



**THE MANAGEMENT OF SANITATION IN A SELECTED AREA IN THE WESTERN
CAPE, SOUTH AFRICA**

By

JULIAN LEMONE

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Supervisor: Prof Rozenda Hendrickse

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ABSTRACT

The research provides a broad overview of the problem statement, research objectives, demarcation of the research, research methodology, and significance of the research, a brief literature review and the ethics statement. Theoretical background through a literature review of the selected topic, as well as of the legal frameworks that guide the provisioning of sanitation. The researcher consulted literature that describes the provisioning of sanitation by the City of Cape Town, and the challenges it faces in this regard. The researcher also discussed the legislation that guides sanitation, and five broad themes relating to sanitation, around which the research questions were formulated. The researcher discovered that City of Cape Town employees face a number of challenges that make their job difficult, especially in providing water and sanitation to the communities in Site C in Khayelitsha. The researcher concludes the study and makes recommendations regarding the provision of proper sanitation by the City of Cape Town. These recommendations are based on the study's questionnaire results.

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DEDICATION

To my family that supported me and people that contributed to the process of doing the research and making sure that I completed my studies.

Glossary

IDP: Integrated Development Plan

SAHRC: South African Human Rights Commission

WASH: International Water, Sanitation and Hygiene

USDG: Urban Settlements Development Grant

NP: National Party

RDP: Reconstruction and Development Programme

NGO: Non-Governmental Organisation

CBO'S: Community Based Organisation

WHO: World Health Organisation

NWSRS: National Water Services Regulation Strategy

O&M: Operation and Maintenance

WSA: Water Services Authority

DWA: Department of Water Affairs

DA: Democratic Alliance

ANC Youth League: African National Congress Youth League

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INTRODUCTION AND BACKGROUND

CHAPTER ONE

1.1 INTRODUCTION

The community of Khayelitsha, near Cape Town in the Western Cape Province, South Africa, faces a sanitation problem. Twenty-five percent of the City of Cape Town's overall budget is spent on direct service delivery to poor communities. While the budget for the provision of water and water-borne sewerage infrastructure has increased and the number of toilets delivered to the Khayelitsha informal settlement doubled to 34000 in the 2011–2012 financial year, there appears to have been little change (Harrison, 2013). Sanitation delivery targets have been set by the International Water, Sanitation and Hygiene (WASH) programme in terms of halving the worldwide backlog of sanitation by 2015, and aiming to provide access to sanitation for all by 2025. Community involvement, which enables households and communities to take important decisions and actions, has been advocated to support this initiative (Cousins, 2004:1).

An estimated 38% of South African, some 15 million people, do not have adequate sanitation facilities. In South Africa, access to basic services is every citizen's constitutional right, and local government has an obligation to provide this. People living without these services experience development challenges, made worse by growing unemployment and the spread of unplanned informal settlements. Government's strategy is to link the provision of sanitation infrastructure with local economic development, a measure also proposed in the recently revised Water Service Strategy document. There is evidence that these two aspects of national policy can merge successfully (Govender et al., 2010:90).

Sanitation within sub-economic communities such as Khayelitsha is a historical problem that continues to be a huge challenge facing the government. Government actually promised to provide proper sanitation to these communities by 2014 (Atkinson, 2005), but this has proved impossible. Khayelitsha continues to grow and the risk of just going to the toilet in some parts remains high (Harrison, 2013:26).

1.2 PROBLEM STATEMENT

Section 6 of the Constitution of the Republic of South Africa (Act 108 of 1996) clearly states that every South African citizen is equal before the law and enjoys equal rights and the freedom to enjoy these. No person may be unfairly discriminated against, whether directly or indirectly. It is arguable that the absence of proper sanitation is a form of discrimination that offends people's dignity and infringes their human rights (Constitution of the Republic of South Africa: 1996).

According to Robin (2002:89), the Western Cape bucket system had been mostly replaced with a waterborne sanitation service, which had demanded additional infrastructure such as water supply schemes, increased wastewater treatment capacity, and new internal reticulation networks.

In certain marginalised and isolated areas with no existing bulk sewer networks or wastewater treatment works, waterborne systems were nevertheless installed. This resulted in the provision of sanitation infrastructure that, in some cases, was not the optimal technical solution. This resulted in problems pertaining to long-term service affordability, functionality and sustainability.

In Khayelitsha, places that lacked infrastructure used the dry sanitation system. The bucket toilet system has taken longer to replace than initially envisaged owing to inadequacies in the existing infrastructure. The rush to eradicate the bucket system did not allow time for proper feasibility assessments and project life cycle budgets providing for unforeseeable challenges, such problematic geotechnical conditions. In 2008 the Department of Water Affairs and Forestry was forced to revise its strategy for universal access to water supply and sanitation targeting the year 2010, as it was clear the goal would not be achieved. The Department of Housing focused on informal settlements in 2014 to ensure that safe and healthy water and sanitation services were provided for all citizens, including the eradication of all bucket toilets (Van Wyk, 2009: 121).

The City of Cape Town revised the bucket system to maintain and keep toilets clean and provide jobs, but the system remains. The pioneering programme to maintain and keep toilets clean in Khayelitsha had failed. The blockage problem limited the toilets in the communities, forcing people to risk their lives by walking longer

distances to find a toilet or to squat in the bush. The blue chemical toilets are the first thing that one sees when going to Khayelitsha, being one of the three types of toilets provided by the City for their residents, with others being flushing and portable (Kings, 2012: 01).

Khayelitsha is known in Cape Town as a dirty place with corrugated iron shacks and illegal electricity wires. It is a real challenge to find a toilet that works in the narrow gaps between the packed houses. Using a toilet should be one of the simplest acts, enjoyed without restraint by people who live in Cape Town's suburbs, but a problem for the residents of Khayelitsha (Kings, 2012:19). The make-shift toilets are supposed to have cement bases, but most of them do not. They are supposed to be emptied by a contracted company, but this does not always happen (Harrison, 2012). And herein lies the problem that is addressed in this research study.

Khayelitsha residents are faced up with a challenge of not having proper sanitation in those areas. The reason being the high population growth of the citizens flocking into the area, resulting to the high informal settlements in the area. It becomes a big challenge for the City of Cape Town to provide good proper sanitation for the residence of Khayelitsha.

1.3 RESEARCH OBJECTIVES

Lagardien and Cousins (2003:08) recommend formulating research objectives as a means of organising measurable research outcomes in a way that will allow the researcher to select the best techniques to solve a problem.

The research objectives of the study are to:

- Investigate planning strategies that the City of Cape Town has established to address sanitation issues, in general, and in Khayelitsha, in particular;
- Compile an appropriate research framework to undertake the study; and
- Propose recommendations to the City of Cape Town on how to address the current challenges.

1.4 DEMARCATION OF THE RESEARCH

The study was confined to the area of Khayelitsha township. The findings cannot be generalised to the entire Western Cape, or to South Africa, for that matter.

1.5 RESEARCH METHODOLOGY

According to Higgs (1995:03), research methodology is essentially theory about methods. Whereas substantive theory is about content, methodological theory is about what lies behind the methods of enquiry that might be used in a piece of research. Any method of inquiry makes certain assumptions about the nature of the reality that is being studied, about what constitutes knowledge of that reality and about appropriate ways of acquiring that knowledge. These assumptions, which are often implicit, constitute the essential idea or paradigm informing a research methodology.

Research methodology is defined as the research strategy as a whole, recognizing the political, theoretical and philosophical implications of making choices regarding methods of research (Seale, 1993:3).

There are two broad approaches to research methodology, namely quantitative and qualitative research. Quantitative research adopts the natural science experiment as a model for social science research, its key features being quantitative measurement of the phenomena under investigation, and systematic control of the theoretical variables that influence those phenomena (Donald, 1955:339; Welman et al., 2006).

Qualitative research involves theoretical sampling, which focuses on the representativeness of the concepts in the research, whilst providing access to the social processes in which the researcher is interested. Theoretical sampling leads to the selection of respondents, who are likely to be aware of the phenomena in which the researcher is interested (Bryman, 1988:90).

Qualitative research was employed in this study, as the researcher was keen to hear the views and opinions of public officials responsible for sanitation services in the Khayelitsha area. Qualitative research methods also serve to provide a bigger overall picture of a situation or issue, allowing for much more detailed investigation of

issues whilst answering questions of meaning in terms of who is affected (by the issue), why, and what factors are involved (Van Maanen, 2008:12).

1.5.1 Data collection

Aldridge and Levine (2001:79) argue that when data is collected, it is often difficult to understand what the data means. The qualitative researcher will have made extensive field notes and spent a good deal of time with participants, and so have a sense of the data as it is collected. This study used interviews or “guided conversations” (Yin, 2003:89) to collect qualitative data. The method, involving face-to-face meetings, achieves a better response rate and can explain a study more convincingly than other techniques (Oppenheim, 2006:64). More importantly, a researcher is able to discover unique and unanticipated issues during interactions with subjects (Garson & Horowitz, 2002:210).

According to Patton (2002), there are three main types of interviews, namely the informal conversation interview, the general interview (guided) approach, and the standardized open-ended interview. Minichiello (1990) provides a useful continuum of interviewing methods based on the degree of structure involved. Fielding (1996) distinguishes between standardized and semi-standardized interviews, while Fontana and Frey (1994) use a three-way classification of structured, semi-structured and unstructured interviewing, which they apply to individual and group interviews. Whichever typology is used, the important dimensions are the degree of structure in the interview, and how deep the interview tries to go. At one end of the continuum, are tightly structured and standardized interviews: interview questions are planned and standardized in advance, while pre-coded categories are used to analyse the responses and the interview itself does not attempt to go into any great depth. At the opposite end are unstructured and open-ended interviews. Interview questions are not pre-planned and standardized; instead there are general questions to get the interviews going, and to keep them moving. Specific follow-up questions then emerge as the interview unfolds, and the wording of those questions depends on whatever direction the interview takes. There are no pre-established categories for responses. With so many different types, the interview is a data collection tool of great flexibility that can be adapted to suit a wide variety of research situations.

Different types of interviews have different strengths and weaknesses, as well as different purposes. The type of interview that is selected should, therefore, be aligned with the research strategy, purposes and questions (Fontana and Frey, 1994:373).

Interviews were conducted with 5 purposively selected individuals who work with the strategic management of sanitation in the City of Cape Town in the Western Cape. The positions that they hold are:

- Executive Director, Utility Services;
- Manager of the Reticulation;
- Acting Head of Informal Settlements;
- Project Manager (for sanitation and tap installation); and
- Monitoring and Evaluation Officer.

The researcher asked each participant five questions relating to sanitation. The five broad themes around which the questions were formulated are:

- Strategic planning;
- Sanitation management;
- Sanitation challenges;
- Sanitation benefits; and
- Sanitation improvement – all in respect of the Khayelitsha inhabitants who are affected by this research problem.

The researcher was thus enabled to identify the challenges faced by the department when providing sanitation services to the community of Khayelitsha. Appointments were made by the researcher to conduct the interviews, which were approximately 30 minutes long. An in-depth interview is defined as an approach that involves one-on-one interviews in which individual respondents are questioned in detail about a particular issue, experience or event (Fielding & Thomas, 2008: 251). This data collection tool appeared to be apt for a study of this nature.

1.6 SIGNIFICANCE OF THE RESEARCH

This study could assist the City of Cape Town in revisiting their strategic planning for the delivery of sanitation services in Khayelitsha. Recommendations based on this research will be made to the City Manager of the City of Cape Town for consideration and implementation.

1.7 LITERATURE REVIEW

A literature review helps provide a theoretical framework for research, as well as a justification for carrying it out. While by its nature it should be conducted prior to the research, reference to the literature should not be considered as something only done when designing the research. The results of the research should be presented and discussed in relation to the existing literature. This serves to contextualize the results while at the same time confirming or challenging existing theory (Strange, 2003).

The following literature review is organized around the core areas of the research.

1.7.1 Strategic planning

Strategic planning is an important element to ensure the success of any government initiative to provide services to communities.

The Strategic Sanitation Approach/Strategic Sanitation Planning (SSA/SSP) is a policy covering the delivery of urban sanitation services, which engages with the social, technical, institutional and economic factors that impact on the potential for sustained services provision. It focuses on incentives, responsiveness to demand, the unbundling of service delivery, and the availability of choice among a range of technical, financial, and management options (Vezina, 2002).

1.7.2 Sanitation management

Government should organize the provision of sanitation to its communities so that proper sanitation that is satisfactory to these communities is introduced. Service providers with the necessary skills and experience should be awarded the tenders for these kinds of projects to ensure that they provide good and consistent services.

