehole is drying up, its level has dropped drastically

I: ehm, what are the main causes for water shortages really, I would not wish our conversation to be clouded by the current wave of ("Botswana o a kgala") {Botswana is drying up}, of course we are in the worst situation in an extended period of time?
[Office phone continues to ring]

R: Really, in home villages, there are no problems except when boreholes have dried up, that is the only challenge we face or when the borehole engine has broken down

I: Do ever experience vandalism of pump stations, boreholes or borehole engine?

R: not that much especially in our area.

I: What about leakages?

R: Leakages ehm, yes, there are lots of leakages, really those that have been existing when we took over from the Councils and the Water Affairs, we found that there were lots of leakages, we fixing them at present, we are trying to fix them.

I: what does fixing them entail, are you replacing them or just stopping the leakages?

R: we are fixing the, fortunately the Councils and Water Affairs they used a material that we consider to be good, PVC which is easy to work with. When the material has burst you just cut it and fit in a new joint, moreover the lines are new I mean, the networks are not old. We are not replacing the lines we are just repairing them.

I: ehm, when there is shortage in different villages how are residents supplied with water

R: We bowse water the affected villages

I: Okay, is this bowsing scheduled looking at the period of water shortage or do you respond to calls from villages

R: We, **[pauses]** have a schedule for bowsing, where we respond to call is where the village would have had a regular supply and then there is a sudden shortage

I: in your own view, can private companies be contracted to help in the supply of water is the answer is yes, where exactly

R: the answer is yes, we have already done that, we did contracted some for new connections, when we took over people applied in large numbers, ehm so it meant that we had to contract some companies, we can also contract some for maintenance particularly with pipe repairs, we can contract these companies to deal with repairs.

I: What type of contracts did you have with those for new connections?

R: Ehm, well really these did not include tendering, it was just a matter of looking for small contractors

I: ehm, perhaps you could clarify about the length of contracts or was it per orders?

R: it was a list of new connection, we had a list that we requested companies to quote for and inform us of the price?
I: So would you say this arrangement is servicing you well?

R: It is servicing that well only that it is expensive, we believe that it could be cheaper if we sourced perhaps the villagers to dig trenches.

I: These companies, are they local companies from Gaborone or foreign companies?

R: Well, it is local companies, we really invited local companies, well what we wanted from the management, but since the procurement has its own processes, and companies from outside the Lobatse Management Centre were invited

I: okay, well I'm saying this looking at that there are retrenches from the Department of Water Affairs and councils, who were doing this type of work and could form companies and perhaps be cheaper, and then you even have staff here at the WUC who would be ready to start companies provided they have guarantee of business. Well, going back to your response what is the maintenance is for what specifically?

R: For pipe networks and leakages

I: What about pump stations and boreholes?

R: Well for those really we contract private companies. They mostly carry out repairs and maintenance. We do have expertise within the WUC to carry out those functions but we do not have capacity to carry out maintenance of pump stations and boreholes because boreholes are just too many. In the LMC we have about 61 boreholes which our staff cannot manage, even engines; we send them out for repairs to other workshops.

I: In one of the stations, I was told there is a transport problem, is this problem still there or you have attempted to address it as vehicles were in short supply?

R: ehm, the vehicle problem is within the entire WUC, when we took over from the Councils and Water Affairs, the expectation was that they were going to give us all resources including vehicles and machinery regrettably they did not transfer vehicles to us resulting in this shortage, so the entire corporation has shortage of vehicles.

I: There is also another problem they mentioned of shortage of fuel for fuel operated boreholes. Is it still there or you have attempted to address it from last year around this time of the year to date?

R: We have improved the situation, the challenge was only to identify a filling stations somewhere near where most of the boreholes are located especially Goodhope so we identified one in Metlojane village.

I: Is this a private filling station?

R: Yes, we also have a diesel bowser which we use to transport fuel to various boreholes.

[Respondent's cell phone rings, he looks at it repeatedly curiously]

I: You may answer it as it could be an official call.

[The recording is paused to allow the respondent to answer the phone. He speaks to a client briefly and the interview continues]

I: Yes sir, were discussing fuel, would you say it is advisable for the Corporation to have its own fuel stations?

R: Yes, ehm, it would help a lot, it would help a lot, and the only problem is that fuel suppliers demand that our fuel points should not be less than 9000 litres, if it is less they would not supply us. We have a filling point here at Lobatse office.

I: The other issue raised, if I recall very well, it was that of borehole operators. It was mentioned that some borehole operators were not performing to expectation such that water would be in short supply not due to water itself but the operator?

R: labour issues are challenging. Our policy is that when one is employed they are posted to the requisite location. It would be nice if we could hire a village local to operate a borehole within a particular village. But it ultimately now depends on our supervision but yes, the challenge of transport contributed to this.

I: I take it that my questions are over, you may add on anything that you may have not included in your previous responses such as potential areas partnership.

R: Yes, really as I already mentioned, Ramotswa is okay because we do not have some many boreholes there, Lobatse if fine, the problematic area is Goodhope. That is the area that wholly is supplied though boreholes there is no alternative supply such as water from Gaborone. We used to supply Goodhope Senior (secondary school) from Lobatse otherwise the entire area is supplied though boreholes. That is where contract mostly work with us. Elevated tanks are also given to private companies to construct.

I: I am very grateful for the time you have given me.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 3

Place : **Lobatse**
Date of interview : **15/10/13**
Venue : **Lobatse Management Centre Office**
Interviewer : **Thekiso Molokwane**
Age Group : **Males 31-57 years old**
Setting : **Round table**
Transcriber : **Thekiso Molokwane**
Number of respondents: **One (1)**
Date of Transcription : **27/02/10- 01/03/10**
Respondent : **Foreman Customer Care and Support - Lobatse Cluster**

Interview : **Three (3)**

Key: **R**= Respondent **I**= Interviewer

Introduction done before recording

I: What is the main source of water in your area?

R: We are supplied by Gaborone, we used to be supplied by Nnywane but Nnywane at present is dry. It now doesn't have water at all meaning that we are now supplied only by Gaborone which sources water from north.

I: Are there alternative sources of water besides these dams?

R: Well there are some boreholes although I am not sure what state they are in nut I know there is an attempt to operationalize them.

I: How has the water situation been in the past three years in your area you may also compare past years to the current?

R: Err well it is worse this year, last year there Nnywane dam had something but currently the dam has nothing at all such that when there is no supply from Gaborone, Lobatse has no water at all.

I: Okay, what about in the past three months, was the situation the same or there is change?

R: Well, the other thing that happens is that if there happens to be a pipe burst somewhere in between Lobatse and Gaborone or in the line supplying

us from the north, that is when the situation becomes worse, but, when we say we do not have water we mean something like two days but thereafter the situation improves.

I: you mentioned pipe bursts, there any other causes of water shortages.

R: Well is the pipe bursts and leakages within the village as well as improper use of water

I: Improper use of water we refer to what, misuse?

R: they misuse water.

I: So when there are shortages how do people have access to water?

R: We try to bowse water using vehicles

I: So in your own view, do you see it necessary that government can contract private companies be to assist the Water Utilities in the provision of water services?

R: What do you mean?
I: Well you offer a range of services. For a customer to end up receiving water from a tap, there would have been activities such as connection, metering, networking.

R: Well I see no need

I: Well I often hear customers crying about connection and that comes to say that the corporation is not coping with the applications

R: yes, but what I see important, if there is private participation, we could perhaps engage casual labourers to assist pipefitters who do the fittings to hasten their work because if the connections are done by pipefitters and there is a problem, whatever that happens thereafter it is the pipefitters who would be accountable compared to contracting a private company and then after approximately 3 years you experience a problem resulting from the company not doing things according to your specifications.

I: It could be in any other area; I mean customers are also complaining about bills, just a mere receiving of bills they wait for months, this could be an opportunity to contract a private partner.

R: Yes most of the customers cry foul about bills but customers are still crying foul even after engaging a private company such as Botswana Postal Services

I; But at present do you ever engage private companies to repair boreholes and pump stations
R: Well I am not familiar with that one as it fall outside my scope of work

I: I am grateful for the time given for this interview.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 4

Place : **Lobatse**
Date of interview : **15/10/13**
Venue : **Lobatse Management Centre Office**
Interviewer : **Thekiso Molokwane**
Age Group : **Males 31-57 years old**
Setting : **Round table**
Transcriber : **Thekiso Molokwane**
Number of respondents: **One (1)**
Date of Transcription : **27/02/10- 01/03/10**
Respondent : **Superintendent – Goodhope Cluster**

Interview : **Four (4)**

Key: **R**= Respondent **I**= Interviewer

Introduction done before recording

I: Should the private companies be contracted to assist the Water Utilities in the provision of water services?

R: We do have private companies in the supply of various items that are consumed by the WUC as we do not manufacture. I am of the view that private companies operating within the water sector can play a role. The role to play can include improving our service as we have many functions. The corporation can outsource plot connections

I: New connections?

R: yeas new plot connections. When a private company is contracted for those, they will just be focusing on connections unlike today where you take an area with limited pipe fitters (personnel), when the pipefitter I supposed to install new connections and a breakdown is reported, we suspended him from the crew to attend the breakdown but private companies will complete the work since they will be having no other work and this will allow our personnel to continue with other duties.

