

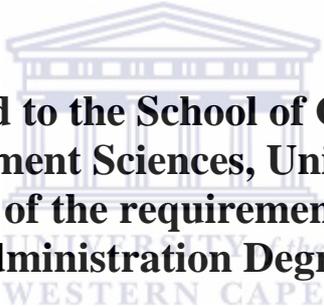
**AN ASSESSMENT OF THE SOCIAL CONSEQUENCES OF
WATER MANAGEMENT DEVICES ON THE POOR IN
SAMORA MACHEL, CAPE TOWN**

By:

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**A Full-Thesis submitted to the School of Government, Faculty of
Economics & Management Sciences, University of the Western
Cape, in fulfillment of the requirements for the Master of
Administration Degree**

The logo of the University of the Western Cape is centered behind the text. It features a stylized building with a pediment and columns, with the text 'UNIVERSITY OF THE WESTERN CAPE' written below it.

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ABSTRACT

This study assesses the social consequences of water management devices in poor households in Samora Machel, a poor urban area characterised by high levels of unemployment and poverty. South Africa is currently faced with an increase in the roll out of water management technologies, mainly in poor areas, allegedly to manage water demand and help poor households manage their water consumption and prevent wastage. The water management device (WMD) limits access to the free basic water (FBW) allocation and automatically cuts it off when the allocation is finished. In 2009/2010 the City of Cape Town started rolling out the devices in Samora Machel, which previously used the conventional water meter that supplied the area with unlimited water access. WMDs limit water access to 350 litres of FBW per day. People living in Samora Machel claim that 350 litres is not enough and they are experiencing problems of frequent water cuts even before the allocated litres are used up. There have also been water leaks ever since the installation of the devices.

Section 27(1)(b) of the Constitution of the Republic of South Africa, Act 108 of 1996, entrenches the right of access to sufficient water. The WMDs are criticised for infringing the right of access to sufficient water supply to poor households by leaking, cutting off water supply frequently and by limiting access to FBW supply. Moreover, critics argue that the WMDs are not water-demand management mechanisms; they are cost-recovery mechanisms that are introduced under the neo-liberal policies introduced by the post-apartheid government in 1994. This criticism is based on the fact that the WMDs are implemented in poor areas only, where water is needed more for basic survival, rather than in high-income areas, where water is mostly used for luxury purposes.

Section 152(e) of the Constitution further encourages the involvement of civil society in local government matters. However, residents state that there was relatively little public participation or engagements in Samora Machel before the implementation of WMDs. Due to such challenges residents are threatening to rip the devices out (Donne, 2009:3).

Therefore, there is a need to assess the impact of WMDs on poor households, as the implementation of the WMDs has caused unevenness in the distribution of water as a socio-economic right.

The main objective of this study is to determine the impacts of the implementation of WMDs on poor households in Samora Machel. Specifically, this will be achieved by determining the extent of community participation in the implementation of WMDs, how the WMDs affected households' access to water in Samora Machel, and what households' perceptions are about the implementation of WMDs in Samora Machel. The study consists of both qualitative and quantitative methodologies. The qualitative methods that are used in the study are books, journals and internet sources and 14 in-depth interviews with residents of Samora Machel. Furthermore, 208 quantitative interviews were conducted with residents from Samora Machel using a semi-structured questionnaire containing of both open-ended and closed questions. The data from the questionnaires was captured and analysed in the IBM SPSS Statistics 19.

Key Terms

Water Management Devices (WMDs)

Cost-recovery

Consumers

Free Basic Water (FBW)

In-house water display unit

Main dwellers

Backyard dwellers

Public Participation

Dual flush toilet system

Tagged stand pipes



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ACRONYMS

FBW	Free Basic Water
CCT	City of Cape Town
CSA	Customer Services Agents
WMDs	Water Management Devices
RSA	Republic of South Africa
ICESCR	International Covenant on Economic, Social and Cultural Rights
WDM	Water Demand Management
DWAF	Department of Water Affairs and Forestry



CHAPTER 1

AN ASSESSMENT OF THE SOCIAL CONSEQUENCES OF WATER MANAGEMENT DEVICES ON THE POOR IN SAMORA MACHEL, CAPE TOWN

1.1 Introduction

There is undoubtedly an element of discrimination in the way in which poor households are the targeted recipients of punitive water demand management strategies. This is evident in Cape Town, as well as other South African municipalities. It is a discrimination built into the political economy of local government, where those who can pay are treated better than those who cannot. Cost recovery itself is discriminatory in a country with such high income disparity. Some city officials genuinely believe that the water management device is a holistic solution [in] that it helps the City manage debt, saves water, helps people identify leaks quickly, and gives people a way out of debt, and therefore, presumably, a way out of poverty. But this reveals such a limited understanding of poverty and of what is required to overcome it. Apart from the many direct ways in which WMDs make people's lives worse, by restricting their access to water and being a source of confusion and conflict, the very notion of using a piece of technology (complete with tamper-proof wires) to regulate and limit household water use reveals a short-cut mentality, and a mentality of control at any cost. It keeps people in a state of frustrated dependence (Wilson and Pereira, 2012:16).

This quotation gives an overview of how the implementation of water management devices (WMDs) has negatively impacted on water access in poor areas, where households are in desperate need for water for basic survival. The views of the authors quoted above are one of the reasons which have triggered this study. The right of access to sufficient water is recognised at the constitutional level: Section 27(1) (b) of the Constitution of the Republic of South Africa, Act 108 of 1996 where it underpins the whole law and water policy framework. Chapter 2 of the Constitution contains a comprehensive Bill of Rights that embraces human rights principles, including the right of access to sufficient water supply. The Constitution further obligates the state to take reasonable measures to realise this right.

In order to understand the roll-out of WMDs, it is important to understand the two schools of thought that emerge from water demand. The first perceives water as an economic good

which has to be priced in order to ensure that it is used appropriately and not wasted. The second school of thought perceives water as a human right and, as such, argues that everyone is entitled to have water at no cost. Perceiving water as an economic good in South Africa came to include different forms of privatization. These include the operation, management and maintenance of the water systems; laying new pipes and making new connections; meter installation and reading; debt collection; and carrying out disconnections (Mbazira, 2005:2). It is important to further clarify at this stage that the South African government disagrees with the fact that it has privatised water services. However, as Mbazira (2005) argues, privatization takes different forms: from complete divestiture, to leasing concessions, servicing contracts, public/private partnerships, and operation and management arrangements including outsourcing, which some municipalities have undertaken in water services provision.

Therefore, this study aims to show how the implementation of WMDs that are criticised of being a form of privatization impact on poor households' water access. According to Utility Systems (2009:1) a WMD can be defined as a low-cost electronic valve that is able to control the flow of water dispensed to a fixed daily quantity, thereby providing the ability to limit a consumer to a finite or pre-negotiated level of water supply. The City of Cape Town (CCT) started rolling out these devices in poor areas in 2007. The devices were installed under the CCT's Water leaks Repair Project as means to manage water demand. According to CCT (n.d), although the project is referred to as a 'leaks repair' project, the purpose is to ensure that all aspects around delivery of water and sanitation services to poor communities are addressed. It further states that the end goal is to save water and ensure households only consume the amount of water they need and can afford. The project must also ensure that future leaks must be minimised and repairs must be affordable to households (CCT n.d).

The WMDs are programmed to limit indigent households to 350 litres of free basic water (FBW) per day. It automatically stops when this quantity is used up and opens up the following morning at 4am. Poor households' responses to such limitations have been anger and distress. Bond et al (2012) blame the installation of such mechanisms on the neo-liberal system adopted by the South African government after the end of the apartheid regime. They state further that the apartheid regime enforced racial and spatial divisions within society, which caused uneven development in both divisions in almost imitated forms. In addition:

The systematic separation of racial groups, the profound underdevelopment of black areas, and the racial segmentation of labour markets suggested to many that the fight against apartheid was coterminous with the fight against capitalism (Bond, et al 2012:para 54).

Furthermore, while it is correct that capitalism and racism were jointly strengthened during the 20th century, the main mistake made by activists was in thinking that conquering one durable but ultimately conjectural influence of discrimination, apartheid, would bring the capitalist system down (ibid). However, when the African National Congress- (ANC-) led government adopted neo-liberal policies which promoted cost-recovery in the provision of public services through the Growth Employment and Redistribution Programme (GEAR),¹ clean water instantly became a commodity which the poor population could not afford to pay for and many had their water cut off. As a result, according to Dugard (2008:8), cost-recovery and maximising returns from delivery of water services have become the main factors of water services delivery instead of social or developmental benefits. Within this commercialised framework, water is viewed and measured primarily as an economic good, although with some obligatory concerns to social justice.

The state has the responsibility to guarantee that everyone has physical access to water. According to Earle et al (2005:14), this means that the facilities that ensure access to water must be located in an area that is physically safe for all sections of the population, especially for vulnerable and marginalised groups. It is the state's responsibility to guarantee that everyone has economic access to water services. Earle et al (2005:14) states that this implies that people should be able to gain access to water without necessarily sacrificing access to other basic services, therefore it is important to guarantee that the cost of water access is protected.

The Free Basic Water Policy was introduced in 2001. It aims to ensure that people have access to a basic water supply by subsidising the operating and maintenance costs of the current basic water supply services. However, Muller (2008:72) states that in 2000, the initial policy assumptions already showed gaps, which meant that the policy had to be reviewed to ensure that the aim of supplying all South Africans with water supply was accomplished.

¹ GEAR is a macroeconomic strategy adopted by the Department of Finance in 1996 as a five year strategy aimed at rebuilding and restructuring the economy (RSA, 1996:1).

There was also a need to reflect on the newly established local government structure. The fundamental aim of reviewing the policy was to deal with the general financial sustainability of municipal water services (Muller, 2008:72). This had to further guarantee that the main objective of ensuring that all South Africans have access to safe water services was achieved. It was within this framework that the approach to prices and tariffs was reviewed. The introduction of the tariff system has been shown to have negative implications on poor households. One of the major reasons is that households in poor areas pay more for water services compared with households who live in high income areas. The inability of poor households to pay for water services has resulted in the municipality disconnecting the water supply of those households who cannot pay their municipal bills. Furthermore, Dugard (2008:4) states that the Department of Water Affairs and Forestry (DWAF) has failed to engage its regulatory powers in the social interest to intervene when people's right to sufficient water access is not protected by municipalities.

The failure to protect people's rights to sufficient water access has led to cases such as *Mazibuko and Others vs. City of Johannesburg and Others* (Southern African Legal Information Institute, 2009). *Manqele vs. Durban Metro Council* (Prada, 2011:91) and *Residents of Bon Vista Mansions vs. Southern Metropolitan Local Council* (Community Law Centre, 2002), which are discussed in depth in chapter 2. These cases show that beyond formulating a baseline, which is the national Free Basic Water Policy, DWAF never intervenes to enforce it.

The introduction of water demand management mechanisms such as water meters that limit water access for the poor are criticised of being unconstitutional. These water meters abuse human and socio-economic right to water by denying sufficient access to clean water to those in most need. Instead, water meters that limit water access force poor families to use unsafe water sources once they lose their ability to pay (Water for All, n.d:1).

A reduction in water consumption by the poor, particularly to levels of critical deprivation, is unequal with broader goals of equity and alleviating the fundamental constraints of desolation in South Africa (Smith, 2010:604).

According to Water for All (n.d:1) water meters that limit water access facilitate effective water demand management in a very unethical manner in that when people are unable to

afford the charge beyond the FBW supply, they are simply cut off. Furthermore, Water for All (n.d:1) states that studies have shown that these water meters have reduced the demand for water by up to 65%, leaving poor consumers with the bare minimum of water for their daily consumption. Donne, (2009:3) argues that it is not in the wealthy suburbs of Cape Town, where there are pools to fill and luxurious green gardens to water, that the water management devices are being rolled out. It is in the dry, dusty and barren ghettos of Mitchell's Plain and the townships of Khayelitsha, where water is mostly needed for basic survival (Donne, 2009:3).

Moreover, citizens are required by law to participate in government decision making. The Constitution requires all government spheres, particularly the local sphere, to involve the public in decisions that are aimed at improving their lives. Furthermore, the introduction of public participation was further realised in the water sector in the early 2000s, when water provision was decentralised to the local sphere as this is the sphere closest to the people. The aim of decentralization was to involve communities in the water sector. However, government officials often see public participation as time consuming, and they thus purposely do not adopt participatory approaches; instead, they simply make decisions on behalf of citizens (Public Service Commission, 2008:11).

Lack of public participation in the implementation of WMDs is one of the key challenges that Samora Machel faces and have impacted in the negative attitudes of residents towards the WMDs. Residents claim that the City of Cape Town failed to properly engage with them before implementing the devices in the area. This is a violation of section 152 of the Constitution. Donne (2009:3) argues that the implementation of WMDs without allowing the residents to give their views and concerns about the devices shows that the implementation of WMDs within current policies is not about the prudent or cautious distribution of a declining resource: it is about cost recovery and ensuring that only those that can afford to pay for water are entitled to it. This in-depth study is part of a broader study funded by the Water Research Commission looking at WMDs' impact on poor households in Cape Town and Durban. This study aims to look at the social consequences which the poor face after the WMDs are implemented in their communities, using Samora Machel as a case study. In this regard the study will argue around the issues of the right of access to water and the responsibility of government to promote public participation in the decision making process and how the WMDs implementation has impacted on these.

1.2 Description of Samora Machel

Samora Machel is a poor urban area in Cape Town, situated along Vanguard Drive and the R300 freeway. It is bordered to the north by the Mitchells Plain/Khayelitsha railway line. See Figure 1.1 below for a map of Samora Machel's location. Samora Machel was first settled in 1993 when the land was invaded and an informal settlement set up. The informal settlements in the area grew rapidly, from between 245 shacks in February 1994 to 735 shacks by November 1994 and 1 010 by June 1995 (Anderson, et al 2009:6). Government then sought to develop the area under the integrated serviced land project. 'The area was created to meet the residential needs of low income families who were moved from areas such as Crossroads, Gugulethu, Langa and other surrounding areas' (Heinz and Hinrichsen 2004:314). Furthermore Heinz and Hinrichsen (2004:314) state that when Samora Machel was created, the project was regarded as an experimental or pilot project for higher-density housing in the Western Cape on the basis of its design and aims. The area is made up of brick structures as well as informal settlements. Community representatives feel that the supply of brick houses improved the standard of living in the area where previously almost all the people lived in informal dwellings.

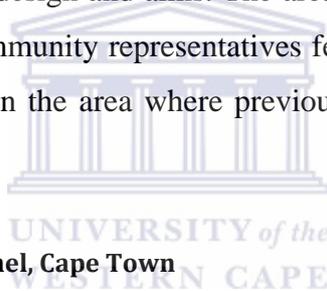


Figure 1.1: Location of Samora Machel, Cape Town



Source: Google Maps (2014)

Due to the rapid growth in the area, it now faces challenges of overpopulation. The population size of Samora Machel is 14 885 (CCT, 2009). According to Rendall et al (2005:8) the average monthly income is less than R800. The poor spend over 50% of their income on food, and, those that do have jobs spend up to 25% of their income on transport (Rendall et al, 2005:8). Since the area is a low-income area there are high levels of poverty. For households to generate income they have backyard dwellers who rent from the land occupiers . The high unemployment rate and poverty in the area have triggered criminal activities.

Incidences such as housebreakings increase rapidly in the area. Other criminal activities involve assault of women and children as well as missing children. The government is not proactive in this regard and the community needs government support (Heinz and Hinrichsen, 2004:4).

Furthermore, with issues of some of the land being illegally occupied with no legal tenure Samora Machel faces a major challenge of lack of basic service delivery. According to Maqoma (n.d:1), there are informal dwellings without any access to basic services such as water, toilets and electricity. In order to access basic services backyard dwellers use the land occupiers services or ask from other community members depending on the availability of the service within the plot or the agreement they have with land occupiers. However, Samora Machel is one of the few areas where the CCT complemented WMDs with tagged standpipes, in-house display unit and the dual flush toilet system. According to the CCT these devices are meant to assist with water access in the area. The CCT describes the devices as follows: first, the in-house water display unit is a device that reads the WMD meter and indicates how much water is left. It also informs the land occupier owner if there are leaks. Secondly, the dual flush toilet system has two distinct buttons which allows minimal water for liquid waste and more water for solid waste. Thirdly, the tagged standpipes were implemented after the WMDs project to assist with water access. They were specifically implemented for backyard dwellers. They are water meters that dispense 250 litres of FBW water only when one inserts a tag (key).

This study aims to determine how the WMDs have impacted on poor households' right to water access and which public participation instruments were used in their implementation.

1.3 Significance of the study

The Constitution binds government to ensure the realisation of the right of access to water services in section 27(1)(b). The requirement of the right of access to water should be achieved economically and physically. This requirement is protected by section 27(2) of the Constitution which gives the state the responsibility to take practical steps and procedures within its available resources to ensure that the right of access to sufficient water is achieved. Gowlland-Gualtieri (2007:8) states that the economic approaches to water management embraced by the South African water legislation makes it challenging to ensure the realisation of water (including the provision of a basic water supply) as a human right. Furthermore, Gowlland-Gualtieri, (2007:8), states that water legislation adopted in 1994, which embraces cost-recovery, is accused of obstructing the fair and equal provision of clean water services mainly to the poor population.

The application of economic approaches to water caused many poor households to be unable to afford water services, which have further led to water disconnections and the implementation of water demand management (WDM) mechanisms that are criticised of being cost-recovery oriented, leaving poor households without any water access or with insufficient water access. Bertone et al (2009:12) quote Siphosiso Mosai, who was the CCT's Director of Water and Sanitation, as stating that the WDMs project was introduced due to the increased water demand caused by the rapid increase in population. Challenges became worse due to economic development, climate changes that affected rainfall levels, and extensive water losses through leaks. However, it is only in poor areas where these devices are implemented whereas excessive water use is often found in rich areas where most water is used for luxury purposes. The roll-out of the WDMs from the outset aroused deep feelings of mistrust within many communities and members of civil society in Cape Town. They are viewed as prepaid meters in disguise (Wilson and Pereira, 2012:2). The human right to water is crucial for leading a life in human dignity. Mwebe (2004) states that although South Africa has made some progress towards building democratic institutions and respect for human rights, the country still faces challenges of income inequalities, with a significant part of the population living below the poverty line. This inevitably means that many people, just like in other developing countries, are dependent on government for the provision of basic services like water (Mwebe, 2004:5).

In Samora Machel, where this study is based, the CCT started rolling out the WMDs in 2009/2010 and introduced this strategy as a pilot study to the community. The community argues that the basis of the decision to move from pilot study to full-blown roll-out was never communicated. Furthermore, no public participation approaches were implemented before the devices were implemented. As discussed above, Samora Machel is a poor urban area where a high population density is one of the challenges. The implementation of WMDs which limit water supply makes water access a major problem and in this regard, the devices are infringing citizens' right of access to sufficient water. Findings of this study will therefore reflect on how the implementation of WMDs as the CCT's strategy to manage water demand has impacted on the lives of poor households.

1.4 Problem statement

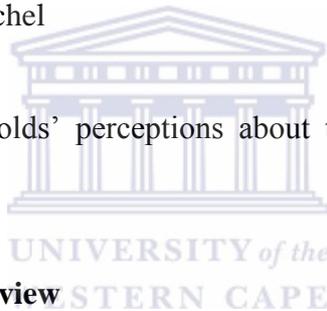
South Africa is currently experiencing an upsurge of the roll-out of many different types of water-supply volume-control devices as means of controlling the usage of water. The CCT is one of the municipalities that have rolled out such devices. In 2007 it rolled out water management devices in poor areas. They limit water access to 350 litres of FBW per household per day. The introduction of the WMDs has faced severe criticism from social analysts and residents in areas where the devices are implemented. In some places public resistance and litigation have followed the implementation of these water-supply volume-control devices. Critics argue that if the devices are meant to manage water demand then why they are implemented only in poor areas where water is mostly used for basic survival, and not in high-income areas where more water is wasted on luxuries (swimming pools, and watering of lawns)?

Furthermore, the devices are criticised for not taking into account the social justice or human rights approach, namely that water is an inalienable right to which everyone should have unrestricted access regardless of their economic conditions. The WMDs, like other water-supply volume-control devices, are criticised for supplying water on the basis of who can afford to pay for sufficient access. The devices are further criticised of leaking and sometimes they fail to dispense water. Moreover, there are allegations that the devices were implemented without any prior or proper community engagement with the affected households. Hence, this study aims to assess the social consequences of the WMDs on the poor, using Samora Machel as a case study.

1.5 Objectives of the study

With the above given problem this study documents the impact of water management devices on poor households' water access in Samora Machel, Cape Town. More specifically, the study investigates the perceptions of households, mostly with low incomes and which have limited access to resources, about both the opportunities and challenges that these devices present to them. This information will provide insight into how these devices infringe the right of access to water and what methods were used to notify the community about the devices. The aim of this study is to determine the impacts of the implementation of WMDs on poor households in Samora Machel. The study aim is articulated through three further specific objectives which are:

- To determine the extent of community participation in the implementation of WMDs
- To determine how has the implementation of WMDs affected the water access of households in Samora Machel
- To determine the households' perceptions about the implementation of WMDs in Samora Machel



1.6 Preliminary literature review

1.6.1 Water legislation

In 1994 South Africa adopted a neo-liberal water law and policy framework. Literature shows that this legislative framework has proven to work against the constitutional goal of healing the divisions of the past and establish a society based on democratic values, social justice and fundamental human rights. The new legislation emphasises cost recovery and the implication of this policy has negatively affected poor households. Water became a commodity for which the poor households cannot afford to pay and this led to water cut-offs. Furthermore, literature shows that as much as the Bill of Rights is binding it is not restrictive enough to ensure that government does not by-pass its responsibility to ensure that the right of access to water and the other rights contained in the Bill of Rights are met. Section 27 (2) of the Constitution states that the state must take reasonable legislative and other measures, within its 'available resources', to achieve the progressive realisation of each of the rights (RSA, 1996:1255). This obligation is not binding enough to ensure that government carries out its

obligation to meet the right of access to sufficient water and other rights contained in the Bill of Rights.

1.6.2 Cost recovery and the right of access to water

South Africa has a background of oppression and segregation, which has been the major cause of the country's unequal distribution of resources, including water. According to Scherrer and Saha (2013:12) South Africa's gini-coefficient is still at its peak: it stands at 0.70 and is one of the highest in the world. This is an indication of the great gap between the rich and the poor. A review of the literature reveals that the adoption of neo-liberal policies, which aim to recover costs in delivering basic services such as water, has shown to increase the challenge of inequality from which South Africa has been battling to recover over the years.

The introduction of cost recovery in the water sector induced the implementation of WDM strategies such as the WMDs, which are criticised for being cost recovery oriented rather than ensuring water demand is managed. According to Stalker and Komives (2001), water systems in developing countries must provide services that are safe, desirable, and affordable to consumers and they must also ensure an institutional and commercial system capable of actually recovering costs. These often conflicting goals have significant political and economic implications. The effort to balance them is particularly challenging in developing countries and can lead to the implementation of price structures that do not help meet either goal and, in fact, have an adverse impact on poor consumers (Whittington et al, 2002:67). The literature further reveals that in South Africa, poor consumers are charged more for water services compared to high-income earners. McDonald and Pape (2002:28) explain that the cause of high tariffs in poor areas is both the lack and ageing of infrastructure, which governments has to implement and replace due to poor maintenance by the apartheid regime. However, due to factors such as unemployment, poverty and inequality in poor areas, some residents living in these areas cannot afford to pay for basic services, including water.

This has led to situations whereby poor households end up not paying their water bills and have their water completely cut off. According to Whittington (2003:63) the equal division of the fixed costs between consumers, and charging the marginal costs on all consumed water units, is the simplest two-part tariff structure that guarantees that the utility breaks even.

Whittington (2003:63) states that setting water tariffs requires that one strike a balance between the following four main objectives:

- 1. Revenue Sufficiency:** From the water supplier's point of view, the main objective of water tariffs is often cost recovery. Therefore, income from water users should be sufficient to pay the operation and maintenance costs of the water utility's operations, repay loans undertaken to replace and expand the capital stock, provide a return on capital at risk and maintain a cash reserve for unforeseen circumstances. The revenue stream must be adequate enough to attract both equity capital and debt financing. The revenue stream should preferably be relatively stable and not cause cash flow or financing challenges for the utility.
- 2. Economic Efficiency:** Economic efficiency involves the setting of prices in a way that ensures consumers face the avoidable costs of their decisions. Therefore, the pricing of water should be set in such a way that indicates to consumers the all the costs related to the way they choose to use water and what impacts these have on the rest of society. From an economic efficiency point of view, a tariff should create incentives that ensure, for a given cost of water supply, that consumers gain the largest possible total benefits. This means that volumetric water charges should be set equivalent to the marginal cost of water supply. When the amount of water is constrained and there is water scarcity, it is usually presumed that the marginal cost of water supply can be approximated by the average incremental cost (AIC), i.e. the average cost of water from the next water capacity expansion project. Alternatively, the AIC of additional water may be the unit cost of reducing unaccounted-for water.
- 3. Equity:** Equity means the tariff should be set in a way that treats similar consumers equally, and that consumers in different circumstances are not treated the same. This means that water users are charged monthly according to the amount of water they consume.
- 4. Poverty alleviation:** Many people perceive water as a basic right which they are entitled to, regardless of their inability to pay. This notion leads to a situation whereby people recommend that water services should be supplied free, especially to the poor

population. Providing water free through private connections conflicts with the objectives of cost recovery and efficient water use (Whittington, 2003:63).