According to Water, Sanitation and Hygiene (WASH), Project Managers are responsible for overseeing and supervising sanitation projects at all stages of the project management cycle. They are responsible for implementing the programme's objectives and outcomes within the contextual constraints. The success of the programme depends on the effectiveness and efficiency of the Project Manager, making sure that the overall programme is successfully implemented and completed by the team, on time, within budget, and in line with internal standards and contractual obligations (Cottin, 2015).

1.7.3 Sanitation challenges

Since 1994 the South African government has committed itself to attending to both sanitation and water supply backlogs in order to achieve the Millennium Development Goal for sanitation in 2015. There are reports by the Department of Water and the World Health Organization on the significant social, environmental and economic benefits of improved sanitation. Government's addressing these sanitation service backlogs involves several challenges, such as the quality of the structures that are built and the collection of revenues to fund the ongoing provision of service, the maintenance of infrastructure, community liaison and participation to ensure acceptability, and responsibility for management of the sanitation programme. Another major challenge is the ongoing growth of informal settlements in urban areas, caused by migration, population growth and the influx of foreign nationals (Chorus & Bartram, 1999: 25).

1.7.4 Sanitation improvements

The South African report regarding the status of sanitation services reveals the following points:

- Master plans for the development of sanitation services align it with the Integrated Development Plan (IDP) process, the municipal Comprehensive Infrastructure Plans (CIP), and the need to improve service delivery planning at national, provincial and local levels;
- There is a need to focus on boosting capacity at local government level, especially in the fields of technical and financial management. Capacity building programmes and alternative mechanisms must be established so that places with poor service delivery no longer suffer;
- There is a need to improve the effective utilization and management of the funding allocated for sanitation service delivery, and to ensure adequate funding of O&M;
- Challenges associated with institutional fragmentation should be addressed as a matter of urgency, including the clarification of roles and responsibilities, and regulatory, monitoring and evaluation (M&E) activities; and
- Performance monitoring and reporting must be improved, together with the introduction of a well-coordinated M & E framework with KPIs that enable relevant assessment and control of service delivery (Mahamed, 2012).

The Ottawa Charter (1986) proposes the following measures for appropriate sanitation and health promotion:

- Collaborative partnerships to reorient environmental health services;
- Empowering local communities to take responsibility to promote sanitation and environmental health; and
- Promotion of health programmes that help to inculcate and enhance life skills to enable people to make informed choices.

Local communities need to be educated on the correct use of water and sanitation facilities so that sustainable improvements in sanitary and health conditions can be made. For any sanitation system to operate effectively, much depends on the communities themselves and the on-site management of the facilities. Container units are sometimes managed by families who share the facility, and are responsible for locking and cleaning, while others are contracted out locally. Informal settlements can contribute substantially towards sustaining sanitation systems because of their labour resources. By making use of local capacity, either informally or formally, systems stand a greater chance of being sustained (Devine, 2009:20).

1.8 ETHICS STATEMENT

According to Barnes (2008:78), the concern about ethics in social research has only come about in the latter part of the twentieth century, as a result of a shift in the balance of power from the research establishment towards ordinary citizens. He argues that the broad civil rights gained by British citizens from 1950 onwards empowered them to question activities that were carried out in the name of science.

The researcher addressed various ethical considerations when conducting this research, namely:

- Maintaining objectivity throughout the research;
- Preserving integrity in the research;
- Having respect for the research subjects' rights to privacy and dignity;
- Ensuring the protection of subjects from personal harm; and
- Preserving the confidentiality of the research data (Cloete, 1981:153).

1.9 ORGANIZATION OF THE STUDY

The following points provide an overview of how this work is organized into chapters:

- Chapter One offers a broad overview of the research problem;
- Chapter Two provides a literature review of the selected topic;
- Chapter Three outlines the research methodology employed, and describes how data was collected and analyzed;
- Chapter Four describes the outcomes of the study; and
- Chapter Five concludes the study and makes recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

What to focus on in the literature when planning research is something that depends upon the kind of project and style of research planned. In a traditional model of research, the literature is reviewed as part of the research planning and question development stage. The literature becomes an important input into the analysis and planning during this stage. This is the recommended way to proceed in most research situations, and it has been the model typically followed in quantitative research and in some types of qualitative research.

Conversely, in a grounded theory study the literature coverage is deliberately delayed until directions emerge from an early analysis of the data. The literature is introduced later and dealt with essentially as further data for analysis. This is because the researcher wants the categories and concepts that emerge from the research to be fully grounded in the data, rather than to be imposed on the data from the literature. There is obviously room also for approaches situated somewhere between these two ends of the scale.

Choosing a point of focus is a matter of judgment involving the style of the research, the overall research strategy, what the objectives of the proposed study are, the nature of the substantive problem and how much is known about it; how well developed the literature in the area is, and how closely the study wants to follow in the footsteps of that literature. Another important factor is the professional or experiential knowledge that the researcher already has, especially when the research topic is derived from practice or experience. Many research topics and questions have their origin in the world of professional practice and are set in organizational, institutional, community or public contexts. Often, the researcher is also a professional practitioner or closely connected with the professional practice within that setting.

With regard to this research, the researcher had considerable knowledge of the subject before starting the research process. This knowledge was used as a starting point for the question development process, as described above. It involves exploring and articulating the knowledge and experience of the individual in generating reflection about the issues at hand.

Sanitation is an important issue of human wellbeing for the South African government. The Constitution has established a framework that outlines how municipalities should provide basic sanitation services, which are deemed to impact on a community's social development. The South African Constitution provides for citizens' rights, which include the right to access adequate housing, the right to human dignity, and the right to a safe environment. If these rights are routinely violated, the implication is that citizens' human dignity is not a priority on the government's agenda. Access to adequate sanitation is fundamental for personal dignity and security, social and public health, poverty reduction, gender equality, economic development, and environmental sustainability.

If the South African Constitution provides a framework for the provision of sanitation, the RDP and the IDP provide guidelines regarding how sanitation should be delivered. They outline key legislation, policy, strategy, and case laws, which relate to basic sanitation in South Africa, as well as describing the roles and responsibilities of different spheres of government. But the truth is that South Africans are in the habit of creating estimable policies that are often not properly implemented. The provision of sanitation in South Africa continues to face a number of challenges and problems. South Africa's framework for the provision of sanitation, as well as strategies to improve the quality of life for communities, are discussed next. The legislation pertaining to sanitation and certain broad themes of sanitation are also addressed.

2.2 FRAMEWORK FOR THE PROVISION OF SANITATION IN SOUTH AFRICA

The Constitution 1996 is the umbrella for all legislation in national, provincial and local government, providing for the rights of citizens to access basic services.

According to Davids (2005:07), public participation in South African municipalities ought to provide effective and efficient service provision to communities, and to ensure social learning, empowerment and sustainability, key components in sustainable service delivery. When there is a focus on working with the communities to improve their quality of life, it becomes easier to find ways to meet their needs. The White Paper on Local Government includes programs such as the RDP and IDP, which provide ways for local citizens to participate in integrated development planning for the short, medium and long term. Development linkages among municipalities are encouraged and enabled by integrated development planning. The White Paper on Local Government states that the process requires an integrated approach to ensure participation from beneficiary communities and all relevant departments within a particular municipality (Mogale, 2003:07).

The White Paper on Local Government can be used as a guide for the overall vision and development strategy for an area. Local municipalities should improve their understanding of communities' social reality in order to tackle challenges such as that of sanitation provision (Theron & Wetmore, 2005:07). Through concretization they gain the ability to identify the changes needed. A paternalistic top-down and prescriptive approach is unlikely to be able to meet the needs of local communities (Theron, 2005:07). Programmes and project introduction make an important intervention in communities, as they involve public participation. Monitoring and evaluation of the development programs and public participation benefits decision making, as does participation in the implementation of development programmes (Davids, 2005:19).

According to the report on the Status of Sanitation in South Africa (2012), Millennium Development goals envisaged halving the size of the population without sustainable access to basic sanitation by addressing sanitation supply backlogs from 1994 to 2015. The target to achieve universal access to sanitation was set for 2014. The

provision of adequate sanitation services by government programmes at all levels has advanced to the stage of having to face the challenge of sustaining access. Several risks and problems remain, including ensuring the quality of the structures that have been built, the maintenance of infrastructure, the collection of revenue to fund the ongoing provision of the service, community liaison and participation to ensure acceptability, and responsibility for and effective management of the services. Sustaining access is also impeded by the growth of informal settlements, owing to rural-urban migration and population growth. Constructing toilets and meeting the political imperative to deliver on target, regardless of the actual outcomes and often at the expense of community consultation and participation, affects the quality of the service that has been delivered to communities. The problem of infrastructure arises because there is too much of a focus on targets and numbers, and not enough on access and sustainability. Project-built toilets bucket systems, which are unacceptable across the country and are not used by people, provide evidence of this tendency. Sanitation access statistics reveal high failure rates because users often do not receive the full benefit.

One of the major technical challenges that has been identified for expanding services in informal settlements, is the general scarcity of bulk water and sewer services to connect to, particularly in peri-urban areas that have the characteristics of both urban and rural land use. Currently, 74% of the sanitation facilities in informal settlements in Cape Town are non-sewered, on-site systems. Managing grey water to prevent water pollution has been the main environmental concern. As already noted, Cape Town has the additional challenge of having a high water table in many areas, which means that on-site grey water disposal systems such as Soak Ways have the potential to pollute ground water and land surfaces.

One city official suggested that there is the potential to use grey water to flush toilets, but added that there were social acceptance issues relating to perceived service inequities regarding the use of grey water in pour flush toilets. (Pour flush toilets are similar to conventional flush toilets, except that instead of water coming from a cistern above the bowl, users must pour water into the bowl in order to flush the toilet.) In fact, many of the social and economic issues mentioned as challenges to sustainable sanitation intertwine with equity issues. For purposes of clarity, equity concepts are limited in this study to those, which relate to access, resource

allocation and perceptions. The efficient use of resources is a major consideration, and standardized designs are easier to implement. However, as the demand for facilities to accommodate diverse needs grows, greater attention will have to be given to access for vulnerable people (women, children, the disabled, and the elderly).

How to allocate resources equitably is an essential question for any aspect of governance, including the supply of sanitation services. The 1994 White Paper on Water Supply and Sanitation promoted the underlying equity principle of some for all, and not all for some (DWAF, 1994). Various grants exist to fund basic services for indigent households. These include the Equitable Share, which is an unconditional grant administered by the Department of Cooperative Governance and Traditional Affairs, and the Urban Settlements Development Grant (USDG), which is a conditional grant that is administered by the National Department of Human Settlements for capital investments to improve service delivery to urban low-income households. There remains, however, the question of to what extent a sanitation service should be subsidized. In terms of water, a volume of 6 kℓ of free water was set based on a minimum recommendation of 25 litres per person per day for an 8-person household (DWAF, 2001).

The use of alternative sanitation systems – that is, any system other than a conventional waterborne system – is generally viewed as undignified or inferior (Anon., 2005; Matsebe & Osman, 2012). As a city official has observed, from interaction with communities over the years it is clear that people want waterborne sewage, and whether they like it or not, local government should listen and see how it can provide these services to the people who need it. The sustainability of providing individual household waterborne sewerage as part of a Free Basic Sanitation policy, as compared to the inequity of providing different levels of sanitation services and alternative sanitation options to low-income households, should still be publicly discussed and debated. The location of many informal settlements makes it difficult to provide water and sanitation services, given either the distance from existing bulk infrastructure, or the fact that the land is unsuitable for residential development (road and rail reserves, wetlands, flood-prone areas, landfills, and so on). Furthermore, there is a clear tension between the mandate for local government to provide basic services and the sentiment that informal

settlements should not exist (Huchzermeyer, 2009). Historical inequities in the spatial layout of the city, based on apartheid planning, as well as Cape Town's natural boundaries, namely the Atlantic Ocean and Table Mountain, make the relocation of settlements to land closer to economic opportunities and existing infrastructure, a massive challenge, because of limited space and high land costs (Hutton et al., 2008).

World Toilet Day aims to publicize the plight of the estimated 2.6 billion people who lack access to basic sanitation, and the 5,000 children who die daily every day of diarrheal diseases. The prospect of this situation improving in the immediate future is bleak; at the recent summit on the Millennium Development Goals in New York, the United Nations announced that it would not meet its target of halving the number of people without sanitation by 2015. Indeed, of all the Millennium development targets, improved sanitation appears to be the furthest out of reach.