I: In your view, when the companies are contracted in what way can they be contracted looking at various issues such as contract period and their numbers in a particular area?

R: well it is not that the arrangement has been done before, but I can only conceptualise give a suggestion. I take it that for starters, the WUC might

begin with identifying talent or expertise that is in an area because areas are now vast. This arrangement can reduce costs such as travelling cost. There companies in different villages for as long as they have expertise they can be contracted as and when the need arises.

I: But how long do you wish a particular company can be contracted an example being that of new connections?

R: Yes, we have to consider the magnitude of the applications looking at where most are. Let me take an example of the town of Lobatse, if we have a backlog of people awaiting connections, if we have a long waiting list of applications, we can contract a company and this company has to demonstrate their capability. We will then provide distances to be covered by the private company; the company then has to demonstrate the length of time they would take to complete their task, we as the WUC will also have a role in determining the length of time to be taken by the company. We will also determine whether it is worth it and whether the cost would be under control. So when they complete their task the contract will be over. When another list comes we will advertise and open a new bidding.

I: Should advertising of these jobs be done

R: Yes it should be done

I: Should tendering be done

R: Yes but not major tendering. The corporation can just request for quotations

[Respondents mobile phone rings, interview interrupted as the respondent had to leave Lobatse for Goodhope].

R: Thank you for the time given for the interview

[Interview ends]

INTERVIEW TRANSCRIPT NO. 5

Place : **Lobatse**
Date of interview : **16/10/2013**
Venue : **Lobatse Management Centre Office**
Interviewer : **Thekiso Molokwane**
Age Group : **Males 33-52 years old**
Setting : **Round table**
Transcriber : **Thekiso Molokwane**
Number of respondents: **Seven (7)**
Date of Transcription : **17/10/2013**
Respondent : **Distribution and Networking**
Interview : **Five (5)**

Key:
R= Respondent **I**= Interviewer **G** = Group

Introduction done before recording

I: in your view how has the water situation been in the past three years, 2011, 2012 to date?

R: What changes are you asking about, do you refer to the increase or lack of water?

I: Yes sir anything relating to the question, you are welcome to comment on.

R: oh yes, you know mmm....

[Long silence]

R: ***In the past two years the water was better,*** there we not so many challenges, we can really say the problem begins when we realise shortages due to insufficient rains. This now results in the dams failing to maintain levels that can supply the nation Botswana with.

[Office door opens]

R: The other major challenge was that we as the ***WUC were initially responsible for supplying water to urban centres and did not supply water to villages,*** now what I observed from last year and this year, we are placed under pressure due to that we now supply the entire country with water so we have really not managed yet because when we took over, we found that our service was different from that of other previous authorities.

It appeared that because other areas we supplied water by government and water supply to government is not business. Government just supplied water without necessary basing the collection of revenue tariffs on business; the collection was only to cover some of the maintenance costs. ***Water supply has always been business on our side***.

But now it is difficult. ***It is difficult particularly this year*** as water has dried up. We were not used to supply water from boreholes; we were also not used to bowse water using trucks'.

I: Please everyone present here should contribute; one of my respondents asked me yesterday why I did not interview your superiors as they are the ones with information. My response to him was that this study collects information the same way the national census did. When interviews reached households, they did not ask for the head of house and interview them alone, all people present I a particle household were asked the same questions which as the famous "who woke up in this house this morning?"

[One respondent laughs]

G: group agrees

R: So in the past two years that you have indicated have been hefty on us.

I: Yes Sir,

R: they are hefty, we are trying, wherever we can, we are not sure, maybe we will improve and also if God could help by letting the rain fall.

I: Where is the water served to the people in your area from?

R: Err, we have dams in the north

I: please allow colleagues to comment as well
R: We source water from Gaborone to supply areas this side of the country

R: let me to add onto the issue of ***water situation*** and supplying water to rural areas, I am of the view that ***contracting private companies can improve the situation*** looking at that water network in those areas was non-existent hence it is difficult for the current personnel to what was being done those areas they are faced with huge tasks to understand the state of affairs in specific localities. It is a lot of work and it takes time to understand the situation.

[Office door opens and closes]
I: Well were going to discuss that aspect later however let us divert into that discussion. By stating network in rural areas, do you refer to

network in newly occupied parts of the villages or you refer to those that existed when you took over?

G: Several respond at once

R: the existing network

R: ***most of the people got water from communal standpipes*** and did not have standpipes connected to their households

R: Yes the network was not well serviced

I: *What is the problem with the network?*

G: continue to respond all at once

R: It's the lines, they are few

R: The problem is low quality as we carry out work on the network daily.

I: There are few lines; does this mean they need to be increased?

R: **Indeed they need to be increased**, when you go to villages such as Molapowabojang you would notice that the older part of the village is well networked but the more recently occupied parts have fewer lines hence when we are supposed to make new connections we struggle, some lines are far resulting in some people not managing to afford the connection fees which naturally are higher based on the distance measured to the nearest line.

I: Okay, What exactly do you mean when you say that the quality of the pipes is low?

Water supply requires that lines should be serviced. For example in the town of Lobatse, private companies were contracted to service lines and install new connections now the situation is much better.

I: Well, were has just discussed the sources of water, is Gaborone dam the only source?

R: Water supplied in Lobatse originates from dams located in the northern parts of the country. These dams feed Gaborone dam which in turn supplies Lobatse. The levels of Gaborone dam are low and it supplied by dams such a Letsibogo in the north. The water from Gaborone is deposited at Nnywane dam which is in the LMC and then pumped to reservoirs in Lobatse. The water also branches to Boatle where the WUC station is located.

I: Does this water flow directly from Gaborone to Lobatse?

R: No, the water does not flow directly

I: Could we all try to comment, we have to avoid dialogue between the interview and only one speaker

[Interviewer laughs lightly]

R: Well the water goes to Nnywane dam from Gaborone and then comes to Lobatse

R: The water goes through, Ramotswa, Boatle first

I: Does the water branch into Boatle or does it go though Boatle?

R: The water is pumped from Gaborone to Boatle, and then from Boatle to Nnywane

[Office door opens and closes, one of the staff members enters and takes a seat]

I: You are welcome sir

I: I have heard that there are boreholes, what is their status looking at the town of Lobatse and other villages falling under the Lobatse management centre

R: Those in the villages do not have water,

I: Others do not have water...

R: there is nothing, as for those in in Lobatse I do not know it is these old men who would know about them as they are the ones who have long worked

[Interviewer laughs lightly]

[Group members also laugh]

R: No, they could be having water but they have long been deserted, their connections have been disrupted and we are not sure exactly what their problems are. Okay let me keep quiet I have made a lot of comments.

R: The boreholes in Lobatse have water,

I: Okay...

R: we supply water however from only one, customers pay for the water from front office and source water from the borehole. There is another borehole at the Department of Geological surveys that is equipped but is not functioning due to the problem with its pipeline. The line experiences frequent bursts hence its closure. But those in Lobatse have abundance of water it's just that as you heard, they have been abandoned.

I: Yes, tell me about water shortages, there is an outcry in the villages that water supply is frequently interrupted. What is the cause of this shortage?

R: There are no interruptions but we experience water shortages. We have a problem affecting water shortages with our reservoirs going empty. Wait a minute, what do you refer to when you say shortages can you explain.

[One group member laugh quietly, the other clears his throat]

I: Well prior to the current season of "*Botswana o a Kgala*" (Botswana is running dry), there would be reports such "we at Molapowabojang we do not have water" others would say "we in Mogobane, we at times go for a week without water" and the remaining question is therefore that when there is no water, what is the cause?

[One respondent whispers]

R: Is it not pump-stations?

R: The problematic area is Molapowabojang the main reason being that the village was supplied with a surface pipe that was temporary. The pipe experienced repeated bursts. Water supply would then be frequently interrupted to enable repairs. The reservoirs for the village were also small until the project that was under construction was completed. Just when we thought the situation was better Botswana went dry.

I: So the reservoirs were small, was anything done regarding these reservoirs?

R: Yes, a bigger reservoir was constructed just that when the project was completed, Botswana went dry.

I: So this surfaced pipe, is it now placed underground or there are some arraignments to do so?

R: We have dug in underground, we took a bidder pipe of 400, I mean, 350 from the hiking stop to Crescent, from Crescent if I am not mistaken it's a

400 pipe up to the reservoir that I am referring to. It now meant the reservoir now supplies Molapowabojang and Kgomokasitwa villages.

R: The other problematic area was Goodhope, we also supplied Goodhope Senior Secondary School using the same surfaced pipe. We also experienced challenges beyond Molapowabojang where people vandalised the pipe so as to supply their livestock particularly cattle with water. Hence in that area a decision was also taken to install a pipe that runs underground. But this pipe found Botswana dry although its installation is not yet complete.

I: You mentioned Molapowabojang, there water problem also exists in other villages such as Pitsane, I have personally experienced the shortage as I used rain water to install corner peoples in my plot as the village had not water. What is the cause for this shortage in the village?

R: I personally am not sure about water shortage in Pitsane as I have not worked there most of the time but there is a borehole at Kgoro village, we once went there to repair the pipeline. That pipe seemed to be the main problem as the corporation now took a decision to make a new pipeline running parallel the existing one. We are not sure as what the situation is since its completion. It was also mentioned that reservoirs were also of low capacity.