Striking a balance between the above objectives has been shown to be a challenge, especially in the context of South Africa where water is perceived as a social good and economic mechanisms are applied to manage it. Given that poor households live under excruciating conditions, they need water for basic survival and in some instances for livelihood purposes (such as watering of food gardens). The roll-out of WMDs which limit water supply to FBW in poor areas is criticised for infringing the poor's right of access to sufficient water. The devices created a situation where those who can afford to pay for water have unlimited access and those who cannot are limited to the FBW supply.

1.6.3 Significance of public participation in the water sector

Increasing the involvement of communities in the water sector, can have a substantial positive impact on livelihoods. Krchnak (2005:37) states that increased civil society engagement serves as a vehicle to integrate social and environmental goals in approaches to water management, and as an instrument of accountability. It will help ensure involvement and ownership of decisions by local populations and address the needs of the poor, the people whose opinions and ideas are most often muted in development decisions.

In South Africa public participation in the water sector was introduced in the early 2000s when the responsibility for water services was decentralised to local government since it is the sphere closest to the people. Section 15 (e) of the Constitution mandates local government to consult the public about the level of service they will receive. Other legislative frameworks that promote public participation include the Municipal Systems Act No. 32 of 2000, the Municipal Structures Act No. 117 of 1998 and the Batho Pele White Paper on Transforming Public Service Delivery. With all these laws and policies in place the literature shows that there is still a massive lack of public participation in government decision-making processes. Strategies are often implemented in communities without any, or proper, engagement by residents.

1.7 Limitations of the study

The major limitation encountered in the study was the challenge of safety, especially during the collection of the quantitative data. The area has a high crime rate, which includes drug

abuse, and moving from one household to another in an unsafe area without knowing what might be encountered on the way to the next plot, or even within one plot, was risky and dangerous. This resulted in a situation where, after every plot visit, the male data collector had to wait for the female data collector before proceeding to the next plot. This affected the study in that time was wasted and the data collection period was longer than planned. The second challenge was the poor willingness of people to participate in the study. Some community members refused to participate since they were not going to receive any incentive for their participation. This also prolonged data collection. It was further challenging to secure interviews with CCT officials, some cancelled meetings and some indicated that they were not available. This was a challenge because not much data was obtained from the CCT's officials most of the data contained in this study was from the community and secondary data was used to capture the CCT's views.

1.8 Structure of the study

Chapter 2 gives a discussion of relevant literature. It starts by providing background on the two schools of thought – that which perceives water as a public good, and that which perceives water as an economic good – and the impact these have on water demand management. In this regard further an outline is given of water legislation in connection to cost recovery and its impact on the of water demand management mechanisms such as WMDs. The introduction of public participation in the water sector through the decentralization of water services from national to local government is also outlined. Moreover, literature concerning the most commonly used water meters in South Africa is presented and empirical cases on the impact of water privatization on poor households are also discussed.

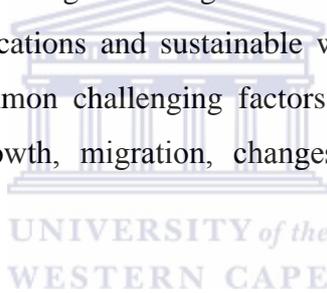
Chapter 3 outlines the conceptual analysis of public participation and its implementation in the water sector. The chapter gives definitions of public participation, provides a general overview of public participation in South Africa, and presents a framework of public participation and public participation in the water sector and the implementation of water demand management mechanisms in South Africa. Chapter 4 consists of two broad sections which are the research methodology and the analysis of the findings on WMDs in Samora Machel. Chapter 5 is the concluding chapter of the study. It gives a summary of the main findings of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Water demand management is defined as the management of the total quantity of water abstracted from a supply source by using methods that ensure that water wastage and unjustified consumption are controlled (Herbertson and Tate, 2001:4). Moreover, Savenije and Van der Zaag (2002:100) state that water demand management should not be seen as only targeting a decrease in water demand or achieving higher water-use efficiencies. Water demand management is another approach to water resource management that is different from the traditional supply management, intended at increasing the supply whatever the demand. Water demand management differs from water supply management which mainly targets the supply of water whereas demand management targets the users of water services with the aim of achieving more desirable allocations and sustainable water uses (Savenije and Van der Zaag, 2002:100). The most common challenging factors which impact on water demand management are population growth, migration, changes in people's lifestyles and the demographic structure.



There are two schools of thought about water demand management. The first perceives water as an economic good which, due to its scarcity, needs to be conserved by making users pay for it. The second perceives water as a social good that is intended for everyone on an equal basis, the supply of which should be subsidised by government. Scholars such as Reddy (n.d:26), state that there is now an agreement at several levels that water is a scarce resource that needs to be treated as an economic good and be priced at its economic value. The market will then ensure that the water is allocated to its best uses (Reddy, n.d:26).

It is important to price water on the basis of cost because it does not only assist with financial benefits but it ensures that water is used efficiently and not wasted. Furthermore, Savenije and Van der Zaag (2002:98) states that water is an essential need which is limited and scarce by nature, therefore water scarcity strengthens the argument that water is an economic good, and therefore due to its scarcity it cannot completely satisfy the demand for all its different uses. The price of water should reflect its value so as to achieve the efficient use of water as a resource.

A water market is an effective instrument to reach efficiency of allocation. In fact, the concept of water as an economic good implies that decisions on the allocation and use of water should be based on a multi-sectoral, multi-interest and multi-objective analysis in a broad societal context, involving social, economic, environmental and ethical considerations (Savenije, 2002:741).

Furthermore Savenije and Van der Zaag (2002:741) state that the water market differs: some water consumers have a high willingness to pay and consume small quantities of water, and others have a low willingness and ability to pay but consume large quantities of water. With such challenges these consumers cannot be merged into one market. In this regard as much as Savenije and Van der Zaag (2002) perceive water as an economic good they share different views from those of Reddy (n.d), in that they do not agree with the idea of the market determining the price of water.

Van Der Zaag and Savenije (2006:7) state that allowing the market to determine the price of water has proven to be at odds with the notion of integrated water resources management, as it will not inevitably lead to the required water allocation and water use by consumers due to different types of market failures. They further believe (Van Der Zaag and Savenije, 2002:100) that although water is the same, the notion of water demand differs according to the quantity, quality and the reliability of the resource. Hence, adjustments between the different consumer classifications ought to be made through political priority setting, rather than the market. A suitable water price can be determined within one of these classifications, however this is not suitable to be used between sectors. WDM efforts should concentrate on areas where the largest relative environmental, social and economic benefits can be achieved. In principle, WDM should be implemented where the net marginal social benefits are higher than those of other interventions (Savenije and Van der Zaag, 2002: 100).

Perceiving water as an economic good requires one to make well-versed choices as to how water will be allocated, conserved and used.

Water pricing as such is a financial issue, which should serve the purpose of financial sustainability through cost recovery, often if not always combined with cross-subsidies (Van Der Zaag and Savenije 2006:7).

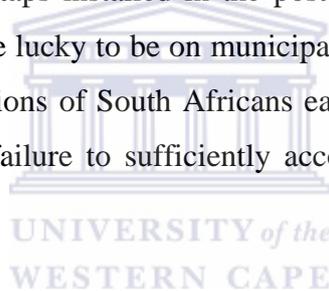
The pricing of water will give a clear indication to consumers that water is truly a scarce resource that requires consumers to use it economically. Treating water as an economic good by pricing it stimulates conservation, controls demand and encourages the efficient use of water for highly valuable uses (Van Der Zaag and Savenije 2006:7). According to McDonald and Pape (2002:22) cost recovery is necessary to sustain water services on a long-term basis. Without cost recovery the state will not have the funds to invest in future service delivery and infrastructure upgrades and extensions. Cost recovery is perceived as pro-poor because it provides the financial basis for further service improvements and expansion (McDonald and Pape, 2002:22).

In South Africa, water demand management entails efficiently using and saving water which can be achieved through measures such as water saving devices, water efficient processes, water conservation and demand management and water limiting mechanisms, the prime target being water pricing that will ensure cost recovery (Van Der Zaag and Savenije 2006:7). It is important to note that in order for water pricing to be effective, water policies should also be based on the notion of cost-recovery. This will give clear directions as to how the water pricing should be implemented. These policies will further ensure cost recovery tools are complemented by WDM mechanisms that encourage coordination between various water agencies and enforcement bodies (Van Der Zaag and Savenije 2006:7).

Moreover, policies will guide the implementation of water demand management strategies that encourage decentralisation and encourage the participation of the various stakeholders so as to broaden the role of communities in water management. However, other scholars dispute the notion of water as an economic good. These scholars believe that water is a public good, and the state holds the custodianship over the resource for public interest. They believe that the state holds the obligation to manage the resource as a whole in order to maximise the benefits that the entire society derives from it. Thompson (2011:27) states that water is also a human right: all people are entitled to have adequate access to clean water for their basic personal and domestic needs, and argue that treating water as an economic good is not compatible with managing it as a public good or a human right. In the 1980s and 1990s the World Bank and donor agencies promoted a strategy to develop water systems in developing countries through privatisation. This was expected to deliver finance for investments, efficiency improvements, and better governance than they believed possible through the public sector in developing countries (Hall and Lobina 2008:6).

Moreover, Hall and Lobina (2008:6) states that through the introduction of privatization it was expected that multinational companies would be drawn by a new profitable market and that privatization would be welcomed by a society which is disillusioned by the inefficiency and corruption that the World Bank linked with the public sector. This experiment has now clearly failed, on all counts (Hall and Lobina, 2008:6). The pricing of water at full cost, the distribution of water to the highest bidder, and cost-recovery in water management, undermines the notion of water as a human right.

In South Africa, after apartheid the new government's new water legislation included cost-recovery as a means of delivering quality water services. However, according to Bond (n.d:1) there are millions of South Africans who still lack proper access to water services due to their inability to pay for it. Poor areas are underserved due to lack of operating subsidies, which mean that a large percentage of taps installed in the post-apartheid era are now dry. Bond (n.d:1) further states that for those lucky to be on municipal water grids, mass disconnections due to unaffordability affect millions of South Africans each year. The South African water legislation is outstanding in its failure to sufficiently account for the true social values of water.



Many social policies, especially those for consumptive water use, remain within a fundamentalist economic model, occasionally with environmental concessions (Park et al, 2013:para1). Moreover, Park et al (2013:para2) state that treating water as a commodity recognises price, markets, growth, profit, efficiency, costs of production and redistribution. There are significant conflicts between these factors and the community values for water, which make up the social and environmental dimensions, such as water for human consumption, for household use and for a healthy and hygienic environment. The use of water meters that limit and restrict water supply conflicts with the country's Water Services Act (1997) and people's constitutional right of access to sufficient clean water. The automatic water cuts imposed on households by these meters, without giving them any chance to prepare for other alternatives for their water use, infringes their right to water access. One of the enforcement tools used for non-payment of rates is the eviction of households from their homes. Some households have been denied even the basic water supply due to non-payment of water bills (McDonald and Pape, 2002:19). Furthermore, lack of safe water, poor sanitation facilities and poor hygiene practices contribute to ill health.

Based on the nature of profit maximization in a developing country like South Africa, which is recovering from a state of oppression, there are weak possibilities for successful cost-recovery in water services. This is due to the fact that the pricing of water and choosing the right quantity water supply in order to recover costs conflict with the challenges of the country, such as poverty and unemployment, which limit most household's ability to pay. With this background this chapter stems from the two schools of thought that perceive water as, respectively, an economic good and as a social good. The study demonstrates how these schools of thought impact on water access and the implementation of water demand management mechanisms such as WMDs in poor areas.

This chapter draws on three main bodies of literature. The first is the legislative framework for water services in South Africa, which it discusses in reference to the introduction of cost-recovery in the water sector and how this has impacted on households' right of access to water. Furthermore, this chapter shows how public participation in the water sector was introduced within the water legislation through the decentralization of water services from national to local government. The second body of literature this chapter draws on is the comparison of the three commonly used water demand management mechanisms at domestic level in South Africa. In this regard the focus will be on the three main metering systems namely: conventional water meters, prepayment water meters and WMDs. The argument will be based on how the notion of cost-recovery attached to these meters impacts on poor households. Finally, the third body of literature the chapter draws on are empirical cases of water struggles from different backgrounds in connection to cost-recovery.

2.2 South African water services legislative framework

Earle et al (2005:3) argues that under the apartheid regime, water legislation in South Africa was geared to advancing the needs of the selected few. South Africa's water resource development was connected more with supporting the development of the country's wealthy population than with improving the lives of the urban or rural poor. Furthermore, with the beginning of the new constitutional order, it was clear that the prominent issues on the agenda of the new government were to redress the impact of many years of oppression caused by apartheid. This included replacing the Water Act of 1956 with new water legislation in order to provide for equitable allocation of water supply. According to McKinley (2005:181) when the African National Congress (ANC) was given its political victory by the majority of South

Africans in 1994, the new government was also given the power to address the challenges of inequality left behind by the apartheid regime. This included control over natural resources, including water, to ensure that all citizens irrespective of class and race have equal access to resources.

However, it did not take long for the new government to unilaterally decide to implement water legislation that is neo-liberal, thereby abandoning its mandate. This legislation has further produced conflicting results of widening inequality in South Africa (McKinley, 2005:181).

The immediate result of this policy was a massive increase in the price of water that necessarily hit poor communities the hardest. The neo-liberal-inspired cost-recovery policy making people pay for the associated costs of water infrastructure led to this dramatic increase (McKinley 2005:182).

Moreover, although all spheres of government are mandated to work hand in hand to ensure that all citizens have access to water, in 1994 water legislation was more centralised, and the duty of water provision was mainly in the hands of national government. In the early 2000s there was a shift in South Africa's water legislation and water provision became more decentralised, becoming mainly the duty of local government.

The main reason for this shift was the introduction of public participation in the provision of water services, since the local sphere is closest to the people. However, this does not mean that the national and provincial spheres are totally excluded in ensuring that all citizens have water access. Therefore, this legal framework for water services aims to show two things: firstly, the impact of the introduction of cost-recovery in South African water legislation; and secondly, the emerging trends from centralised water legislation to a more decentralised water legislation with the aim of including civil society in the water sector. In this regard this legal framework will discuss the South African Constitution Act No. 108 of 1996, White Paper on Water and Sanitation of 1994, Water Services Act No. 108 of 1997, National Water Act No. 36 of 1998, Free Basic Water Policy of 2001 and the Strategic Framework for Water Services of 2003.

2.2.1 *The Constitution*

Section 27(1)(b) of the Constitution of the Republic of South Africa states that everyone has the right to have access to sufficient water (RSA, 1996:1255). This is the one section in the Constitution that speaks directly to water. The following sections are also linked to the right to have access to sufficient water but do not specifically have the word ‘water’ in them. For example, Section 9(3) states that everyone is equal before the law; therefore the state may not unfairly discriminate directly or indirectly against anyone on any grounds (RSA 1996:1247). Section 24(a) states that everyone has the right to an environment that is not harmful to their health or well-being (RSA 1996:1251). Section 27(2) states that the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right (RSA 1996:1255).

Large parts of the South African population still suffer from unequal access to water services. In effect the constitutional commitment to the basic rights such as the right to equality when it comes to water access are negated by the living conditions in which a large number of the South African citizens find themselves. Poor areas still suffer from high levels of inequality in the supply of water services. The idea of providing FBW supply to poor households is compelling as it integrates cross-subsidization from wealthy water users to the poor (Davidson-Harden et al, n.d:17).

However the restrictive definition of FBW supply in South Africa meant going back into the previous status of sustaining inequality in providing water services. Furthermore, Martino and Zommers (n.d:15) states that the lack of and unequal access to sufficient water and sanitation in the country's poor communities increases the threat of water-borne diseases affecting the health and well-being of citizens.

The South African Constitution allows national government to decentralise its power and attendant responsibilities. In this way local government can assume the responsibility for the provision of water services and can contract with private companies to manage and provide water services (Earle, et al 2005:15).

Moreover Earle et al (2005:16) emphasise that even though responsibilities are decentralised to local government, the national government bears the crucial duty to ensure compliance with the state's obligation of ensuring sufficient water access. Thus, government is in

violation of its duty of fulfilling the right of access to sufficient water if it allows water services to be provided by the private sector that randomly disconnect water services or if it adopts methods that are discriminatory or drastically increases the price of water thus making it unaffordable.

Though the Constitution reflects the above given rights, the amount of water received is increasingly determined by the practice of cost recovery, whereby consumer tariffs are introduced to pay for the capital costs and marginal costs of water (Morris, 2012:19).

2.2.2 White Paper on Water and Sanitation, 1994

In support of the constitutional right of access to water, in 1994 the White Paper on Water and Sanitation was put into practice. It mainly focused on the establishment of a new national water service function. It further focused on the role of the national sphere to ensure that it directly provides basic water and sanitation to households in rural areas.

The White Paper (RSA, 1994:3) acknowledges the issue of inequality, which is the line that divides the population with sufficient water access from those without access to water is the same line dividing the rich from the poor, the hungry from the well fed and the line of race. Stated in the White Paper is also the introduction of what was then a new Department of Water Affairs and Forestry. The main reason for introducing this department was to end the inequality in access to basic water supply and sanitation services.

According to the White Paper, basic water supply is defined as set out below.

Table: 2.1 Definition of water supply

Quantity	25 litres per person per day. This is considered the minimum required for direct consumption. It is not measured to be sufficient for a full, healthy and productive life.
Cartage	Maximum distance between a person and the source of water supply should not be more than 200 m.
Availability	The flow rate of water from the source should not be less than 10 litres per minute and water should be available every day.
Assurance of	Schemes for domestic water supply should ensure the availability of "raw"

supply	water for 98% of the time. This means that the service should not fail due to drought more than one year in fifty, on average. Moreover, the operation and maintenance of the system must be effective. The aim should be to have no more than one week's interruption in supply per year.
Quality	The quality of water provided as a basic service should be in accordance with currently accepted minimum standards with respect to health-related chemical and microbial contaminants.
Upgradability	The desire of many communities to upgrade a basic service to provide for household connections should be taken into account during planning.

Source: RSA (1994:15)

Moreover, the White Paper states that those people who previously enjoyed the unlimited water supply without any costs, (i.e. the costs of whose usage are borne by the state), now have to start paying for water. Furthermore, it states that the idea that people have that it is governments' responsibility to provide water free of charge is misleading and incorrect (RSA, 1994:23). It leads to serious financial problems and the possible interruption of services in some areas. It is important to establish a culture of conservation and the introduction of stringent demand management strategies to reduce water usage and the stress on resources (RSA, 1994:23).

2.2.3 Water Services Act, No. 108 of 1997

While the White Paper was aimed at the establishment of a new national water service function and focused on the role of national government in assuming a direct delivery function to provide basic water and sanitation to people living in rural areas, the Water Services Act is aimed at fulfilling the constitutional rights of access to basic water and sanitation (RSA, 1997:2). This is essential to guarantee that there is sufficient water supply and that the environment is not harmful to the health or well-being of citizens. Section 3(3) of the Water Services Act states that every water services authority must provide for measures to realise these rights in its water services development plan.

Furthermore, the Water Services Act states that there is a responsibility placed upon all spheres of government to guarantee that water supply and sanitation services are provided in a way that is efficient, equitable and sustainable within the physical and financial feasible

restrictions. According to Section 4, water services providers have to undertake certain processes before limiting and discontinuing water services and these must be done in a fair and equitable manner. Consumers should be provided with reasonable notice and should also be given a chance to make representation about the issue, be it limiting or discontinuing water supply (RSA, 1997:12).

Furthermore, the water service provider should have measures in place to measure and promote water conservation and water demand. Section 5 also states that if the water services institution provides water which is unable to meet the requirements of all its consumers, it should give them a chance to state and choose which water supplier is suitable to supply them with appropriate water services. Sections 10(3)(d) and 10(3)(f) of the Water Services Act state that when the Minister prescribes the norms and standards, among other factors he/she must consider cost-recovery reasonably associated with providing the water services and the need for a return on capital invested (RSA, 1997:18). In addition, sections 11(2)(d) and 11(2)(g) state that, among other factors, the responsibility of the water services authority to consumers to ensure efficient, sustainable, affordable and economical access to water services is subject to consumers' responsibility to pay reasonable charges. These charges should be in accordance with any prescribed norms and standards for tariffs for water services (RSA, 1997:18). If the consumers fail to comply with the tariff norms and standards of the relevant water services authority, the authority has the right to limit or terminate water service provision.

2.2.4. National Water Act, No. 36 of 1998

While the Water Services Act of 1997 focusses on fulfilling the constitutional provision of the rights of access to basic water supply and sanitation, the National Water Act of 1998 seems to emphasise that water is a scarce and unevenly distributed national resource that occurs in many different forms, which are all part of the unitary inter-dependent cycle (RSA, 1998:2). The National Water Act abolished the Riparian Water Act of 1956.

The National Water Act aims to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that take into account, among other factors, meeting the basic needs of present and future generations (RSA, 1998:2). Furthermore, it acknowledges that water is a natural resource that belongs to everyone and that discriminatory past laws and practices prevented equal water use and access.

The National Water Act thus aims at promoting equitable water access, and redressing the effects caused by the past racial and gender discrimination. It places complete responsibility, authority, and use over the nation's water on the national government (RSA, 1998:2). Additionally, it gives national government the responsibility of ensuring equitable water allocation for beneficial use, redistribution of water and international matters concerning water services. The National Water Act also aims to provide for growing demand for water and to promote the efficient, sustainable and beneficial use of water in the public interest. It recognises that the ultimate aim of water resource management is to achieve the sustainable use of water for the benefit of all users. In order to achieve the above, water management strategies are put in place. These are the National Water Resource Strategy and the Catchment Management Strategy.

a) National Water Resource Strategy

The National Water Resource Strategy is formulated by the Minister after consultation with society at large, for the protection, use, development, conservation, management and control of water resources for the country as a whole. The strategy gives a framework for water management at catchment and regional level in distinct water management areas. The strategy must be periodically reviewed and it is binding on all institutions and authorities that are exercising powers or performing duties under the National Water Act No. 36 of 1998.

The NWRS-2 is positioned around the acknowledgment of water as a basic human need, and the recognition of its vital role to guarantee equitable socio-economic development. According to the NWRS-2 the principle of equity is based on giving more consideration to the population that was previously denied access to water services or to the economic benefits of water. It views equity as a concept of fairness, which allows for different practices in the management of water in response to different social, economic and environmental needs. It is vital to differentiate between equity in access to water services, equity in access to water resources and equity in access to benefits from water resource use through economic, social and environmental development and management. Differentiation between these factors will bring the notion of equity to a practical level.

Equity in access to water services speaks to the water legislature introduced in and after 1994. These include the Water Services Act of 1997 and its accompanying regulations, which transformed the constitutional right of 'access to sufficient water' into fixed characterisations

in terms of quantity, quality and assurance of water supply. According to the NWRS-2 the backlog in water service delivery in South Africa was reduced and progress has been made since 1994. However, there are South Africans who suffer from insecurity of water services and lack of reliability of water for productive and domestic use even though there are improvements and investments in water infrastructure. The NWRS-2 identifies that there is a need to address issues of equitable allocation as indicated in the water legislature and policy which has not yet been fully realised.

When referring to equity in water resources, access deals with the notion of direct water access for production commitments, such as water for watering crops or water for corporate use or by an industry. The requirement to address challenges of equal distribution in water services and to ensure the valuable use of water for job creation, to assist in poverty alleviation and to reduce challenges of inequality within society is a critical obligation of the NWRS-2. However, it is neither practical nor possible to divide water resources in South Africa in a way that everyone has equal access to water.

When referring to equity in access to the benefits from water resource use, the NWRS-2 refers to a state in which the allocation of water is done in a way that brings maximum direct or indirect benefit to everyone. In order to achieve this it is important for government to invest in infrastructure renewal, invest in human skills, motivate innovation and improved technological development, redress the challenges of past inequalities and improve stakeholder participation in water management and governance. It also necessitates an appreciation of emerging challenges, such as climate change and how it might influence the existing and future strategies.

b) Catchment Management Strategy

The catchment management agency is required to develop a Catchment Management Strategy for the water resource within its water management area. These strategies have to link with the National Water Resource Strategy. When developing this strategy the catchment management agency has to collaborate and be in agreement with the relevant stakeholders on matters concerning water services. The catchment management strategy has to contain matters concerning the allocation of water and it has to be reviewed periodically. Moreover, this strategy must set the ethics and processes for water allocation to users taking into account

factors such as the protection, use, development, conservation, management and control of water resources.