In highly polarized societies like South Africa, seeking to redress the inequalities of colonialism or, in this case apartheid, sanitation provision has a symbolic resonance that transcends its practical function. Under apartheid, as Goldblatt (2010) reminds us, infrastructure was an integral part of the apparatus of state control, and was central to its attempts at social engineering. In the post-apartheid era, infrastructure is no less important, but is now a target of the African National Congress's plan to reverse the social injustices created by segregation. In this new political landscape, toilets have become potent symbols of human dignity and equal rights (Goldblatt, 2010).

Flush with Inequality (2010), has researched public toilets for the last 15 years in the context of Western cities. They wanted to learn about the implementation of sanitation in other cultures. South Africa's second largest city, Durban, was an ideal place to begin. eThekweni Water and Sanitation, the unit that delivers Durban's water and sanitation services, has gained international recognition for its progressive approach. eThekweni Water's ambitious rollout of 90,000 UD toilets in the rural and peri-urban areas, beyond its sewage system, seems especially worth noting, given global concerns about water scarcity. UD toilets are dry and self-contained sanitation systems; they divert urine into a separate compartment from feces so that the latter dries and can be more easily disposed of on-site.

At first glance, UD toilets appeared to be a relatively straightforward solution to the problem of providing basic sanitation to water-stressed regions. Just weeks before the FIFA World Cup began in 2010, Cape Town's Khayelitsha township was rocked by the so-called "toilet wars." The ANC's Youth League destroyed 51 toilets, which had been temporarily enclosed by the city's ruling Democratic Alliance government, on the grounds that the corrugated iron enclosures were substandard and racist. The DA provided these after a number of residents failed to provide enclosures themselves, as previously agreed. The ANC Youth League justified the destruction with the argument — supported by the South African Human Rights Commission — that the enclosures should comprise brick and mortar and not corrugated iron.

Bemused journalists, local and international, struggled to make sense of the occasionally surreal events building up to the destruction, which involved a complicated web of charges, counter-charges and incitements to protest from the two main political parties. The ANC Youth League repeatedly called on residents to destroy infrastructure and to make the city "ungovernable," while Dan Plato, the DA Mayor of Cape Town, urged them to "burn Tires" to oppose the Youth League's "thuggery." Thirty-two people were reportedly arrested in the clashes that resulted. After attempting to summarize the saga, The Christian Science Monitor concluded: "The notion that toilets would become a matter of a rather violent struggle between two parties that fought on the same side against apartheid shows that politics in South Africa has taken a turn for the worse."

Yet we should perhaps not be surprised that toilets can trigger such conflict. History shows time and again that toilets can act as catalysts for territorial and political struggles, not least in the United States. Bathrooms and locker rooms, for instance, reliably proved to be the main obstacle to desegregation at many workplaces throughout the 1950s and '60s. And in the 1970s, the Equal Rights Amendment to the U.S. Constitution was not ratified in part because the right wing claimed that it would mandate unisex bathrooms. Thus, "far from being banal or of second-order importance, toilets are arenas where social distinctions like race, class, sex, and, increasingly, religion are inscribed, maintained and contested in the built environment" (Muench, 2010).

According to the Cape Argus (22 March, 2002), a lack of sanitation would kill 20 million of the world's poorest children over the next decade unless governments took urgent action to prevent it from happening. One might deduce from this that to ignore the problem of sanitation could lead to a deplorable situation in which disease is the order of the day for developing countries. It is clear that local governments everywhere have a mandate to deliver adequate services to every sector of the community. Movik and Mehta (2010) insist on the importance of ensuring that sustainability and equity are incorporated into the provision of sanitation services, through including context-specific criteria within policy. The aim of both sustainability and equity, as realizable possibilities, is to increase the number of toilets in informal areas as quickly as possible, with the long term vision being sustainable and equitable sanitation services.

According to Drum (23 July, 2015), the equity of sanitation services is inadequately addressed because of so many other competing crises. In Cape Town and other South African municipalities, the Integrated Development Plan (IDP) is a mandatory five-year strategy document, which outlines priority development areas for the City. Sustainability and other major IDP themes, as well as specific objective indicators for sanitation, should be used to guide and measure progress. But apart from the number of water taps and toilets that are provided in informal settlements, there is an absence of qualitative and quantitative indicators. Sustainability and equity criteria still need to be prioritized in planning sanitation services (Hellstrom, Balkema & Kvamstrom, .2004).

An elderly woman lifts her skirt, squats and relieves herself in an open field in full view of passers-by and motorists driving on the N2 highway between Somerset West and Cape Town International Airport in the Western Cape. Like hundreds of other residents in the sprawl of shacks that is Khayelitsha, she has no alternative, as the City of Cape Town has not provided adequate toilet facilities (Kamnqa, 23, 90). Many people from the impoverished, crime-ridden Site C informal settlement in Khayelitsha come to the same field to relieve themselves in this humiliating fashion, which the South African Human Rights Commission (SAHRC) views as a violation of a resident's dignity. In 2010 the SAHRC accused the City of this violation when it did not enclose the toilets that it had provided for residents of Makhaza in Khayelitsha (Kamnqa, 23, 90).

Despite the infamous “poo protests” by controversial Ses’khona People’s Right Movement leader and ANC councillor, Andille Lili, and his colleague, Loyiso Nkohla, in 2013, little seems to have changed. At the time they claimed that the only way to attract the authorities’ attention was to dump human waste at Cape Town International Airport, as inhabitants of the Western Cape black townships were still living in what the pair described as inhumane conditions. Many are obligated to use portable toilets, the bucket system or open fields because the authorities are simply not addressing the problem. One encounters a situation where a family of five who live in a shack have to use a portable toilet. All who use the toilet are forced to do so in full visibility of other family members, which clearly impacts the person’s dignity. It is even worse when people have to relieve themselves behind bushes in the open while people are walking past and children are playing nearby (Kamnqa; 23, 91).

While some informal settlements in Khayelitsha do have proper toilets, many shacks dwellers are still obliged to use the fields, a bucket, or a portable toilet to relieve themselves. In an area already plagued by poverty, squalor and massive overcrowding, the toilet problem has added to the misery of Site C residents. Unemployment and crime are the order of the day and residents complain that going out at night to relieve themselves can prove deadly, as criminals target them. As a result, they use the bucket system at night.

“We have nowhere else to go, but here, when we want to relieve ourselves, said resident, Melikhaya Jim, about to cross the N2 highway from Site C to Mfuleni township on the other side. It is a humiliating experience because there are cars passing by on the highway. But what else can we do?” (Kamnqa, 23, 91). Melikhaya has been living in Site C since he arrived from the Eastern Cape a decade ago. The father of five came to Cape Town to escape poverty in the Eastern Cape and considers himself lucky to have found work as a truck driver. This problem of toilets is nothing new, but it seems that the Government has ignored these people. He said that they have grown used to this life, because they have no other option. Some Site C residents seemed unperturbed by the Drum photographer who photographed them, while others turned away as soon as they saw them. The residents are angry and demanding to know when the toilet problem is going to be resolved for them. They believe that only the City can help them, but it seems that the City is ignoring

complaints that have been submitted for years. If residents' pleas continue disregarded, the situation could become dangerous (Kamnqa, 23, 91).

Proper provisioning of sanitation to communities brings dignity and convenience to their citizens. As the face of government, local government should ensure that the system is managed with care.

The City of Cape Town Metropolitan Municipality made media headlines regarding the lack of respect for human dignity in their sanitation services provision. Recommendations were made to the Monitoring and Evaluation Department in the Presidency concerning the report regarding the quality of sanitation service delivery by local governments across the country. An investigation conducted by the South African Human Rights Commission found that the right to human dignity, privacy and a clean environment demanded that existing toilets be enclosed.

Sanitation is an important ongoing concern for the South African government. The upgrading of collection and treatment infrastructure has been neglected for years, mainly in communities that are served with waterborne sewerage systems. Local government institutions have been invested by the Constitution with certain roles and responsibilities in sanitation service provision. The Department of Water Affairs and Forestry was given the responsibility for this from a national and provincial perspective from 1994 to 2001. Then the National Sanitation Programme unit was moved from the DWA to the Department of Human Settlement, but with the DWA retaining certain responsibilities in the sector, including regulation, information management, high-level planning and management of the bulk infrastructure. The lack of coordination and the need to uphold norms and standards resulted in the particular challenge of the absence of a single national body to take the lead in the sector. Other challenges include:

- Service delivery backlogs;
- Refurbishment backlogs;
- Extension backlogs;
- Upgrade needs; and
- Operations and maintenance (Dwaf, 2012).

Scott (2012) states that equity also requires further consideration, generally, in relation to sanitation. Equity is an ethical concept pertaining to notions of social justice, fairness and human rights, based on need as the foundation for the allocation of resources. As with sustainability, there are different dimensions to be considered, such as barriers that limit access to sanitation facilities. Gender aspects, people with disabilities, the elderly and children, should all be considered. There are also regional disparities in sanitation coverage, such as between rural and urban areas, and in sanitation coverage and levels of service in informal settlements. The need to consider resource allocation for sanitation service provision, on both a national and municipal level, is an important equity consideration (Freeman et al., 2011).

As custodian of South Africa's water resources in terms of the National Water Act, the Department of Water Affairs (DWA) is today the water and sanitation sector leader in South Africa. The DWA is primarily responsible for the formulation and implementation of policy pertaining to water and sanitation. Section 155(7) of the Constitution, as well as section 62(1) of the Water Services Act, mandate national government to monitor the performance of the water sector. According to the 2001 White Paper on Basic Household Sanitation, DWAF (predecessor of the DWA) shared the following responsibilities with other national level role players: developing norms and standards for the provision of sanitation, providing support to the provinces and municipalities in the planning and implementation of sanitation improvement programmes, monitoring the outcomes of such programmes and maintaining a database of sanitation requirements and interventions, and providing capacity building support to provinces and municipalities in matters relating to sanitation.

Section 155(7) of the Constitution mandates national government to regulate water services. The National Water Services Regulation Strategy (NWSRS) (January 2010) aimed to fill a critical regulatory gap by establishing the DWA as the national regulator of the water services sector. This shifted the Department's role from water services provider to that of regulator. As the national regulator, the DWA has legal recourse against noncompliance with the Water Services Act, as well as the ability to hand over water service functions to different departments or spheres of government, if there is a major problem. The Department of Water Affairs will also be

able to intervene in service delivery if there is a gross failure on the part of a water service authority, and where lives and the environment are at risk. Part E of the National Water Services Regulation Strategy prescribes an approach to the regulation of sanitation. The following is a summary of some of the relevant provisions, as contained in Part E of the NWSRS.

- **Planning:** the NWSRS describes what should be contained in a WSDP, particularly in relation to sanitation. The Department of Water Affairs monitors the compliance of the WSA in developing the WSDP.
- **Financing:** the Department of Water Affairs monitors all Monitoring Infrastructure Grant (MIG) applications for sanitation projects, and is supposed to monitor adherence to MIG conditions in the execution of projects. The NWSRS acknowledges that this is not happening at present.

In terms of design and construction, sanitation infrastructure must be consistent with national protocols, regulations and legislation, as well as with local water services by-laws. The NWSRS outlines a number of issues relating to sanitation infrastructure, including: the problem of temporary facilities being used for longer than desirable; and the question of chemical toilets, which – when introduced as a last resort – should be used by a limited number of households and be well maintained. There is a lack of clarity on how many households per toilet is acceptable in informal settlements. The NWSRS poses the question of whether a sub-basic standard should be developed for certain areas.

According to Smit (1994:47), low income housing in Cape Town is located mainly on the Cape Flats, where high water table conditions preclude most on-site sanitary systems such as pit latrines. Smith (1994: 47) states that waterborne sewerage is thus generally accepted as being necessary on the Cape Flats.

According to Vukani (13 October, 2016), affected Site B residents said that they had had enough of living next to communal toilets, which often overflow and are not always cleaned by the contractors who are employed to maintain them. They alleged that the toilets were the only ones that were not cleaned in the area, while others in other parts of the community were cleaned frequently. Noluntu Ndiko said that she

had not been consulted before the four toilets were erected next to her house in 2007. Ms Ndiko lives in the MM section of the informal settlement, opposite the BBM section (Siyavuya Khaya, 1,9).

The communal toilets serve the entire community, including the residents of the BBM section. When the toilets were first installed, Ms Ndiko said that she never experienced any issues, as they were cleaned regularly. But as time went by the state of the toilets deteriorated because they were not cleaned. Ms Ndiko said that she has learnt to live with the smell of faeces, but the ongoing blockages had been a major problem and were creating a health hazard for herself and her children. Ms Ndiko said that it pains her that there is a lack of urgency from municipal officers who have responded to her numerous complaints. She added that sometimes it took more than six months for municipal workers to fix the toilets when they are blocked. Meanwhile, the area becomes flooded with human excrement. Ms Ndiko said that the last time that the toilets were cleaned was at the beginning of the year. As a result, she said, she and her neighbours have decided to clean them themselves, as they could no longer handle the unpleasant smell (Siyavuya,1,9) .