[Office door opens, one member of staff asks if he can join but is informed that he will join the next FG]

R: even the reservoirs for the areas were said to be small

I: Right....

R: The borehole at Kgoro really has abundant water.

I: The pipeline from Kgoro, where does it go to?

G: It goes to Pitsane but another line goes to Goodhope

I: Do you ever experience vandalism of boreholes or boreholes engines as well as pump stations?

R: Yes, even the pipelines themselves, they punch the lines causing damage. Even the boreholes we spoke about earlier located in Lobatse, some had fittings inside, people have stolen them.

[Truck beeps outside the office indicating that it is reversing]
I: Okay, ehm, when there was shortage of water prior to improving the reservoirs, how did villagers access water?

R: Do you mean Molapowabojang?

R: I will answer mostly relating to Molapowabojang

I: Others will comment on other villages

R: We bowsed water to Molapowabojang, even my colleague here has bowsed water to Molapowabojang, Digawana and Phitshane-Molopo and Ditlharapa. There are no reservoirs in some of these villages. The new development is to fill JoJo tanks.

I: Is this bowsing scheduled or you deliver responding to calla

R: ehm, a schedule is used

R: Nowadays really a schedule is used, as you hear the truck making the beep, beep, beep sound it is leaving to deliver water.

R: We try to bowse although we have a problem currently as one of the pumps at Boatle is not functioning hence less water is reaching Lobatse. We made an arrangement last night to bowse water to Delta 1 and Delta 2 areas as well as Pitikwe in Lobatse.

I: We are all going to participate gentlemen, please do not be listeners like me

[Interview laughs]

[Group also laughs]

I: So these trucks are they sufficient or are they in short supply, if they are not sufficient what suggestions do you have to the Corporation?

[One respondent laughs lightly]

R: I am of the view that the trucks are in short supply, we sometimes deliver water to far away villages.

I: Yes, this increasing of truck do you mean? Do you mean that the corporation should increase the trucks or private companies should be contracted? By private companies I am not referring to big companies from outside Botswana, it could be ex-employees of the DWA or Councils, even yourselves when you retire, you could use you benefits to purchase even a small truck for water bowsing. These are also private companies not only those from countries like South Africa.

R: The Corporation should increase the number of trucks if it has a financial muscle to do so, if it is challenged it can loan some trucks from government departments, isn't we all want is for our customers to receive water.

R: Let me also add on to say that the WUC is overburdened. For some of the activities it should request organisations with capacity to help it such as private companies more especially looking the bowsers. The corporation will buy these in large numbers and when the situation improves they would just be parked here with no use but if they are privately owned, they won't be a burden of the corporation and can always be redirected to areas that require the service.

I: Let us look as other activities or services. You have rightfully explained the entire process of water from the dams up to the stage where it comes out of the tap. Where else can private companies be contracted and if so where and for how long?

R: It is important that when the contracts are awarded they should specify the contract period so that the contract doesn't benefit only one company.

R: Yes I was going to echo the same sentiments but I can however add on to say, the companies should be given least one year to assist in whichever field so that the WUC should not be seen to be overburdened.

[Door opens and closes]

R: On the issues of private companies, we can say that the water situation used to be better and the main problem began just now on this era of "***Botswana o a kgala***", (Botswana is sunning dry) so private companies private companies can be given tenders but they should be given tenders only in areas where the WUC does not manage well such as to browse water but the contracts should be only for a certain period.

I: That a thoughtful idea...okay, let me see if there is anything I left behind you mentioned bowsing and lines, are there any areas for considering private participation?

R: With regards to lines, the work of new connections is a never ending job even now this morning there is a customer who is applying for a new connection. Now this is one of the functions that we were of the view that they could be outsourced and if possible, private companies could sign 3 years contracts with the WUC. You know when things are like this, you are giving the citizens some form of empowerment such as we the employees who have been doing this type of work for so many years and we are also the people who know the ins-and-outs of this work. We had discussed this with management before suggesting that they could give us 3 to 4 year contracts. They could give us a gracing period of 2 years and if they are satisfied with

our work they could then give us an additional period. This would allow us to grow and competition with other companies in the market.

I: Yes, such arrangements are created by people, please feel free to make suggestions and not fear that big companies could come and take jobs from your companies. Policies can be designed to restrict
tendering to local companies.

G: Yes we have capability to carry out this kind or jobs.

R: Indeed localisation happens, it was done at Botswana Housing Corporation when I was attached there as a student.

I: My questions are complete; anyone may add to the discussion anything they might have left out

[Long silence]

I: I thank you all for the time accorded for this interview.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 6

Place : **Lobatse**
Date of interview : **16/10/2013**
Venue : **Lobatse Management Centre Office**
Interviewer : **Thekiso Molokwane**
Age Group : **Males 30-38 years old**
Setting : **Round table**
Transcriber : **Thekiso Molokwane**
Number of respondents: **Seven (5)**
Date of Transcription : **17/10/2013**
Respondent Dept : **Customer Care and Service (Meter Readers, Connector & Disconnectors)**
Interview : **Six (6)**

Key:
R= Respondent **I**= Interviewer **G** = Group

I: Gentlemen I am back, I am here to conduct research about water service and the role that private companies can play, if you deem it fit, in certain areas of the corporation. I request that you do not mention your names for purpose of confidentiality. We may begin if you allow me.

[Two respondents nod in agreement]

I: You may begin by telling about the water situation in the past three years, has been the same, improved or has worsened?

[Group members giggle]

R: It has become worse

R: The situation is worsening forward as there is not even a single drop

I: what is the problem?

G: Mumble in animated talk

R: In the past two years Gaborone dam has not received any water.

I: Is it really the only reason for water shortage? I do not know that it is said that **"Botswana o kgadile"** (Botswana has run dry) due to lack of rains but let us not be clouded by that thought as it not so old?

R: Yes it is recent, we need to drill boreholes

I: After conducting data collection last year, I was given various causes for water shortage but the issue of low levels at the dams was not mentioned the any other examples, pipe leakages were mentioned for instance and others?

[Long silence]

R: yes, water leaks are potential problems of water shortages as some people vandalise pipes.

I: Yes, so when there is water shortage how do people access water? We know that Gaborone dam only supplies the town of Lobatse. I take it that villages are served though boreholes. I have noticed that when the dam levels got down, villages also experience shortage but they are served from boreholes?

R: A lot of things have happened, if you look at villages such Digawana and Mmathethe, boreholes are drying up. This is why water is fetched from Lobatse and bowsed to Mmathethe. So there is a pipe that has been installed to deliver water to Goodhope.

R: Sometimes we are told that pump station electricity has done this and that...

I: Meaning?

R: it means if there are power cuts problem, these villages have to be supplied with from Lobatse though water bowsing and we then cannot pump water when there is no power. If the is no water supply in Lobatse therefore, it means villages served with bowsers are also affected.

R: With previous authorities, it looks like generators were used. One generator was used to pump water in more than one village.

I: What is there difference under your authority?

R: I don't know, it is like they did not adapt the old system of pumping water with one generator in many villages.

I: How is the water bowsed, is there a schedule or do you respond to calls?

R: Well although we are not in the bowsing department, it appears there is a schedule as there is a schedule as every day trucks go out and looks they go to different villages as they know where they go to on Mondays, Tuesdays, Wednesdays because the trucks are on the move daily.

I: Err.. Please participate with us sir,

R: I'm with you Mr,

I: please be with us it might appear later as if I was just discussing with a few people

I: Do you think private companies should be contracted to assist the Water Utilities in the provision of water services? By private companies I am not referring to those from outside the country but rather even local companies owned by retirees from the water sector?

R: They can help in so many areas

I: Please mention them

R: An example is new connections and not like in Lobatse where there is only one JCB used for digging trenches for new connections for all the villages.

I: So only one JCB services all villages

G: all villages

I: hmm

R: You also find that one crew of pipe fitters are also working in many villages that is why there always a lot of work remaining behind (backlogs) as it appears they cannot cope with the work.

[Office door opens and closes]

R: Just as there are so many pipe leakages, they really cannot cope.

R: Thy cannot manage as many as ten villages

R: so they are responsible for new connections and maintenance?

I: Okay, besides new connections, where else can these companies be contracted? Or even for new connections, if a decision was made to contract, how many and how long can they be contracted? I would like you to feel free to suggest

R: I think there is need to contract only two companies for new connections. One company cannot manage.

R: For new connections

I: Why only two companies, not three or five?

R: they will bring their own labour

R: If more than two companies are contracted this can cost the corporation.

I: Unless the connections are done for free. Is there not a fee charged?

G: There is a fee

R: There is a free but the charge is very little looking at the magnitude of work for instance labour costs for a trench measuring from the WUC office to BMC. You may also find that this could be just one application charged P1, 500.00 with a company needing about 20 people to dig a trench, hence this could be costly.

R: Private companies can also be engaged in the maintenance department because they might need external help as they experience many problems as when their pumps have broken down they outsource. They even need assistance with repairing big valves as well as the North South Water Carrier bursts very often.

R: Even in faraway villages these companies may help in the area of boreholes

I: In what way?

R: They can be allocated clusters for instance where there is certainly of underground water being available, private companies should be contracted to drill boreholes and the WUC should fit the pipes in the boreholes. They should also construct reservoirs; the WUC would then get water from boreholes and supply customers.