Ashton (n.d:4) explains the catchment management process in South Africa as follows: The new water law in South Africa makes provision that water resources covers the management of the whole hydrological cycle in order for water management to be effective. A river basin boundary refers to water in all phases of the hydrological cycle, through precipitation, into subsurface storage and along drainage lines, to the sea.

The land area included in a river basin should include land through or over which water moves, and land on which human activities or disturbances create impacts that affect the quantity, quality or distribution of water in any phase of the hydrological cycle. A river basin could be made up of several catchments, either contiguous or nested within each other (Ashton, n.d:4).

2.2.5 Free Basic Water Policy of 2001

The Free Basic Water Policy is a strategy introduced in 2001 to assist in stimulating access to a basic water supply. This is done through the subsidisation of the existing operating and maintenance costs attached to the supply of basic water services. When the Free Basic Water Policy was introduced in 2001, water services was decentralised from the national to the local sphere. This was the introduction of public participation in water services in South Africa. ‘The Free Basic Water Policy gives the water services authorities the right to adopt strategies of the practical application of the policy’ (Hall et al 2006:58). Depending on a municipality’s available resources, it will decide how it will implement the Free Basic Water Policy. This also depends on how sustainable the chosen method will be after the implementation (Hall, et al 2006:58). The Free Basic Water Policy allow for the consumption of FBW by households free of charge every month.

According to Hall et al (2006:58), the policy provides for households to get a minimum of 6kl litres of FBW per month, calculated at 25 litres per person per day for a family of eight. However, although the Free Basic Water Policy was introduced to assist in promoting water access, it is criticised for being insufficient for monthly basic survival. According to Muller (2008:72), as infrastructure advanced and operational experience increased, concerns were raised about water access. It was discovered that the cost of water was preventing poor people

from using it because they could not afford it. The introduction of the Free Basic Water Policy was not the solution to deal with such water backlogs. Gowlland-Gualtieri (2007:7) states that the main challenge with the Free Basic Water Policy is with the quantity of FBW determined by government as the suitable amount necessary for survival.

Moreover Gowlland-Gualtieri (2007:7) states that in a household of eight people, the prescribed 6kl of FBW per household per month translates into 25 litres per person per day. To demonstrate this clearly it means that the water allows for households to have 40 baths per month (i.e. five baths per person per month) or 16 toilet flushes a day (i.e. two visits to the toilet per person per day). The FBW of 25 litres per person per day is measured as being inadequate to meet the needs of households for basic survival, especially the urban poor population. Hence, it is considered as too little to fulfil section 27(1)(b) of the Constitution, which is the right of access to sufficient water.

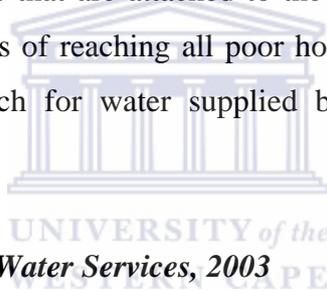
According to Hall et al (2006:58), the Free Basic Water Policy allows for the following options from which municipalities can choose for its implementation in their areas: the rising block tariff, targeted credits or subsidies and service level targeting. These are defined as follows: The rising block tariff gives the municipality the right to provide FBW to consumers and the excess beyond the free basic is charged for. This strategy work in areas where households have meters and taps that can be billed for consumption. In the targeted credits, or subsidies, certain amount of water is subsidised for indigent households and credited against their monthly bill. Finally, the service level targeting option guarantees that water access is restricted to the FBW supply. The most common form of service level targeting is the communal tap system, in which a tap should be installed within 200 meters of each household that has no yard tap. In areas where municipalities use this system, households are not likely to carry water quantities that are more than the FBW allowance. This strategy is usually used by municipalities that have high populations of poor households (Hall et al, 2006:58).

The above mentioned methods for FBW provision have limitations. The rising block tariffs are suitable for municipalities that have large numbers of households that consumes high water volumes, and will enable cross-subsidization. In several areas, mainly those that have townships or rural areas, it is not logical to implement the rising block tariff as there are not enough households who consume high water volumes for the approach to be effective (Earle et al, 2005:24). In addition, high levels of non-payment have a negative impact on cost-

recovery in some areas. Earle et al (2005:24) further states the provision of the equitable share grant by the national treasury to municipalities makes it possible to use the targeted credits.

However, there is a lack of human resources in many municipalities which makes it challenging to implement the scheme which in turn creates backlogs. Service level targeting runs the risk of lowering the standards of services to inferior levels to poor households (Earle et al 2005:24).

Furthermore, Earle et al (2005:24) states that whatever approach the municipality decides to implement the success of the FBW scheme depends on the implementation of effective metering, monitoring, leakage detection and control, billing and credit control. All of these factors require a high degree of capacity within the municipality and this is often lacking. Understanding all these dynamics that are attached to the Free Basic Water Policy one can conclude that it is failing in terms of reaching all poor households, providing enough water services and it charges too much for water supplied beyond the free amount (Muller, 2008:79).



2.2.6 Strategic Framework for Water Services, 2003

The main aim of the 2003 Strategic Framework for Water Services is to put forward a vision for the South African water sector and to further establish the framework that will allow the water sector's vision to be achieved. According to the framework, government is dedicated to promoting active participation of civil society in sustainable and affordable provision of water services. This is done through the creation of relations between government and local communities and engaging with the capacitated community-based organisations within these communities to assist in managing water services projects, where suitable. The challenge of inequality in access to basic services still exists and improvement in sanitation provision is very slow.

The Strategic Framework for Water Services acknowledges that great challenges still remain regarding the lack of access to water and sanitation. Among these are that the lack of access to water supply and sanitation restrains the poor and their chances to escape poverty, which increases the problems especially of those affected by HIV/Aids and other diseases. It is appropriate that the main focus of South Africa's water services policy should be on

guaranteeing access for the poor population to sufficient, affordable and sustainable levels of defined basic water supply and sanitation services. The Strategic Framework specifically points out that the main responsibility of water services providers is to deliver water services in harmony with the Constitution, the Water Services Act and the by-laws of the water services authority, and in terms of any specific conditions set by the water services authority in a contract.

It is of significance that it is the responsibility of the water services authority to make sure that adequate and proper investments are made to guarantee the progressive realisation of the right of all the population in its area of jurisdiction to receive at least a basic level of water and sanitation services. The grants issued by national government in the form of the Municipal Infrastructure Grant (MIG) will be sufficient to guarantee the universal basic water supply and sanitation facility provision within a reasonable period of time. This is known as the universal service obligation and is the most significant policy priority. Furthermore, the Strategic Framework for Water Services states that, provided that the provision of water services is sustainable, water policies should provide higher levels of water provision facilities such as yard taps that provide more than 50 litres per person per day (RSA, 2003:1).

However, as much as the Constitution promotes equality, the above discussion about the legislative framework reveals that the amount of water received is increasingly determined by the practice of cost recovery, through which consumer tariffs are introduced to pay for the capital costs and marginal costs of water services. Legislative developments in the water sector after the end of the apartheid regime drove the promotion of cost recovery. The first legally binding declaration from the African National Congress outlining water's entrance into the private sphere was the adoption of the Water Services Policy in 1994 (Morris, 2012:17).

A further challenge this has caused is that the need to spread the access of water services to every household is in conflict with the principle of cost-recovery, with the issue compounded by the legacy of the rates boycotts that took place prior to 1994 (Earle et al, 2005:4). Furthermore, Morris (2012:18) argues that, grounded in a neo-liberal-oriented water services framework, water distribution mechanisms produce a highly unequal distribution of water services. Provision of adequate services is only available to those able to pay. Morris

(2012:18) further states that this distribution system undermines the declared right to have access to sufficient water in South Africa's Constitution.

Due to the introduction of neo-liberal policies in the water sector, water services are provided based on the ability to pay, rather than based on need, and water distribution structures worsen disparities between neighbourhoods. The water policies in place limit equitable access and distribution of water within poor, predominantly black townships, whereas affluent suburban neighbourhoods continue to afford substantial amounts of water. In South Africa there is clear inequality and there are biases in favour of suburban residents and industries when it comes to payment of services. Township residents will often pay more than those living in suburban areas despite being mainly underdeveloped urban areas with high levels of poverty (McDonald and Pape, 2002:27). This overpayment is caused by the inclusion of payment for new infrastructure, which poor communities lack due to the legacy of the apartheid regime, the major maintenance and replacement of old existing infrastructure which was neglected during the apartheid regime in poor communities.

The block tariffs are forms of cost recovery structures used to pay for basic services. This tariff structure unfavourably affects low-income households as the price of water rises substantially after the FBW has been consumed. Furthermore, Morris (2012:19) argues that the tariff policy, designed as a consumption based charge, fails to consider that many low-income households, especially in townships, are comprised of 15 to 30 people sharing a single water source. Due to urban spatial inequalities, the block tariff structure subsequently increases the cost of water for urban low-income households with more than four to five people, and the inability to pay for water service delivery results in water disconnections (Morris, 2012:20). Earle et al (2005) argues that it is not unreasonable to expect beneficiaries to pay for water and sanitation services provided to them, but problems such as high unemployment and dependency on seasonal income sharply influence the reasonableness of the user pays principle.

According to Morris (2012:19), the inability to afford sufficient water supply obligates many South Africans to use dirty water or to collect water from a distant sources, which cause harm to their health and well-being. In a country such as South Africa, with a large portion of the population living in poverty, there needs to be subsidisation of the provision of water services: the market alone will not ensure equitable access to water services. Furthermore,

Earle et al (2005), states that at present, millions of South Africans face severe problems in accessing basic water services. The democratic government is faced with great difficulties and enormous backlogs due to the apartheid legacy. However, the challenge of poor provision of water services is actually a result of the pro-market policies adopted by the South African government since 1994. These have hit the poor population the hardest, with implementation of water demand management strategies that are criticised for failing to consider factors such as unemployment, inequality, and poverty. The new water legislature introduced in 1994 focused its command and control approaches to water resources management unilaterally from the national government sphere (Ashton, n.d:1).

This is no longer widely accepted by the general public. The shift from this approach to a more decentralised approach, which included mainly the local government sphere, started in the early 2000s. This showed in the introduction of the Free Basic Water Policy in 2001, which was instructed to municipalities to implement. With the aim of encouraging public participation in the water sector the South African government abolished the White Paper on Water and Sanitation of 1994, which mainly mandated the national government to be the provider of water services, and replaced it with the Strategic Framework for Water Services of 2003. The latter encourages citizens' involvement in the provision of sustainable and affordable water services through the creation of a link between local government and local communities, and through engaging capacitated community-based organisations to manage water services projects at the local level, where appropriate.

Furthermore, Ashton (n.d:1) states that people now feel a growing need to participate in, and contribute to, decision-making processes, partly due to their lack of trust in previous delivery systems. In addition, the end users of any resource development project need to be closely involved in both the planning and management aspects to ensure that their concerns are taken into account and that they get appropriate delivery of the resource. However, the neo-liberal system adopted by the South African government in 1994 has made the unequal provision of water challenging for the poor population and local government fails to involve the poor in the decision-making process in the water sector. The following section compares the three common water demand management mechanisms implemented at household level in South Africa.

2.3 Comparison of water demand management mechanisms

South Africa is currently experiencing an increase in the roll-out of many different types of water demand management mechanisms, which control the volume of water supply as a means of controlling the usage of water, particularly in indigent communities and low-income areas. This section discusses the common mechanisms of water demand management used to manage domestic household water access in South Africa i.e. conventional water meters, prepayment water meters and the WMDs. The argument will be based on how the notion of cost-recovery attached to these meters impacts on poor households' water access.

2.3.1 Conventional water meters

With a conventional water meter consumption is not limited by any technical or administrative means. The conventional meters supply consumers with water as long as there is water available to be supplied and there are no technical faults with the meter. Consumers are billed at the end of the month. According to Mills et al (2012:3500):

Conventional water meter reading and billing in many countries have largely followed a mechanical process where agents of the utility physically visit the premises of the users and manually record the consumption data for bill development and delivery for payment (Mills et al, 2012:3500).

With these meters, water bills vary from month to month depending on water consumption. RSA (2004) states that it is important to ensure that the meter fitted is the correct size so that the range of known or expected flows falls within the acceptable accuracy range of the meter. Care in getting this right will be rewarded with greater accuracy and reliability of the data upon which operational and planning decisions are made. Moreover, RSA (2004) states that incorrect sizing has significant financial consequences in that it may cause consumption inaccuracies and distort average household consumption volumes, with the result that households may get high bills that they are expected to pay, regardless of error. McDonald and Pape (2002) argue that due to such challenges, it became difficult to collect water fees from poor households. This has further led to high debt accumulation and poor households finding themselves with debts that they cannot afford to pay. This further leads to the water disconnections found in poor urban areas in South Africa.

2.3.2 Prepayment meters

According to Nkonzo (2010:4), a prepayment water meter can be defined as a device that is hooked up to a water supply system and requires the user to pay before retrieving water. With the prepayment meters people have to buy water in advance. The meter works by inserting a plastic chip-encoded card. In South Africa the prepaid water meters are set to supply the FBW per month and when the water is used up the meter automatically stops supplying water and opens again the next following month or when the user pays for more water. According to McDonald and Pape (2002) prepaid meters are the ultimate cost recovery mechanism. The meters collect money in advance, thereby earning interest for the service provider in the process.

McDonald and Pape (2002) further state that prepayment water meters do not allow households to go into default and theoretically they require no overt punitive measures to ensure payment for services. Moreover, the meter allows low-income households to budget more effectively for water services so as to avoid falling into debt. However, Bond and Dugard (2008:2) state that in poor areas where these meters are installed, households rarely have enough money to purchase sufficient water to ensure an adequate supply for the month. The automatic disconnection typically signals no water supply at all until the next month's FBW allocation is loaded and dispensed. According to Nkonzo (2010:4), the need for prepaid water meters in South Africa is driven largely by the situation that local authorities find themselves in, with huge levels of consumption as a result of leaking toilets and taps that consumers cannot pay for.

However, the prepayment water meters are found to be discriminatory towards the poor, who cannot afford to pay for water. Poor households have argued that the FBW per month supplied by the prepayment water meters does not last the whole month and when it is exhausted, they have to go without water for the remaining weeks or days until the following month. During this period they have to find alternative means of water access. In most cases these include inferior polluted water, which affects their health and well-being.

2.3.3 Water management devices

As previously stated that a WMD is defined as a low-cost electronic valve that is able to control the flow of water dispensed at a fixed daily quantity, thereby providing the ability to limit a consumer to a finite or pre-negotiated level of water supply (Utility Systems

Corporation 2009:1). The devices are installed only in poor areas in Cape Town. When the CCT was selling the devices to households it stated that the devices offered 350 litres of FBW per day, and all the household water debt would be written off. Households claim that they were never given information about the automatic water cuts after the daily allocation has been finished.

At this stage it is important to explain the indigent grant policy of the CCT, which, according to the CCT (2011), was created to assist households in paying their rates and services charges. Furthermore, CCT (2011:6) states that the policy has been designed to give a 100% rates rebate to property owners who meet predetermined criteria. Provided the municipal value of their property does not exceed R199 000, a monthly indigent grant of R40.50 for water and sanitation services is proposed – an increase from the current R38 subsidy. This subsidy provides indigent residents with an additional 4 500 litres of FBW per household per month (and the associated sewerage charges and VAT), which is over and above the 6kl litres all households receive free of charge monthly (CCT, 2011). Properties valued under R100 000 will receive a 100% rebate on their refuse bin service, reducing as the valuation increases and falling away when such valuation exceeds R400 000. In 2006 the upper limit for the rebate was R125 000. A new rates rebate category was proposed for the 2011/2012 budget. Currently, indigent households with a combined income of less than R3 000 per month qualify for 100% rates rebates. All indigent households with income levels between R3 000 and R4 000 per month will now receive a rates rebate of 50%.

The indigent policy may be valuable in increasing the accessibility and affordability of water and other basic services. However Smith (2003) states that its value should be reviewed and low-income socio-economic constraints should be factored into the amended policy e.g. household size, number of dependants, illness status, household water activities, income and expenditures. Thereafter, the indigent policy should be fast-tracked and all qualifying households should be assisted in registering for the subsidy (Smith, 2003:108). Administratively this could be made possible through staff training.

The basic water allocation and programming of the WMDs differ from city to city. In some cities, such as Durban, indigent consumers are supplied with 300 litres daily and unused water from this allocation is not carried over to the next day. In Cape Town the WMDs supply indigent households with the 350 litres of FBW per day as programmed by the

municipality and if extra water is needed the user has to pay an extra amount. Once the agreed-upon daily allocation has been used, the flow stops until the next morning. If there are certain litres left over within a certain day than they are carried over to the next day (CCT, 2009). If, for example, a household has an allocation of 350 litres per day and on a certain day it only uses 200 litres, the other 150 litres are carried over to the next day. However, at the end of the month any remaining water is not carried over and the cycle starts all over again.

According to Utility Systems Corporation (2009:1), in most countries the installation of these devices is introduced mainly because of a rapid increase in water demand following an increase in population, climatic changes which affect rainfall levels, and considerable water losses through leaks. Wilson and Pereira (2012:13) state that in the case of Cape Town, where these devices are installed the WMD policy is skewed towards debt recovery, rather than demand-side management, as currently only poor or non-paying areas are being targeted for their implementation, rather than areas where people are using excessive amounts of water for luxury purposes. Furthermore, Wilson and Pereira (2012:13) perceive these devices as being in line with neo-liberal theories of water as a business and the principles of cost-recovery and user pays.

By installing WMDs rather than engaging with the systemic problems of poor infrastructure, bad plumbing, inherited debt and disempowered people, the City leaves people with no choices to make, other than the choice between accepting the device passively or ripping it out of the ground (Wilson and Pereira 2012:16). Moreover, Wilson and Pereira (2012:12) state that not only do the WMDs limit water access, there are also problems with leaks in many township houses where the devices are installed and these leaks are recurrent. The main reason for the leaks is that the plumbing has been built with such poor quality material and been so poorly installed that leaks spring up with great regularity (Wilson and Pereira, 2012:12). A once-off leak fix does not begin to address this systemic problem; all it does is shift the burden of poor workmanship from the City to the household, whose water is now cut off once the daily allocation has been used or has leaked away. The devices have been met with such resistance in poor areas in Cape Town that communities are threatening to rip them out, since they are often faulty and they limit water access (Donne, 2009:3).

From the above discussion on the water demand management mechanisms in South Africa it is clear that the WMDs have no ideal features compared with the conventional and

prepayment water meters. All these water meters are the same: the only difference is how the service provider programmes the meter to dispense water. The conventional water meter is programmed to be on free flow, which means that users have unlimited water access. The prepayment water meter is set to allow the monthly FBW supply and automatically cuts when the monthly allocation is used up and opens up the following month. The WMD is set to allow portions of the monthly FBW on a daily basis and when the daily allocation is used up the meter automatically cuts off and opens up the following morning.

Moreover, both prepayment water meters and the WMDs are implemented in poor areas only, where households struggle to pay for water and not in high income areas where households get unlimited water access since they can afford to pay for it. Therefore, this proves the argument that WMDs were implemented mainly for cost recovery rather than water demand management. These types of water demand management mechanisms are cost recovery strategies, which are targeted towards poor households who cannot afford to pay for water services.

2.4 Empirical cases of water struggles

This section aims to give empirical cases which will demonstrate how cost-recovery has impacted on citizens' right to water access, and how the limitations in the water legislation and the Constitution can impact the right to water access. According to Mwebe (2004) the first and most immediate consequence of cost-recovery has been implementing water demand management mechanisms, which reduce access to water. This contravenes Section 27(1)(b) of the Constitution, which provides for the right of access to sufficient water. Mwebe (2004) further states that the reasons for the lowered access to water in the full cost-recovery model means disconnecting water to those not paying water bills. The policy of cost recovery has seen the price of water rising and this has negatively affected poor communities the hardest.

Moreover, Mwebe (2004) states that over two million people have been evicted from their homes, often as a part of the associated legal process to recover debts from defaulters. Poor communities without previous access to clean water have either suffered the same fate once infrastructure was provided, or have simply had to make do with sourcing water from polluted streams and boreholes (Mwebe, 2004:40). The impact of cost recovery in water services has hit poor households so hard that in some areas they took the water service

providers in their areas to court. The following cases are among the few reported cases where residents took their water service providers to court for lack of water supply in their areas.

2.4.1 Mazibuko and Others vs. City of Johannesburg and Others

Before the installation of prepayment meters, Phiri residents had unlimited water supply charged at 20kl per household per month. In 2004 the City of Johannesburg introduced prepayment meters, stating that this was its strategy to save water. The meters were installed in low-income areas and allowed households to use the 6kl litres of FBW allocated to them per month. The meter runs until the 6kl are used up and then the meter cuts off automatically unless the residents purchase more water. This caused outbursts from the poor. According to Southern African Legal Information Institute (2009), Phiri residents stated that they had been persuaded to accept pre-payment meters as the only option available.

A statement issued by Johannesburg Water stated that ‘the new strategy reduces the overall average cost to households by R100 per month, from the previous flat rate of R149 per month to an average of R39.58 per month’ (Southern African Legal Information Institute, 2009: para 5). However, Phiri residents preferred the old strategy of using conventional meters that did not restrict water supply even though they had to pay a bit more than what was required of them by the prepayment meters. With the old strategy the residents claimed that they did not worry about water cuts; they were supplied with unlimited water for a flat rate.

In 2007 five residents of Phiri took the City of Johannesburg and other stakeholders who were responsible for water supply in Phiri to court on behalf of themselves, their households and all residents of Phiri (Dugard, 2008). According to Southern African Legal Information Institute, (2009), Phiri residents argued that, according to Section 27(1)(b) of the Constitution, they have the right to sufficient water access and the FBW (6kl) that was supplied to them by the City of Johannesburg was not enough. This was with the hope of successfully challenging both the forced installation of prepayment meters and the insufficient FBW allocation of 25 litres per person per day.

The applicants sought, more broadly, to advance a policy re-orientation towards viewing water primarily as a social good. The Phiri residents won the case in both the High and Supreme Courts. However, the residents further appealed to the Constitutional Court seeking the reinstatement of the High Court order, but not against the declaration of pre-paid meters

as unlawful but against the suspension of the order of invalidity for two years. Applicants further asserted the Supreme Court of Appeal was wrong in not considering arguments relating to the manner in which pre-paid meters were installed.

Additionally the respondents appealed against the Supreme Court order that reviewed and set aside the Free Basic Water Policy as unlawful and the declaration that 42 litres of water per person per day would constitute sufficient water within the meaning of section 27(1)(b) of the Constitution. The respondents also appealed against the order that declared the pre-paid meters used in Phiri to be unlawful. The Constitutional Court ruled that the City of Johannesburg's Free Basic Water Policy of 25 litres per person per day was reasonable under section 27(1)(b) of the Constitution. The introduction of pre-paid meters was found to be lawful, fair and not unfairly discriminatory (South African Legal Information Institute 2009).

2.4.2 Residents of Bon Vista Mansions vs. Southern Metropolitan Local Council

The case was brought forward following water supply disconnections owing to non-payment of water bills by residents of Bon Vista Mansions, a block of flats in Hillbrow, Johannesburg. Mr Ngobeni brought the case on behalf of himself and other residents. Community Law Centre (2002) states that, owing to the critical nature of the case, Mr Ngobeni requested that while the case was being heard the Court should temporarily restore the water supply.

Furthermore, it was contended that the Respondent had been wrongly cited. The Southern Metropolitan Local Substructure no longer existed as a distinct legal body and had been incorporated into the City of Johannesburg. The premises' water service provider was previously the Eastern Metropolitan Local Substructure, which was also incorporated into the City of Johannesburg. From the information provided it was found that the City of Johannesburg was the water service provider for the block of flats and it was the City of Johannesburg that had disconnected the water supply to the applicants. The claim of wrong citation was dismissed due to the true dis-connector of water services and service provider which was given a notice and was before the court and had not appealed to have suffered any prejudice due to the incorrect citation (Community Law Centre, 2002:3).

The respondent complained that they were given only three hours before the matter was heard. The Court held that water is an essential and basic need and the lack of water supply could have crucial health implications for the applicants. The weekend was approaching and

water supply was vitally urgent. The case was based on the Constitution and the Water Services Act. The applicants argued that Section 27(1)(b) of the Constitution states that everyone has the right of access to sufficient water and section 27(2) states that the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right (RSA, 1996:1255). Judge Budlender held that this case involved the duty to respect the constitutional right of access to water and did not contain the positive responsibility to provide access to water supply. Judge Budlender further specified that the City of Johannesburg was in breach of its Constitutional responsibility to ensure the right of access to sufficient water by discontinuing and depriving the applicants of their existing water supply. Council was ordered to restore the water supply to Bon Vista Mansions. The Court therefore granted an interim interdict in favour of the applicants.