Ms Ndiko explained that there were sub-contractors engaged to clean and maintain the toilets. However, it became problematic when the contract of these sub-contractors ended and others had to be appointed. She said that she felt like a prisoner in her home because she had to keep the windows and doors closed. Ms Ndiko said that whenever she reported the blockage of the toilets she was always promised that the toilet would be fixed, but this did not happen. The residents claimed that they had informed the councillor that they wanted the toilets removed or they would demolish them. Ward councillor, Ntombeyebala Mquqwana, confirmed that the toilets had not been cleaned, and that she had met with the residents to hear their complaints. She had sent enquiries to the local Department of Water and Sanitation to enquire why the toilets had not been cleaned. She was still waiting for them to schedule a meeting to enable her to table the residents' grievances. She said that if she could not reach an amicable solution with them, they would have to find a plan B to address the issues. The City of Cape Town's spokesperson, Priya

Reddy, said that the City had met with the community and ward councillors on Tuesday October 11. Ms Reddy said that the problem was a recent lack of a top-up janitorial service owing to challenges in the recruitment of janitors. She said that they were presently in the final stages, which would result in recruitment and expert services would begin shortly (Siyavuya; 1,9).

According to the Socio Economic Rights Institution, in April 2011 the Western Cape High Court handed down judgement in the Beja119 case, which provided more clarity on the provision of basic sanitation in informal settlements, as well as on the importance of meaningful consultation with communities in decision making about basic sanitation provision. The Beja case revolved around 51 unenclosed waterborne toilets that were constructed in Makhaza in Khayelitsha, City of Cape Town, as part of the Silver Town Housing Project that was undertaken in terms of Chapter 13 of the National Housing Code. The City referred to these toilets as loos with a view; and argued that an agreement had been reached with the community whereby the City would provide a toilet for each household, while residents had to provide an enclosure for each toilet. An official complaint was lodged with the SAHRC, which argued that the right to human dignity and privacy had been violated by the open toilets, along with a number of other rights. The SAHRC investigated the complaint and published a report in June 2010, finding that the City had violated the residents' right to human dignity. The City attempted to appeal the decision internally; however, the appeal was dismissed (Tissington, 2011).

Schmidt (2001:41) reported in the Local Government Service Delivery Transformation Document that a winning IDP contributes to a vibrant local democracy by combining various elements of service delivery excellence. A dynamic economy and strong united communities' municipalities are faced with the challenge of developing new models of municipal service delivery, which combine privatization and corporate governance.

In order to deal with the crisis in municipal service delivery, the national government developed four approaches within the IDP: Municipal Services; Partnerships, Rationalization; and Performance Management Systems (Schmidt, 2001:45). The

purpose of these approaches was to facilitate the shift for local government from being a mere service provider to being both a facilitator of development (social and economic), and a service assurer (to ensure equitable and essential community services).

Sanitation refers to the principles and practices relating to the collection, removal or disposal of human excreta and waste water, as they impact users, operators and environment (Asmal, et al., 1996:3; the white paper on basic household sanitation, 2005:5). In Durban there was only one water spigot for an estimated 15 000 to 20 000 persons. Water vendors were selling a bucket of water for 25c in what is known as inanda Newtown. Women and children often traveling substantial distances are required to collect water in containers ranging from bottles and cans to huge plastic jugs weighting thirty pounds or more. Only 20 percent of African households reported having a water tap inside the home compared nearly 100 percent of white Indian households. Sewage disposal has been another problem, some townships have pit latrines, and others have portable toilets. Many residence use open bucket system within their homes, the lack of adequate sewage disposal, combined with heavy rains hot temperature and accidental spilling of these buckets, obviously creates enormous health problems in particular infectious diarrhea, other gastrointestinal disorders and worm infestations.

In South Africa, citizens have been promised houses and improved sanitation since 1994, but communities such as Khayelitsha continue to face problems in this regard. It would seem that South Africa has effective legislation and policies in place, but has failed to implement them successfully. The researcher has identified strategic planning as a tool to assist in the implementation of policy by helping municipalities to improve the provision of sanitation services.

According to Theron (2005:111), the IDP is a strategic plan for South Africa that identifies the characteristics of particular programmes and challenges to help address communities' needs. Public participation helps communities to have a sense of pride and be responsible and motivated, whilst providing improved understanding of the limitations and challenges of service provision. Public participation could be used as a strategic planning component in the introduction and maintenance of sanitation facilities within communities. Strategic planning should involve how the

provision of sanitation will be conducted, whilst monitoring the company that does the job. It also involves educating communities around matters relating to sanitation standards, in terms of safe toilets; a sound, reliable environment; privacy and protection against the weather. The toilets should be well ventilated, keeping smells to a minimum, and preventing the entry and exit of flies and other disease-carrying pests (Water Services, 2003). South Africa compares favourably in these respects with international practice, and underscores the point that the country views access to acceptable sanitation services as a fundamental human rights issue. The key to all of these standards is the requirement for privacy, safety, health and structural soundness.

Environmental soundness relates to keeping the environment clean and minimizing the risk of spreading sanitation-related diseases by facilitating appropriate control of disease-carrying pests and enabling the safe, appropriate treatment or removal of human wastewater. Regulation two of the Compulsory National Standards states that the appropriate and necessary operation and maintenance of a facility include the safe removal of human waste and water, and the communication of good sanitation- and hygiene-related practices. The City of Cape Town should strategize with these requirements in mind for the provision of adequate sanitation.

According to the Preliminary Draft Paper (2002), the primary responsibility for providing water and sanitation services in South Africa lies with local government municipalities, in terms of Part B of Schedule 4 of the Constitution. The Water Services Act and the Municipal Systems Act clearly outline this obligation, while the Municipal Structures Act and the 2003 Strategic Framework for Water Services describe the institutional relationships at local level in more detail. Whether a metropolitan district or a local municipality, a Water Services Authority (WSA) has executive authority to provide water services within its area of jurisdiction. This power derives from the Municipal Structures Act, or from ministerial authorizations made in terms of this Act.

According to the Water Services Act, every WSA must draft a Water Service Development Plan for its area of jurisdiction. The Water Services Authority regulates

water services provision as well as water services providers within its area of jurisdiction and within the policy regulatory frameworks set by DWA through the enactment of by-laws and the regulation of contracts. A water services provider is any entity that has a contract with a Water Service Authority to provide water services to one or more end users within a specific geographic area. A WSA may perform the functions of a water service plan by entering into a written contract with a water service provider or form a joint venture with another water services institution to provide water services to end users. However, a WSA may only enter into a contract with a private sector water service provider, once it has considered all known public sector water service providers that are willing and able to perform the required functions. A water service provider, if not the same entity as the WSA, must be approved by the relevant water service authority in order to provide water services, and may be local or regional, depending on whether it provides water services to more than one WSA. A WSA may act as a water service provider outside of its area of jurisdiction, if contracted to do so by the water services authority for the area in question. District and metropolitan municipalities shoulder the primary responsibility for the health and hygiene education of communities. In 2004 the National Health Act, No 61 of 2003 on the 31 of May was passed, delineating the responsibility of municipal health services to district and metropolitan municipalities.

According to the Strategic Framework for Water Services (2003), provincial government, together with national government, has a constitutional responsibility not only to regulate but to support and strengthen the capacity of local government. Provincial government departments (Public Works) may undertake or oversee the construction of water and sanitation infrastructure on behalf of other departments in the province. This usually includes include setting design standards for water and sanitation facilities in schools, hospitals and clinics. In terms of housing delivery, which is closely linked to sanitation, provincial housing departments have thus far been largely responsible for developing housing projects across the country in terms of the Constitution and the Housing Act. In future, this role will be taken over by municipalities accredited to undertake the housing function and administer national housing programmes, in terms of section 10 of the Housing Act.

According to Jackie (2012), the World Health Organization (Ten facts on sanitation) has reported on the significant benefits (social, environmental and economic) of improved sanitation. Investment in sanitation that provides a comprehensive service (infrastructure, effective operations and maintenance (O&M), and appropriate health education) has significant benefits in terms of community wellbeing, whilst also improving household productivity and reducing health care costs. The following are among the significant benefits of sanitations identified by the WHO:

- Improved sanitation reduces diarrhoea death rates by a third;
- Improved school sanitation encourages children, particular girls, to stay in school;
- Improved sanitation has significant economic benefits, as every \$1 that is invested in improved sanitation, translates into a return of \$9;
- In Africa 115 people die every hour from diseases that are linked to poor sanitation, poor hygiene and contaminated water; and
- Hygiene education and the promotion of hand washing are simple, cost effective measures that can reduce diarrhea cases by up to 45%.

The benefits of improved water and sanitation and the priority given to them by poor Sub-Saharan Africa, justify regarding the provision of water and sanitation as a global concern. At the Millennium Summit on Sustainable Development, South African joined in pledging its commitment to:

- Halving the proportion of people without sustainable access to safe drinking water by 2015; and
- Halving the proportion of people without access to basic sanitation by 2015, and achieving a significant improvement in the lives of at least 100 million slum dwellers by 2020, including the provision of water and sanitation services in slum areas (Mehta & Thomas, 2003).

Access to adequate sanitation is fundamental to personal dignity and security, social and psychological well-being, public health, poverty reduction, gender equality, economic development and environmental sustainability.

This chapter has thus far outlined key legislation, policy, strategy and case law relating to basic sanitation in South Africa, as well as the roles and responsibilities for different spheres of government. It has also highlighted some of the current challenges and fault lines around the provision of sanitation. The Constitution, the Water Services Act and the Municipal Systems Act have established the obligation of local government to provide basic municipal services, with a particular focus on the basic needs of the community and the promotion of social and economic development. Section 73 of the Municipal Services Act explicitly refers to a “right to basic municipal services”, and while the Constitution does not contain an explicit right to basic sanitation, this right has been inferred from a number of other constitutional rights, including the right of access to adequate housing, the right to human dignity, and the right to a safe environment. National water and sanitation policy repeatedly refers to a “right to basic sanitation”, most often linked to the constitutional rights to dignity and a safe environment. There is, however, still confusion at local (and national) level regarding access to basic sanitation as a human right, while current sanitation legislation and policy offers no definitive guidance. Institutional and financial challenges at local government level, coupled with a distinct lack of political will, are causes for concern, resulting in continued compromised access to sanitation for millions of people who live in South Africa. This lack of access is particularly visible in informal settlements, inner city buildings, townships in rural areas, and on farms. Women, the disabled, and people who live with HIV/AIDS are most affected by a lack of access to adequate basic sanitation. The latter are particularly prone to diseases such as diarrhoea, and require ease of access to sanitation facilities, as well as a continuous supply of safe water. The lack of adequate sanitation at schools and clinics (together with ongoing operation and maintenance across the country is also cause for concern. For households that have waterborne toilets, access to sanitation requires a continuous supply of water for flushing. Without access to sufficient and affordable water, even households with the basic infrastructure can have extremely compromised access to sanitation. The effectiveness of the indigent policy and register as the mechanism to target FBS, including FBSan, is questionable, and alternative targeting methods should to be explored.

The Human Settlements Department is currently developing a development matrix, which will be used to guide the city's strategy to upgrade informal settlements, which will then influence the type of sanitation system that is selected. Settlements are categorized according to a number of different physical, technical and environmental risk factors, which determine the whether they can be upgraded in situ or need to be relocated. The development of such a strategy for informal settlements presents an opportunity to develop a long-term, rather than an ad hoc approach to the provision of sanitation services, although there is also a risk of reinforcing top-down planning strategies, which exclude non-government stakeholders. Thus, the development matrix, as a planning tool, should be used in conjunction with various other planning approaches that are more inclusive. Planning and design experts are often in a different socio-economic group and live in a different environment from residents in informal settlements, which limits their ability to relate to circumstances in such environments, and this may in turn hamper the overall success of the sanitation system (McConville, 2012).