I: So who constructs the reservoirs?

G: It is the private companies

I: So do you think this arrangement is okay

G: It is fine

R: At present it is the private companies that construct the reservoirs and we think this arrangement is ok.

I: Any last comments?

R: The WUC has been given a huge responsibility of managing water throughout the whole country. I am therefore of the view that going forward, the corporation will not manage.

R: This impacts negatively on their performance and they are at times forced to stop new connections to respond to maintenance calls.

I thank you for the time given for this interview. As I indicated, this interview is only academic work. It will be treated with highest confidentiality.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 7

Place : **Ramotswa**
Date of interview : **22/10/2013**
Venue : **Lobatse Management Centre Office**
Interviewer : **Thekiso Molokwane**
Age Group : **Males 31-48 years old**
Setting : **Round table**
Transcriber : **Thekiso Molokwane**
Number of respondents: **Five (5)**
Date of Transcription : **22/10/2013**
Respondent : **Distribution and Networking**
Interview : **Seven (7)**

Key:
R= Respondent **I**= Interviewer **G** = Group

I: As I mentioned my name is Thekiso and I am conducting research on the water services and also to find out what role can private companies can play in improving service delivery in the water sector. As you may all be aware, the corporation carried out various activities for water to leave a dam to a tap in a household, the land gets services, water is bowsed, meters are installed there are also bills hence the services are so many. The other issue is that customers are also crying foul over water shortage and put blame on the corporation. The corporation in turn also points a finger at the dams and rain.

I: You may tell me about the water situation in the past three years in your area

R: What do you mean by water situation Sir, the question is not clear, are you referring to water levels at the dam or what?

I: Well, the general availability of water in your area?

R: do you mean that was there sufficient water to supply to customers?

I: That would also be a response

R: Yes, I take it that water levels in the dams have been dropping every year due to lack of rain. The rain situation has been worsening over the years.

I: You may also comment on the delivery of water to customers. Tell us if there have been changes and if there have, state them.

R: Do you mean that when wee supply water does it reach people?

I: Yes, I take it that when you go to the field you meet some of your clients and they express thoughts or complaints to yourselves?

R: Changes in terms.....?

I: You supply water is that not so? Have you not heard reports of water shortage or pipe leakages in any of the villages? Please feel free to make comments on anything you may think of regarding water situation.

R: Yes in our area the challenge we face is that we have a 450 pipe from Taung station which bursts frequently. We sometimes spend the whole day repairing the pipe resulting in our customers not having water but they supply is normally restored the next day.

I: What does the 450 refer to? Is it the size of the pipe or distance?

G: I it's the diameter of the pipe

[One member coughs]

R: We however have a solution now to the pipe which includes replacing the pipe with that of better quality

I: What does the solution entail?

R: Replacing the existing pipe with that of new quality

[Members whisper]

I: I take it that you receive from Gaborone dam, are there alternative sources of water?

R: No we rely on water from Gaborone dam

I: and the boreholes?

R: We were informed that boreholes have been contaminated. The boreholes have water but there is a plan to reopen them?

I: It was said they are contaminated, does this mean that the water is now clean or will be cleaned?

G: The water will be cleaned

R: the water will be cleaned in a plant

I: Is there a plant or will one be constructed?

G: A plant is being constructed

[A member requests to step out waving his cell phone, interviewer tells him it is okay]

[Door opens and closes]

R: There is talk of water from boreholes will be cleaned. A plant to clean the water will be constructed

I: Have there been any water shortages in the past three months and what was the cause of water shortages/interruptions, I am well aware that water rationing is going on but I am not referring to it?

[Tapping noise in the background]

R: Yes we do experience water shortages. There is this big pipe from the north called N-D-what, what, it is sometimes spoken about in the radio which bring a lot of water in this part of the country, North South Carrier, it is the one that causes disruptions for a considerable period when it as burst.

South Water Carrier with experiences frequent bursts.

[Door opens and closes. Member re-joins group]

I: So when there is not supply where do your customers fetch water?

R: We make announcements to our customers if there is a water shortage caused by pipe bursts. We also inform the customers that the pipe would be undergoing maintenance. We spread the announcements using various means. We do this to prepare our customers for the shortage

I: the next question is that how do customers access water when there is disruption

R: We use water bowsers

R: We fill in JoJo-tanks in concerned villages

I: How long have these JoJo tanks existed

R: We are installing them

R: We install them in villages due to this dire shortage of water

I: Do you think that private companies be contracted to assist the Water Utilities in the provision of water services?

R: what do you mean, helping with certain functions or how?

I: Yes, it could mean that the corporation could contract a private company where there is an activity experiencing a backlog.

G: It is already like that

R: As we speak there are private companies contracted to install fittings in boreholes. They are helping us.

R: Others have been contracted to install telemetry in pump stations.

I: So this arrangement has been there?

G: yes

I: So do you see the importance for this arrangement?

G: It is important because some of the activities are those that we cannot do

R: They specialise

I: Could there other areas that you may see as potential areas for partnership where performance could be improved?

R: Is that a question?

I: Yes, the corporation saw the need to contract private companies for installing fittings in boreholes as well as telemetry, so the question is that are there other areas besides these two where private companies could be sought?

R: I did not see the need to contract private companies in the Ramotswa cluster as the new connections are under control. The main challenge which results in back longs most of the time is shortage of transport. But areas such as telemetry are highly specialised.

I: Well when I was at Lobatse, although it is a different area, some of the respondents indicated that they could appreciate assistance in new connections as they have serous backlog

[Member coughs]

R: We do have backlog but the main challenge is shortage of transport. It would help if the WUC could contract employees with vehicles to use their own vehicles to conduct the business of the corporation.

I: My questions end here, anyone could comment on anything else that we might have left out.

R: We could really appreciate if the WUC can also sell to its staff, vehicles that are auctioned to public. Some of these roadworthy vehicles can be given to us and their costs be deduct from our salaries. We can use such cars in conducting the business of the WUC.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 8

Place : **Ramotswa**
Date of interview : **22/10/2013**
Venue : **Lobatse Management Centre Office**
Interviewer : **Thekiso Molokwane**
Age Group : **Males 31-48 years old**
Setting : **Round table**
Transcriber : **Thekiso Molokwane**
Number of respondents: **One (1)**
Date of Transcription : **23/10/2013**
Respondent : **Foreman - Distribution and Networking**
Interview : **Eight (8)**

Key: **R**= Respondent **I**= Interviewer

I: As I mentioned my name is Thekiso and I am conducting research on the area of Public Private Partnership. The research partly investigates the water situation, the services and also to find out what role can private companies can play in improving service delivery in the water sector. We can begin by you providing me with the information how the water situation has been in the past three years in your area of work.

R: I began working in Ramotswa in April. We cover up to areas such as Lekgolobotlo, Otse and Mankgodi. The water situation is comforting but has not yet become bad. It is just that there are areas where network pipes have not reached. An example is Magope ward in Ramotswa which has newly occupied plots.

I: Who installs this network?

It used to be government through the DWA and councils and now it is the WUC. The responsibility is now on the WUC since takeover.

I: Do you experience any challenges regarding installing the network in newly areas looking at the entire areas of your work?

The network in areas we inherited from the DWA and Councils is old. An area such as Ramotswa for instance, water is always leaking and this is not because we do not carry out repairs. We carry out repairs daily but we equally have reports coming in daily and this is due the fact that the

network is old. What is required therefore is for the network to be rehabilitated.

I: what do you mean by rehabilitate, do you mean replacing old pipes with the new ones?

R: Yes, replacing old pipes with new ones.

I: Do you think this rehabilitation of pipes should be done by the WUC or private companies?

R: hmmm, we cannot manage to do it. It can be done by private parties because we have a lot of work on daily basis.

I: There are water cuts in various areas, and I am not referring to the current water rationing exercise. What causes these shortages in most cases?

R: usually they are caused by power cuts. We source water from Gaborone hence if there is no power in Gaborone we experience water shortages.

I: do you experience pipe leakages that result in loss of, if you do, how serious is the situation?

There are these lines called trunk mains than collect water from pump stations to reservoirs.

I: They are called?

R: Trunk main. We have one that comes from Taung station in Boatle to an area called Rankepe. This pipe is vulnerable to repeated bursts hence it leaks frequently. It fills first the reservoir at Rankepe before distributing water to other areas such as Ramotswa. If it bursts we experience shortage. Sometime there is a delay in repairing it prolonging the water shortage. We however are in the process of replacing it with better quality pipe.

[Office phone rings, the recorder is paused to allow the respondents to answer the phone. The recorder is switched on after the call to continue the interview]

I: In you view, where can private companies be contracted in the delivery of the water services as these services begin from dams to a tap in the house holds?

R: hmmm, private companies can be contracted in the construction of new lines because in our daily work it would be difficult to engage them as there are many requirements demanded by the corporation before we can think of engaging them.

I: I hear that in other areas there is a backlog of new connections. Do you experience the same in Ramotswa and if you experience it, would you say it is one of the areas to contract to private companies?

[A customer opens the door]

R*: (To the customer)* please wait for little while Sir.