Judge Budlender based his judgement on the nature of the duties placed on the state in Section 7 of the Constitution, the Bill of Rights, and specifically on Section 39(1)(b) which states that, when interpreting the Bill of Rights, a court, tribunal or forum must consider international law. In this case he referred to the International Covenant on Economic, Social and Cultural Rights (ICESCR) and comments on that document. Using the interpretations specified to similar requirements to section 27 in the ICESCR, which states that in order to 'respect' a right the state must refrain from action which would serve to deprive individuals of their rights. On the facts of this case, the Applicants had existing access to water before the Council disconnected the supply. The act of disconnecting the supply was based on the first impression, in breach of the Council's Constitutional duty to respect the right of access to water, in that it deprived the Applicants of existing access. In accordance with what is sometimes called the two-stage approach that places a burden or an onus on the Council to justify the breach of its Constitutional duty (Prada, 2011:91).

2.4.2 Manqele vs. Durban Metro Council

This case regarded the complete disconnection of the supply of running water by the Durban Metro Council due to an outstanding municipal debt of R10 000, which Mrs Manqele could not afford to pay. Manqele followed a declaratory order that the termination of her water supply was illegal and invalid according to the Water Services Act 108 of 1997. The Water Services Act states that everyone has the right to basic water supply necessary to ensure that there is sufficient water and that the environment is not harmful to health or the well-being (RSA, 1997:2). As there was no guideline in place regarding how many litres would be

considered as FBW as prescribed by regulation, which in this case is the Water Services Act, the water service provider implemented the Free Basic Water Policy. It supplied households with 6kl of monthly FBW in an attempt to fulfil its responsibility according to the Water Services Act. The monthly water consumption of the applicant, had without her noticing it, far exceeded this amount.

Her counsel, advocate Maurice Pillemer from the Supreme Court, argued that when the council disconnected her water services it did not take people's needs and circumstances into account and therefore acted unlawfully according to the Water Services Act. By discontinuing the water supply the Durban Metro Council was denying Manqele her right of access to basic water supply. He further argued that the applicant did not request unrestricted or unlimited water provision and so it was not fair that the defendant cut off even the 6kl of FBW (Prada, 2011:91). The Court ruled that since there was no regulation that interpreted the extent of the right of access to basic water supply, there were no guiding principles from the executive or legislature to allow the Court to interpret the content outlined in the Act. The right to water that the applicant depended on was in this case inadequate and therefore unenforceable (Prada, 2011:91).

These cases are a representative of the broader struggle to realise poor people's socio-economic right of sufficient access to water. The cases further highlight the general commercial prejudice of municipal water service delivery, regardless of the obligatory FBW allocation and some internal tariff cross-subsidization (Dugard, 2008:17). These cases further reveal contradictory implications based on the rights-based conception which views water as social good and a seemingly contrasting approach in which water is perceived as an economic good. Regardless of the applicants' absolute human suffering, it is clear from the cases that water service provision in South Africa remains overwhelmingly oriented towards the principle of cost-recovery. According to (McDonald and Pape, 2002:115), when access to water supply is defined in the same way as access to consumer goods that people buy in the capitalist market the majority of those who do not have money will be denied access.

This is what happened in the cases above: residents who did not have the means to pay for water were denied access to sufficient water supply. Moreover, these cases have demonstrated how cost-recovery in water services undermines the human right of access to sufficient water (McDonald and Pape, 2002:114). Moreover McDonald and Pape (2002:114)

state that it is sad to see government continuing the inequities of the apartheid regime against communities who in the past were subject to third class services. The goal of government has become balanced budgets rather than improving the lives of the citizens it serves. In its quest to recover costs government goes against the rights to equality and the right of access to sufficient water enshrined in the Constitution. It implements mechanisms that widen the gap of inequality between rich and poor communities in South Africa, leaving poor communities without proper basic services including water.

2.5 Conclusion

In conclusion, all the human rights mentioned in this chapter are interlinked to the right of access to sufficient water on an equal basis with no unfair discrimination on any grounds. It is the state's responsibility to ensure that these rights are adhered to. Among other challenges the failure to provide water equally without any discrimination leads to problems of harming the health and well-being of citizens. However, Bond (2011:9) states that in South Africa, the Constitution's limitations clause enables every protected right to be watered down and gives government the chance to bypass its obligation by restricting people's rights as long as this is done reasonably. Likewise, socio-economic rights are only progressively realizable within government's available resources (Bond, 2011:9). Furthermore, the empirical cases discussed in this chapter show how the privatization of water services have negatively impacted poor households and how the constitutional and water legislation limitations have worked against poor citizens in the courts of law in South Africa.

These cases have further demonstrated how challenging privatization of water has made the fulfilment of socio-economic rights, specifically the right of access to sufficient water. The employment of economic mechanisms to manage the demand of this resource in a country like South Africa, which faced years of oppression, has been shown to be challenging and discriminatory. Mbazira (2005) states that the ideologies of privatization such as cost-recovery are damaging for the full enjoyment of the socio-economic rights mainly by the poor population. For instance, if subsidies were removed the decrease in the enjoyment of services rendered would mainly be experienced by the poor. Mbazira (2005) further states that the attention of the private sector will always be more focused on making profits as its operation is mainly on the basis of business principles, and this will always compel the private sector to pay more attention on the wealthy population at the expense of the poor. This proves that involving the private sector in the delivery of water services in South Africa, where poverty

and unemployment are at a peak, will further widen inequality within society. Hence a water demand management strategy that excludes a significant segment of society cannot be said to be reasonable (Chirwa, 2004:189). The strategy must respond to those whose needs are most urgent and whose ability to enjoy all rights therefore is most in peril.

Moreover, the communities must be involved in the decision-making process of all the strategies that are to be implemented. A strategy that is statistically successful but fails to respond to the needs of those most desperate may not pass as successful (Chirwa, 2004:189). In terms of the water policy, it seems the implementation of WMDs has not translated into significant, substantive improvements for the majority of the poorest citizens. The fact that these devices are only implemented in poor areas, where citizens are too poor to afford to pay for water, proves that the WMDs infringes citizens' right to sufficient water access, as does the mere fact of the devices limiting water access. Chapter 3 gives a conceptual framework of public participation and its application in the water sector.



CHAPTER 3

A CONCEPTUAL ANALYSIS OF PUBLIC PARTICIPATION AND ITS APPLICATION IN THE SOUTH AFRICAN WATER SECTOR

3.1 Introduction

South Africa has one of the most progressive Constitutions in the world. It includes the municipal legislative framework that provides for community participation in decision making at municipal level. However in practice citizens have had little experience of this, which is particularly relevant in [a] context of severe poverty and failure by the state to provide basic services (Hicks, 2008:1).

This quotation means that the Constitution requires all government spheres, particularly the local sphere, to involve the public in decisions that are aimed at improving their lives, yet this is a seldom case in practice. South Africa has undertaken massive reform in the water sector. This reform has been informed largely by the need to move away from race-based, separate development practices to a state of democracy, participation, inclusivity and progressive initiatives. According to Wilson et al (n.d) the South African water sector was institutionally reformed by the National Water Act of 1998 and the Water Services Act of 1997. These Acts recognise that past laws relating to water resources were discriminatory and not appropriate to South African conditions.

However, these laws mainly focused on the national government as the main provider of water. The decentralization of water services to the local sphere and the introduction of public participation in the water sector in the early 2000s were vital in that the public has important insights on how service providers can meet their needs. The decentralization of water services was mostly vital because local government is the sphere of government with the greatest constitutional and statutory obligations for public participation (Buccus et al, 2007:5). Perhaps it is also because it is the sphere of government perceived as closest to the people. In addition, although there has been emphasis on public participation, its poor implementation reflect a concern at the lack of performance of many local municipalities. This poor performance is reflected in the widespread public dissatisfaction with many local municipalities.

According to Liebenberg (2005:1) social justice should be measured in relation to the concept of participatory equality. There are two major obstacles to overcome in the institutional patterns of subordination that obstruct the ability of people to equally participate in society. The first is misrecognition, which involves systematic degrading and disadvantaging certain population in society in terms of race, gender and sexual orientation. The second major obstacle involves the lack of necessary resources from some actors which will enable them to interact with others in society (Liebenberg, 2005:1). Both these obstacles of injustice correspond and interact with each other, which is vital in creating an effective strategy that will improve social justice. RSA (2005) states that without public participation, the goals of water resource management cannot be achieved. This chapter aims to show the importance of public participation in government decision making processes particularly in the water sector.

Section 3.2 of this chapter aims to clarify the meaning of public participation by giving definitions from different authors. Section 3.3 deliberates on the general overview of public participation in the South African context, looking at the policy framework for public participation, state organised forms of participation and community organised forms of participation. Section 3.4 outlines a framework of public participation and in this regard discussions of horizontal, vertical and the combination of horizontal and vertical public participation are given. Section 3.5 is a discussion of public participation in the water sector and the implementation of water demand management mechanisms in South Africa. Section 3.6 is a conclusion of the chapter.

3.2 Defining public participation

In order to discuss public participation in the water sector it is important to first understand the meaning of public participation. Different scholars define public participation differently, however their definitions are interlinked. The following definitions are selected to show that public participation entails more than government calling people to meetings and people stating their views and concerns: it also involves what is done after those meetings in order to meet the needs of the community.

Public participation should be viewed as an active process in which people should be allowed to take initiatives and actions that are stimulated by their own thinking and deliberation and which they can effectively influence (Schulenburg 1998:41).

Schulenburg sees public participation as a process in which people are the key role players. Power resides with the people, they are the real actors of positive change and government should allow people to pursue their own objectives. The public knows what it wants and expects from government and it is important for government to allow the public to state its concerns so that government will be aware of what it needs to do to fulfil the public's expectation.

What gives real meaning to public participation is the collective effort by the people concerned in an organised framework to pool their efforts and whatever other resources they decide to pool together, to attain objectives they set for themselves (Rahman, 1993:150).

Rahman views public participation as a group effort, which includes different people from the public with different views and opinions on things with the same mind set of achieving the desired outcome.

Public participation is too often simply conducted as a therapy for stakeholders, while important decisions have already been taken. Public participation is measured by how much participation there is and how it is conducted, rather than on what is achieved by the process (Brandshaw and Burger, 2005:49).

Brandshaw and Burger emphasise that government consults with the public mostly as a procedural matter that has to be followed before making decisions as stated in the Constitution, even though government has already made the decision before consulting the public. Furthermore they emphasise that often the main objective of public participation is misunderstood: instead of focusing on the outcome achieved often the focus is on measuring the participation process itself.

To summarise the above definitions, the process of public participation entails giving citizens the opportunity to voice their views in order to influence government's decision making. Doing so improves the chances of achieving sustainable development. The public should be made aware that it is their right to participate and not just an invitation, they should be encouraged to become active participants. Moreover, it is important to understand that there is a difference between public participation and consultation. Macdonald (1998:15) defines

consultation as means used to seek information or advice, or to take into consideration. In the present context, consultation is essentially a tool or mechanism for citizens' participation. Theron et al (2007) state that in public participation, the most important role player is and should be the public. Government is elected into power by the people to serve the people; whatever decisions the government makes should be on behalf of the people. It is biased of government to make decisions on behalf of the public without engaging with the public about what they want. Civil society needs to build strong organizational groups and form powerful allies that will be strong enough to hold government and others accountable for the standard of service delivery and for unethical and corrupt behaviour. Civil society should not take for granted the power of numbers, nor the influence of small actions. Furthermore, civil society is more likely to be taken seriously if it shows that it know its rights and can propose solutions to those in power, as well as challenge them.

According to McEwan (2002), in large parts of the world decentralisation of governance is taking place in response to the privatisation of public services. Thus, local government tends to be the sphere that is responsible for promoting local socio-economic growth and the facilitation of public participation, since it is the sphere closest to people. This trend can be understood in two ways, which are negative and positive: negatively, as the state's withdrawal from its obligations; or positively, as a potentially fundamental model of good governance, indicating a shift from local government (which involves the power to govern) to local governance (which is the act of governing) (McEwan, 2002:3).

Furthermore, McEwan (2002:3) states that the shift depend on how civil society is empowered and mobilised and the implementation of a more citizen-oriented approach in governmental institutions. It further emphasises the need for partnerships between civil society and government, accountability, and the importance of public participation that includes those groups which are discriminated against in terms of gender and who suffer from poverty. Therefore, theoretically, the decentralisation of governance has the possibility to improve participatory democracy. In practice, whether the model is an essential valuable technique of deepening democracy or the means of civil society disempowering is defined by understanding good governance (McEwan, 2002:3). The following section outlines the notion of public participation and how it informs approaches towards local socio-economic development in the South African context.

3.3 General overview of public participation in South Africa

This section aims to give a general overview of public participation in South Africa. The understanding that, by design, public participation is mainly restricted to public consultation is proven by reviewing the key policy of public participation. Furthermore, it is notable that there is still no final national policy on public participation. Policy improvement has lagged behind legislation by some five to seven years (Buccus, 2007:10). The first relevant public participation policy to be implemented was the Batho Pele ('People First') White Paper on Transforming Public Service of 1997, which aimed to ensure that public servants aim for high standards in service delivery and strive for service delivery excellence.

Apartheid, with its centralised and hierarchical system of government, deprived citizens of opportunities for public participation in decision making. With the transition to democracy after 1994, public participation in South Africa is now embedded in section 152 of the Constitution that mandates local government to provide a democratic and accountable local government and to encourage the involvement of communities and community organisations in local government matters. There are a number of policies and laws passed after 1994 to expand on the constitutional provisions of public participation in South Africa. These include the Municipal Structures Act, No. 117 of 1998, and the Municipal Systems Act, No. 32 of 2000, which are outlined in this section.

3.3.1 Policy framework for public participation in South Africa

In 1997 the Batho Pele 'People First' White Paper on Transforming Public Service Delivery was launched to transform the public service and promote public participation.

Apartheid did not promote a people friendly public service to the black community and there were lack of skills and attitudes towards meeting the developmental challenges facing the country. The old culture needed to be changed to ensure that people are served properly, that all staff worked to their full capacity and treat state resources with respect (RSA, 1997:10).

Section 16 chapter 4 of the Local Government Municipal Systems Act requires that municipalities develop a culture of municipal governance that complements formal representative government with a system of participatory governance.

In this regard the Municipal Systems Act obligates local government to encourage and create conditions for communities to participate in affairs of the municipality. Furthermore, municipalities are required to encourage and enable communities to participate in all processes associated with Integrated Development Plans (IDPs), performance management systems, preparation of municipal budgets, and strategic decisions connected to the provision of municipal services. These are then the main processes that which ward committees are expected to follow. Moreover, the Municipal Systems Act states that municipalities should ensure that councillors and staff have the capacity to enable them to ensure that public participation is adopted and communities also have the capacity to participate. Section 17(2) of the Municipal Systems Act notes that municipalities should take into account the special needs of sectors of the population who cannot read and write, as well as the disabled, women and other disadvantaged people. This should be done with respect to all mechanisms, processes and procedures for community participation.

According to Buček and Smith (2000), the possibility of revitalising democracy in local government institutions can be achieved through the practise of public participation. Furthermore, Tully (1999) and Shaw and Martin (2000) state that it is important to point out that public participation can be reduced to simply ceremonial attendance of people in local institutions and it does not necessarily result in noticeable or required results. Hence it is vital for civil society to know how to influence meaningful change and to be aware of their capabilities to make judgements and play political roles as citizens (Mahajan 2003). Moreover in public participation, power spaces are important in that they impact on the participatory process.

Moreover, Patterson (1999) argues that when there is non-participation in community organised spaces, this does not necessarily mean that there is an element of laziness within the democratic process. Thompson (2007) states that before creating new spaces of public participation and new institutions of participation it is vital to understand the spaces which currently exist. Further, some of the dynamics of power within local communities makes it challenging for civil society to use the new created spaces effectively. In some cases the community-organised spaces and practices can yield better results in getting civil society to participate than new created spaces can. Participatory democracy entails a high level of public participation in the political process through a wide variety of institutional channels. In South Africa these channels can either be state organised or community organised. The state-

organised forms of participation such as ward committees are formed by government to act as the link between government and the public. In state-organised gatherings, government meets up with the public to convey a message or it seeks to get feedback on an issue (e.g. policy making) concerning the public. The community-organised institutions are formed by the public to communicate with government and also to ensure that their voices are heard by government and by other public members.

This section aims to outline the nature of, among others, state-organised forms of participation such as ward committees, Izimbizos and Integrated Development Plans, and community-organised forms of participation, such as social protests, street committees and community meetings.

3.3.2 State organised forms of participation

a) Ward committees

Ward committees originated in 1999 in terms of the provisions of the White Paper on Local Government of 1998 and the Local Government Municipal Structures Act 117 of 1998. The White Paper states that provinces can choose which type of metropolitan, district or local municipality will be established in their respective provinces. Category A municipalities consist of a metropolitan council that exercises the complete range of municipal powers and duties, and ward committees, which are area-based committees whose boundaries coincide with those of ward committees. Chapter 1 Section 3 of the Municipal Structures Act states that Category B municipalities are those municipalities which differ from Category A in the following ways, among others: if an area is not of high population density, if the area does not have extensive development, and if there is a single area for which Integrated Development Planning is desirable then this area has to have a Category B municipality.

Chapter 1 section 9 of the Municipal Structures Act states that Category B municipalities can be divided into the following different types; a municipality with a collective executive system combined with a ward participatory system, a municipality with a mayoral executive system, a municipality with a mayoral executive system combined with a ward participatory system and a municipality with a plenary. According to Section 6 of the Municipal Structures Act if an area is declared a district management area it should have a Category C municipality.

These municipalities do not have ward committees. Ward committees are given certain municipal and policing functions. Their role has evolved over the years and now, among other things, their task is to communicate and consult with the community in respect of development and service plans. Furthermore, the ward committee should be set up in a way that it can reach most sectors and areas in the ward. Part 4 of Chapter 4 of the Municipal Structures Act sets out the composition, election, framework for powers, functions and dissolution of ward committees. The Municipal Structures Act limits statutory powers and functions of ward committees to those of advisory bodies. Section 74 states that a ward committee may make recommendations on any matter affecting its ward to the ward councillor or through the councillor to the council, executive committee, mayor or sub-council.

The ward committee can also have duties and powers delegated to it by the municipal council. Smith (2008:5) states that, as much as the laws that govern ward committees are perceived as being an effective way to govern these structures, these Acts on their own limit ward committees in the manner that they are to perform their duties. Ward committees do not have any decision-making powers and certainly none over resources. According to Smith (2008:5) even though ward committees are meant to identify key issues affecting their ward and deliberate upon them, the failure to integrate ward committees explicitly into the decision-making process of the municipality means that they have little impact.

In some municipalities ward committees exist by name [only], they do not perform their tasks, and they fail to attend public meetings. Having ward committees may seem to be good on paper however they are practically limited (Smith, 2008:7).

b) Izimbizos

Izimbizos were launched in 2001 as an initiative with the aim of creating a communication tool between government and the public.

Izimbizos were created to assist government in gathering information that can be used to inform future policy decision-making processes and to improve the management and implementation of the policy making process (Hartslief, n.d:2).

Furthermore, Izimbizos are supposed to serve as platforms where the public is given the chance to pose questions, state their concerns and give advice about matters concerning the municipality. Additionally izimbizos are supposed to ‘aim at providing government officials and communities with an opportunity to engage on various service delivery challenges and finding solutions to them’ (Tsatsire, 2008:189). Furthermore, the review of the IDP and the Midterm Review Expenditure Framework take place in this initiative, which is where the municipality’s way forward is given.

Raga et al (2012) further states that izimbizos are part of a government’s plan to build partnerships across communities, supporting the President’s call for government to serve the poor. Moreover, izimbizos should also aim to allow for consultation and feedback on programmes undertaken by government in improving the lives of residents.

Kondlo (2010) argues that izimbizos, although seeming useful on paper, in practice are a travesty of what they should be. Moreover, being state led, they are a small-scale version of wider challenges within the administration of government. Such challenges include poor coordination, lack of consultation, lack of follow up on issues and the political party’s self-serving tactics. Moreover, in practice, in these gatherings the decisions have already been made on behalf of citizens, therefore izimbizos are in effect a platform in which government tells people what it has decided to do and citizens should just listen as their feedback is not required (Kondlo, 2010:1). Kondlo further argues that while izimbizo are supposed to allow for two-way interaction, in practice government calls the shots during the gathering and the public is expected to obey.

c) Integrated Development Plans

According to RSA (n.d), an IDP is an approach within local government which aims to overcome the fragmented planning of the past. The IDP is a planning approach that includes the whole municipality and the communities under the municipality in discovering the best solutions to attain good long-term development. Furthermore, the main aim of the IDP is to coordinate the work of local and other government spheres in a coherent plan to improve the quality of life of all people living in a specific area. All municipalities are required to have an IDP. It helps the municipality to focus on the most crucial community needs, taking into account the available resources to meet these needs. In this way the municipality can find the most cost-effective strategy of rendering the services. IDPs give the community members a

chance to participate in identifying their most important needs, for which the municipality then develop solutions to address.

3.3.3 Community organised forms of participation

a) Social protests

Social protests can be defined as a source of communication used by citizens to voice their demands and dissatisfaction towards the government so as to be able to access resources which will enhance their livelihoods. Social protests are regarded as a form of public participation where citizens take to the streets to show their dissatisfaction in the way government does things. In South Africa civil society often protests over grievances which they feel that government is not responsive in taking steps to rectify, and protests serve as their way of getting government's attention. Social protests can take different forms, such as lawful protests and unlawful protests. Lawful protests refer to protests that are legal and they do not include violence.

Unlawful protests, on the other hand, in some instances can include violence, such as burning of tyres in the street, damaging private property, injuring other citizens, and any other harmful behaviour. While analysing these protests Atkinson (2007) observes that at the municipal level, protesters have regularly complained about the unresponsiveness of officials and councillors. Among other things protests are driven by dissatisfaction over basic service delivery, which includes access to water, sanitation and electricity. Citizens claim that they are tired of the empty promises government keeps making and embarking on protests seems to be the only way they can make government listen to their concerns.

b) Community meetings

Community meetings can be described as public gatherings called by community leaders in a specific area. 'These meetings can complement the structures that foster citizen deliberation such as citizen panels by providing citizens with the opportunity to engage in the political process' (Adams 2004:43). All members of the community are welcome to attend the meetings and it is important for them to do so since the issues discussed in the meetings will affect them. Adams (2004:43) further states that the way that the meetings are set up is important - everyone should be made to feel comfortable to speak and to ask for clarification when they do not understand. According to McComas et al (2006:674), people attend meetings for different reasons. Some attend out of curiosity, some attend because of concern

with what will be discussed and some attend to provide input on the issue at hand. 'In these meetings everyone is allowed to state their views and concerns about issues concerning the community and also try to ensure that their voices are heard' (McComas et al, 2006:674).

In community meetings community leaders (ward councillors and street committee leaders) supply feedback from issues that were discussed previously. These meetings are an effective way to convey information about public opinion to officials. The community plays an important role in shaping and addressing issues concerning community development. According to Adams (2004:48), although public meetings are called by community members, this does not necessarily mean that all the community members will attend and not all the community members are involved in calling the meeting. Community meetings require:

high initiative and high citizen power because it is the community's responsibility to call and address the meeting. Depending on the issues discussed and how they are addressed community meetings usually have less conflict (Adams 2004:48).

c) Street committees

Street committees consist of a group of people living in a specific community and are chosen by the community members to create a peaceful environment within that community. According to Nzimande (2008), in South Africa most street committees fall under the South African National Civics Organization (SANCO), which is the direct product of the civic tradition of the anti-apartheid struggle.

Furthermore, Nzimande (2008) states that one of the major roles of the street committees is to ensure close relations between the community, the municipality and the councillor. Therefore, even though the street committee is not a substructure of the ward committee, there should be a link between these two structures (Nzimande, 2008: para 20). In some areas street committees are regarded as community law regulators, mostly patrolling at night to alert the police about the main areas within the community where crime is at its highest.

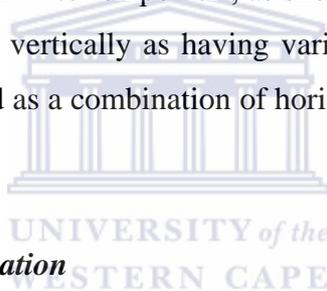
Even if street committees' main duty is to fight crime, they cannot ignore other community challenges, mainly those faced by poor households (Integrated Regional Information Networks, 2012). Furthermore, as street committees are closer to the people they can identify and act upon a range of challenges faced by households in a specific street, including levels of

poverty, orphans and child-headed households, the need for social grants, and domestic problems including domestic violence.

Although street committees are created to maintain peace within a specific community, in some instances they have been shown to be the creators of violent acts themselves. They tend to take the law into their own hands, creating vigilant groups who beat up people and at times kill them. Instead of ensuring safety and security they are the creators of violence.

3.4 Public participation framework

This section aims to give an overview of the framework for public participation. Public participation can be viewed horizontally or vertically, or as a combination of both. The Public Participation Spectrum, which was developed by the International Association for Public Participation, views public participation as entailing several steps that can be represented on a horizontal axis ranging from ‘inform’ to ‘empower’, as shown in Figure 3.1 below. Arnstein (1969) views public participation vertically as having various stages. Figure 3.3 shows that public participation can be viewed as a combination of horizontal and vertical forms of public participation.