Increased water and sanitation access and hygiene promotion create improvements in people's health. Better hygiene, improved water quality and sanitation will also have an indirect, positive effect on educational opportunities. Studies demonstrate that the school enrollment of girls increases with the provision of latrines there, while easy access to safe water sources frees women from the onerous task of spending hours every day drawing and carrying water home. Safe water and sanitation also underpin economic growth. Income benefits may result from a reduction in the cost of health treatment and gains in productivity. There are methods and tools to assist in moving towards sustainability and equity in sanitation services for informal areas, at various levels of decision making and at different stages of sanitation project implementation. These methods and tools should be incorporated during the planning and design stages when there is the greatest potential to influence decision making regarding the prioritization of sanitation problems, sanitation technology options, layout and the number of toilets delivered. The results indicate that there is awareness amongst practitioners and authorities that the current practice of providing temporary sanitation facilities such as chemical or container toilets, which end up becoming temporarily permanent services, is unsustainable. Furthermore, there is also acknowledgment that differentiating the services provided to informal

areas from services that are provided to formal areas may contribute to further inequities in the city because of existing spatial inequalities, so care must be taken to deliberately incorporate informal settlements into infrastructure development plans. Translating awareness of shortcomings into planning implementation and monitoring practices on a wide scale will not happen overnight. The Community-Led Urban Environmental Sanitation Method of Planning developed by the Environmental Sanitation Working Group of the Water Supply and Sanitation Collaborative Council promotes multi-stakeholder participation in a seven step format (Lüthi et al., 2011), and shares some similarities with the more well-known Community-Led Total Sanitation approach. Both approaches emphasize the need to create demand for sanitation services as a first step for instance. Additionally, the first five steps place great emphasis on fostering communication between stakeholders and obtaining a detailed understanding of the sanitation priorities and needs of community members (residents of a given settlement) by way of survey mapping and stakeholder analysis. Although not a panacea, the method may be particularly useful in providing guidelines. The two methods could potentially be used complementarily to enable greater participation from the various stakeholders, whilst incorporating sustainability and equity assessment criteria, prior to the selection of a sanitation system.

Part of the reason that sustainability and equity criteria are not routinely invoked may be because many proposed sustainability indicators would be difficult to measure or are relatively subjective, for example contribution to climate change or odour (Kvarnström et al., 2004). Other indicators such as annual costs for capital and operating expenditures are usually measured, but should to be tempered by consideration of other indicators such as risk of exposure to hazardous substances and social acceptability. Equity indicators beyond resource allocation are less easily defined, although one potential measure, which could supplement the current measure of the ratio of toilets to households, would be to calculate the percentage of households that have to walk further than a pre-defined distance to access a facility (for water standpipes the standard is less than 100 m), or the amount of time it takes to maintain different sanitation technologies. The criteria which should be assessed are context-specific and should be tailored to reflect major issues which arise in informal areas, such as the safety of women and children and grey water management.

In addition to municipal departments, other stakeholders should also have a role in ensuring that sustainability and equity criteria for sanitation are duly considered. Informal settlement residents should have a role in selecting viable sanitation options and be informed of any operational and maintenance requirements (Lüthi et al., 2011). NGOs and community-based organizations (CBOs) are well positioned to act as monitors, and potentially also as service providers, although this occurs less commonly in South Africa than in other developing countries. Contractors that provide sanitation services to informal settlements should be monitored, both by municipal officials and residents. The sanitation products which are sold and the services that are rendered should be assessed and regulated: for example, a certification scheme could be implemented, which recognizes providers who meet specific criteria, as part of a wider effort to move towards green infrastructure. This would create an incentive for contractors to incorporate sustainable practices. Although other stakeholders also have important roles to play, given the current institutional arrangements in South African cities, it is likely that the state, in the form of local government, will continue to have the most control over the direction of sanitation service development. Hence, it is important to have champions within local government, at city level, to advocate for the improvement of sanitation services in informal areas. At national level, a national strategy or policy such as the proposed update to the White Paper on Water and Sanitation Policy, which explicitly includes specific measures for the sustainability and equity of sanitation services, can influence how sanitation services are developed in both informal and formal areas within cities. Equity can be influenced by, for example, explicit requirements to include a certain percentage of toilets that are accessible to disabled and elderly people in public, or communal facilities in informal areas, or to include such toilets on an as-needed basis, following a needs assessment.

2.3 LEGISLATION THAT GUIDE BASIC SANITATION SERVICES

2.3.1 The Republic of South Africa Constitution 1996

According to Smith (2005: 11), the National Party (NP) government (Act 110 of 1983) had to come up with an apartheid-style plan to include the various population groups. Local authorities were required to undertake developments in different political structures. Thus the post-apartheid statutory framework, as detailed in the Local Government Municipality Structure Act (Act 117 of 1998) and the Local Government Municipal System Act (Act 32 of 2000), had to conceptualize a transformation process leading to the delivery of services to the total community of South Africa. However, the highly centralized system of national government influenced the development and power of local government.

According to Reddy (1999:75), this ideology resulted partly from historical factors, as an inheritance from an earlier colonial administration, with its rigid emphasis on control from centralized structures. This meant that all levels of government effectively relied upon centralized institutions and agencies to provide them with terms of reference. This led to local government being neglected by central government, as there was no meaningful involvement in their governance. Centralization distorted the development process of the local community at local government level. It was a structure that allowed the apartheid government to neglect the Black population in terms of providing adequate facilities at local government level (housing, water, transport, schools and electricity).

According to Craythorne (1993:32-33), the biggest error of the 1983 reforms aimed at structural change, was the exclusion of Blacks from all levels of government, except from local government, the national states and the self-governing territories. It was during this period that a huge wave of violence and anarchy swept across South Africa. This continued until after the 1988 local government elections.

The Constitution of the Republic of South Africa, Act 108 of 1996, sections 24 and 27, stipulates that basic water and sanitation services, as well as access to a safe environment, are considered to be basic human rights. It also indicates that local government is the cornerstone of government in respect of ensuring that services

are provided, and that a safe and healthy environment is promoted. According to the White Paper, acceptable sanitation practices are defined as follows:

- Appropriate health and hygiene awareness and behaviour;
- A system to dispose of human excreta and waste water refuse, which is acceptable and affordable to users; is safe, hygienic and easily acceptable, and which does not have an unacceptable impact on the environment; and
- A toilet facility for each household (Sykes & Jooste, 2011).

According to Section 24(a) of the Constitution's Bill of Rights, an environment that is potentially harmful to health or wellbeing should be protected for the benefit of present and future generations (Tissington, 2011).

According to Section 26 (i) and (ii) of the Bill of Rights, the state must take reasonable legislative and other measures within its available resources to achieve the progressive realization of this right, as everyone has the right of access to adequate housing (Tissington, 2011).

According to Section 10 of the Bill of Rights, there is a clear crossover between sanitation and human dignity, as being forced to relieve oneself in unhygienic, inadequate toilet facilities impairs dignity. Every individual has inherent dignity, and the right to have that dignity respected and protected (Tissington, 2011).

According to Section 10 of the Constitution's Bill of Rights, unfair discrimination against any group of historically disadvantaged people is unacceptable, while bias in favour of historically disadvantaged people will be regarded as fair discrimination, and is acceptable (Tissington, 2011).

According to the Department of Water Affairs and Forestry, the primary point of the 1994 White Paper is that sanitation development should be demand driven. The Reconstruction and Development Program (RDP) was followed by the White Paper on Sanitation to outline a number of policy principles, which are largely repeated. A municipality has a crucial role to play within informal settlements, as these post the greatest health risks owing to inadequate sanitation. The Municipal Systems Act No. 32 of 2000 states that access to at least a basic level of municipal services is the greatest need and priority among communities (Mjoli, 2009).

2.4 CHAPTER SUMMARY

Sanitation is a fundamental right that all South African communities enjoy, as implied in the Constitution, which recognizes its role in development and environmental sustainability. This chapter has discussed issues concerning frameworks that relate to the provision of sanitation, legislation around the provision of sanitation, and five broad themes around which the research questions were formulated.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Qualitative research does not depend upon a unified theory or single methodological approach. It can involve various theoretical stances and methods, including observation, interviews, questionnaires and document analysis. While qualitative research is still regarded in some quarters as being less valid and reliable than quantitative enquiry, it is nevertheless an effective source of information and understanding. Qualitative research is typically context-dependent, conducted in a natural (real life) setting, and sometimes over a long period of time (Flick, 2006).

Qualitative research can, in certain circumstances, even be used to test hypotheses in the manner of scientific enquiry (Charmaz, 1995). A qualitative approach can be adopted in circumstances where relatively little is known about a phenomenon, or to gain a new perspective on a phenomenon about which much is already known. Qualitative research can also be used to identify concepts or variables that might later be tested quantitatively, as in a mixed method research design (Strauss & Corbin, 1991).

This chapter presents the research methodology utilized in this research study. It focuses on the strategies adopted by the City of Cape Town for the delivery of sanitation services to the community of Khayelitsha, covering issues such as strategic planning, sanitation management, sanitation challenges, sanitation benefits, and sanitation improvement provisioning. The study suggests a research framework and makes recommendations to the City of Cape Town on how to deal with the challenges that they face regarding sanitation. The researcher used a qualitative approach to collect data. Structured interviews were conducted with the Operations Manager, the Executive Director of Utility Services, Monitoring & Evaluation, the Head of Water and Sanitation, and the Functional Operations Manager at the City of Cape Town.

3.2 ETHICAL CONSIDERATIONS

According to Barnes (2008:78), concerns about ethics in social research only emerged in the latter part of the twentieth century because of a shift in the balance of power from the research establishment towards ordinary citizens. He argues that broad civil rights that were gained by British citizens from 1950 onwards, empowered them to question activities carried out under the rubric of scientific research.

The researcher entertained a number of ethical considerations whilst conducting the research, including:

- Maintaining objectivity throughout the research;
- Acting with integrity throughout the research process;
- Respecting the research subjects' rights to privacy and dignity;
- Protecting subjects from personal harm; and
- Preserving the confidentiality of the research data (Cloete, 1981:153).

3.3 TYPES OF RESEARCH

3.3.1 Research methodology

According to McRoy (1995:2009-2015) the qualitative paradigm stems from an antipositivistic, interpretative approach is idiographic and thus holistic in nature, and aims mainly to understand social life and meaning that people attach to everyday life. The qualitative research paradigm in its broadest sense refers to research that elicits participant's participant accounts of meaning, experience or perceptions. It also produces descriptive data in the participants own written or spoken words. It thus involves identifying the participant's belief and values that underlie the phenomena. The qualitative researcher is therefore concerned with understanding rather than explanation, naturalistic observation rather than controlled measurements and the subjective exploration of reality the perspective of an insider as opposed to the outsider perspective that predominant in quantitative paradigm.

Finally, Marshall and Rossman (1999:46) offer the following guidelines on situation where the qualitative approach would be the preferred one:

- Research that cannot be done experimentally for practical or ethical reasons
- Research that delves in depth into complexities and process
- Research for which relevant variables have yet to be identified
- Research that seeks to explore where and why policy, folk wisdom and practice do not work
- Research on unknown societies or innovative systems
- Research on informal and unstructured linkage and processes in organization
- Research on real, as opposed to stated, organizational goals

Denzin and Lincoln (1994) and Tutty et al. (1996) represent two extreme points of a continuum. At the end , Denzin and Lincoln describe the broadest possible view of an overall qualitative research process including a great many paradigms, perspectives, strategies and methods of qualitative research in a great many fields and discipline of social work only, utilizing only interviewing as a method of data collection. Such a dichotomy depicts the variety of breath, length and depth possible in qualitative research.

Denzin and Lincoln (1994) do not use process terminology such as planning selection, collecting in their description of the research process. Their phases are offered entirely in the form of lists items. We are consequently obliged to translate these lists into process language. This inevitably implies some interpretation of the authors meaning for which we have to assume responsibility.

Confusion about the nature of the steps to be performed within these broad phases of the process has arisen owing to confusion in the conceptualization of qualitative research field. Whereas qualitative research is the term applied to the broadest approach as described by Denzin and Lincoln (1994).

Research methodology is defined as an overall research strategy, taking into account the political, theoretical and philosophical implications of choosing a particular method of conducting research (Seale, 1993:3).

Qualitative research, on the other hand, focuses on the representativeness of the data gathered so as to access the social processes in which the researcher is interested. That is, a sampling process leads to the selection of respondents involved in or with the phenomena in which the researcher is interested (Bryman, 1988:90).

Qualitative researchers are interested in understanding how people interpret their experiences, how they construct their worlds; and what meaning they attribute to those experiences and that world. For example, rather than finding out how many people find part-time jobs after retirement, which could be done via a numerical survey, one might be more interested in how people adjust to retirement, what they think about this phase of their lives, and how they experience the transition from full time work to retirement; and so on. These questions, conducing to an understanding of subjective experience, would call for a qualitative design (Keith, 2009:111).