R: Yes we experience a backlog of new connections in many areas for instance they are many in Ramotswa and Mankgodi village but we have attempted to engage private companies. Engaging private companies however affects us because water is a sensitive thing to deal with. We will be required to be there when the company works because we cannot engage some people we do not know. Water gets easily contaminated.

Dealing with water demands a lot of things such as getting tested for various ailments hence it is better for our employees to deal with water because we have tested them. We have engaged causal workers at Mankgodi village for digging trenches. We are to yet sure whether this new strategy will work.

I: So at present which areas have you engaged private companies in?

R: We do not have any companies contracted at currently

I: These would be all my questions you may add on to anything that you which to comment on.

R: It's just that this water service is complex. I am of the view that government policy has really placed a burned on the WUC. It would be better if private companies would be engaged to assist in certain areas. Restrictions should be lessened in terms of allowing private participation in the water services. The only challenge is that there would be a need for us to be around when this companies work so that we are able to better monitor their work.

At first it was better because there were three authorities hence the WUC was responsible only for urban centres. The previous arrangement favoured the WUC as the infrastructure in urban centres was of better quality.

I: Thank you for your time.

R: You are welcome.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 9

Place	**: Ramotswa**
Date of interview	**: 23/10/2013**
Venue	**: Lobatse Management Centre Office**
Interviewer	**: Thekiso Molokwane**
Age Group	**: Males 28-46 years old**
Setting	**: Round table**
Transcriber	**: Thekiso Molokwane**
Number of respondents:	**Seven (7)**
Date of Transcription	**: 23/10/2013**
Respondent Dept	**: Wastewater**
Interview	**: Nine (9)**

Key:
R= Respondent **I**= Interviewer **G** = Group

[Introduction done before recording]

R: I am not sure how exactly to comment because I believe that you could begin by indicating the main issues and giving examples about the purpose of your research. You could clarify how you want to discuss private companies and government. You may mention the position of government and tell us whether you want to discuss the advantages and disadvantages of private involvement.

I: Thank you for that request for clarity. I however have questions that I will occasionally place on the table to guide us in our deliberations. I wish to highlight what prompted this research. This research has been prompted that by that in the past three years, there has been a huge outcry by Batswana over the water service. In addition, relieved the DWA and Councils of the water service and centralised these on the WUC. Now no one has evidence to that this development was the cause for the outcry or that the outcry was there just that there were three players in the water industry instead of one. At present, the public blames only the WUC. There is a possibility that the outcry was low and manageable simply because each of the councils was autonomous. It was not possible for instance, for a customer residing at Phitshane Molopo to complain about the Chobe District Council. Now today whether one is at Pitsane or Ramokgwebana villages, they are serviced by the WUC.

R: So the purpose of your study is to find out whether the Government decision to centralise water service was right or wrong.
I: errrh no, not necessarily.

R: (*intercepts*) I mean regarding the Government decision to centralise water service on the WUC. You are basically talking about the water service and nothing else?

I: Yes but aim is to understand if private companies can play a role, this is the direction I am coming from. I am not mainly investigation whether the centralisation of water service on the WUC was right or wrong.as I mentioned this is just an academic study. And by private companies I am not referring to big companies from outside Botswana but rather even locally owned companies including by some to the workers who used to work for the other two authorities.

R: Now I understand let me give my colleagues an opportunity to comment.

I: I request that you allow me to lead this discussion with questions we can begin with you telling me about the water situation in the past three years in your area?

R: over a three year period?

I: Yes Sir,

R: There could have been changes but the greatest challenge is shortage of manpower. This affects our work output. In the old system when there 3 authorities performance was better. The water situation has not improved since take over. If you look and compare the era of DWA and councils to the present arrangement performance was much better in terms of things like leakages.

I: But would you say that this year, customers are happy for the service that WUC provides compared to previous years?

R: They are not happy.

I: What do they say?

R: They mention that we take long to provide various services such as new connections and also to respond to their calls. They state that we are slow in our service provision. We however try to explain to them that there has been a change in the administration of water services and that we are few.

I: Someone else may add?

R: The water situation Sir, has not improved since the take-over. In the times of DWA and Councils, service provision was much better than now in terms of things like leakages. If you compare the two eras, you wouldn't not find so many leakages in under the past authorities. Our turnaround time for responding to leakages was far much better than now. At present, we try to raise this issue of leakages but the management does not heed to our call. In the current system we are unable to respond to reported leakages on time. What we realise is that customers even complain in various media such as radio stating that WUC workers are after over time and not service. Examples can be installations of pipes that take too long in villages. Some customers wait up half year. In the old arrangement there was no issue of lack of labour force.

[A passer-by whistles]

R: And the third thing is that **"Botswana o a kgala"** (*Botswana is drying up*), water at the dams such as Gaborone dam are lost though seepage in to the ground and this has now resulted in a huge loss on the part of the corporation due to lack of manpower.

I: There is an issue of water shortage. By water shortage I am not referring to this era of "Botswana o a kgala". I am sure you have received reports from villages such as Mankgodi with people saying they had not water for three days and then those at Mogonye would also say we have gone for two days without water. What would be the real cause for these shortages? I would like for all who are present here to comment.

[Long silence]

I: Let us communicate please

R: We do not have comments as we work with waste water. The major concern here is that the WUC has changed a lot of policies. It policies differ with those of the previous authorities; the other thing is that there is shortage of manpower. WUC did not hire adequate staff after the take-over. You find that at present, five people would be expected to do work that was normally done by twenty people in the previous authorities. This means that work will be too much for us to carry out.

I: Alright this means that your comment issue is linked to the other speaker who commented on shortage of labour. This is one of the challenges. Since you are from wastewater section what are the other challenges you encounter in your section? Others have mentioned transport for instance. These challenges differ from one section to another.

R: you see that challenge of transport you mentioned is common throughout all sections, you find that if one section doesn't have a enough vehicles, the other one also doesn't, when one section doesn't have adequate manpower, the other section as well doesn't.

I: Right...

R: (*intercepts*) The other thing is restriction which disempowers us to attend to any work until the rightful person authorises such.

I: So it is business processes. You may comment more on the same. Others may as well comment on the same issues including administrative processes such as work orders for instance.

R: There are many challenges. When we worked for Councils when there were breakdowns we would attend to those immediately more especially because we would be having a huge tool box containing all fittings. It was not like at present where one has to request for fittings first. If you were driving and spotted a pipe burst, you just park the car and attend to it, there and then. If a person came to report a leakage we were in most cases in a position to go with them at that moment.

I: Immediately

R: Immediately not to attend to people on a list from yesterday. During those times we worked much more effectively unlike today.

R: It was flexible?

I: It was flexible

R: So today there is emphasis on written policies?

R: These policies are the ones that cause setback. If we were to go install calcamite today for instance, we would have to wait for someone with cement but at the Councils we would be working with someone in our crew who would mix concrete for us. We now will wait for many months waiting for someone from Lobatse office while we are capable of doing the work ourselves. So the WUC has increased work.

I: What is calcamite?

R: It is a mine hall that a pipe is fitted onto. You find that you have to wait for someone to come and do work that you are capable of doing.

I: We are building a basis for our discussion as we will now discuss as to whether private companies can be contracted

R: If private companies are contracted it would mean that we are not capable of doing work. We are very capable of doing work. It has also been said that there are no funds so if a company is contracted where will the money used to pay it emerge from. That will just be wasteful. Policies that were used at the Councils and the DWA should be the ones practiced. The current policies are the ones causing underperformance of employees.

I: Okay

R: We are not failing to do our work. What we would like of for the equipment to be there in our vehicles at all time. We then would hold meetings as we did when we were still with Councils with our supervisors on how best we can be assigned for various jobs. In the new arrangement, when it is Friday, all vehicles are parked. On Monday morning you have over one hundred people coming to register.

I: So communication lines do not allow you to interact effectively with your supervisors. Do you make new connections for wastewater in households?

R: No we do not.

I: Much as other issues are emerging, I may not include them in my study because I am guided by my objectives mainly to investigate the possibility of private participation in the water sector as well as to assess the water situation in the LMC. If there are challenges, I also take note of them as I have been observing from your responses that there are communications, business processes, shortage of manpower, shortage of equipment, work schedule and others. I will thereafter make an academic analysis.

R: We only want to correct some operations mistakes taking place within the organisation. The current policies stall progress and result in us not performing well for instance the WUC at present does not allow us to board a van at the back.

R: When we used to work for the Councils, we used to make decisions for example. If an applicant came to apply for new connection, we would assess the area which they are located at. We would then make a total four connections and save the Council costs as we would have done four connections in one weekend rather individual connections in one area at different time.

R: The current decision making mechanism has caused gaps between the board, the senior management, middle management and us the operational staff.

I: Well the points raised are understandable. As I said, I will only be looking at your comments from an academic perspective not from the point of view that they are complaints. I have also noted a very interesting perspective which I have not come across in my previous interviews of red tape. I had thought that this restricted to government departments only. I therefore than you for time you have given me.

I: Please allow me to switch off the recorder if we have exhausted out deliberations unless there are issues we might have let behind in our deliberations.