3.4.1 Horizontal public participation

Figure 3.1 shows that as one moves from ‘inform’ on the left end of the spectrum through to ‘empower’ on the right, there is an equivalent increase in expectation for public participation and impact. In informing councillors or municipalities, civil society has no expectation that they will receive feedback, hence there are low levels of impact. The other end of the spectrum, which involves empowering councillors and municipal officials to make decisions, this leads to an increase in expectations and therefore an increased level of public impact.

Figure 3.1: public participation spectrum

IAP2 PUBLIC PARTICIPATION SPECTRUM

INCREASING LEVEL OF PUBLIC IMPACT

INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
Public Participation Goal:	Public Participation Goal:	Public Participation Goal:	Public Participation Goal:	Public Participation Goal:
To provide the public with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the Public:	Promise to the Public:	Promise to the Public:	Promise to the Public:	Promise to the Public:
We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example Tools:	Example Tools:	Example Tools:	Example Tools:	Example Tools:
<ul style="list-style-type: none"> • fact sheets • web sites • open houses. 	<ul style="list-style-type: none"> • public comment • focus groups • surveys • public meetings. 	<ul style="list-style-type: none"> • workshops • deliberate polling. 	<ul style="list-style-type: none"> • citizen advisory committees • consensus-building • participatory decision-making. 	<ul style="list-style-type: none"> • citizen juries • ballots • delegated decisions.

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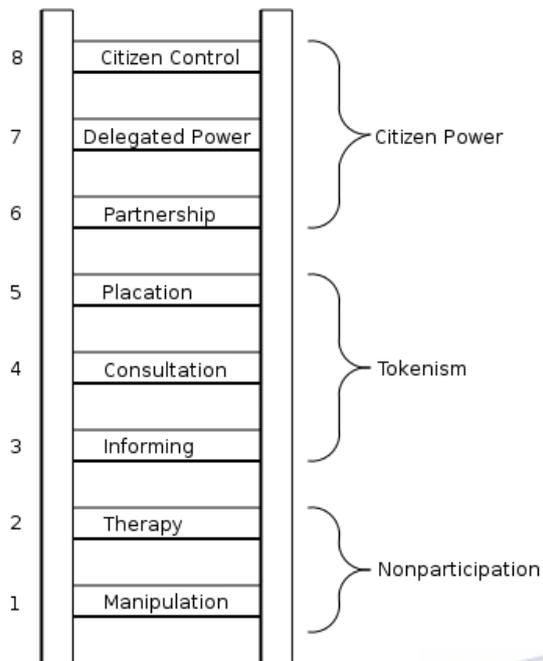
Source: Victorian Department of Environment and Primary Industries (n.d)

It is important to note that task levels can be relatively high at the ‘inform’ end of the spectrum, while the power and strength of the relationship between civil society and the municipality may be low. Sometimes the assumption is that the difficulty levels involved in the process of engagement increases as the level of public participation increases, with ‘inform’ perceived as being easy compared with ‘empower’. In reality, where the process of engaging with civil society is effective for its main purpose, no part of the spectrum is harder than or more preferable to another. Indeed, the need for different skills and depth and trust in relationships can make all parts of the spectrum both challenging and rewarding.

3.4.2 Vertical public participation

Figure 3.2 below shows Arnstein’s (1969) ladder of participation, in which participation is viewed as entailing various stages on a ladder ranging from non-participation at the bottom to citizen power at the top. Steps 1 and 2 at the bottom of the ladder are considered to involve manipulation and therapy, and represent non-participation.

Figure 3.2: Ladder of participation



Source: Arnstein (1969:217)

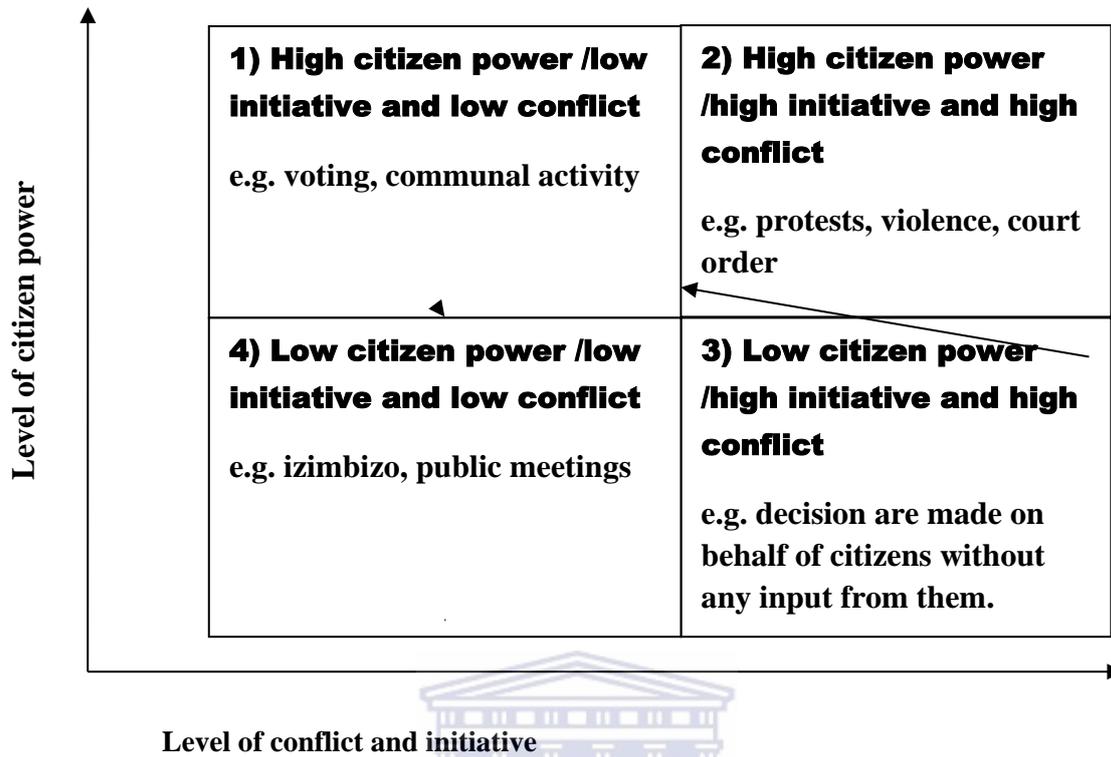
At that level the authorities' main goal is to prevent the public from participating in planning, but allows those in power to educate the public. In non-participation the public is not given the chance to participate in decision making; government makes decisions on behalf of the public. Steps 3 and 4 are 'informing' and 'consultation'; these steps allow those in power to give citizens information and the opportunity to voice their opinions. However, under these conditions citizens lack the power to ensure that their views will indeed be taken into consideration by those in power. When participation is at these two levels there is no follow up to determine if the views of the public will indeed be considered. For example, in a public meeting people are given the chance to voice their concerns but there is no follow up after the meeting that the relevant steps to rectify the concerns will be taken. Step 5 is 'placation' and citizens at this stage have some degree of influence; the public is allowed to give some degree of advice although the ultimate decisions are taken by those in power. Step 6 involves 'partnership' with those in power to negotiate outcomes. Step 7 ('delegated power') and step 8 ('citizen control') are the last two steps, where the public has the majority say in decision making.

According to Mananga (2012:3), among the major challenges facing local government are acute problems of institutional capacity, mismanagement of funds, high levels of corruption and a lack of public participation. These are key challenges hampering performance in the local government sphere (Mananga, 2012:3). This places South Africa at the bottom of the ladder of participation, i.e. where there is non-participation, the public is not given the chance to participate in decision making and government makes decision on behalf of the public. Government's failure to realise the new developmental mandate of working collaboratively with communities in ensuring that they have sufficient access to water services could cause instabilities in the lives of households. Furthermore, in the water sector lack of public participation has led to severe service backlogs that impact on many poor communities that yearn for the provision of water services for their survival.

3.4.3 Combination of horizontal and vertical public participation

Figure 3.3 below illustrates the integration of both horizontal and vertical forms of public participation which were discussed separately above. Quadrant 1 shows high citizen power in participation and low initiative and low conflict, which occurs where minimal effort is required for participation, such as through voting. Quadrant 2 shows high citizen power, high initiative and high conflict, and in this quadrant the public has the highest influence on decision making, which is derived from own initiatives such as demonstrations to get the government's attention as well as court actions to force government to listen to their concerns and do something about them. Some of these demonstrations can become violent with concomitant damage to property and sometimes even deaths.

Figure 3.3: Combination of vertical and horizontal public participation



Quadrant 3 shows low citizen power with high initiative and high conflict. Decisions are made on behalf of the public by government; the public has little or no power over decision-making despite its effort to negotiate better interaction. When government makes decisions on behalf of the public this often creates conflict between government and the public which may lead to violence and court action, which would lead to a shift to quadrant 2. This shift is illustrated by the arrow pointing from quadrant 3 to quadrant 2, which shows that participation can shift from low citizen power, high initiative and low conflict to high citizen power, high initiative and high conflict. Alternatively the public can become disillusioned and accept its lack of power and the monopoly of government, which would shift participation to quadrant 4. Quadrant 4 shows low citizen power, low initiative and low conflict. When citizens find themselves in quadrant 4 they have no power or assurance that their views and concerns will be taken into consideration.

3.5 Public participation in the water sector and the implementation of water demand management mechanisms in South Africa

This section aims to outline public participation in the water sector and the implementation of water demand management mechanisms in South Africa. As discussed in chapter 2, public

participation in water services was introduced in the early 2000s when water services were decentralised from national to local government. The application of public participation in the water sector is important in order to ensure that government addresses the real needs of communities in the most appropriate way. Public participation is a guiding principle of South Africa's post-apartheid water sector reforms. Yet, according to Wilson et al (n.d), studies indicate that substantive and effective participation has been difficult to achieve in the water sector. According to Galvin and Habib (2003), public participation also assists in ensuring that an informed and responsible civil society is built with a sense of ownership over the state's developments and projects. Public participation further gives municipalities the opportunity to obtain buy-in and to develop partnerships with the relevant stakeholders.

There are a number of policies and legislation that makes it compulsory for municipalities to consult or inform civil society before making decisions. However, these are good on paper but are seldom applied in practice. Sometimes officials perceive public participation as something that they are forced to do instead of perceiving it as something that will benefit them. Other officials fear facing the community because of the feedback or consultation they might receive, which can sometimes end up being complaints forums and protests over lack of service delivery. However, Galvin and Habib (2003), states that engaging with communities will help municipalities to make more appropriate decisions that are based on the real needs of people. The more that civil society is informed about governmental issues, the better it will understand government intentions and the available resources and budget limitations. Public officials can only claim accountability if they interact with civil society regularly and if they give feedback on the council's key decisions. Government can only be effective in addressing community service delivery challenges if it works in partnership with communities and civil society.

According to Wilson et al (n.d), the water sector has embraced the need to work together to address service delivery challenges, initially focusing on local water services delivery and now moving towards integrated water management encompassing all water uses by engaging with the communities. However, this has not been the case in practise. Galvin and Habib, (2003) state that given its central role in development, the management and development of water has also been affected by the societal pursuit of redress and democratisation. Yet despite the rhetorical commitment to decentralisation in policy papers and legislation, competing tendencies toward centralisation undermine the implementation of these policies

(Galvin and Habib, 2003:16). Moreover, government does not exhibit a strong commitment to decentralisation when confronted with the practical difficulties of involving local communities as participants in the water sector. The complementary laws and policies put in place for public participation in South Africa fail specifically in the water sector because they are not properly implemented. Theron et al (2007:4) found that the failure goes beyond the implementation process in that public officials lack the capacity and understanding of what public participation entails and thus how to implement and manage it in the water sector. According to Savenije and Van der Zaag (2002), the legislative and institutional tools consist of the rules and organizational measures for managing water use and water demand, including water rights, priority of use, role and authority of the water regulator, water pricing and the protection of water quantity and quality. These tools should promote decentralisation and public participation in order to broaden the role of civil society in water management as water demand management strategies develop.

Lack of public participation in the implementation of water demand management strategies has shown the negative impact of these strategies on poor households. The Mazibuko case, which was briefly discussed in chapter 2, is one in which local government implemented a water demand management strategy that negatively impacted on poor households and there was relatively no community engagement in the decision-making process. According to the Phiri residents they were persuaded to accept pre-payment meters as the only option available. Dugard (2008) states that they were never given the opportunity to refuse the implementation of the meters.

In the case of the CCT and the rolling out of WMDs, Bertone et al (2009) found that residents have no choice in receiving WMDs. All new homes built by the CCT have WMDs and they are also being installed in old homes as well. Moreover, Bertone et al (2009) state that no proper community engagement was done before the devices were installed. The CCT hired young people to go into poor areas and talk in support of WMDs and free water but they did not explain any negative aspects about the devices. In this sense poor people were deceived into signing a contract by withholding the complete truth. People in these communities further state that the CCT, after sending people to promote the WMDs falsely, went quiet until they were billed, causing confusion and anger. These cases show how government bypasses its mandate to provide a democratic and accountable local government and to encourage the involvement of communities and community organisations in the matters of

local government, as stated in the Constitution (RSA, 1996:1331). Public participation is about how civil society influences decisions that will improve its standard of living. However, in some areas certain people or interests have more access to power and decision-makers than others. According to de Villiers (2001), forms of access to power will tend to reflect the socio-economic landscape and inequalities of society. Even in well-functioning democratic systems people tend to pay more attention to the views of those who are more powerful and disregard the views of the poor and unorganised (de Villiers, 2001). The case of South Africa has also demonstrated that the poor population's voices fade when it comes to voicing their concerns and dissatisfactions concerning service delivery, while the wealthy population seems to be heard more.

It has further shown that the lack of public participation worsens the inequalities found between wealthy and poor citizens, even though in South Africa everyone is said to be equal under the law. However, in practice this has not been the case. In the case of the implementation of water demand management mechanisms, decisions are often made without allowing participation from the communities where the devices are implemented. Local government in this regard makes decisions on behalf of citizens and only consults or engages communities after the decision has been made, which is not public participation. According to Scott (2009), the role of public participation, which facilitates the communication channels between civil society, on one hand, and policy makers and implementers, on the other, demonstrates that public participation should be promoted and preserved. This makes sense more when looking at the role of public participation in democratising and controlling the making and implementation of policies. Although such practices of community engagement are in creating more democratic forms of equitable and sufficient water supply, they can only be achieved with proper understanding and implementation of public participation processes in municipalities.

3.6 Conclusion

In conclusion, this chapter has demonstrated that public participation is a vital process in government decision-making processes because it brings development closer to the people, promoting participatory approaches and consolidating democracy. This chapter has demonstrated that the country's history of oppression has influenced the adoption of the new South African Constitution in 1996, which promotes equality and addresses the state of inequality caused by the apartheid regime. However, as stated by Thompson (2007) the

adoption of the liberal democratic model in South Africa has caused a major downfall within the state. Those citizens who were deprived of participating and having a voice in the way the government performs its duties are still deprived even today. Citizens who live in rural and poor urban areas still face the challenges which they faced during the apartheid regime of not being given the opportunity to voice their views on how government does things. This chapter further showed that as much as public participation is enshrined in the Constitution, the implementation and application of it is poor. The main cause of its poor application goes beyond its implementation and its failure is rooted within government departments where officials lack understanding of what the public participation process is and what it entails.

As further discussed, public participation takes two forms, namely, that which is state organised and that which is community organised. However, both these have major disadvantages in how they are implemented and viewed. State-organised forms of participation have proven to be a way in which government tells citizens what decisions it has already made and what strategies it will carry out next without any feedback or engagement from citizens. Some of the platforms government uses make as if it is allowing community engagement while the concerns citizens bring up in such platforms will not be addressed because the decisions were taken before engaging with citizens. Community-organised platforms, on the other hand, often tend to get out of hand, with citizens turning violent and at times taking the law into their own hands.

The frameworks of horizontal and vertical public participation discussed in the chapter gives a clear understanding of what public participation is and what it is not, and how the process can be carried out. Moreover, the legal framework for water services in chapter 2 showed how public participation was introduced into the water services sector. In chapter 3 the conceptual framework of public participation revealed the failure of the implementation of public participation in the water sector and how this has influenced the implementation of water demand management mechanisms. Chapter 4, which follows below, outlines the research methodology and the analysis of the findings on how the WMDs have negatively impacted the fulfilment of the right of access to sufficient water.

CHAPTER 4

RESEARCH METHODOLOGY AND ANALYSIS OF FINDINGS

4.1 Introduction

This chapter is divided into two broad sections. Section 4.2 outlines the research methodology used in this study. Research methodology refers to the methods of identifying, collecting, condensing, organizing and analysing data in the process of undertaking a research in social science (Bryman 2001, and Mouton 2001). It therefore focuses on the research process itself and the kind of tools used and procedures followed. This section begins with an outline of the selection of the study site in subsection 4.2.1. Subsection 4.2.2 outlines the design, which clearly maps out the significance of using both quantitative and qualitative methods in achieving the research objectives of this study.

Subsection 4.2.3 outlines stratified sampling and its relevance as a sampling method used in this study. Subsection 4.2.4 gives an overview of the data collection methods and sources used. In this regard the primary and secondary sources of data used in this study are outlined. Section 4.3 is the analysis of the findings of the study. This is undertaken in four subsections. Subsection 4.3.1 presents an outline of the characteristics of the sample. Subsection 4.3.2 presents the level of community participation in the implementation of the WMDs in Samora Machel, followed by the levels of water access to the sampled households in subsection 4.3.3. An attempt is made to analyse people's perception about the WMDs on the sampled households in subsection 4.3.4.

4.2 Research methodology

This study is based on evaluating the social consequences of WMDs on poor households and the participation processes used in the implementation of WMDs in low-income areas in Cape Town, using Samora Machel as a case study. This approach helped in doing an in-depth analysis on how people's lives have changed after the implementation of WMDs and what power they had over the implementation of the devices. This section outlines the research methodology used in the study. In this regard this section gives the overall procedures which explain and describe clearly how the data was collected and how the study objectives were achieved.

4.2.1 Selection of study site

The selection of Samora Machel as a case study was based on a number of reasons. Firstly, Samora Machel is one of the poor urban areas where the CCT implemented the WMDs as its water demand and conservation strategy. Secondly, it is an area in which the basic water services provided have to be shared among multiple households, made up of both main and backyard dweller households. Thirdly, and most interestingly Samora Machel is one of the few areas in which the CCT's WMD project included installing other water demand management mechanisms that are complementary to the WMD, such as the in-house display unit and the dual-flush toilet system. Due to challenges of overpopulation the city further implemented tagged standpipes. The in-house display unit is a device which enables households to monitor their water consumption from inside the house, thus allowing them to take remedial steps before water is exhausted. The in-house display unit also indicates when there are leaks with the WMD.

Furthermore, the CCT installed dual-flush toilet systems in the area. Unlike the conventional flushing system, which uses the same amount of water for flushing solid waste as for liquid waste, the dual-flush toilet uses less water when flushing liquid waste and slightly more for solid waste. Elliot (2011) sees the dual-flush toilet system as an interactive toilet design that helps in saving water. The dual flushing system is a convenient way of manually selecting the water volumes for each flush. A half flush is used to flush liquid waste and a full flush is used to flush solid waste. Elliot (2011) states that most modern dual- flush toilets use less than three litres to flush liquids and six litres to flush solid waste. 'These are huge savings when compared to the old system which used approximately 19 litres or more for flushing both solids and liquids' (Elliot 2011: para 2). In areas where there is a lack of water to allow conventional flush toilets, dry sanitation, pour flush and low-flow systems should be considered (Mukheibir 2006).

A tagged standpipe is a communal tap which the CCT installed as a pilot study to be used mainly by backyard dwellers in Samora Machel. The tagged standpipes are seen as means to control water access in the area, which is characterised by high numbers of backyard dwellers. In order to dispense water from these devices one has to have a tag (key) to open the device and dispense water. These standpipes are situated outside of the plots and each of the standpipes can supply water for up to 40 households. The tagged standpipes are programmed to dispense 250 litres per backyard household per day.

4.2.2 Research design

Designing research in social sciences entails that the researcher should map out the approaches or the research design they will be using as guiding principles that will enable them to obtain the appropriate results for the investigated problem. Berg (2001:60) defines a research design as a road map that is used to plan before embarking on a research study, while Yin (1994:20) defines a research design as a rational plan for getting from here to there, where 'here' is the initial research questions that needs to be answered by the participants and 'there' includes the conclusions resulting from the findings. Once the research topic and questions were determined, it was important to start with the data collection. Samora Machel among other challenges faces challenges of crime, in order to ensure the safety of the researchers, community leaders in Samora Machel were consulted and informed about the research and about the number of researchers who were going to be collecting data before going into the area. Moreover, a week before the researchers collected the data the study site was visited in order to get a broader view of the environment, the type of dwellings and water access points in the area. After closely examining the research questions, it was decided that a combination of qualitative and quantitative methods were best suited for this study.

This combination enabled the capturing of different features of the topic under investigation. The use of qualitative methodology is significant for this study in that it helped in recording people's attitudes, feelings and behaviours concerning the implementation of WMDs in greater depth. As confirmed by Reichardt and Cook (1979), qualitative research is an approach or an attitude to data gathering which comprises an in-depth investigation of human perceptions, attitudes and experiences, as well as the associated processes by and the context within which these occur. The choice of qualitative design for this study was further justified by the objectives of the study, which displayed two main features that theoretically require a qualitative design. Firstly, the research was conducted in the natural setting of the social actors themselves. Secondly, the focus was on making an in-depth analysis and understanding the impact of the WMDs on households.

The use of quantitative methodology was also significant for this study in that it often allowed identifying cause and effect relationships. Another advantage is that quantitative data revealed measurements that provide meaningful information about the subjects of study. Moreover, Lazaro and Marcos (2006) state that in the quantitative analysis of the data, dependent and independent variables are identified and inadequate or unnecessary variables

are eliminated in order to reduce as much as possible the complexity of the problem at stake. At least two key differences between quantitative and qualitative methods stand out. The first is their degree of flexibility. Quantitative methods are fairly inflexible as, for example, researchers ask all participants identical questions and in the same order in the surveys and questionnaires. Qualitative methods are more flexible in that they allowed greater interaction between the researcher and the household members interviewed. While the relationship between the researcher and the participant in qualitative research is, to some extent, less formal, it is strictly formal in quantitative research (Lazaro and Marcos, 2006).

The other difference is what Reichardt and Cook (1979) refer to as the dimension of discovery versus verification. By this they mean that while the qualitative researchers aim for rich, deep, real and valid data, the quantitative researchers attempt to attain hard, replicable and reliable data. While qualitative and quantitative research approaches each have their strengths and weaknesses they were extremely effective in combination with one another in this study. The qualitative method was used to identify the factors that affect households in Samora Machel, and that information was then used to formulate quantitative research that assessed how these factors would affect household preferences in relations to water access.

4.2.3 Sampling method

A sample means ‘a special subset of a population observed in order to make inferences about the nature of the total population itself’ (Babbie et al., 2001: 203). Sampling is therefore the process of selecting a sample of respondents. Stratified random sampling is applied in this study. Stratified random sampling includes surveying a selected group of subjects from a larger group of people and is always used when the population is heterogeneous. Through this useful sampling method, it was possible to sample each subpopulation of the main population separately. This is an effective and easy way to get unbiased results from these populations (Babbie et al., 2001). The main aim of using the stratified random sample in this study was to reduce the potential for human bias in the selection of cases to be included in the sample.

As a result, the stratified random sample provided the study with a sample that is highly representative of the population being studied. Furthermore, Babbie et al (2001) state that stratified random sampling also improves the representation of particular groups within the population, as well as ensuring that these groups are not over-represented. In this study, stratified sampling was used to ensure that the sampled population was a representation of

various groups within the population, which included males and females who were 18 years old and above, since the study aimed at capturing views of adults and adulthood starts at 18 in South Africa. In total the sample size was 222. This was further divided in half: 111 lived in the main household while the other 111 were backyard dwellers. Each of these was further divided in half by gender. Together, this helped to compare the groups, as well as make more valid inferences from the sample to the population.

4.2.4 Data collection methods and sources

Primary data sources

Primary data collection involves the collection of data that is unique to the research undertaken (Lowe and Zemliansky, 2011:153). The use of primary data helps in determining what has not been done by other scholars to help answer the research question. Furthermore, Lowe and Zemliansky (2011) states that the use of primary data increases the validity of the study data in that the data is obtained from the relevant sample population. Moreover, choosing the right primary research tools increases the legitimacy of the data collected. As previously stated, this study makes use of both qualitative and quantitative research methods. Hence, both qualitative and quantitative data collection methods were used so that they would adapt to the qualitative and quantitative research design adopted in this study. Although the objectives of quantitative and qualitative research are not mutually exclusive, their approaches to decoding the world involve distinct research techniques and thus separate skill sets (Family Health International, n.d).