A qualitative research strategy was applied to the collection of data in this research study. The impetus for the study shares aspects of two more specific orientations that qualitative research can adopt, those of evaluation research and action research. Evaluation research collects data to establish the worth or value of a programme, process or technique, with the purpose of establishing a basis for decision making. When this examination of effectiveness is conducted systematically and empirically through careful data collection and thoughtful analysis, one is engaged in original evaluation research (Patton, 2002:04). Another form of applied research is what is known as action research. Action research aims to address a specific problem within a specific setting such as a classroom, a workplace, a program, or an organization. This kind of research often involves participation in the research process, thus blurring the distinction between action and research. Furthermore, while some training in research is helpful, action research is often

conducted by people in the real world who are interested in practical solutions to problems, and who are interested in social change (Bogdan & Biklen, 2007:04).

The author of the present study is interested in social change – improvement in the delivery of sanitation services to the people of Khayelitsha – and in evaluating the current planning and performance of the municipal authority. Yet this project is neither pure evaluation research nor action research, but rather a preliminary step in those directions. The researcher was interesting in obtaining the views and opinions of public officials responsible for sanitation services in the Khayelitsha area, so as better to understand the problems and challenges that they face. Qualitative research methods allow for a much more detailed investigation of issues such as these, answering questions of meaning in terms of who is affected by what, how, and why (Silverman, 1993:171).

3.4 DATA COLLECTION METHOD

Aldridge and Levine (2001:79) argue that when data is collected, it is often difficult to understand what it means. The qualitative researcher makes extensive field notes and spends a good deal of time with participants, and hence had a sense of the data as it is collected. This study employed interviews or “guided conversation” (Yin, 2003:89) as its technique for data collection. The technique guarantees a “response rate” and can provide more detailed information than other techniques (Oppenheim, 2006:64). More importantly, with an interview, a researcher is able to discover unique and unanticipated issues through face-to-face interaction with the interview subjects (Garson & Horowitz, 2002:210).

It is necessary to distinguish between research questions and data collection questions. A research question is a question that the research itself attempts to answer. A data collection question is a question that is posed in order to collect data to help answer the research question. In this sense it is more specific than the research question. Typically, a number of data collection questions are posed in order to answer one research question. Developing data collection questions – in this case, interview questions – can be a messy, iterative and cyclical process (Punch, 2009:62).

3.4.1 Interviews

The interview is the most prominent data collection tool in qualitative research. It is a good way of accessing people's perceptions, meanings, definitions, situations and constructions of reality, so as to come to understand them (Jones, 1985:46). While interviewing is basically about asking questions and receiving answers, there are a variety of forms it can take. The most common type of interviewing is individual face-to-face verbal interchange, but it can also take the form of a face-to-face group interview (a "focus group"). Interviews can be structured, semi-structured or unstructured. They can be used for marketing purposes, to gather political opinions or to produce data for academic analysis. An interview can be a one-off brief exchange, for example, five minutes over the telephone, or it can take place over multiple lengthy sessions, which sometimes span days, as in life history interviewing (Fontana & Frey, 1994:145).

Patton (2002:145) suggests a different classification – the informal conversation interview, the general interview guide approach, and the standardized open-ended interview – while Minichiello et al. (1990) propose a continuum of interviewing methods based on the degree of structure involved. But whichever typology one uses, the important variables are the degree of structure in the interview, and how deep the interview tries to go. At one end of the continuum, interviews are highly structured and standardized. Interview questions are planned and standardized in advance, while pre-coded categories are used to analyse the responses. At the other end of the continuum, by contrast, interviews are unstructured and open-ended. Interview questions are not preplanned and standardized: instead there are general questions, to get the interview going and to keep it moving, followed by more specific questions that emerge as the interview unfolds. The wording of these questions depends on the direction that the interview takes.

3.4.2 Population and sample

According to Fox and Bayat (2012:64), a population is a full set of cases from which samples are drawn. Fox and Bayat (2012:64) also state that the population is the object of the research, comprising individuals, groups, organisations, human products or events. It is important for the researcher to be clear about the population or units of analysis involved when conducting research (Fox & Bayat, 2012:64). Goddard and Mellvile (2012:64) point out that it is usually impossible for a researcher to study an entire population, which is why it becomes necessary to draw a sample representative of the population being studied.

According to Miles and Huberman (1994), sampling is as important in qualitative research as it is in quantitative research. The baseline in sampling procedures in both quantitative and qualitative research is probability sampling, which is directed at representativeness. But because qualitative research tends to focus on people in unique situations, it frequently uses some sort of deliberate sampling, that is, sampling in a deliberate way, with some purpose or focus in mind.

The sample for this study was purposively selected from managers employed in the City of Cape Town local government in the Western Cape, South Africa. The Strategic Management of Sanitation section of the municipality comprises an Operation Manager, an Executive Director of Utility Services, Monitoring & Evaluation and a Head of Water and Sanitation and Functional Operations manager. The aim was to obtain their perspectives as government officials, since the study is concerned with strategies that they have employed or plan to employ regarding sanitation in Site C, Khayelitsha. Due to constraints of time and finance, Site C residents could not be formally included in the study.

3.5 RESEARCH PROCEDURE

Appointments were made to conduct the scheduled interviews, and a total of five interview questions was posed to the participants.

The researcher first wrote to the City of Cape Town to obtain permission to collect data. Once permission was granted, he made appointments via email correspondence with the Strategic Management of Sanitation. Interviews were conducted face-to-face with representatives of the department in order to collect data. Interview were conducted with the Executive Director of Utility Services, the Manager of Reticulation, the Acting Head of Informal Settlement, and the Project Manager (for Sanitation and Tap Installation) & Monitoring and Evaluation Officer. The purpose was to obtain an overview of sanitation planning from top management through to lower management. The personal identities and research data have been kept confidential, in keeping with the ethical commitments made.

The interviews were conducted at different times and on different days. The first interview was conducted with the Executive Director of Utility Services on the 13/07/2016 at 15:00 at the City of Cape Town offices. The second interview was conducted with the Manager of Reticulation on the 14/07/2016 at 09:00 at the City of Cape Town offices, and the third interview was conducted with the Area Project Manager (for Sanitation and Tap Installation) in Khayelitsha on 19/07/2016 at 09:00. The fourth interview was conducted with the Acting Head of Informal Settlements in Khayelitsha on the 19/07/2016 at 10:00, and the last interview was conducted with the Monitoring and Evaluation Officer. Interviews were conducted in English to ensure understanding between the interviewer and the interviewees. A laptop was used to record the information without impeding the information flow between the interviewees and the interviewer.

3.6 LIMITATIONS OF THE STUDY

The following were found to have placed a measure of restriction on the process of conducting this study:

- It took three months to obtain permission to conduct research at the City of Cape Town;
- Time was a constraint for the researcher in conducting the research, as staff members were not always available at the time of the appointments, and re-scheduling of times was often the only option; and
- There seemed to be some misunderstanding with the Head of Settlements and the Project Manager.

3.7 CHAPTER SUMMARY

This chapter has described the research methodology and data collection tools employed in the study. The researcher provided a theoretical basis for the research methodology, and explained how it was practically applied within the research study.

CHAPTER FOUR

DATA ANALYSIS

4.1 INTRODUCTION

Qualitative research concentrates on the study of human behaviour and social life in natural settings. The richness and complexity of this subject matter means that there are a number of ways of going about investigating it (Coffey & Atkinson, 1996: 170). There are also different ways of processing the results of the investigation (Miles & Huberman, 1994:170).

In the expanding literature on qualitative analysis, emphasis is placed on interpreting and making sense of qualitative data (Coffey and Atkinson, 1994:171). According to Shank (2006:51), data analysis is a process that aims to bring order, structure and meaning to a large amount of data that has been collected. This may be referred to as data grading, which serves as a model for understanding the data collection process.

Chapter Three set out the research methodology that the research study followed. This chapter focuses on analysis of the data that the study generated.

4.2 ANALYSIS METHOD

Mount (2001:161) defines the qualitative approach as research that describes and evaluates a phenomenon in its natural state. Typical of this research approach is that it produces findings that are not arrived at by statistical procedures (Strauss & Corbin, 1996:7). Qualitative research is typically used to answer questions about the complex nature of the phenomenon from participants' points of view (Leedy & Ormond, 2001:101).

Several interviews were conducted to collect data. The participants were purposively selected from among the City of Cape Town's sanitation management employees. Five employees were selected from different sections of sanitation management, and each was asked five questions.

4.3 PRESENTATION RESULTS

Five questions were posed to the relevant participants, addressing the themes of strategic planning, management of sanitation, challenges and improvements. The responses are provided below.

4.3.1 STRATEGIC PLANNING

4.3.1.1 Question 1: What objectives have the City of Cape Town established to address sanitation issues in Khayelitsha?

The respondents displayed common knowledge when answering the above question. They stated that Informal Settlements does not have a long-term human settlement programme; their objectives are to provide the best that they can within the context of settlement without a formal layout. The participants indicated that full flush toilets were their preferred option, as well as that of the community, but indicated that because of certain constraints, it was not always possible to provide full flush toilets. The respondents also stated that in the City of Cape Town, various departments played a role in sanitation, albeit with different objectives. The aim to provide the best sanitation levels possible within the context of informality, varies amongst different communities within the City. They mentioned that there are certain pillars or fundamental principles for the City of Cape Town that were developed through the IDP process, which are to be caring and responsible. Their mandate is constitutional, which is to make water and sanitation available to all residents and citizens. The respondents emphasized that community servicing in Khayelitsha is based the Vision and Mission of the Water and Sanitation Department, which are supported by the Batho Pele principles adopted by the Department. The Informal Settlement Department indicated that they had internal teams that maintain full flush toilets, while they used contractors for servicing the containerized toilets, three times a week. There is a janitorial program, which is massive and operates throughout the City, and on which they spent R62 million annually.

These responses indicate that the respondents are aware of their roles and responsibilities in providing sanitation services. Strategies should be created by the department to render a better service, but the underlying problem is the definitional temporariness of informal settlements. The City regards informal settlements as land that has been invaded.

4.3.2 MANAGEMENT OF SANITATION

4.3.2.1 Question 2: How can we better manage human resources for the provision of sanitation in the two communities in Khayelitsha?

The respondents reported that the way to improve human resource management is to provide more support to the management and staff on the ground in terms of technical and social ability. More support is also required to assist with community engagement, because the staff operates in a fraught and politicized environment. They stated that human resource requirements are based on system performance. This is where the community comes in: 72% of all toilet blockages were a result of vandalism, with people putting inappropriate items into the sewage. The respondent said that by reducing such vandalism in the community, human resources would be able to manage the system better.

The respondents stated that all stakeholders should be involved in the process of better managing human resources to provide improved water and sanitation services. According to the Water and Forestry guide, without public participation, the goals of water resources management cannot be achieved. National government has a critical responsibility to ensure the effective participation of all stakeholders regarding water resource decisions that affect them. Understanding the water laws is one of the first steps towards effective participation. The Water Services Development Plan is a statutory document that should be reviewed each year, since it is linked to the IDP promulgated Water Services Act No, 108 of 1997.

4.3.3 CHALLENGES

4.3.3.1 Question 3: What are the reasons for the slow delivery of sanitation in some parts of Khayelitsha?

The respondents reported that the reasons for the slow progress in sanitation delivery included legal issues, geographical issues, damp lands, floods during the winter months, power lines, roads that are no longer used, no infrastructure beyond the existing edge of the city, and space and land constraints. The big challenge is land availability in the informal settlement and surrounding housing issues. Politics makes it more difficult to render services where people use basic sanitation as a political tool. Moving to providing services on a more formal and permanent basis, which would make the job easier from a water and sanitation perspective, would require more space and land availability. The City should play a bigger role in the Human Settlement Department through providing land for settlement, while the engineering component needs space to install water and sanitation.

The respondents revealed that these challenges are making it more difficult for employees to render their services.

4.3.4 IMPROVEMENT

4.3.4.1 Question 4: What monitoring and evaluation measures have been established to ensure that sanitation is properly managed?

There are monitoring and evaluation officers that are contracted to evaluate whether there are areas requiring improvement. They ensure that they are kept informed about new technology as it becomes available. They provide tracking of service vehicles and monitor janitorial services. Supervisors monitor the toilets every day, but the difficulty is that there is a large number (50 000) of communal-type toilets that belong to the City. This makes it difficult to check if they have indeed been serviced. The respondents pointed out that they could not guarantee that all the toilets were always serviced, because people lock them to prevent entry. They indicated that the community itself was the best resource to drive monitoring and evaluation, because they knew best what happens in the community and what is needed. They have

community liaison officers who check and report when services are not up to standard. They have janitorial services, so that, for example, when something leaks they can immediately be informed. They have four M & E officers who conduct random checks to ensure that services are promptly delivered. Inspections are also conducted regularly regarding faulty areas, and these are also promptly reported to the results of work by work councillors. If there is something wrong they will go to the Ward Committee, cultural structures, the women activist groups and relevant NGOs.