[Long silence]

I: I once again than you very much for the time you have given me for this interview.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 10

Place : **Lobatse**
Date of interview : **04/11/13**
Venue : **Lobatse Management Centre Office**
Interviewer : **Thekiso Molokwane**
Setting : **Round table**
Transcriber : **Thekiso Molokwane**
Number of respondents: One (1)
Date of Transcription : **05/11/11**
Respondent : **Engineer – Lobatse Management Centre**
Interview : **Eleven (10)**

Key: **R**= Respondent **I**= Interviewer

I: As I mentioned my research is in the areas of PPPs. I am basically assessing the water situation in the LMC and also trying to see if whether private companies can be engaged to carry out specific functions and if the answer is yes, where and what type of arrangement can be done. We can begin by you telling me how the water situation has been in the past three years in your area, you may even comment in Setswana

R: The water situation has been very erratic in terms of raw water availability. We have seen the unavailability of good rainfall in the past three years leading to the current draught we are in whereby the current dams are very low if I may just point to the Nnywane dam where we get at least 10 percent of our supply is dry which means we are down to 90 percent which we get from Gaborone. Over and above that, that is not sufficient because out infrastructure has been surpassed by events or times.

The demands are high, the infrastructure was designed to cater for the town of Lobatse but as we went on with the boreholes drying up in the villages on the periphery of Gaborone but falling within the LMC, we began having connections on the very pipeline that was designed solely for the town of Lobatse. We started having connections for Ramotswa, Mankgodi, Manyana villages getting water from Gaborone. They get at least 8 mega litres per day from that pipeline. That is their demand but basically we are able to supply up to 6 mega litres.

We have new connections for villages such as Magotlhwane, Ntlhantlhe and Otse because their boreholes have given up. There are new connections for villages down south such as Molapowabojang and Kgomokasitwa and some of these decisions are basically Executive decisions due to pressure of lack of water. When you make so many new connections the capacity of the infrastructure is greatly reduced. This results in under performance. Apparently we are operating at maximum, at what we call capacity.

[Phone rings]

R: That makes us very vulnerable. We have seen the storages in our reservoirs dropping. We are unable to supply at 80 percent or above that we are supposed to be doing. We are supposed to, at any given moment have 80 percent storage capacity of our tanks, so that we can supply water without sourcing fresh water from out treatment plant for the next 48 hours should there be a breakdown. We are supplying at very low levels.

Currently the draught has worsened with Nnywane dam drying up and Gaborone dam being at 16 percent. Government has introduced water restrictions to manage water demand. These includes such as people not watering their lawns, washing vehicles and using water on swimming pools and using portable water. But further we have gone to what is now called water rationing whereby we supply water to areas intermittently. Twice a week we shut down Lobatse demand centre which include the Town of Lobatse and surrounding villages, twice a week we shut down Ramotswa and its villages and we also shut down the Otse line twice a week.

I: For how many hours in a day is this rationing carried out?

R: We close at 08:30 hours and open at 15:30

I: Who carries out the repairs of pumps stations and boreholes as well as maintenance?

R: We have our maintenance section and it is our staff who undertake daily maintenance of boreholes and pumps stations. The maintenance may also be planned or periodic. Where we do not have capacity we outsource.

I: how do you contract the private companies?

R: We have our own tender regulations and procedures

I: is it open bidding?

R: Yes, but we also have a system of quotation for jobs costing up to P250, 000. Anything above P250, 000 is taken for tendering

I: Which areas do you specifically currently contract private companies?

R: errrh which areas?

I: I heard for instance that you do some contracting for new connections

R: Yes there are a lot of things we contract out Mr Thekiso. Like I said it is based on the availability of expertise and capacity within the corporation. Even if our maintenance undertakes normal maintenance, when they are overwhelmed there is need to bring in external parties to assist us. Say pump stations, some of the m can only be repaired by their manufactures. If a pump gives us a problem we take it to SOULSA that is in RSA. For other electrical issues we get electrical companies to come in to replace something but some of our products are very specific to the manufacturer.

If a generator set is coming from Barloworld and has their trademark on it, it is best to appoint Barloworld to repair it. Other areas include painting, if we only one painter who carries our minor maintenance in our premises and there is a job to paint the whole pump station, then you take out the job. We have also contracted out periodic maintenance of boreholes. You know if the boreholes have worked for a certain period, the oils must be changed, the filter must be changes, so yes we contracted some private companies to carry out the maintenance.

I: Was that based on the quotation system?

R: That was above 250,000.00

I: So it was a tender?

R: Yes.

I: Can you briefly explain the invoicing and the repayment process of these contracts?

R: The what?

I: The payment process, how you pay them

R: The service provider is appointed; they come in and provide a service. The services are inspected, if they are satisfactory we fill in a job satisfactory form. The goods have been delivered as we want. Together with their invoice they are submitted at our fiancé department for payment.

I: Do private companies finance any aspect of these jobs. For instance if they awarded maybe say 20 boreholes, there might be the need to

purchase the some equipment and fittings. Is it the corporation that finances these or is it the private company that finances and bills the corporation thereafter?

R: No it is the company, it is the company that normally supply and install, that's why we normally call it supply and install.

I: Okay...

R: But if there is a possibility where they can provide labour only like in terms of connections we have outsourced connections as we had a huge connections and our challenge ranges from our fleet being down and huge numbers backlog. We do have meters and pipes in stock. We just need companies that can come and do excavations and the laying of pipe under our supervision, so that labour only.

I: So do you have any agreements with private companies because I understand that equipment like pumps for instance and electrical equipment like generators are service only by the suppliers. Do you have any form of agreement with those companies?

R: No we don't, that is why I am saying there is provision for selective tenders or appointments. But you need to justify that as the person who requires that particular service based on the assessment and expertise you need to justify to the Management Tender Committee that you need the services of so and so, particularly why. We don't have such standing agreements with anybody because we a also guided by the procurement system of the Government of Botswana

I: ehm, the billing system it appears there is a problem with the billing system. Most customers cry foul that their bills area high, sometimes they go for some time without water but they are still billed

R: Well, I am mainly on the technical side; I do not want to comment on the billing because it is not my field of expertise.

I: When there is shortage in the villages how do villages access water?

R: we do have some interventions whenever there is shortage. If we know that there is a planned shortage we announce to the public so that they can store water. But over and above that we get water bowsers to supply water. We also put JoJo tanks around villages for storage.

I: Do you experience any vandalism of pipe lines or boreholes in some villages?

R: Yes it happens, some naughty members of the public steal borehole engines at our borehole sites. We have had diesel stolen at our borehole

sites. Some of the local farmers break our appurtenances; that will be fitting in terms of air valves because they know that if they break it they would be able to water their cattle there. They do these especially where the pipeline is surfaced and goes through the lands.

I: Well these are all questions you may add on to anything that you think my questions may have left out

R: I think you covered quite a lot

I: thank you for your time.

[Interview ends]

INTERVIEW TRANSCRIPT NO. 11

Place	**: Lobatse**
Date of interview	**: 04/11/13**
Venue	**: Lobatse Management Centre Office**
Interviewer	**: Thekiso Molokwane**
Setting	**: Round table**
Transcriber	**: Thekiso Molokwane**
Number of respondents:	**One (1)**
Date of Transcription	**: 04/11/11**
Respondent	**: General Manager - Lobatse Management Centre**
Interview	**: Eleven (11)**

Key: **R**= Respondent **I**= Interviewer

Introduction done before recording

I: Could you tell me about the water situation in your area since your arrival at the centre. The situation can refer to the availability of the water, where it's lacking and the efforts you are making to mitigate such?

[Cell phone rings]

R: The area you mean Lobatse Management Centre?

I: Yes Sir,

[Respondent lifts a glass with yellow liquid and shakes it]

R: As you know the LMC is affected by the impending drought, 2009 to 2011, and we almost entirely reliant on supply from Gaborone, which is also reliant on supply form elsewhere. We have Molatedi in RSA and Letsibogo in Mmadinare Village which contribute water to Gaborone dam. In Lobatse we are supplied though two treatment plants in Gaborone. The first plant is Mmamashia which treats water from Letsibogo for the benefit of Northern Gaborone and Kgatleng areas. The second plant is the Gaborone plant which is the older plant. The plant treats water from Letsibogo and Gaborone dam, we receive supply from that plant as we. We have a number

of pumps that pump water from Gaborone dam towards Lobatse. The water is pumped to Boatle then to Lobatse town.

So in principle I can only tell you that there is short supply of water. The shortage is seen in that Gaborone is at times not able to give us all the water we want in terms of quantity. Sometimes we cut down to 3 pumps from all pumps available; sometimes we cut down to two pumps when the situation is really bad more especially when the North South water Carrier has bursts. Gaborone WUC ends up distributing water from Gaborone water Works to both Gaborone South and North as well as Kgatleng areas. This arrangement now exposes the southern parts of the county particularly the LMC to shortage.

[Respondents shakes the glass again and takes a gulp]

I: I picked form some of the respondents that the supply from Gaborone mainly supplies the Town of Lobatse and that villages rely mainly on borehole water

R: *(intercepts)* not true, not true

I: The trend is that when the town of Lobatse experiences shortage the villages also experience shortage though they are supplied by boreholes supply

R: That is why I said that picture is not true because the Ramotswa which stretches from Manyana, Mankgodi and Otse villages, consumes about seven mega litres per day. Then we have the Lobatse area which consumes approximately elven (11) mega litres per day. All that water comes from Gaborone except about 10 percent which comes from Nnywane dam but the dam has already failed as you may be aware.