The quantitative method used was a semi-structured questionnaire used to conduct interviews with 208 interviewees. The questionnaire consisted of both open-ended and closed-ended questions. According to Meadows (2011) in quantitative research it is ideal to use a mixture of both question types in order to get useable data quickly that is easy to analyse. The open-ended questions were significant for this study in that it allowed the respondents to include more information, including feelings, attitudes and understanding about the implementation of the WMDs. Thus allowing better access to the respondents' true feelings about the WMDs. Meadows (2011) states that open-ended questions assist in decreasing two types of error responses: the first one is that it is unlikely for participants to forget the answers they have chosen if they are given the opportunity to respond freely, and the second is that open-ended questions do not allow respondents to disregard the questions and just give the same answers such as 'yes/no', with no explanation. The advantages of using closed ended questions in this

study were that the questions were quick and easy to answer. Furthermore, the answers of different participants were easier to compare, and all the answers were easier to code and to analyse statistically. Moreover the participants were more likely to respond to sensitive questions if they were framed in a closed ended way.

The qualitative data collection method used in this study was in-depth interviews. These were life-history type interviews, conducted with a small sample of 14 interviewees, on their experiences before and after the implementation of WMDs. According to DiCicco-Bloom and Crabtree (2006), individual in-depth interviews are used by researchers to co-create meaning with interviewees by reconstructing perceptions of events and experiences. The in-depth interviews were used to discover common understandings of the households in Samora Machel. The in-depth interviews were more effective because the sample of chosen interviewees was fairly homogenous and they shared critical similarities related to the research question. DiCicco-Bloom and Crabtree, (2006) states that selecting in-depth interview participants is based on an iterative process referred to as purposeful sampling, which seeks to maximise the depth and richness of the data to address the research question. The quality of data for the research was improved in that the in-depth interviews allowed the researcher to probe for greater detail and data was collected faster. Primary data collection was done by three researchers. Two researchers collected quantitative data using a semi-structured questionnaire, which took five weeks. The qualitative in-depth interviews were done by one researcher who took two week to collect the data.

Secondary data sources

Secondary data analysis can be literally defined as second-hand analysis. It is the analysis of data or information that was either gathered by someone else (e.g., researchers, institutions, other NGOs, etc.) or for some other purpose than the one currently being considered, or often a combination of the two (Cnossen and Sith, 1997). If secondary research and data analysis is undertaken with care and diligence, it can provide a cost-effective way of gaining a broad understanding of research questions. Secondary data are also helpful in designing subsequent primary research and can also provide a baseline against which to compare primary data collection results. Therefore, it is always wise to begin any research activity with a review of the secondary data (Novak, 1996). Secondary data analysis and review involves collecting and analysing a vast array of information. Novak (1996) further states that to help the researcher to stay focused, a well-defined purpose is necessary as well as a clear

understanding of why the data is being collected, and what kind of data they want to collect, analyse, and better understand. Getting this right will help maintain focus and prevent the researcher from becoming overwhelmed with the volume of data.

Secondary data analysis can be carried out rather quickly when compared with formal primary data gathering and analysis exercises. According to Novak (1996) where good secondary data is available researchers save time and money by making good use of it rather than collecting primary data, thus avoiding duplication of effort. In research, a body of literature is a collection of published information and data relevant to a research question. A careful examination of a body of literature can point the researcher towards the answer of the research question (Cnossen and Sith, 1997).

Furthermore a literature review is vital for any study in that it is essential to know what work has been done previously on the topic. According to Novak (1996) there is no point in spending time to produce a research outcome that someone else has already achieved. Literature reviews further helps the researcher to identify research possibilities and to tailor or slant the particular research project to gain new insights or perspectives on the chosen topic. Moreover, Novak (1996) states that a literature review demonstrates that the researcher has read a large amount of literature to prove that they are aware of the wide range of research in theory and methodology related to the proposed research topic. This study's literature review focused on the two schools of thought that emanate from water demand management. The literature review further focused on how both these schools of thought have shaped water legislation and their impact on the right of access to water and to participate in the decision-making process in the water sector in South Africa.

This section therefore gave an outline of the research methodology used in this study in order to achieve the objectives set out. All the data captured was analysed on IBM SPSS Statistics 19. The type of questionnaire used in the study required the researcher to do an accurate analysis and the IBM SPSS Statistics 19 provided a quick visual snapshot of the data and offered the ability to apply validation rules that identify invalid data values. It was possible to create rules that flagged out-of-range values, missing values, or blank values. The following section gives a general outline of the analysis of the findings of the study.

4.3 Analysis of findings

This section presents data on the impact of WMDs on residents of Samora Machel. As previously stated in Chapter 1, the WMDs were implemented in 2010 under the CCT's water leaks project as a water conservation and water demand management strategy. The CCT claims that the installation of the WMDs was vital since the area is characterised by high levels of water consumption as well as the low levels of payment for water services. However, the devices have been criticised as being unconstitutional and for being prepayment meters in disguise because they limit water access and are installed only in poor areas. Addressing the complex issue of equality in water supply requires a multi-pronged approach to manage water consumption and maximise economic and social benefits in an equitable manner. As stated in Chapter 2, the WMDs are specifically programmed to supply 350 litres per household per day, unlike the previously used conventional meters which were set on free flow and thus allowed for any level of consumption.

4.3.1 Characteristics of sample

Samora Machel is a poor urban area. The study discovered that the sampled households in the area fall within the CCT's indigent grant policy, which was discussed in Chapter 2. Table 4.1 presents the range of house values of the sampled households, all of which are below the R199 000 threshold for entitlement to an indigent grant. Therefore, the sampled households receive 350 litres of FBW which is 150 litres more than those households who own houses that are valued at R199 000 and above.

Table 4.1: Value of sampled houses in Samora Machel

Property value (Rands)	Proportion (%)	Cumulative proportion (%)
10 000–39 999	25.9	25.9
40 000–50 000	39.5	65.4
50 001–75 000	28.4	93.8
75 001–100 000	4.9	98.8
100 001–150 000	1.2	100.0

As mentioned in subsection 4.2.3, the sample for the quantitative interviews consisted of a total of 208 stratified randomly selected households. The sampled households were all 18 years old and above. The study found that 80% of the sampled plots have backyard dwellers

who rent from the plot owners, the number of which varies in each plot. Figure 4.1 gives the size of the sampled households.

Figure 4.1: Size of sampled households

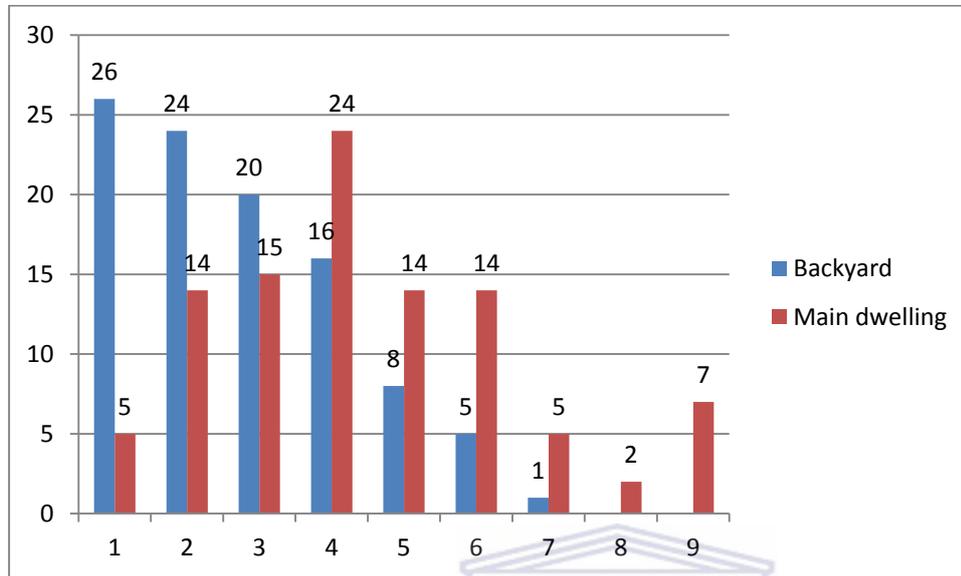


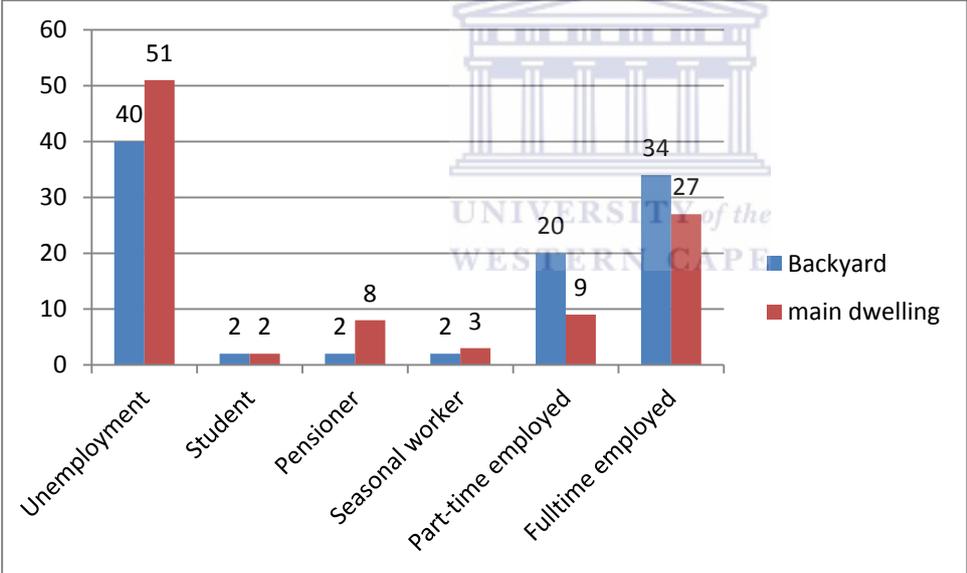
Figure 4.1 shows that within the sampled households the backyard households tend to be smaller in size, with 70% having fewer than three people and a further 29% ranging from four to six people. In the main dwellings 34% of households have one to three people within each household with 52% of households ranging from four to six people. In an area like Samora Machel with multiple households within one plot the size of the households has an impact on water access. If the plot has more multiple households this means that the water access is very limited for each person on the plot because water has to be shared among every person on that plot. The higher the number of multiple households and the larger the households in the plots, the less water there is per person. As demonstrated by the literature in chapter 2, Gowlland-Gualtieri (2007:7) states in a household of eight people, the 6kl of FBW per household per month translates to 25 litres per person per day.

To illustrate concretely what this means, it allows the household 40 baths per month (i.e. five baths per person) or 16 toilet flushes a day (i.e. two visits to the toilet per person per day). Applying this in an area like Samora Machel with multiple households with members who can amount to a more than eight people within a plot water access is a challenge. Hence the amount of 25 litres of water per person per day is considered insufficient to meet basic human needs, particularly for the urban poor, and thus has been considered not to fulfil the

requirements found in section 27(1)(b) of the Constitution (RSA 1996). Although the CCT has increased its FBW supply to 350 litres per household of eight per day, it however did not take into consideration population size in areas such as Samora Machel, where, as shown in Figure 4.1 (above), multiple households include backyard dwellers. All of these household members, which amount to more than eight, have to share the 350 litres of FBW per day as allowed by the WMD.

Turning to employment status of the sample, Figure 4.2 shows that the sampled households have a high unemployment rate: 51% in the main dwellings and 40% for backyard dwellers. The relatively higher level of employment of backyard dwellers is expected because they need the income to pay for their rent. The sample showed that 34% backyard dwellers are in full-time employment compared with 27% of main dwelling households.

Figure 4.2: Employment statuses of sampled households



The qualitative in-depth interviews revealed that the sampled households did not have the necessary means to pay for water above the basic daily supply in order to have sufficient water to sustain them throughout the day. The quantitative results supports what was revealed by the qualitative interviews. Furthermore, as demonstrated in chapter 2, the cost of water is preventing poor people from using it because they cannot afford it. This is further clearly explained by McDonald and Pape (2002) in the literature review in chapter 2, as a difference between poor and rich areas when it comes to paying for water.

The authors state that the water policies in place limit equitable access and distribution of water within poor, predominantly black townships, whereas affluent suburban neighbourhoods continue to be able to afford substantial amounts of water. Township residents will often pay more than those living in suburban areas despite the fact that townships are mainly underdeveloped urban areas with high levels of poverty. This is one of the reasons why poor citizens often run up water debts, which they cannot afford to pay, and often face having to deal with the implementation of cost-recovery instruments that limit their water access.

4.3.2 Public participation in the implementation of the water management devices in Samora Machel

This section gives an overview of the public participation process in the implementation of the WMDs in Samora Machel. As demonstrated in Chapter 3, public participation is an important component in local government. Public participation helps government to implement strategies that will meet the needs of the communities. In its presentation to the Parliamentary Portfolio Committee on Water and Forestry in December 2010, the CCT (2010a) asserts that it undertakes educational and awareness campaigns on proposed projects. The CCT suggested that it engaged with stakeholders, such as ward councillors and community leaders, and made representations at community forums to create awareness around water conservation. Moreover, the CCT further stated that it also targets individuals at household level, a process that is normally triggered by high consumption and high debt. At this level the CCT would then enter into negotiation with the affected households and sell the use of the WMD, explaining how the device would save not only water but assist with the management of water accounts.

In the case of the implementation of WMDs in Samora Machel the CCT had to employ Customer Service Agents (CSAs). These agents were to be responsible for addressing any queries that the community of Samora Machel had involving WMDs. Table 4.2 is taken from the tender document issued for the installation of WMDs and shows the door-to-door activities of CSAs and plumbers. Table 4.2 is vital for this section as it carries information regarding the public participation process in the implementation of the WMDs, and is proof that the information on public participation given by the CCT is misleading. As shown, on their first visit to the households, CSAs are to educate the owners of the households using an A4, 12 pages comic booklet about the WMDs. The aim of this is to explain the purpose of the

project, how the project will run and how to identify and repair leaks. Furthermore, as shown in Table 4.2, on their first visit plumbers are instructed to install the device whether the owner is there or not. This means that the plot owners had no say and no choice over the implementation of the WMDs.

Table 4.2: Door-to-door activities of customer service agents water management devices installation in Samora Machel

	Process	CSAs	Plumbers
1	Visit No. 1	<ol style="list-style-type: none"> 1. Greet the owner. 2. Check the name of the owner against the Council record and note differences if any. 3. Hand-over the flow limiter/WMD pamphlet. 4. Educate the owner on the issues in the pamphlet and those in the A4 booklet especially those listed in table 3. 5. Inform owner of what leaks will not be repaired under the project. 6. If owner or designated senior member is not at home (NAH), leave booklet and calling card with date of 2nd visit. 	<ol style="list-style-type: none"> 1. Install the flow limiter and set on free flow (whether or not the owner is there). 2. Take a meter reading.
2	Visit No. 2 (at least 30 days after visit no. 1. Team installing flow limiter will go ahead of plumbing repair team)	<ol style="list-style-type: none"> 1. If previously NAH cover issues under Visit 1. 2. Greet the owner. 3. Show the owner where there are leaks and what needs to be repaired. 4. If no leaks but high consumption, identify water uses and advise on how to reduce consumption. This is critical as the owner will experience problems once the Flow Limiter is installed. 5. Ask the owner for the latest bill and identify properties that have incorrect billing information e.g. no Indigent Grant. 6. Inform owner of date that plumber will repair 	<ol style="list-style-type: none"> 1. Take a meter reading. 2. Download consumption information from Flow Limiter for the period. 3. Audit the plumbing.

	Process	CSAs	Plumbers
		<p>water leaks.</p> <p>7. Ask the owner to sign off the audit and the visit.</p> <p>8. Ask owner to sign agreement letter. If owner refuses, inform him/her that no repairs will be done and the standard credit control process will be followed.</p> <p>9. If owner or designated senior member is not at home (NAH), leave booklet and calling card to contact the contractor to arrange date to visit.</p>	
3	Visit No. 3	<p>1. If previous NAH, undertake activities as per Visit No 1.1</p> <p>2. Inform owner how to maintain plumbing in good condition.</p> <p>3. Sign off plumbing repair</p> <p>4. Repeat information about flow limiter – ensure owner understands (report unhappy owners for special visit).</p> <p>5. If owner or designated senior member is not at home (NAH) leave calling card giving date of installation of the Flow Limiter. Leave a leaflet explaining who the owner should contact if they run out of water during the day.</p> <p>6. Install “Hlonipha Amanzi” Boards.</p> <p>7. Handover the A4 booklet and A4 colouring book.</p> <p>8. Educate the owner on the issues in the A4 booklet.</p>	<p>1. Take a meter reading.</p> <p>2. Repair the plumbing.</p> <p>3. Ensure no leaks.</p> <p>4. Set flow limiter</p>
4	Visit No. 4	<p><u>This occurs about 6 weeks after the flow limiter is commissioned at the property.</u></p> <p>1. Check for understanding</p> <p>2. Ensure no problems with leaks or with WMD</p>	<p>On call out from CSA:</p> <p>1. Audit new leaks.</p>

Process	CSAs	Plumbers
	3. CSA calls plumber if it is a technical problem with WMD or a new water leak 4. Follow up on those whose flow limiter is set >10.62Kl/month and have not paid	2. Repair new leaks. 3. Repair/adjust WMD.
5 Call out from Customer.	This visit is only in response to customer call out 1. CSA goes to investigate first to check that the problem is not to do with customer understanding. 2. Educate customer in case of understanding problem. 3. CSA calls plumber if it is a technical problem with WMD or a new water leak	On call out from CSA: 1. Audit new leaks. 2. Repair new leaks. 3. Repair/adjust WMD.

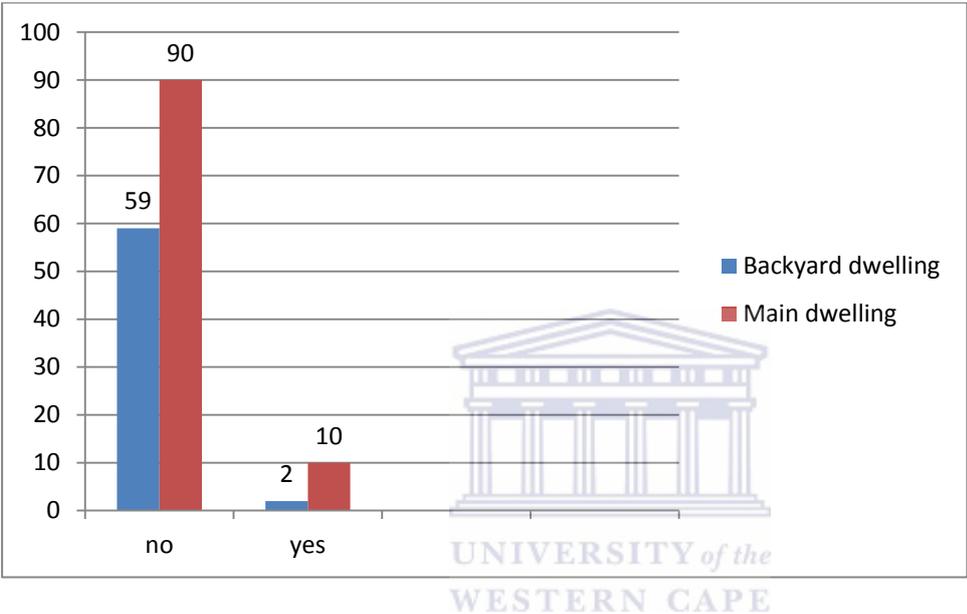
Source: City of Cape Town (2009)

Table 4.2 instructs that, on the first visit, the CSAs should educate the owners of the houses about the WMDs and how the meters work. On the second visit they should check if the installed WMD records high consumption but no leaks. If so, then they should identify water uses and advice households on how to reduce consumption. This is critical as the owner will experience problems once the flow limiter is installed. On the third visit, if the owner or designated senior member of the household is not at home the CSA is instructed to leave a calling card giving the date on which the flow limiter will be installed and a leaflet explaining who the owner should contact if they run out of water during the day.

Table 4.2 demonstrates that there was lack of public participation in the implementation of the WMDs. This was further verified by the study findings, which are presented in Figure 4.3 (below), which shows that 90% of the sample respondents in main dwellings claim that they had no say in the decision-making process of rolling out the WMDs and even during the implementation phase the meters were implemented without their input. Only 10% claim that they were consulted, the qualitative data revealed that those who were consulted found the consultation process uninformative and misleading. The consulted respondents state that they were not told about the automatic water cuts after the daily limit was used up, they were only told that they will be supplied with water free of charge and their arrears would be written off.

Since the consultation process was largely aimed at main dwelling households, some of whom were also plot owners, only 2% of the sampled backyard dwellers claim they were consulted. As further stated by Wilson and Pereira (2012), the young people employed by the CCT to go to poor areas to introduce the WMDs only gave information in support of WMDs and free water, and did not explain any negatives about the devices.

Figure 4.3: Level of public participation of sampled households before installation of water management devices



The lack of public participation in the implementation of the WMDs is further verified by the literature reviewed in Chapter 3. A study done by Bertone et al (2009) discovered that residents in Cape Town had no choice in receiving WMDs. All new homes built by the CCT have WMDs and they are also being implemented in old homes as well. Moreover, these scholars found that no proper community engagement was done before the devices were implemented.

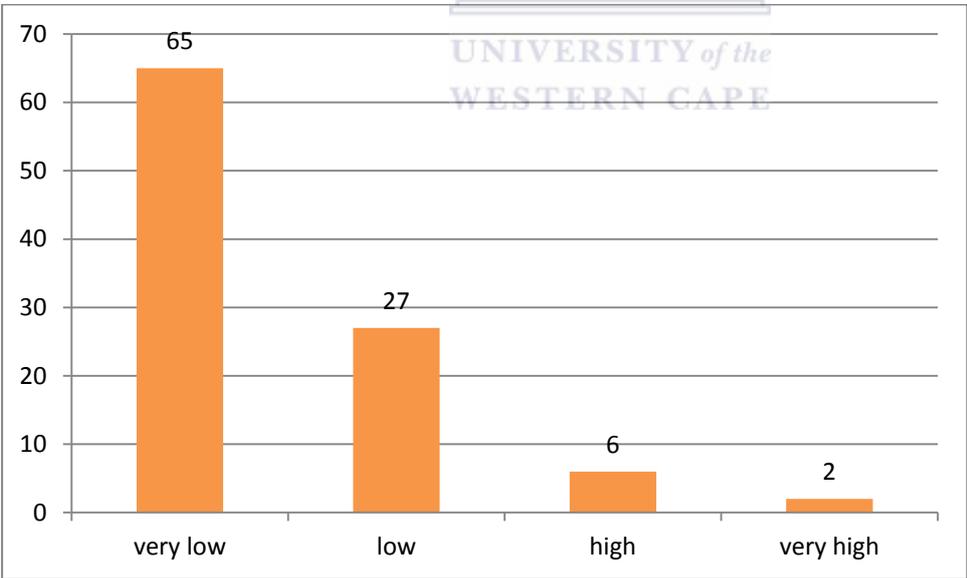
The sampled households claim that:

All that happened was a municipal worker would knock on our doors and tell us that they were here to install the water management device. In some instances we would see a municipal worker removing the old conventional meter and installing the water management device without even consulting us (Respondents 1, 2, and 4 Samora Machel, 3/10/2011).

The sampled households stated that it would have been fair if they were given the opportunity to state whether or not they wanted the WMDs. Moreover, they felt that as they are the people who have to live with the devices after the whole strategy was implemented in the area, the CCT should have included them in the decision-making process. Former Mayor of Cape Town Helen Zille applauded the installation of the WMDs in poor areas, as ‘helping’ both the City’s customers to ‘save water and to manage their monthly water bills and the City to manage debt’ (CCT, 2008). To show support for the program, Zille had a WMD installed on her property. While on face value it was commendable that she ‘walked the talk’ in reality her situation was different from that of the affected residents because she made a conscious decision to switch to a WMD meter, whereas the residents had that decision taken on their behalf by the City because of their inability to pay their water bills. Zille’s statement reflected a shift of responsibility to consumers to manage and calculate their water consumption.

Figure 4.4 show that the sampled households’ citizen power in the installation of the WMDs in Samora Machel was declared to be low or very low by 92% of the respondents.

Figure 4.4: Extent of citizen power in installing water management devices in Samora Machel



The in-depth interviews revealed that respondents believed that it does not help when they voice their views and opinions, because they are not taken into consideration by the CCT. The sampled participants further felt that the information they were given by the CCT was not clear. They stated that in South Africa there are no rights for poor people; they have to accept whatever they are given, their opinion makes no difference. They felt that the government has

more power than they do and often bullies them. They further stated that they were not involved in planning and decision making for the WMDs: they only saw the CCT officials when they wanted to install the meters. Therefore, they do not know how the in-house display unit works, which is meant to help them to manage their water access and alert them when the WMD is leaking or has a fault.

Challenges concerning population size might have been realised if the CCT engaged with the community of Samora Machel in the decision-making process around WMDs. The installation of tagged standpipes might have been done at the same time as the installation of the WMDs and not later, as a pilot study. This would have ensured that majority of the area does have tagged standpipes. Moreover, issues concerning leak projections could have come up in the public participation phase and information on how to deal with such occurrences would have been supplied. Where consultations were undertaken, as representatives of the CCT the consultants were expected to educate, inform and install the WMDs. They were expected by the residents to have the answers to their concerns about the new devices that were being installed on their properties.