The City should employ more staff to monitor the process because informal settlements cover large areas. According to the Department of Water Affairs and Forestry, the 1994 White Paper emphasizes that sanitation development should be demand driven. The Reconstruction and Development Program (RDP) was followed by the White Paper on Sanitation to outline a number of policy principles. A municipality has a particularly important role to play within informal settlements, as this area experience the greatest health risks owing to inadequate sanitation. The Municipal Systems Act No. 32 of 2000 states that access to at least a basic level of municipal services is a priority for communities to receive (Mjoli, 2009).

4.3.5 BENEFITS

4.3.5.1 Question 5: How would the provision of sanitation affect those places in Khayelitsha that do not have proper sanitation?

The respondents said that the more access that people have to sanitation and the closer that toilet services are to people's houses, the better. Maintenance conditions would be easier from the City's perspective. It would also be better for the people's living conditions if the house-toilet ratio could be decreased. The challenges mentioned above make it difficult for the department to provide sanitation. Since 2007 the ratio has decreased from something like one toilet to 10 households, to one toilet to four and a half households. Improving the ratio to one-to-one will not only improve resident's conditions, but will also positively affect their dignity and pride in themselves and their environment. The residents would be responsible for their own

toilets, which should assist enormously with the problem of vandalism. The Water and Sanitation Department is trying to reduce the ratio of households to toilets. In some areas the ratio is as low as 2 toilets for 3 families, but there is still vandalism. The answer for shared ablution facilities is for people to take joint responsibility themselves for looking after their toilets.

It appears that City managers are far from meeting their target because of the challenges that they face, which include the growing number of informal settlements. Community involvement, based on liaison with local communities, remains a key element in finding a solution. But approaches that embrace community participation in the expectation that community development will result from the establishment of representative project committees, encounter serious problems seemingly inherent in this assumption (Pearson, 1992).

Even where an acceptable local decision-making structure that has the support of the community has been established as a necessary component for sanitation provision projects, the expectations that local committees will reach all the target groups and deal with multiple issues within communities, are unrealistic. Local committees do not have the finance, infrastructure or other resources to deal effectively with all aspects of a project, which require different levels of response. Community involvement in sanitation provision can thus not rest solely on the organized involvement of a community in a development effort with all major groups being represented (Pybus et al., 2001).

According to Dunstan and Associates (1998), local perceptions of services provided to communities play a major part in their efficacy. Where the perspective of users was included in the evaluation of the sanitation system that was provided, apart from inadequacies in the system itself, a significant finding was the absence of consultation by providers. The report emphasized that people had been under-consulted and uneducated about the use of the system that they possess. Subsequent research into the difficulties of provision and maintenance of services in dense informal settlements concurs that service provision has historically not involved detailed discussion with the community (Wood et al., 2001:12)

Dunstan et al. (1998) found that community hygiene beliefs and behaviours needed addressing in all their study cases. Local authorities and the community should be involved in a mutual, massive education campaign, involving consultation and information sharing, before a service like sanitation can become viable. All parties need their definition of sanitation provision to be expanded beyond the narrow role of toilet supply (Dunstan et al., 1998:47-48).

According to Pybus et al. (2001), adequate communication cannot be achieved through a one-way flow of information. Their study focused on effective communication between providers and users of services as a key aspect of all phases of a sanitation project cycle. Involving 14 communities in four provinces, as well as six consulting engineers, the research aimed to establish the actual understanding that is achieved between developers and communities (Pybus et al., 2001).

Pybus et al. (2001) go on to report that local committees need capacity building to strengthen their community involvement, including awareness creation, participation, knowledge transfer and training. They conclude that reliance on un-capacitated local committees is misplaced. Conversely, they criticize skills-oriented approaches since training that has no relation to community mobilization or awareness is pointless. What is needed is a process of mutual learning embedded in the real-world context (Pybus et al., 2001).

Rossouw and Crous (2000) concur that additional support is required for well-functioning communities. This involves addressing issues of systems or structures, which are often lacking or deficient. They suggest that it is cost-effective to invest in community-based resource centres to enable service-related tasks to be carried out more competently in both the short and the long term (Rossouw & Crous, 2000). Community development approaches that consist only of sanitation promotion, training inputs and costly short-term staffing have doubtful benefits if they do not

establish clearly delineated and manageable roles and responsibilities for the long term.

According to Cousin (2004:34), the existing research literature suggests that the dominant understanding of community involvement in sanitation service provision sees it as a form of social development, since local level civil society and recipient household responses, roles and functions feature prominently in the literature. All appear to agree that social considerations are critical to the successful provision of adequate sanitation. However, concerns relating to the technical aspects of provision remain largely in the domain of external providers. The extent to which communities are actively engaged in a range of aspects and functions is undoubtedly influenced by the way in which partnerships between external providers and local actors are formed within the social context. On the whole, it appears that concerns about sanitation systems are viewed as essentially technical considerations associated with the role of the external provider.

Municipalities have tended to respond to urban sanitation backlogs by extending commitments to increasing the delivery of waterborne sewage (Nasco, 1998) – notwithstanding the lack of sufficient financial resources for this level of provision. Conversely, there are many instances where informal settlements are subjected to forms of rudimentary or temporary service that fail to forestall public health hazards. Indeed, such provision has often exacerbated a public health problem (Nasco, 1998). Such rudimentary options are often provided to informal settlements at unaffordable operation and maintenance costs, as demonstrated by the excessively high operating costs of black buckets and chemical (container) toilets. Efficiency and sustainability appear to be sidelined in the rush to provide basic services; municipal coffers are drained while substantial operating costs are paid to suppliers outside of the community. Regardless of the technology option or levels of service that may be offered, substantial investments of both capital and operation costs are inevitably incurred. In the context of national guidelines and strategic opportunities to actively

move towards finding solutions, one cost-effective strategy that municipalities can adopt is the encouragement of small, community-based service provision to people who live in poverty. This practice is not a new concept or phenomenon. The East African model, for example, embodies an alternative approach to service provision that has been applied over the past decade. This experience may be drawn on to aptly inform local initiatives in South Africa (City of Cape Town, 2002).

4.4 CHAPTER SUMMARY

The researcher discovered that the City of Cape Town faces a number of challenges that make it difficult to provide water and sanitation to communities in the informal settlement in Site C. The fact that the Department of Housing has not been able to resolve the problem as yet, compounds the issue. The City of Cape Town should employ more staff to render the service, while every stakeholder involved in the process should be consulted and play their part.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Sanitation systems are essential for the removal of excreta and sullage. The kind of sanitation system that is desired or possible depends, to a large degree, on sub surfaces and socio-cultural conditions, as well as on levels of affordability. According to Smith (1994: 47), low-income housing is located on the Cape Flats, where high watertable conditions preclude most on-site sanitary systems such as pit latrines. Waterborne sewerage is thus generally accepted as being necessary for the Cape Flats.

This final chapter presents recommendations based on the research study's findings regarding the City of Cape Town's planning strategy to address sanitation issues in Khayelitsha. The researcher compiled an appropriate research framework to undertake the study, which posed the following questions regarding the provision of sanitation to this "informal settlement": what are the reasons for the slow delivery of sanitation in some parts of Khayelitsha, what monitoring and evaluation measures have been established to ensure that sanitation is properly managed, and how would the provision of proper sanitation affect those places in Khayelitsha that do not have proper sanitation?

The problem statement motivated the researcher to investigate the reputation of Khayelitsha as a dirty place, characterized by corrugated iron shacks and illegal electricity wires. While most citizens in Cape Town have easy access to an efficient sewerage system, it is currently a challenge in Khayelitsha to find a toilet that works in the narrow gaps between the packed houses. Such toilets as there are, are supposed to have cement bases, but most of them do not. They are supposed to be emptied by a company, but this does not always happen (Harrison, 2012). This, in a nutshell, is the situation that the researcher wished to address by way of undertaking this research study.

5.2 CONCLUSION

Chapter One provides a broad overview of the research project, including the problem statement, research objectives, demarcation of the research, research methodology, significance of the research, a brief literature review and the ethics statement.

Chapter Two presents some theoretical background through a literature review of the selected topic, as well as of the legal frameworks that guide the provisioning of sanitation. The researcher consulted literature that describes the provisioning of sanitation by the City of Cape Town, and the challenges it faces in this regard. The framework for the provision of sanitation in South Africa as a whole is discussed next, as well as strategies in place to improve the quality of life for communities. The researcher also discussed the legislation that guides sanitation, and five broad themes relating to sanitation, around which the research questions were formulated.

Chapter Three outlines the research methodology employed in the study, describing how data was collected and analysed. The data collection tool was a structured interview questionnaire distributed to City of Cape Town employees. Purposive sampling was used to select five employees from the Water and Sanitation Department.

Chapter Four describes the outcomes of the study with regard to the provision of sanitation, including consideration of the problems faced by efforts to provide water and sanitation services in the informal settlement of Khayelitsha. The chapter focuses on analysis of the data that the study generated. The researcher discovered that City of Cape Town employees face a number of challenges that make their job difficult, especially in providing water and sanitation to the communities in Site C in Khayelitsha.

Chapter Five concludes the study and makes recommendations regarding the provision of proper sanitation by the City of Cape Town. These recommendations are based on the study's questionnaire results.

5.3 RECOMMENDATIONS

Recommendation 1: The researcher recommends that the City of Cape Town Project Manager (for sanitation and tap installation) in the Human Settlement Department should implement long-term human settlement programmes. Collaboration between departments such as Sanitation and Human Settlement is vital, because it will allow systems to be implemented efficiently with quality service delivery, especially with the availability of more land. They should introduce strategies that will allow the City to meet objectives that have been set by the Department. The City should establish policies that will prevent people from occupying land illegally. Better provision should be made for oversight, planning, financial allocations and accountability. Moreover, the coordination of support programmes for municipalities should be improved.

Recommendation 2: The researcher recommends that the City of Cape Town's Head of Informal Settlements in the Human Resources Department should employ more staff to provide services in the informal settlement areas at Site C in Khayelitsha in particular, because it is a vast area facing a number of serious challenges. When sanitation programmes are to be implemented, education should be provided regarding the correct management of sanitation in order for it to last longer. The City should employ people who are qualified to do the job, and who know the community's requirements and wants. All stakeholders, including National, Provincial and Local government and community representatives should participate in these programmes. The municipal staff's skills, which are facilitated by the Municipal Infrastructure Support Agency, should be upgraded and prioritized.

Recommendation 3: The Human Settlement Department Manager of Reticulation should implement policies and systems that will effectively ensure that the Water and Sanitation Department operates efficiently. When the Human Settlement Department implements programmes they should provide education to the affected communities, particularly about invading land that does not belong to them, and which will not be serviced by the municipality. Support should be provided for basic service delivery, especially where backlogs are most acute and capacity is weak, through a service delivery management structure. The City should buy privately owned land in order to provide housing opportunities so that water and sanitation will work in environments that are more suited to providing the service.

Recommendation 4: The researcher recommends that all the relevant stakeholders should be involved in the monitoring and evaluation phase of providing the service. In fact, they should be invited by the City to be part of the process from the planning and implementation phases. For example, when it come to the budget to be allocated for such projects, they can contribute their ideas, since they are the ones who have experienced the problems, and are hence the people who should be handling the projects. When there is dissatisfaction, they will at least know what was and what was not agreed upon. The City should employ people from the community to take care of Water and Sanitation services within their respective communities.

Recommendation 5: The National Department's Executive Director of Utility Services should consolidate the sanitation function under a single national department, which has the requisite knowledge and skills to understand and address the complexities of sanitation service delivery beyond the scope of simply providing a facility; but rather in the context of the interrelationships among water, sanitation and community needs. This structure should prepare a pipeline of projects that will address the capital and maintenance backlogs, per municipality, within a clear timeframe, and should coordinate the necessary funding in order to implement these projects. Departments that are responsible for water and sanitation should be supported by the Municipal Infrastructure Support Agency.

Recommendation 6: The Executive Director of Utility Services in the City of Cape Town should provide an opportunity for the private sector to participate in service delivery, going beyond engineering and construction services to include maintenance contracting, financial management services, water service franchising and outright privatization.

Recommendation 7: It is recommended that the Project Manager (for sanitation and tap installation) and the Monitoring and Evaluation Officer should assist by linking up to undertake donor-supported infrastructure projects, which are packaged with training, systems and facility design, water education, computer applications and hardware such as vehicles and computers.