I: the other villages which I am referring to include areas of Goodhope, Pitsane and Molapowabojang. The information I receive from respondents is that they get supply from boreholes.

R: Who was giving this information so that I understand where they we coming from

[Respondent takes a sip form a glass and types something in his laptop computer]

I: Oh, part of my respondents were residents of these villages

R: hmm, It means there was a bit of misunderstanding, let me explain, we do have some limited capacity to supply mostly villages that border the

town of Lobatse and Ramotswa village through boreholes. The supply the supply from boreholes is pretty low, not even enough to cater for about 75 percent of that the population needs. You may find that one village borehole produces about six cubic per day whilst the village requires 50 cubic, so they are pretty low compared to the actual demand. This is why they have all been taken off their boreholes and supplied from Gaborone.

[cell phone rings]

I: you have private companies installing fittings in your boreholes and carrying out repairs of pump stations, is this arrangement working for you at present.

R: it is a pilot, we are learning as we go along and keep on improving

I: but would you rather have had the WUC doing these functions in-house, I understand that capacity is not there due to lack of funds but would you rather have had the WUC doing this work or would you say the arrangement is fine?

R: Theoretically, bringing those companies in to do the job is supposed to the job is supposed to save us in terms of manpower hours in terms of resourcing and maintenance of those boreholes. The reality is that your wont in-house staff is not always geared to deliver as compared to someone whom you have held against a contact whose payment is based on performance. But calling a third party is not always a solution as they also require serious supervision because if you do not monitor and evaluate their performance, which then takes your time and resources to do, they tender make baseless claims or they cut corners. So what we doing not is not total hiving of work to third parties. Because we are operating on pilot basis, we are practicing a bit of a mixture which we change anytime when we get an opportunity to. The way the contract is that you call them in to come as you see fit. It is not automatic that they will service all your boreholes or engines. So some work you reserve for yourself and some work you hive off to third parties.

[Train hoots in the background]

I: And how do you contact them do you tender?

R: *(intercepts)* Yes open tendering

I: Open tendering

I: Okay, and the contracts you say they are limited to the amount of work that is there at a particular time?

R: That you call them in to do, even though you have contracted them

I: And where there is need for resources to be brought in such as spares who finances for those

R: It depends on which spares, that is why I said it is not hard and fast that the company comes in and does everything and it bills you. If there are spares available at WUC we the job ourselves but if there are spares not available and we want a company to carry out a certain number of boreholes, they would come in with necessary spares, filters and oils for instance.

I: and how is the payment method when they have completed the job to your satisfaction?

R: I don't understand what you refer to by payment method

I: In some instance you may find that a company will in voice you

R: That's exactly what happens

I: Okay,

I: They would do a job, we would inspect, they would then invoice us, we would sign off that they have done a satisfactory job and we would pay them.

I: Are there any other areas where you think you can engage private companies safe from those that you are already doing

R: there are lots and lots of opportunities, we are already doing that in the security guard and cleaning areas and sometimes normal core work that we do

[Respondent types in his laptop computer]

I: what about areas such as bowsing of water, are you coping with the demand of waters, would you be interested in engaging private companies, and by private companies I am also referring people such as retirees of the DWA and WUC, not necessarily to big companies

R: We do have scope for some of the work to be hived off to private companies what remains is technicalities, for example if you take your core business of serving people with water, and hive it off, you will end up being in a situation of G4S in South African prisons, they were used to securing premises and other place, but when they decided to expand into prison services cause the South African government gave them a chance, they came from the UK with international experience. But clearly they were

mismanaging the prison because that was core business of prisons department you see what I mean

I: Yes

[There is a knock on the door and a cleaner walks in to bring bread]

R: You need to monitor and manage how the job is done because when you hive of to a private party you need to have a strong monitoring and evaluation, but of course there is a lot of opportunity for that.

[Here it is - cleaner]

R: Thank you

I: My previous encounter with some of the respondents last year and this year indicated some challenges that slowed down the business of the day such as shortage of transport and fuel, what are you view regarding these, does the corporation have indent to have its own fuel points? Is it desirable to own some?

R: Fuel points are not much of a hindrance because we have working agreements with fuel companies out there ranging from prepayment of fuel to paying in arrears. Fortunately there are enough privately own fuel stations throughout the country for us to have a choice so fuel points are not a problem. But owning a fuel point can be both an advantage and disadvantage at the same time.

[There is a knock at the door, a member of staff requests to say something but the GM informs them that he is in an interview and they should give him time]

R: So we do have a mixture of both services, we do have a fuel point but it is not active as we had not done the necessary Environmental Impact Assessment (EIA) I hear, so we have done it and we are now in the process of operationalizing this fuel point. Other areas that do not have fuel points such as Goodhope and Ramotswa satellite offices will also have their own fuel points. I have budgeted for those and the budget is currently being reviewed. In some areas you may find that there are no fuel stations, those with some close at night and during other times when we are working. In some stations fuel runs out and all these place us at a disadvantage hence the need to have our own a fuel point.

There is also the issue of dealing with pilferage of stock.

I: That's true

I: Is the corporation doing anything about shortage of transport?

R: Specifically where, we do have shortage of transport as we do with resources

I: the problem was more echoed by the Goodhope office but this year Ramotswa has the same concerns

R: That is not true; the members of staff who raised the complaint are the same ones who refuse to share vehicles. One vehicle could be used by two crews; they are refusing to make more with less.

The other problem is that since we have a challenge of machinery such as JCBs, I gave my staff the liberty to make proposals to me about how efficient we can work. I said they could use a JCB in one village and hire manual labour to augment the JCB in another village. I also said they could hire a privately owned JCB to carry out work in a third village such that in one day you would have carried out work in three villages rather than one. My staff is resisting to this however because they are from a culture that made them used to a lot of resources to one of relying on other resources that they are not used to.

I: The other issue raised by your customers was billing. They complain that bills are high, sometimes they go for some time without water yet they would still be billed, what your view on this assertion?

R: That's true, but only partially true, the biggest problem her is education of customers, let me show you an example

[Respondent turns his laptop computer to the interviewer to show them a customer account]

R: I have a customer account here; this customer came to me and said they are over billed. They do not understand how an elderly woman who lives alone in a household can consumer that much water. I then went into the account and gave them account details, I think she owes P2000. I sent them to check meter reading, the meter readings between three months indicate that she consumes about 33 cubic litres per month and this is high for an elderly woman who lives alone.

[Phone rings]

R: (to the phone) may I please call you back I am in meeting

Previous authorities did not bill customers hence when we took over we started billing customers and they are now complaining. Government tariff

never had anything above P11 which was a standing charge but you still found bills with P6.50 charge.

I: Tell me more about the tariffs, for the three authorities, the DWA, Councils and WUC, how were the tariffs set? Because it appears this issue of standardising the tariff has raised a lot of outcry but as the researcher I am still not...

R: *(intercepts)* It's still the issue of education, I really wish somebody could broadcast it more because we really can win it easily. When we were still responsible for major urban centres only, and other authorities responsible for villages, we used to supply water the DWA and Councils water at a tariff set by Cabinet. We were working on a no grant basis with Government like we are doing now. We were expected to break even and carry our own weight. The DWA would be funded by Government whether they made money or not. Sustainability was not an important factor them hence they could go for months without billing customers.

[Another phone call comes through]

R: (to the phone) can I please revert to you I am in the middle of a meeting. Give me about 10 to 15 minutes

R: With the previous authorities when they were not billed it meant nothing. Government now made a decision to come up with water sector reforms and we continue to bill customers with the old tariff. If you have sustainability you can afford to improve service for the consumer, for instance better water quality, better efficiencies at billing, better efficiencies at customer service and others. Customers of Metsimotlhabe or Mogoditshane which were considered to be major villages resided 10 to 15 meters from a customer in Gaborone. The Gaborone customer enjoyed all proper benefits such as no water cuts or any other negative interruptions, a widely admired efficient system of delivering water.

When WUC took over, we were 95 percent efficient in collecting its debts because customers understood the need to pay bills. They were well aware of the repercussions of not paying bills as non-payment did not only result to disconnection but all other steps in between, there legal issues in between, there are warnings there is lack of connection in a plot if it doesn't service its debt all these things were strictly adhered to and we had 95 percent record for debt collection.

We would bill 450 million annually and collect up to 400 million the same year. We are now dealing with a different culture where people are being billed all the time. This is why they now think WUC is expensive, secondly, even if a customer was billed, if they did not pay there were no consequences. For us now we know if customers do not pay we sink. This is

why I am saying the bigger issue is communication of explaining the nature of the tariff. You mentioned standardisation of the tariff, we are slowly harmonising the tariff over time it would be uniform at one point.

[Another phone call comes through]

R: (to the phone) can I please revert to you give me about 15 minutes

I: was the standardisation not just once?

R: No it was not doe at once. We spent one year with intention not to change the tariff and then we slowly changed a little bit. Remember that we do not change the tariff ourselves. Our Minister has to go and beg the Cabinet for an increase or a change in the tariff. So what we would do, we could say that the tariff can be increased by for instance 5 percent, it is a bit of give and take. We would take consumers that consume less than 5 cubic meters of water per month and exempt those from paying Value added Tax (VAT). However, an increase in the tariff is a natural occurrence because production costs keep growing every year. So how do you assure that you break ever or recover costs while you maintain the same revenue line while the cost line is growing.