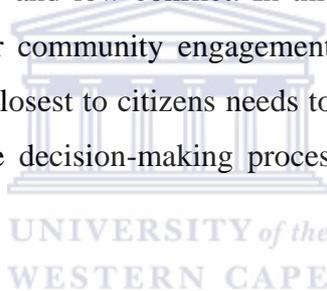
However, indicated that consultants lacked clarity on how to handle technical queries. This demonstrates what is revealed by the literature review, namely that the complementary laws and policies put in place for public participation in South Africa fail specifically in the water sector because they are not properly implemented. As further found by Theron et al (2007), the failure goes beyond the implementation process in that public officials lack the capacity and understanding to implement and manage participatory development in the water sector. Moreover, the literature revealed that poor citizens, in particular, often have little capacity to assert claims and represent themselves, and thus it is important that the institutions and spaces for participation generate a culture that upholds the right for the poor to voice their concerns.

Furthermore, as illustrated in Figure 2.1, when one moves through the public participation spectrum, tasks begin to differ and the strength of relationships increases through consulting, involving, collaborating and finally empowering. The main focus is not the task but the importance of the relationship between government and the community. In the case of Samora Machel the CCT failed to give households balanced and objective information about the WMDs. The 10% that stated that there was some level of public participation in the implementation of WMDs found the process misleading and they were never given the

chance to reject the implementation of WMDs. Moreover, there was no collaboration between the CCT and the community in each aspect of the decision making process. The final decision was made without the community therefore there was no empowerment in the implementation of the WMDs as per the Public participation spectrum in Samora Machel.

According to Arnstein's Ladder of participation the case of Samora Machel can be placed in Steps 1 and 2 at the bottom of the ladder it is considered to involve manipulation and therapy, and represent non-participation. The decision to implement the WMDs was made without giving households the opportunity to voice out their opinions they had no choice in the implementation of the WMDs, therefore there was no participation in the implementation of the devices.

The case of Samora Machel can be further placed in quadrant 3 of Figure 3.3, which shows low citizen power, high initiative and low conflict. In this quadrant decisions are made on behalf of citizens without proper community engagement or any community engagement. Local government as the sphere closest to citizens needs to be aware of the needs of citizens and engage them properly in the decision-making process before the actual strategies are implemented.



4.3.3 *Sampled households' water access*

While in the past water in Samora Machel was supplied through free-flow conventional meters, water access is now intermediated through WMDs which limit water access. As previously discussed, the properties of the sampled households fall within the parameters of the CCT's indigent grant policy. This means that the sampled households receive 350 litres of FBW per day, based on an allocation of 6kl litres of FBW per month according to the Free Basic Water Policy and a further 4.5kl for indigent households per month. Since 80% of the sampled plots have backyard dwellers, they find water access as a challenge. The sampled households state that 350 litres of water is too little to be shared among multiple households on a single plot. As stated in section 3(3) of the Water Services Act, that there is a duty on all spheres of government to ensure that water supply and sanitation services are provided in a manner that is efficient, equitable and sustainable. The study has shown that the WMDs fail to meet these requirements.

Table 4.3 (below) show the daily average of water consumption of the sampled households per plot, of which 51% use 53–200 litres per day and 18% use 300–350 litres per day. A further 7.8% use above the 350 litres daily allocation of FBW and still the sampled households state that their daily allocation is not enough. The study found that the low percentage of households who use above the daily allocation can be explained by the frequent water cuts, which the sampled households state that they experience before the daily allocation is used up. This can be further explained by the absence of water supply which residents face on a regular basis. These findings confirm what other scholars have found as being challenges of lack of water access after the implementation of WMDs. Not only do the WMDs limit water access to households, there are problems with recurrent leaks in many township houses where the devices are installed. The burden of poor workmanship is shifted from the CCT to the household, whose water is now cut off once the daily allocation has been used or leaked away (Wilson and Pereira 2012).

The sampled households claim that:

Sometimes when we wake up in the morning to get water from the tap when we open the tap there is no water the tap is dry. So one wonders where all the allocated water has gone to and how come our allocated water disappeared without any usage. (Respondent 5, Samora Machel, 6/10/2011).

In many occasions we wake up and there is no water coming out from the tap and it can take weeks for the municipality to come and fix the problem. Ever since this new meter has been installed it has been leaking the municipality has come four times to fix the leaks already (Respondent 6, Samora Machel, 6/10/2011)

Table 4.3: Daily average water consumption per plot in Samora Machel

Daily average water consumption (litres)	Proportion (%)	Cumulative proportion (%)
53–200	51.1	51.1
201–250	10.7	61.8
250–300	13.0	74.8
300–350	17.6	92.4

350–400	3.1	95.4
400–450	3.1	98.5
450–500	0.8	99.2
500–550	0.8	100.0
Total	100.0	

Since the sampled households find water access a challenge after the implementation of the WMDs, in some of the plots the main dwelling owners have created systems for sharing water with other households on the plot. These systems range from allowing backyard dwellers to use three buckets of 10 litres of water per day, to not allowing backyard dwellers to use water for laundry. In some plots the main dwellers share water equally with the backyard dwellers. However, there are plots within the sampled households that do not have a system for how water should be shared and in such situations people use water without considering others.

A backyard tenant states:



In this plot access to water is on a first serve basis, the person who comes first is the one who gets the water. It is not easy to get a bucket of 20 litres of water per day, as a result we are always fighting with other tenants over water (Respondent 2, Samora Machel, 3/10/2011).

One plot owner interviewed stated that 18 people from different households live on the plot and they all share the daily allocation of 350 litres of water. People have to wake up at 4 o'clock in the morning to get water; if not, they will wake up with no water to drink or wash because others have finished all the water. In the in-depth interviews, when the sampled households were asked where they get water from when they experience these water cuts or when their daily allocation is used up, they responded that they ask for water from their neighbours, and as a result some of the relationships among neighbours are no longer what they used to be. Asking for water from neighbours has caused conflict in the neighbourhood. Others stated that sometimes neighbours refuse to give them water, stating that they cannot sponsor them when they also have to maintain themselves with limited water for the whole day.

Moreover, the sampled households stated that if the neighbours refuse to give them water they steal it from those neighbours who are at work during the day. As stated by Wilson and Pereira (2012), apart from the many direct ways in which WMDs make people's lives worse, they are also a source of confusion and conflict. The notion of using a piece of technology complete with tamper-proof wires to regulate and limit household water use reveals a short-cut mentality and a mentality of control at any cost. It keeps people in a state of frustrated dependence. Therefore, in this regard the study concludes that the notion of water as an economic good and the implementation of WMDs infringe on the right of access to sufficient water. In that the water supply is not equal between rich and poor households, the devices in this regard are biased and discriminatory. Furthermore, the WMDs make it possible for the state to bypass its responsibility to ensure that the right to sufficient water access is adhered to.

Turning the focus to the issue of households' municipal debt, as previously discussed the CCT promised to write off all households' municipal debt as part of its marketing strategy for the implementation of the WMDs. However, as illustrated in Table 4.4, which presents the sample households' water debt value as measured through the balance brought forward, the study found that 54% of the sampled plot owners who occupy the main dwellings owed the CCT less than R500.

Table 4.3: Sample households' water debt as measured through balance brought forward

Amount (R)	Proportion (%)	Cumulative proportion (%)
1-100	29.6	29.6
101-200	11.1	40.7
201-500	13.6	54.3
501-1 000	6.2	60.5
1 001-5 000	17.3	77.8
5 001-10 000	6.2	84.0
10 000+	16.0	100.0

The major concern is the 16% who owed more than R10 000. Some of the debts are more than the total property value. Given that the percentage of the sampled household who use

above the 350 daily allocation of FBW is 7.8%, debts over R5 000 relate to accounts that have not been written off after the installation of the WMDs. In terms of debt write off 22% of the sampled households stated that their debts have not been written off. This proportion corresponds with debts that have not been written off, as promised by the CCT. This further proves what was said in the literature and the findings that where information on the WMDs strategy was given, it was false and misleading.

The study further found that households approved the implementation of the tagged standpipes in that they assisted with water access. The tagged standpipes were mainly implemented for backyard dwellers as their source of water supply. In areas where the standpipes were implemented, households felt that water access improved. Backyard dwellers had their own 250 litres of FBW separate from the main dwellers' water access. However, the tagged standpipes, just like the WMDs, were often faulty and did not dispense water, or the tag (key) would refuse to work. Figure 4.5 is a picture of a tagged standpipe.

Figure 4.5: Tagged standpipe



As previously stated, during the period that the field work for the study was conducted the tagged standpipes were installed as a pilot study. Only 32 standpipes were installed in the whole Samora Machel area and only 241 tags were issued. The study found that in order for the CCT to cover the whole area with tags it still needed to issue a minimum of 1 900 tags to

backyard dwellers. Those who still did not have tags used the same water as the plot owner. Figure 4.6 below is a picture of a tag (key).

Figure 4.6: Tag



When the tag is inserted the standpipe dispenses water until the tag is removed or the FBW is used up.

The case of Samora Machel reveals how the South African water legislation which promotes cost recovery negatively affects water access for the poor population. As stated by McDonald and Pape (2002), that poor households pay more for water than households living in rich areas. In Samora Machel where 51% of main dwelling households and 40% backyard households are unemployed it is challenging for them to afford to pay for water services, leaving households with insufficient water access. This case further reveals what has been discussed in Chapter 2 that the South African water legislation adopted in 1994 has made water a commodity that is available on the basis of those who have the means to pay for it.

4.3.4 Sampled households' perceptions about WMDs and complementary devices

This section aims to give an overview of the sampled households' perceptions about the WMDs and the other complementary devices installed under the CCT's water demand management and conservation strategy. Furthermore, it will show how households' lives have been impacted on after the devices were implemented. The study found that sampled

households are generally satisfied with water services provided to them after the implementation of the WMDs. Figure 4.7 below shows that 63% of the sampled main dwelling households are satisfied with water services compared with 59% of the sampled backyard dwellers. Figure 4.5 further shows that 16% of the sampled main dwelling households are unsatisfied with their water service, as are 25% of the sampled backyard dwellers. However, the qualitative in-depth interviews further revealed that the satisfaction of the sampled households with water services is not based on being fully satisfied with water access and quantity. The satisfaction comes from the fact that they no longer have to pay for water.

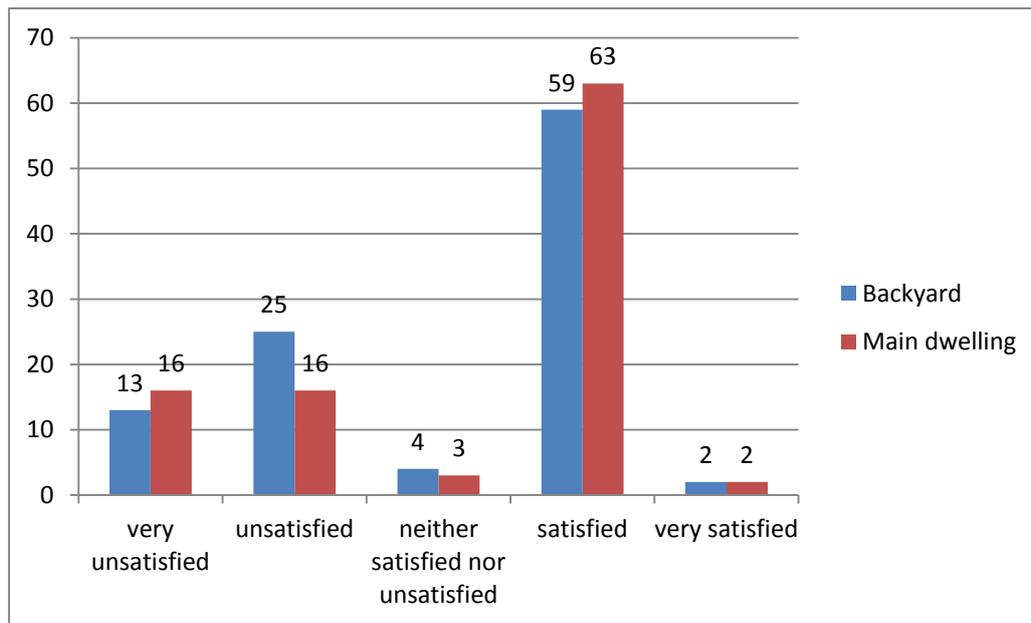
The sampled households claim that:

The only good thing about the WMD is that we no longer have to pay for water access. We avoid high water bills but the meter has made our lives more complicated. (Respondent 1, Samora Machel, 3/10/2011).

The only good thing is that I am not paying for water, but I still prefer the old meter because we always had water with that meter (Respondent 3, Samora Machel, 3/10/2011).

The sampled households further state that the other good thing about the WMD is that they get FBW supply and that everyone in the area gets the same amount of water.

Figure 4.7: Level of satisfaction with water services of sampled households in Samora Machel



Moreover, the qualitative in-depth interviews revealed that the sampled households preferred the old conventional water meters, which supplied them with unlimited water access. The sampled households stated that after the implementation of the WMDs, their water supply is limited and the daily limit is too little to be shared among multiple households. One of the interviewed household members stated:

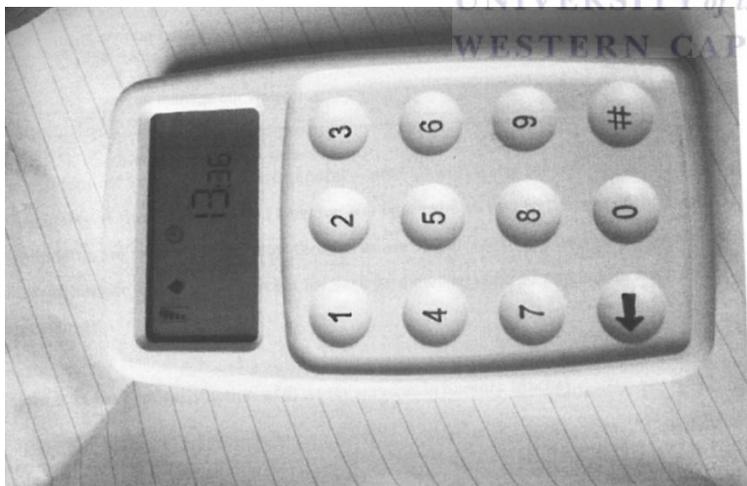
Before the installation of the new meter we never ran out of water, we had water all the time. Now our allocation is limited. The new meter has just brought difficulties in our lives. Sometimes we go to work without taking a bath. I do not like the new meters. The City of Cape Town should re-install the old meters (Respondent 8, Samora Machel, 7/10/2011).

Furthermore, another challenges stated by the sampled households is that since the implementation of the WMDs they experience frequent water cuts before the daily limit is used up, and in some instances they go for weeks without any water supply. The main technical problems associated with WMDs is that the meter breaks regularly, stops working and often leaks. When the meter leaks the sampled households state that it wastes the little water which they have to share, leaving some families without any water access for the whole day. The sampled households further claim that the devices have caused more problems with water supply rather than helping. They state that their lives are more complicated in a very

negative way since the implementation of the WMDs. In the case of Samora Machel, where residents previously made use of conventional meters that supplied them with unlimited water access. With the introduction of the WMDs, residents were lured to accept the device, being told that they would have water without having to pay for it and that their debts would be written off. Information on the negative aspects of the devices was not given. This immediately created high expectations.

After the implementation of the devices there was a sharp downturn in residents' expectations as the devices do not deliver as expected. This has caused discontent in the area; residents fight over water and some steal from each other. Additionally, as previously stated, the CCT complemented the WMDs with the implementation of other devices, one of which was the in-house display unit. As explained in the CCT's Retrofit and Leak Repair Programme, the in-house display is meant to assist the plot owner in the main dwelling to track their water consumption, to notify them when there are leaks with the WMD meter, and what to do when the device is faulty (CCT, 2009/2010). Figure 4.8 shows a picture of the hand-held in-house display unit, which is the size of a cellular phone.

Figure 4.8: In-house display unit



Although the in-house display unit is supposed to serve as a useful device to help manage water, due to the lack of public participation before the implementation of the WMDs households do not know how it works. The sampled households found the in-house display unit of no assistance since they have no knowledge of how it operates.

The third complementary device implemented under the CCT's water demand and water conservation strategy was the dual flush toilet system, also discussed in Chapter 3. As explained in the CCT's Retrofit and Leak Repair Programme, the toilet would be a non-perishable silicone dome washer that guarantees no leaks into the pan and that comes with a 10-year guarantee. The toilets have a float marked with arrows for easy adjusting and functions from 0.1 bar to 16 bar (can resist up to 20 bar). The interruptible flush allows the toilet to be stopped once the bowl is clean (CCT, 2009).

However, the sampled households in Samora Machel have different negative views about the dual flush toilets. They have encountered difficulties in operating the toilets. They further state that most of the toilets were not properly installed so when one attempts to flush, all the water fills the bowl inside and it blocks immediately. Others claim that the toilet takes too long to flush. When a person uses the toilet and attempts to flush, the toilet has not flushed before the next person enters. Households in Samora Machel claim that instead of helping in water conservation, the toilets themselves waste water. The sampled households state that when they are done with their laundry instead of throwing the water away they use the water to flush the toilets, throwing the water inside the toilet bowl instead of the tank. In this way they are saving water and avoiding the mess the toilet creates when they flush it normally. One of the interviewed household member states:

The issue of toilets is related to that of water. If we do not save enough water then we cannot use the toilet because the toilet flush is not working properly and as a result it is now broken. For an example, if one has a running stomach it is difficult to use the toilet, as a result every time when we use water for doing laundry we have to keep it for later when we want to use the toilet. We live under such painful conditions yet we voted. I do not see any creativity in the new system. We fight all the time. I do not support this new system (Respondent 14, Samora Machel: 20/10/2011).

The sampled households perceive these toilets as a waste of money because they cause more water problems for them instead of solving them. Moreover, the sampled households state that when the toilets block, solid and liquid waste often fill the whole plot which make it difficult for them to walk out of their houses. The smell and insects that comes from the waste has affected their health and their children's health.

Unlike the in-house display unit and the dual-flush toilet system, which were implemented as part of the WMD strategy, the tagged standpipes were implemented after the WMD strategy to assist with water access. Although the tagged standpipes were implemented mainly for backyard households, the study found that the sampled main dwelling households found the devices useful as well in that they no longer have to share their water supply with backyard dwellers and this has improved their water access. Moreover, they borrow tags from the backyarders when their water is used up so they access water from the standpipes. The sampled backyard dwellers also perceive the tagged standpipes as useful in that they have their own 250 litres of FBW supply per household per day, so they do not have to share water with their landlords in the main dwelling. Furthermore the tagged standpipes are safe in that no one can access their free litres of water without their permission since they are the only ones with access to the tags.

However, the study found that even though backyard dwellers generally had positive perceptions about the tagged standpipes, there were also some strong negative perceptions about them. Even though the tagged standpipes are useful, there are also challenges with them. These challenges include their tags not working or the standpipe itself not working. When such instances occur they cannot access water. Furthermore, they found the 250 litres too little to sustain them for the whole day.

Another challenge posed by the WMDs is the life threat of being burnt to death. Cape Town often faces challenges from fire, especially in informal settlements. The households state that due to the limited water supply of WMDs this acts as a threat to their lives. One of the household members stated that ten informal settlements burnt in the area, which was caused by a gas explosion while cooking. Due to limited water access it was not possible to put out the fire before it caused even greater damage, though luckily no one was hurt during the accident. The continuous infringements on dignity and health are serious, for a direct risk to life is posed in the event of a fire.

The households further state that the mere fact that these devices are only implemented in poor areas show that government does not care about them after voting in every election. They further state that the only time government listens to them is when elections are near; then they are begged to vote but after the elections they are left to fend for themselves. Despite being made aware that poor households do not want the devices implemented in their

homes, the CCT continued to roll out the WMDs, announcing in 2010 that it aimed to install 5 000 per month. Therefore, households' view that government does not listen to them is also shown by the reaction of the CCT in rolling out the devices despite households being against them. Such views are disturbing in a democratic state like South Africa where everyone is said to be equal under the law.

4.4 Conclusion

This chapter has critically examined the impact of the WMDs on poor households in Samora Machel. The first section gave an overview of the research methodology, describing clearly how the data was collected and how the study objectives were achieved. The research methodology gave an overview of the systematic approach to solving the research problem. The second section of this chapter was the analysis of the study's findings. This section gave the overall evaluation of how the devices have impacted on water access in Samora Machel. It drew on qualitative in-depth interviews and quantitative interviews to emphasise the serious problems of lack of water access and lack of public participation in the implementation of WMDs.

Based on such empirical evidence it is clear that the implementation of the WMDs negatively affects water access in the area. What is striking, though, is that the devices are said to be water demand management mechanisms but they are implemented only in poor areas where water is used for basic survival and not in wealthy areas where most water is used for luxury purposes (watering of lawns, gardens and swimming pools). This further proves that the WMDs are cost-recovery instruments rather than water demand management mechanisms.

The chapter revealed that the lack of community engagement in the implementation of the WMDs had an impact on how the sampled households perceived the devices. The only positive aspect the sampled households find in the implementation of these devices is that they no longer have to pay for water, even though the devices are negatively impacting their water access. This shows that the lack of access to water and sanitation is directly linked to poverty, where those who can afford to pay for water can have unlimited access to water and those who cannot afford to pay have no access or limited access to water.

Moreover, it was disturbing to learn how the poor population have lost all their faith in the state. Their experiences are of being bullied and treated as being worthless due to their socio-

economic status. What is more disturbing is that these opinions might not have any influence on urgent policy changes and proper policy implementation on the part of local government. The main challenge is not only the above problems, but the negative implications they have on relationships among community members and the health threat these devices pose for households and little children, as well as being life threatening under circumstances of fire. Some of these problems could perhaps have been avoided if the community was given the opportunity to be involved in the decision-making process before implementing the WMDs. The community members are the ones with the necessary knowledge about the water challenges which they face in their day-to-day lives, and they know what strategies would best work for them at present and in the long run.

It is worth repeating that even though the WMDs are said to be implemented for managing water, the main emphasis points directly to cost-recovery rather than water demand management. The heart of the matter is that the previous conventional water meters were found to be much better than the current WMD. This questions the fairness of the South African water legislation. Such problems point back to privatization of water as a human right and how the water legislation has been rooted in a system of privatization. A success story in the implementation of a strategy that will have a positive impact on citizens' standard of living is one that puts citizen participation at the centre of the whole strategy. This furthers creates a relationship built on trust between government and citizens, in that the relationship will be transparent. Moreover, this ensures that government remains accountable to citizens. Failure to do this will result in implementing strategies that do not serve the needs of the community.

CHAPTER 5

CONCLUSION

5.1 Introduction

This study focused on assessing the social consequences of the WMDs on poor households, using Samora Machel as a case study. This chapter aims to sum up all the findings of the study. This study showed how water demand management mechanisms that are grounded in a neo-liberal-oriented framework produce a highly unequal distribution of water services. These mechanisms make the provision of adequate water services available only to those able to pay. This undermines the right in South Africa to have access to sufficient water, as declared in the Constitution.

According to Mbizari (2005), one of the greatest dangers of privatization is the loss of accountability on the part of the municipality. The municipality no longer has contact with the community. This is one step in the process of the municipality removing itself from actual service delivery, and it may be tempted to separate itself entirely from its responsibility to the consumers. This goes hand in hand with the absence of measures to ensure public participation and transparency in the process. The absence of these is a threat to the country's democratic principles and to the success of the provision of the service itself. Moreover, this could lead to service boycotts and damage to infrastructure, and thus prejudice the service delivery itself.

This study was based on a thorough investigation of the WMDs as a water demand management strategy in a poor urban area, known as Samora Machel, in Cape Town. The CCT implemented the devices in the area without engaging with the community, where there was engagement residents found it to be misleading. The decision to implement the devices was made by the CCT on behalf of the community. Seeing that South Africa is a democratic country, which encourages citizen involvement on issues concerning government, section 152(e) of the Constitution promotes public participation in local government decision making. The failure of the CCT to engage properly with residents before implementing the devices in Samora Machel was in breach of Section 152 (e) of the Constitution. Moreover, water demand management strategies are meant to manage water demand; hence the strategies should aim at managing water demand at all levels and in all areas with no discrimination. However, the WMDs are implemented only in poor areas. This further raised

questions of why the devices are implemented in poor areas where water is needed for basic survival and not in wealthy areas where water is mostly wasted on luxuries such as swimming pools and watering of lawns. The answer to such questions is that the WMDs are a cost-recovery mechanism more than they are a water demand management mechanism.