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55 APPENDICES

The Registrar
Cape Peninsula University of Technology
PO Box 652
Cape Town
8000

Dear Mellisa

My name Sfiso, Julian Lemone, I'm a student at CPUT doing Masters on Public Management. I'm writing this letter because my topic of the research is on Managing sanitation in a selected sub economic area in the Western Cape, South Africa. The objectives of this letter is to get ethics letter from you that is giving me authority that I can do the research in the Department base on these objectives:

- Identify what planning strategies have been put in place by the City of Cape Town to address the sanitation issues in general and in Khayelitsha specifically;
- Forward recommendations to the City of Cape Town on how to address the current challenges

I need the letter because I have to submit my proposal to the ethics committee, so I can't submit without that letter that's why I'm requesting from the Department.

Thanks

Regards

Sfiso, Julian Lemone

27 March 2015

Research application for STUDENT: Sifiso Julian Lemone

1) The formal research proposal highlighting the research topic, hypothesis (if applicable), research methodology and intended sample group. The impact on the time participants would need to complete the research is also needed and must be clearly stated. Also, how would the researcher envisage accessing the participants. What would you require from the City for the research project- i.e. interviews, data etc

Topic: Managing sanitation in a selected sub-economic area (Khayeltisha, Cape Town) in the Western Cape, South Africa.

Research methodology: According to Yin (1994:19) a research design can be described as a logic sequence that connects the empirical data to a study's initial research questions and ultimately to its conclusion, where Burns & Grove (2001) described research design as an overall plan of the researcher in obtaining answers on the research question. This research will use qualitative methods.

1.1 Qualitative Research

Qualitative research approach proceeds to design your study within the framework of the one of the tradition or genres of the qualitative inquiry. Thus the components of the design process (e.g., the theoretical framework, research purpose, and methods of data collection and analysis reflecting reflect the principles and features that characterise that tradition. However, one need not be so rigid as to not mix tradition employing, for example, a grounded theory analysis procedure within a case study design or conducting a hermeneutic phenomenological inquiry (Van Maanen, 2008:12).

Qualitative research will be employed in this study to determine which methods will most suitably reveal the information or experience sought. The study will help the researcher to take an in depth approach to the phenomenon studied in order to understand it more thoroughly. Qualitative research methods serve to also provide a bigger picture of a situation or issue and can inform in an accessible way. Qualitative research methods allow for much more detailed investigation of issues,

27 March 2015

answering questions of meaning, who is affected (by the issue) why, what factors are involved.

1.2 Data Collection

According Aldridge and Levine (2001:79) argues that when collecting data, it can often be difficult to get a feel for what the data are telling us. The qualitative researcher will have made extensive field notes and spent a good deal of time with the participants and so have a sense of the data as they are being collected. This study will employ an interview technique method. This qualitative technique of data collection is regarded as guided conversation (Yin, 2003:89). It is suggested that the technique can be used for to improve response rate and the explanation of a study more convincingly than other techniques (Oppenheim, 2006:64). More importantly with an interview a researcher is able to discover unique and unanticipated issues during interaction with subject (Garson & Horowitz, 2002:210). Interviews involve a face to face meeting with the interviewees.

The study will make use of Interviews to collect data. The researcher will select five employees that are working with the strategic management of sanitation in the City of Cape Town in the Western Cape. The researcher will ask each respondent five questions related to the sanitation. This approach will help the researcher to identify the challenges faced by the department when providing services to the community of Khayelitsha. Appointment will be made by the researcher to conduct the interviews to the Department. The researcher will spend 30 minutes of the employees time asking the questionnaires.

Unstructured interview is conducted without any comprehensive list of predetermined open – ended questions. It provides in depth data on the topic being investigated and allows participants to be interviewed on a number of separation occasions (Struwig & Stead, 2008:64). Unstructured questionnaire will be used to collect data from the respondent. The researcher will use unstructured questionnaire because it will capture the point of the view of the respondent rather than the concerns of the researcher. It will explore issues in detail with the interview, using probes, prompts and flexible questioning styles both in terms of the ways in

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which questions are asked and the order in which they are delivered. The researcher will focus on two informal settlements.

Hypothesis: Challenges remain in the provision of sanitation in Khayeltisha and through an investigation possible solutions could be identified

Data Request: Household count, tap and toilet for those 2 communities as well as challenges faced in terms of land typology and densities.

Intended sample group/accesses and expectations of City: City officials and community members. Community members will be approached on site; the specific area has not been identified but will go to one area with higher provision and one area with lower provision. Would like to interview staff who work for water and sanitation informal settlements unit in Khayelitsha also would like to consider interviewing formal reticulation in Khayelitsha- would also like to interview Human Settlements too. Will request and pursue access through ED of Utility Services Office. Time will be limited- one interview of approximately an hour per official.

2) What are the set deliverables of the research project;

To identify challenges for the community and the City in terms of sanitation provision in two informal settlements in Khayeltisha and where possible identify solutions.

3) A letter from the relevant tertiary institution confirming the researcher is a registered student and confirming the qualification the researcher is pursuing and that the researcher will be required to conduct research in order to obtain the qualification.

Received

4) A mini project plan explaining the essence and duration of the research.

Mini project plan

Chapter One: Consist of Proposal of the research, how the research is going to be done, which methodology will be used to collect the information. The chapter also provides a broad overview of the research problem, research objectives and Limitations.

Chapter Two: The Chapter will provide a literature review of the key concepts of this research. The researcher will discuss the management of the sanitation currently in the Western Cape local government. The researcher will also discuss challenges faced by the Western Cape government.

Chapter three (Research Methodology): This Chapter will describe the methods that are going to be conducted during the research. The chapter will include an overview of the research design, information needed and sources of the data. The strategies the researcher intend to employ for both collecting and analysing data.

Chapter Four: This Chapter will provide outcomes from the methods conducted in chapter three.

Chapter Five: This Chapter will provide deeper meaning behind the findings. Seeking significant patterns among the findings, making use of description and interpretation.

Chapter Six: CONCLUSION AND RECOMMENDATION This Chapter will deal with implications for policy and practice, as well as for further research. The possible ways that people could and should now do things differently.

Duration- February to November for entire research, data gathering will happen in July/August time.

4. Which institutions and or organisations are involved in conducting/ directing/ commissioning the research;

Only the requestor's institution- CPUT

27 March 2015

5. Is the City the only government sphere or municipality stakeholder in this project, if so why and if not who are the other stakeholders? The City is the only government sphere

6. Are there any other non-governmental/private stakeholders involved in this research;

No

7. What benefit does this research hold for the City;

Possible solutions to challenges identified in the provision of sanitation in the two communities in Khayeltisha- which might also provide solutions in terms of sanitation challenges in informal settlements in the wider Khayeltisha and the City as a whole.

8. Confirmation of the confidentiality of the research and the City's right to request that the name and brand of the City will not be used in the research publication unless this is with the City's consent?

Yes

Appendix B

Andrea De Ujfalussy

From: Nobby Mentoor on behalf of Gisela Kaiser
Sent: Monday, March 23, 2015 4:28 PM
To: Andrea De Ujfalussy
Subject: FW: Permission to conduct research

FYI,

Regards,

Nobby Mentoor
Senior Professional Officer
OFFICE OF THE EXECUTIVE DIRECTOR: UTILITY SERVICES
5th Floor Podium Block Civic Centre
12 Hertzog Boulevard, Cape Town

Tel No: 021 400 3500/2500
Cell No: 0833758343
Nobby.mentoor@capetown.gov.za

Accounts queries: 0860 103 089
accounts@capetown.gov.za

Technical Operations Centre
Hotline: 0860 103 089 (water option)
SMS: 31373
waterTOC@capetown.gov.za
www.capetown.gov.za

[CITYweb](#)
[MySite](#)



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Making progress possible. Together

From: Julian.lemone@yahoo.com [<mailto:Julian.lemone@yahoo.com>]
Sent: Tuesday, March 17, 2015 4:43 PM
To: Gisela Kaiser
Subject: Permission to conduct research

Dear Achmat Ebrahim

Sifiso Julian Lemone, is registered for an MTech in Public Management. The title of his research thesis is: THE MANAGEMENT OF SANITATION IN A SELECTED AREA IN THE WESTERN CAPE, SOUTH AFRICA.

The study will be confined to an area in Khayelitsha. The student requires your permission to conduct the study. He will conduct interviews with key individuals dealing with sanitation services. He will also interview community members to gauge their perception around sanitation in Khayelitsha in general.

Your assistance in this research endeavour will be much appreciated. He will conduct the research in an ethical fashion and will adhere to all ethical protocols which you may insist on, and as prescribed by the university.

Please contact him if further information is required. You may also contact me if you so desire.

Kind regards,

Associate Professor Rozenda Hendrickse (PhD)
Department of Public Management
Cape Peninsula University of Technology
Faculty of Business, P O Box 652, Cape Town, 8000
Tel: 021 – 460 3929
Email: hendrickser@cput.ac.za
(Physical address: Engineering Building, Room 3.57. Cape Town Campus)

Sent from my BlackBerry 10 smartphone.

Annexure C



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Making progress possible Together

Civic Centre
P O Box 298, Cape Town 8000
Ask for: ANDREA DE UJFLAUSSY
Tel: 021 4005034

Iziko loLuntu
P O Box 298, Cape Town 8000
Cela: Qrh ANDREA DE UJFLAUSSY
Umnxeba: 021 4005034

Cape Town
Posbus 298, Kaapstad 8000
Via vir: ANDREA DE UJFLAUSSY
Tel: 021 4005034

E-mail: Andrea.deUjfalussy@capetown.gov.za
Webmail: <http://www.capetown.gov.za>

Julian.lemone@yahoo.com

30 March 2015

Dear Mr Lemone,

RE Request for permission to conduct research on topic: 'Managing sanitation in a selected sub-economic area (Khayellisha, Cape Town) in the Western Cape, South Africa.'

Please be advised that based on the information submitted in annexure A and annexure B your request for research on the above mentioned topic has been granted.

Please note that any deviation from the agreed and understanding in annexure A and B, will result in possible withdrawal of the approval. You are requested to inform myself of any changes to Annexure A and B, in order for the City to reconsider the approval.

Please further note that access to staff for interview purposes and information must be specifically requested through myself.

Kind regards,

Andrea de Ujfalussy OBO
Dr Gisela Kaiser (Executive Director Utility Services)

Principle professional Officer
Office of the Executive Director; Utility Services
5th Floor Podium Block
Civic Centre
Cape Town

The information above and Annexure A and B is agreed to by the applicant: Sifiso Julian Lemone

Applicant Signature:

Date:

31/03/2015

www.capetown.gov.za

Making progress possible. Together.

Annexure D

Interview Schedule

My name is Julian Lemone, currently studying towards M.Tech in Public Management qualification at Cape Peninsula University of Technology and undertaking a research in partial fulfillment of the course.

You have been purposefully selected to participate in this research as a respondent.

Rest assured that your contribution will remain confidential and no interference will be made. Your name will be never be linked to any of the contents of the report so that everything remains anonymous.

I am hereby kindly asking you to honestly respond to the questions I will pose as attached.

Thanking you in anticipation.

Yours sincerely

Julian Lemone

Cape Peninsula University of Technology

Cape Town Campus

8000

Cell Phone: 0727060656

PRELIMINARY INTERVIEW

1. STRATEGIC PLANNING:

What objectives are put in place by the City of Town to address sanitation issues in Khayelitsha?

2. MANAGEMENT OF SANITATION

How can we better manage human resource on provision of sanitation in the two communities in Khayelitsha?

3. CHALLENGES

What are the reasons for slow progress on sanitation in some part of Khayelitsha?

4. IMPROVEMENT

What monitoring and evaluation measures have been established to ensure that sanitation is properly managed?

5. BENEFITS

How would the provision of sanitation affect those places in Khayelitsha that do not have proper sanitation?

Annexure F

GRAMMARIAN CERTIFICATE

SHAMILA SULAYMAN PROOF READING AND EDITING
SERVICES

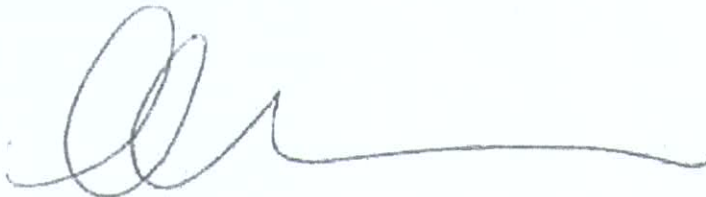
19 April 2018

Dear Sir / Madam

This confirms that I have proof read and edited the research article entitled: "***The management of sanitation in a selected area in the Western Cape, South Africa***" and that I have advised the candidate to make the required changes.

Thank you.

Yours faithfully



(Mrs) SHAMILA SULAYMAN

Communication Lecturer: CPUT

Professional Editor's Group

shamilasulayman@gmail.com

sulaymans@cput.ac.za

071-478-1020