[Train hoots outside the office]

R: You see what I mean

I: Yes

R: The other thing I should have explained while you asked about contracting private parties is that which I know your research centres on, the reason why we have not introduced proper review of our waste water services which seriously drains our revenue is because we are still working on a policy for that. You will find that we would travel a long distance of about 50 or 70 kilometers and change a customer P44 to drain a toilet or septic tank. For a trip that has residual costs such as overtime for the team on the tasks, transport costs such as diesel and wear and tear and all related costs, you will realise that maybe we a spending about P1000 per trip. We have now decided that is it not advisable to carry out business this way and we are therefore reviewing that part of this business and we would therefore end up hiving the bulk of this service to a third party. The arrangement is on the way actually.

I: Let me get clarity on this term hiving, because you have outsourcing, which falls towards full privatisation PPPs really is to, as you are now doing, to engage a private company as and when needed. Are you going to continue with this arrangement or you will end up outsourcing this completely.

R: Which is why I was saying hiving and not using the terms outsourcing or PPPs. We will have a mixture because remember that we are trying these things out, and observe what works and keep the arrangement as we go along, for example, to work an area such as Lobatse draining the septic tanks is not a headache, but leaving Lobatse to far away villages such as Mabule is a big headache. I would rather have somebody stationed in Mabule who has local advantage to this job but sanctioned by the WUC rather than open the job to private entities from all over. That is what Councils were doing. They has this service but what they did then was that they were giving this service to third parties informally meaning that they would be sanctioned by the DWNPC and Councils would sign off...

[cell phone rings]

R: (to the phone) Mmatladi ke tla boela ko go wena (Mmatladi I will revert to you) in a few minutes I am in the middle of a meeting

[Caller: I will revert to you myself I also in a meeting]

R: emh, so these guys started mushrooming everywhere. We were glad that they were there and servicing customers but do you know how much they were charging customers?

I: No

R: a hundred, not even a hundred percent a thousand percent of what we were charging.

I: So it was exorbitant?

R: Extremely exorbitant. In Mochudi village, we would charge a customer between P40 and P150 in some areas depending on which authority was there. We would find that where we would have not managed to provide a service sue to low capacity, a private company would charge between P400 to P1500 for the same area, yet both are in business and are thriving.

I: Would you as now the paying authority not have a ceiling. You could tell them that you can charge but do not exceed...

R: (intercepts) this is why we say we would want to have it authorised by the WUC, because we are the authority we are going to be licencing them. We are going to be monitoring and evaluating them keeping them to a specific range just like people in the bus industry, they are aware that they cannot charge more than x amount for a particular trip. That is will be a condition for their licencing if they violate the contract, we would then revoke the licence.

I: My study is not looking at water from a security perspective. The example you just gave for waste water, I was actually now thinking about it from point of view of water bowsing

R: Portable water?

I: Yes, you may have water cuts in a particular are for say, 5 days and you do not need to have a bowser belonging to the WUC and you may say whoever has a bowser supply water and you will bill us. And when there is no demand it is not your problem.

R: Yes, but no one will go into business waiting for a possibility. When they go into business for something like that they would looking at, how often would it happen, how often would I be engaged and that will influence their decision on whether it would be worthwhile to enter into such business. I mean a proper businessman.

Now we are open to all opportunities to reduce the burden on the corporation. I am sure you will agree with me that we have a huge burden. But we are also open to ensuring that our customers are not swindled because at the end of the day it is us who would have authorised the private company to supply a service to customers. Our customers should therefore not feel that if it was WUC providing this service they would be leaving a better live. They must be satisfied that the private party is not cheating them because WUC would be ensuring that that happens. WUC must maintain the overall responsibility even if we give away the job away to a third party.

I: Maybe the last one being a general question. The WSR centralised water services on WUC. What are you views regarding this because other countries are going the opposite direction, they are liberalising the market.

R: No, I wouldn't agree with you, I do attend international conferences for some of these things. They are reforming so that there is centrality in it and then they are giving out jobs in terms of contracts, PPPs, outsourcing, all types of partnerships so that the overall responsibility is there but actual operating is given to third parties. If you leave water issues being such a critical resource to an open market, you would then be killing you people. The problem here is the nature of the product being served.

Maybe telecommunication and power, maybe power not to that extent because power is right behind us interim of it being a critical economic commodity. You would then say you could hive these out to private parties, but with water, if someone did not receive a service simply because a company is watching its bottom line, an individual's life is finished. The quality or value of a particular country is measured in terms of the way its people live which is why access to water is a key component. So countries have done what we are trying to do at the moment, we are actually late in to

the game. If you go to Lesotho, there is a company called Water and Sewage Authority of Lesotho (WASA). They have been doing what we are going into for years and we have been critiquing their way of managing water. If you go to Johannesburg, you will find Johannesburg water being hived off by the central authority to deal with water for the Johannesburg area. What they found out is that simply liberalising without controls dehumanises the recipients of the product because water have the capacity to make an individual seriously in-dignified.

[Phone rings]

R: So what we are doing is the first step in a bigger picture. It is inevitable that we cannot carry the whole burden ourselves but we must start by centralising so that we can focus. Once we achieve a certain level of efficiency in our learning curve then we would say we cannot achieve absolute efficiency without giving out jobs to private parties because it is much easier to manage an operation that carrying it out.

I: I think you have wrapped it up with that component of the discussion as it has clarified your view particularly on the WSR.

R: We are all headed towards all sought of partnerships with the responsibility being on the WUC because the WSR we never meant to centralise water services on the WUC. The aim was to harness the already existing efficiencies so that when we issue out services we do that in a focused way.

I: Thank you very much for the time given for this interview

[Interview ends]

GABORONE HEAD OFFICE
Sedibeng House,
Lot 17530 Luthuli Road

PRIVATE BAG 00276,
Gaborone. Botswana
Te: (0267) 360 4400
Fax: (0267) 397 3852
Email: metsi@wuc.bw

Our Ref: WUC 3/1/2 **September, 12 2012**

Thekiso Molokwane
P. O. Box 301889
Tlokweng

Att: Molokwane

Dear Sir/Madam

RE: REQUEST FOR PERMISSION TO UNDERTAKE RESEARCH AT WATER UTILITIES CORPORATION, LOBATSE MANAGEMENT CENTRE, FROM 25/09/2012 TO 12/10/2012.

With reference to your letter dated **14Th August, 2012**, the Corporation is pleased to grant you provisional permission to undertake your proposed activities at its dam. This permission is granted with the proviso that you strictly adhere to the following conditions;

1. Your activities shall be conducted in a manner that does not pose any pollution threat to the dam waters and environs, or degradation thereof,

2. You shall conduct your activities in a manner that complies with the Corporation's ethics, regulations and standards,

3. WUC shall not be held liable for any safety or security related matters that may arise during the execution of your activities,

4. You share your findings with WUC

5. You shall produce this letter to the Security and/or WUC personnel at the dam to gain access.

You are also informed that WUC shall from time to time monitor your activities for compliance with the above stated conditions and the overall provisions of its Environmental Management Policy.

WATER UTILITIES CORPORATION
PUBLIC RELATIONS OFFICE
RECEIVED
14 OCT 2013
SIGNATURE
SEDIBENG HOUSE
PRIVATE BAG 00276, GABORONE

In case of any clarifications on this matter please contact the Public Relations Office at Tel: 3604500/4484

Yours faithfully,

Matida Mmipi

CORPORATE COMMUNICATIONS MANAGER

cc: Water Resources Manager
Lobatse General Manager

Permits validity extended up to 30 November 2013; please assist accordingly

14/10/13

WATER UTILITIES CORPORATION
PUBLIC RELATIONS OFFICE
RECEIVED
14 OCT 2013
SIGNATURE .....
SEDIBENG HOUSE
PRIVATE BAG 00275, GABORONE

TELEGRAMS: PULA
TELEPHONE: 3950800
TELEX: 2655 BD

REPUBLIC OF BOTSWANA

OFFICE OF THE PRESIDENT
PRIVATE BAG 001
GABORONE

OP 5/59/ 8 X (35)

07th August 2012

Mr Thekiso Molokwane
P.o Box 301889
Tlokweng

Dear Sir

RE: APPLICATION FOR RESEARCH PERMIT

Please refer to your application for a research permit dated July 13, 2012.

You are herewith granted permission to conduct a research project entitled **"The impact of Public Private Partnerships on the delivery of water service in Botswana, the case of Lobatse Management Centre."**
The permit is valid for a period not exceeding seven months from August, 2012 until December 2012.

The permit is granted subject to the following conditions:

i. Copies of any report/ papers written as a result of the study are directly deposited with the Office of the President.

ii. The permit does not give authority to enter any premises, private establishment or protected area. Permission for such entry should be negotiated with those concerned.

iii. You conduct the project according to the particulars furnished in the approved application taking into account the above conditions.

iv. Failure to comply with any of the above stipulated conditions will result in the immediate cancellation of the permit.

Yours Faithfully,

Lindah K. Modisaotsile
For/ PERMANENT SECRETARY TO THE PRESIDENT

Copied to: Permanent Secretary-Ministry of Minerals, Energy &Water Resources
Permanent Secretary-Ministry of Finance & Dev. Planning