Thus this study from the beginning looked at literature concerning water demand management and what it entails. Within water demand management the study focused on two schools of thought, which perceives water as either an economic good or as a public good and how the implementation of both these schools of thought have produced negative contradictory outcomes in the South African society. Therefore, all the arguments of this study branched out from these two schools of thought and how water as an economic good has shaped water legislation to follow the privatization and cost recovery route. Moreover, the study looked at how cost-recovery has influenced the implementation of water demand management mechanisms such as the WMDs that are more cost-recovery oriented rather than managing water demand. Regarding water as social good, the study looked at how the economic principles have affected the right to water access and how the implementation of the economic instruments have impacted on the poor population's water access. Chapter 3 provided a discussion of public participation and gave a general overview of public participation in the South African context. A framework of public participation was provided. Chapter 3 further zoomed in on public participation in the water sector and in the implementation of water demand management mechanisms and how these affect poor households.

The findings of this study have raised questions about the fairness of the South African water legislation that was adopted in 1994. These questions relate to equity in citizens' access to water services without any discrimination regarding their socio-economic circumstances. Moreover, the dynamics and approach of the study findings find its basis in a need to strengthen the voices of the urban poor so that they can clearly challenge the regulations at local level and begin to pose alternative options for addressing the challenges that confront them. Thus this study set out to assess the social consequences of WMDs in Samora Machel and its main objective was to determine the impacts of the implementation of WMDs on poor households. This objective was further articulated into three specific objectives, which were to determine the extent of community participation in the implementation of WMDs, to

determine how the implementation of WMDs has affected water access by households, and to determine the households' perceptions about the implementation of WMDs.

The following section outlines the summary of the key findings of this study.

5.2 Summary of findings

5.2.1 Public participation in the implementation of the WMDs in Samora Machel

This study has shown that public participation was lacking in the implementation of WMDs. It also revealed how the lack of public participation in the water sector has influenced the implementation of water demand management mechanisms, such as the WMDs, that infringe on citizens' right to water access. Furthermore the study found that, among other challenges, the major cause of such a shortfall is that majority of public officials do not understand what the public participation process is and what it entails, and that is why they fail to implement it. Table 4.1 proves that this finding is valid, showing that what the CCT did to include the community of Samora Machel in the implementation of WMDs demonstrates a lack of understanding of what public participation entails. Furthermore, the study showed that public participation starts at the beginning, before a decision has been made, in order to include the public in the decision-making process about whatever strategy is planned.

Moreover, in every public participation process the public should always be at the centre because all the strategies are implemented for the benefit of the communities. The lack of public participation in the implementation of WMDs has also shown households' lack of understanding about how the devices work.

The situation of Samora Machel has shown that community involvement in decision making is an important element that government needs to practise at all times, because after implementing a strategy, the people who have to live with its consequences are those based in those specific communities. Kondlo (2010) states that there is a need to move away from the way in which public participation has been thought about historically in the democratic South Africa. He argues that participation is about the active involvement and empowerment of citizens. It is about the sustained engagement through transparent forums that bind relations between citizens and the state. He further argues that participation is not an event or celebration, as is currently perceived during public participation events in the democratic dispensation. Instead, participation is the life blood of democracy and development.

Therefore, in order to improve public participation in the water sector, local government should first provide the necessary training within the municipalities in order for all public officials to gain the necessary knowledge as to how to carry out public participation. According to Nel and van der Westhuizen (2004:32), municipalities should further conceive modes of participation that would provide citizens with the necessary motivations to participate. This would empower them to do so and would provide the space within which they can discover what their real interests are.

While people should accept responsibility and accountability for participation in water resource management issues, local government must also take up the responsibility for leadership and guidance, rather than control. Local government must also ensure that civil society involvement in the water sector should not just exist in the legislation, it should be practically applied as well. Significantly, water demand management mechanisms and strategies need to become more people-oriented rather than being dominated by pure cost recovery. Furthermore, the politics of representation can often disrupt well-designed participation processes and their implementation. The literature shows that a progressive public participation process is one that puts the public at the centre, hence it is vital that there be a shift away from regarding political parties and formal organizations as the only legitimate vehicles for citizen participation. Citizens must be given sufficient opportunities for unaffiliated participation (Thompson, 2007).

5.2.2 Sampled households' water access in Samora Machel

As discussed, the CCT's monthly FBW allocation for indigent households is 350 litres, which per day for a household of eight members. With multiple households living on a single plot, Samora Machel faces challenges of overpopulation and the study found that 350 litres per household per day is not enough. The majority of households exhaust their FBW supply before the end of the day and with unemployment rates of up to 40% in the backyard households and 51% for the main dwelling households, the study has proven that the majority of the households in the area are too poor to afford to purchase additional water. Daily disconnections by the WMDs leave these households without water access. The study showed that only 7.8% of the sampled households use above the daily allocation but this was due to the frequent water cuts before the daily allocation was used up.

The CCT only rolled out tagged standpipes as a pilot project and the majority of households in Samora Machel had no standpipes for backyard dwellers, which meant that they had to share water with the main dwelling. Sharing methods applied by the main households to backyard tenants creates constraints on their living conditions. For example, in plots where backyard households are allowed 30 litres of water per day, in a household of eight members this is not enough for washing, cleaning, drinking and cooking. Such circumstances have been shown to cause disputes in the community in that the households who lack water start stealing from their neighbours' taps. The study found that the implementation of the tagged standpipes was a useful strategy to help with water access. However, a further finding was that at times these standpipes are dry and they do not dispense any water, which makes the tagged standpipes an impractical strategy to assist with water access.

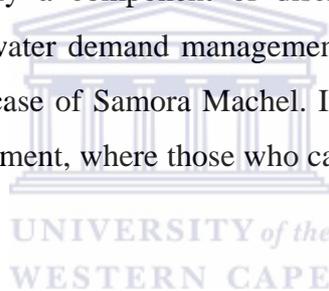
Regarding the state's obligation to fulfil the right of access to sufficient water, the implementation of WMDs has made this impossible. It is imperative at this stage to highlight what has been discussed before, namely that privatization of water services has drastically affected the poor population the most. The inflexibility and hostility which often characterise non-payment for water services has been replaced by an emphasis on water demand management strategies, such as the WMDs, whose automatic disconnection leaves the poor without any water access. WMDs are beneficial only to water service providers as the problem of non-payment for them is rectified and they recover their debt because they only supply the FBW. Due to the struggles of water access after the implementation of the WMDs, the study concludes that WMDs in Samora Machel are infringing the right to sufficient water supply as set out in the Constitution.

5.2.3 Sampled households' perceptions about WMDs and complementary devices

As revealed in chapter 4, the results of both quantitative and qualitative analysis show that households have negative perceptions about the implementation of WMDs in Samora Machel. The study findings show that 59% of the sampled backyard dwellers and 63% of the sampled main households are satisfied with water services but the qualitative data further revealed that this satisfaction came from the notion of non-payment for basic water than because of being satisfied with water access. The study findings reflect the dissatisfaction and disappointments of households over the implementation of the WMDs. While the population of Cape Town who live in high-income areas enjoy the unlimited access to water supply, the urban poor in areas such as Samora Machel struggle to access even the basic water supply to

survive. Furthermore, the implementation of WMDs has sustained massive inequality between the wealthy and poor in Cape Town. The intensive efforts of cost recovery which have been central to the South African government's strategy for redressing historical inequities in water service provision have proven time and time again to worsen the situation.

Furthermore, although the tagged standpipes were found to be of great assistance to both backyard dwellers and main dwellers, the standpipes also come with challenges: at times they do not dispense water or the tags do not work. The implementation of tagged standpipes therefore does not serve as the solution to the challenge of water access posed by the implementation of WMDs in Samora Machel. The sampled household members believe that the main solution to the challenge of water access in the area is by re-installing the conventional water meters that supplied them with unlimited water access. The government embraced privatisation, believing that it would lead to the realisation of the right of access to water, however there is certainly a component of discrimination in the way that poor households are targeted for the water demand management strategies, which are unfair and unlawful. This is evident in the case of Samora Machel. It is a discrimination built into the political economy of local government, where those who can pay are treated better than those who cannot.



Cost recovery itself is discriminatory in a country with such high income disparity. Some city officials genuinely believe that the WMD is a holistic solution that helps the CCT to manage debt, saves water, helps people identify leaks quickly, and gives people a way out of debt, and therefore, presumably, a way out of poverty. But this reveals such a limited understanding of poverty and of what is required to overcome it (Wilson and Pereira, 2012). Apart from the many direct ways in which the WMDs make people's lives worse, restricting their access to water is also a source of confusion and conflict. The quality and maintenance of the infrastructure is also an issue in the provision of basic water supply to citizens. The findings further showed that in addition to the WMDs infringing the right of access to water by limiting water supply, the sampled households claim that the devices are also not properly installed because they often leak. These leaks further waste the limited water with which households have to sustain themselves. WMDs are a violation of the right to water access, stipulated in the South African Constitution and the National Water Act, which specifies that no person should be without water for more than seven days.

Although it started out as a pilot project, the CCT is now in the process of routinely installing WMDs in townships, allegedly without any community consultation, and has made it mandatory for low-cost houses to be fitted with the devices. Moreover, as discussed in chapter 4, the installation of the dual-flush toilet system has further worsened the challenge of water access in Samora Machel. Households find the toilets a useless form of water management in that they toilets do the opposite of what they were installed to do: instead of saving water, they waste the already-limited and insufficient water supply given to households by the CCT. Further, the CCT supplied misleading information about the dual-flush toilet system, stating that the toilet would be a non-perishable silicone dome flusher that guaranteed no leaks into the pan and that came with a 10-year guarantee. However, the study revealed that the toilets not only waste water but also create threats to the health and well-being of households because they often get blocked.

Samora Machel households further stated that they have lost faith in government and they claim that they will not waste time voting again. According to Kunene (2010) many of the people in poor areas are alienated from the state as a whole, not just in local government. The perception of Samora Machel households demonstrates that municipalities and water boards driven to maximise profits do not take responsibility for the health, social and personal costs of inadequate water access by poor people, who are unable to afford market-driven water tariffs. The health-related costs of water-borne diseases because of these devices are life threatening to poor people. Therefore, with all the above information the study concludes that the implementation of WMDs, coupled with tagged standpipes and the dual-flush toilet system, do not serve as useful and practical water demand management strategies.

5.3 Conclusion

In conclusion, this study has shown how the implementation of WMDs has negatively impacted on poor households. The South African Constitution seeks to heal the divisions of the past, establish a society based on democratic values, social justice and fundamental human rights and improve the quality of life for all citizens. However, inequalities still exist in access to water services in South Africa, even after 19 years of democracy. The study found that privatization of water services is the major driving force behind these inequalities. From a human rights perspective, South Africa has a commendable legal and policy framework for urban basic services that explicitly recognises socio-economic disadvantages (Langford et al, 2013).

The Constitution entrenches the right of access to water and the water legislation (including the Free Basic Water Policy) stipulates the basic minimum standards for water. Yet, at the local level, where service delivery occurs, the reality is very different, with widespread failures of basic service delivery leading to rising discontent in many poor urban areas, as well as several test litigation cases (Langford et al, 2013). This divergence between framework and practice is largely related to the limitations of South Africa's neo-liberal economic model, which has failed to advance inclusive economic and human development (Langford et al, 2013). This has had serious consequences at the local government level, which is conceptualised as the developmental sphere of government since it is closest to the people. In line with the broader neo-liberal economic policies pursued since the democratic transition, in the early 2000s central government has devolved the responsibility for water services to the local government sphere and has emphasised the inclusion of the public in government decision making.

However, the study at best suggest that this has not been the case in practise. The consequences of the emphasis on maximising profits from water services has resulted in inadequate extension of basic water services and insufficient maintenance of infrastructure, along with an overly technocratic approach to water service delivery (Langford et al, 2013). It has also led to widespread limitations and disconnection of existing water services in poor urban areas, which has rolled back many of the gains made in connecting poor households to basic services' grids in the post-apartheid era (Langford et al, 2013). The majority of those who do not have access to safe drinking water and sanitation are the poor, in both urban and rural areas.

According to Langford et al (2013) not only are the poor less likely to have safe drinking water and sanitation, they are also less able to manage the impact of this deprivation. The rural poor represent the bulk of those who do not have safe drinking water and sanitation. Over a billion rural inhabitants have to defecate in the open, with important consequences for their health, privacy and even physical security. Water plays an important role in people's day-to-day existence. It is also a key element of their livelihood strategies. The right of access to water therefore addresses only a small dimension. The major impact comes from the type of water demand management strategies and the implementation phase of the strategies to ensure that this right is met at all levels. However, as stated in Chapter 2, the gaps and

limitation within the Constitution and the water legislation makes it easier for the state to bypass its responsibility to ensure the right of access to water is achieved. This has been further shown in the court cases discussed in Chapter 2 and the empirical evidence found in this study.

These limitations include Section 27(2) of the Constitution (RSA, 1996) that obliges the state to take reasonable legislative and other measures within its 'available resources', to achieve the progressive realisation of socio-economic rights, which includes water services. If this limitation could be removed from the legislative framework and the whole legislation be constructed in a way that the main focus is on the equal provision of water as a basic human right to all, and then equity in water access can be achieved. Moreover, government should subsidise water services for all poor households and most importantly reverse its policy of cost-recovery in water services. Furthermore, the use of water demand management mechanisms which are cost recovery oriented and which limit water access should be outlawed and removed from all poor communities and replaced by the conventional water meters.

By subsidising water services the state will be ensuring that it meets its responsibility and obligation of supplying water as a basic service and in this way it can be held accountable if there is a failure in providing this service. Moreover, the water legislation should take into account over-population in poor areas. Therefore, whatever water strategies are implemented in these areas should be able to supply water to all the people residing in these areas. This will assist in alleviating inequalities which were caused by the apartheid regime. The case of Samora Machel has shown how overlooking challenges of overpopulation have influenced lack of water supply in the area.

Furthermore, government should recognise the importance of community engagement in decision making before implementing any strategies. In order to achieve this, government officials need to understand what the notion of public participation entails. As stated in Chapter 2 that the Public Service Commission (2008:11) states that, some public officials lack understanding of what consultation entails in terms of the Batho Pele White Paper. The officials' understanding of consultation includes information sharing, discussions and conferences, whereas the White Paper states that citizens should be consulted about the level and quality of the services they receive. As revealed in the study, lack of public participation

has a negative impact on strategies implemented due to the underperformances these strategies tend to derive. There is a need for departments to ensure that officials involved in public participation are adequately trained to engage with citizens. Departments need to ensure that officials acquire the necessary skills, especially in the areas such as understanding community dynamics. Therefore, government needs to instil within its institutions that in public participation, decision making is a shared responsibility between the state and the citizens. The purpose is to make joint decisions based on agreement and shared responsibility. In South Africa citizens have the right to voice their own views and this is what public participation permits one to do. In doing so, the government will implement strategies that will live up to the public's expectations and in this way the public will receive value for their money. By allowing citizens to participate in local government decision-making processes, opportunities are created for increased citizen participation in processes of priority setting and decision making by local governments.

Moreover, by involving the public in decision making, citizens and government will reach a consensus understanding and agreement as to what strategies are to be implemented. In practice, opportunities for participation are shaped by legal and procedural frameworks, and are subject to bureaucratic and political constraints instead of making citizens engagement the main focus in the participation process. Thompson (2007) states that a major challenge to establishing more effective channels of participation in South Africa relates to the breakdown of the trust between citizens and the state. Furthermore, Thompson (2007) points out that participatory democracy in South Africa is still a work in progress.

Much of the consolidation and deepening of participatory democracy in South Africa has tended to be ahistorical in the extent to which it underplays and the length of time taken to achieve a stable participatory democracy. Therefore, the mere fact of the bias towards privatization in South Africa, which makes the poor population pay more for basic services such as water, shows that the alleviation of inequality in South Africa might as well be seen as a far-fetched vision. Perceiving water as an economic good and implementing cost-recovery strategies rather than strategies which ensure the equal and fair distribution of water as a basic need is unfair and discriminatory towards the poor, in that these cost-recovery mechanisms are implemented only in poor areas.

The study therefore concludes that, firstly, the implementation of WMDs without engaging with communities is unfair and against the law; secondly, implementation of WMDs in poor areas show that the strategy is mostly focused on recovering costs rather than on managing water; and lastly, that the use of WMDs infringes the right of access to water.



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7. APPENDIX 1: Quantitative Questionnaire



RESPONDENT NO. [Office use only]	
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Interviewer Name		
Area	Samora Machel	
Subarea		
Type of Connection	WMD Main dwelling	Tagged Standpipe Backyard

Household Interview schedule

<p>INTRODUCTION</p> <p>Good day. My name is _____. I am part of a research team from the University of the Western Cape. I do not represent the government or any political party. We are doing this research to find out the impact of water management devices in Saxonsea. Your household has been randomly selected and I would like to discuss these issues with yourself, or a member of your household. Your answers will be confidential. They will be put together with over 250 other people I am talking to, to get an overall picture. It will be impossible to pick you out from what you say, so please feel free to tell me what you think.</p> <p>Are you willing to participate?</p>
--

At the start I would like to ask you questions about the people who live in this property.

1. What is the sex of the head of household? (<i>circle correct answer</i>)		Female	1
		Male	2

2. What does the head of the household do for a living? (<i>circle correct answer</i>)					
Unemployed	Student	Pensioner	Seasonal worker	Employed Part-time	Employed Full-time
1	2	3	4	5	6

3. See last question.

4. How many people are in your household? [<i>interviewer: record number</i>]	
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5. Are there backyard flats or <i>wendy-houses</i> or rooms in your property that are occupied by other households? (<i>circle correct answer</i>)		No	1
		Yes	2

If no move to question 7

6. How many other people live in backyard flats or <i>wendy-houses</i> or rooms in your property	
--	--

Let me turn to water services and water management devices

7. How would you describe your level of satisfaction with water services provided by the City of Cape Town NOW? (Interviewer: READ OPTIONS) (<i>circle correct answer</i>)				
Very unsatisfied	Unsatisfied	Neither satisfied nor unsatisfied	Satisfied	Very satisfied
1	2	3	4	5

In the last question you said _____ with water services provided by the City of Cape Town. Briefly explain what makes you say so.

Before water management devices were installed in Samora Machel what was your experience with regards to access to water?				
Not at all accessible	Sometimes accessible	Accessible	Easily accessible	DNT Know
1	2	3	4	99

Where did you live at the time? [probe if interviewee was already a tenant]

8. In 2007 the City of Cape Town started rolling out WMDs in the City. Compared to the earlier conventional meter system, how do you rate the new system of WMDs? (Interviewer: READ OPTIONS) (circle correct answer)				
Much worse	Worse	Similar/ not different	Better	Much better
1	2	3	4	5

Briefly explain why you provided the rating in question 7 above

9. Were you informed and consulted about WMDs project before installation on your property? (circle correct answer) (Interviewer: If no move to question 11)	No	1
	Yes	2

In what ways did the municipality allow you to participate and have a say before the tagged standpipe project was implemented? Through (READ OPTIONS)					
Ward councilor	Ward committee	Street committee	Other	None	DNT Know
1	2	3	4	5	99

10. How would you describe the information (READ OPTIONS?)
--

Very uninformative/misleading	Uninformative	Informative	Very informative
1	2	3	4

What type of information was this and shall you describe for me the content of this information? _____

11. How do you describe the extent of citizens' power in determining the plan of installing WMDs in your area? (READ OPTIONS) (circle correct answer)			
Very low	Low	High	Very high
1	2	3	4

In your answer above you described the extent of citizens' power in determining the plan of installing WMDs in your area as _____. What makes you describe it that way?

12. On average how much water do you use per day (Interviewer ask for bill and check daily average)				
<350 litres	<350 <450 litres		>450	Don't know
1	2	3	4	9
[Ask B/Y]How many Buckets of water do you use/fetch per day				

If the respondent avails the bill record the following information

Debt: record balance brought forward from last month	R
Total property value	R
Daily average consumption	
Indigent Status: yes/no	

13. Did you have water arrears before the installation of the water management device? Ask only owner (circle correct answer)	No	1
	Yes	2

14. Approximately how much were the arrears by the time the WMDs were installed? (circle correct answer)				
<R1000	R1001 - 5000	R5001 – 10 000	R10 001 -15 000	R15 000 +
1	2	3	4	5

15. Did the City of Cape Town write-off all the water arrears as promised if people signed up for WMDs? (circle correct answer)	No	1
	Yes	2

16. Have you experienced technical problems with the WMD? (circle correct answer)	No	1
	Yes	2

If NO move to question 18

17. How often? (Read Out Options) (circle correct answer)				
Never	seldom	A few times a month	A few times a week	Everyday
1	2	3	4	5

If you had technical problems what kind was it?

18. How does the water management device assist you to manage your water use?

b) [Property owner] How does the In-house Water Display unit assist you in managing water?

19. N/A	No	1
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	Yes	2
Are there any good things about WMDs compared to the conventional meters? (<i>circle correct answer</i>)	No	1
	Yes	2
	Don't Know	9

20. If yes, please list 3 most important advantages of WMDs (**DO NOT PROMPT, RECORD UP TO 3 RESPONSES**)

- i. _____
- ii. _____
- iii. _____

21. If no, list 3 disadvantages of WMDs compared to conventional meters (**DO NOT PROMPT RECORD RESPONSES**)

- i. _____
- ii. _____
- iii. _____

Are there any good things about tagged standpipes? (<i>circle correct answer</i>)	No	1
	Yes	2
	Don't Know	9

If yes, please list 3 most important advantages of tagged standpipe project (**DO NOT PROMPT, RECORD UP TO 3 RESPONSES**)

- i. _____
- ii. _____
- iii. _____

If no, list 3 disadvantages of tagged standpipe project (**DO NOT PROMPT RECORD RESPONSES**)

- i. _____
- ii. _____
- iii. _____

How would you describe the operation of the dual flush toilet installed by the CCT compared to the conventional flush system? (<i>Interviewer: READ OPTIONS</i>) (<i>circle correct answer</i>) Would you say its ...				
More difficult	difficult	Similar/ not different	easier	Much easier

1	2	3	4	5
---	---	---	---	---

What are the advantages of the Wirquin dual flush toilet compared to the conventional flush system? (DO NOT PROMPT, RECORD UP TO 3 RESPONSES)

- i. _____
- ii. _____
- iii. _____

What are the disadvantages of the new Wirquin system as compared to the old system? (DO NOT PROMPT, RECORD UP TO 3 RESPONSES)

- i. _____
- ii. _____
- iii. _____

22. Have you ever run out of the allocated water? (<i>circle correct answer</i>)	No	1
	Yes	2
	Don't Know	9

23. How long does your daily allocation last? (<i>circle correct answer</i>)				
0-8 hours	9-16 hours	16 >24 hours	Whole day	Don't Know
1	2	3	4	9

24. If you have backyard dwellers or tenants, what arrangements do you have in place for sharing the daily allocation equitably?

How did the installation of WMDs affect your access to water?			
Negatively	Same	Positively	Don't Know
1	2	3	99

In what ways has the installation of tagged standpipe project affected your own and family's access to water? (DO NOT PROMPT, RECORD UP TO 3 RESPONSES)

- i. _____
- ii. _____
- iii. _____

25. If you run out of your daily allocation and you are desperate for water where do you get it from? (<i>circle correct answer</i>)				
Neighbours	Friends	Relatives	Others	Wait till next morning
1	2	3	4	5

26. If sometimes you go without water, what is the longest period you have been without it? (<i>circle correct answer</i>)			
1-8 hours	9-16 hours	17>24 hours	More than a day
1	2	3	4

27. Have you ever applied for more water above the free basic that you receive every month? (<i>circle correct answer</i>)	No	1
	Yes	2
	Don't Know	9

28. Are you aware that you can apply for more water if you have a function? (<i>circle correct answer</i>)	No	1
	Yes	2

29. Have you heard about the Indigent Grant? (<i>circle correct answer</i>)	No	1
	Yes	2

30. Would you consider applying for the Indigent Grant if you had more information about it? (<i>circle correct answer</i>)	No	1
	Yes	2

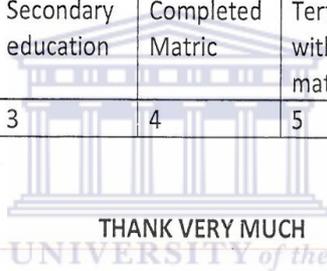
If no, can you give reasons?

31. Has the installation of the water management device affected relationship dynamics in the household? (<i>circle correct answer</i>)	No	1
	Yes	2
	Don't know	9

If yes, can you explain how?

32. What is the approximate total monthly income of your household? (<i>circle correct answer</i>)					
No income	0>1500	R1500> 3000	3000>5000	5000>10000	>10000
1	2	3	4	5	6

3. What is the highest level of education of the head of household? (<i>circle correct answer</i>)						
No formal education	Primary education	Secondary education	Completed Matric	Tertiary with no matric	Post Matric Tertiary	University or Technikon
1	2	3	4	5	6	7



Interviewer should complete the following questions after the conclusion of the interview

33. Respondents Gender(<i>circle correct answer</i>)	Female	1
	Male	2
	Don't Know	9

34. Respondents Race(<i>circle correct answer</i>)	Black	1
	Coloured	2
	Indian	3
	White	4

35. Any comments about the interview (<i>circle correct answer</i>)	No	1
	Yes	2

36. Type of dwelling (<i>circle correct answer</i>)	Zinc/Wooden House	1
	Flat in block of Flats	2
	Brick House	3

37. If yes please write your comments below



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