

**A Critical Analysis of Institutional Partnerships in the
Provision of Water and Sanitation Services in Rural
Ndwedwe Schools**

Bukiwe Alexia Duma

Submitted in partial fulfillment of the requirements for the degree of
Masters of Development Studies, Faculty of Humanities, Development
and Social Sciences, University of KwaZulu-Natal

November 2009

Durban

Abstract

Water and sanitation provision is a matter of life and death to humans, since its absence and shortage may increase incidences of waterborne diseases as well as have adverse effects on the learning environment at schools. Every human has a right to an adequate water supply as well as to proper sanitation services. The two cannot be separated; absence of either can have dire public health implications.

Schools are an extension of communities and can therefore be seen as a reflection of societal trends and infrastructural conditions. In South Africa the national ministry of water affairs is the main custodian of water and sanitation services to all. However it is the responsibility of the education ministry to provide and extend water and sanitation services and build infrastructure in schools. One of the principles in the water and sanitation policy stipulates that the state has an obligation for ensuring service delivery within available resources. Other relevant stakeholders need to assist the government to augment service delivery. It is against this background that the study focuses on exploring the extent to which stakeholders are involved in providing water services to schools and whether their involvement has resulted in any service delivery improvement or not.

The main themes explored in the study include profiling and demographics of the schools, the state of sanitation facilities and water infrastructure, operation and management of sanitation facilities and public health issues. The study also aims to provide an insight into service delivery challenges and includes success stories where partnerships have been involved. The study draws from theories that link water and sanitation to public health, child development and gender based on the human rights principles. Literature on various forms of institutional arrangements is explored in order to understand the regulatory framework upon which service delivery is based.

The main findings indicated that sanitation facilities in the rural schools are generally poor unless there has been some type of intervention. Although it is the municipality's

responsibility to ensure potable water is supplied at a local level, these services are often not provided. Service delivery seems to be very slow for most schools. Stakeholder involvement has been at the level of providing infrastructure for the schools, whereas operations and maintenance has remained the responsibility of schools. There are still huge challenges for the government to improve service delivery in schools especially those in the rural areas.

Acknowledgements

This study would not have been possible without the generous contribution of time given by all the participants of the study and for those who have responded to requests for information. In particular I want to thank the Principals and Heads of Department of participating schools for whom time was particularly precious but who were still exceptionally welcoming and willing to share their thoughts and experiences with me. Also a word of gratitude goes to all my friends and colleagues for their continuous support and encouragement. To my family especially my brother Xolisa Ngwadla my sincere thanks for believing in me and to my daughter, Khwezi, for her endurance and inspiration. My supervisor Ms Zoe Wilson assisted with her professional insight and guidance. Dr. Richard Ballard also assisted towards the end of the process and his motivation and guidance helped me deal with logistical challenges. A big thank you goes to Ms Kim Ward from WESSA in Pietermaritzburg for her editing services. Financial assistance from my employer Umgeni Water made the whole study a reality, for that I am thankful. Last but not least, to God Almighty is the Glory, for the spiritual strength.

DECLARATION

Submitted in fulfilment / partial fulfilment of the requirements for the degree of Masters in Development Studies, in the Graduate Programme in Faculty of Humanities, Development and Social Sciences, University of KwaZulu-Natal, Durban, South Africa.

I declare that this dissertation is my own unaided work. All citations, references and borrowed ideas have been duly acknowledged. It is being submitted for the degree of Masters in Development Studies in the Faculty of Humanities, Development and Social Science, University of KwaZulu-Natal, Durban, South Africa. None of the present work has been submitted previously for any degree or examination in any other University.

Student signature

Date

List of Acronyms

CBO	Community Based Organization
BOTT	Build, Operate, Train, Transfer
DoE	Department of Education
DPW	Department of Public Works
DWAF	Department of Water Affairs and Forestry
EES	Environmental Education Services
EMIS	Education Management Information Systems
GEAR	Growth, employment and Redistribution
HOD	Head of Department
IA	Implementing Agency
KZN	KwaZulu Natal
NGO	Non- Governmental Organization
MDG	Millennium Development Goals
MIG	Municipal Infrastructure Grant
MSP	Municipal Service Partnership
PPP	Public Private Partnership
PTR	Pupil Toilet Ratio
PUP	Public- Public Partnership
RAWSP	Rural Area Water Sanitation Projects
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
SGB	School Governing Body
UN	United Nations
UNESCO	the United Nations Committee on Economic, Social and Cultural Rights
UNICEF	United Nations Children Fund
UNWWDR	United Nations World Water Development Report
UW	Umgeni Water
VIP	Ventilated Pit Latrine
WHO	World Health Organization
WRC	Water Research Commission
WSA	Water Services Authority
WSP	Water Services Provider
WWF	World Wide Fund

TABLE OF CONTENTS

Abstract	ii
Acknowledgements	iv
List of Acronyms	vi
List of graphs	ix
List of figures	ix
List of tables.....	ix
List of Pictures	ix
List of appendices	ix
Chapter 1: Introduction	1
1.1. Introduction.....	1
1.2. Motivation of the study.....	2
1.3. Statement of the problem.....	3
1.4. Aims and objectives of the study.....	4
1.5. Conceptual framework.....	5
1.6. Methodology and core findings.....	7
1.7. Organization of the dissertation.....	8
Chapter 2: Literature review	9
2.1. Introduction.....	9
2.2. Overview of the South African water sector.....	9
2.3. Service delivery in rural areas.....	12
2.4. Water and sanitation service delivery at schools.....	12
2.5. Institutional arrangements for water and sanitation provision.....	14
2.6. Types of partnerships.....	15
Chapter 3: Theoretical Framework	19
3.1. Introduction.....	19
3.2. Water and sanitation provision as a basic need.....	20
3.3. Basic needs and rights based approaches to water and sanitation services.....	21
3.4. Water, sanitation and public health.....	22
Chapter 4: Methodology	25
4.1. Introduction.....	25

4.2. Description of the site and population.....	25
4.3. Research methodology and design.....	26
4.3.1. Qualitative methods	26
4.3.2. In-depth interviews	27
4.3.3. Sampling methods.....	30
4.3.4. Analysis of interviews.....	31
4.4. Limitations of the study.....	33
Chapter 5: Presentation of results and findings.....	34
5.1. Profiling and demographics of the study area.....	35
5.1.1. The physical environment.....	35
5.2. Sanitation facilities.....	38
5.2.1. The state of sanitation facilities	40
5.2.2. Sanitation facilities maintenance	42
5.3. Water infrastructure.....	46
5.3.1. Source of water and other related issues.....	46
5.4. Public health and personal hygiene.....	47
5.4.1. Waterborne diseases.....	49
5.5. Institutional arrangements, partnerships and service delivery.....	50
5.5.1. Service delivery	51
5.5.2. Partnership involvement and service delivery experience.....	52
Chapter 6: Discussion.....	56
6.1. Water and sanitation facilities, public health and gender issues.....	56
6.2. Institutional arrangements and partnership as determinants to level of service delivery.....	62
6.3. Conclusion.....	65
Chapter 7: Conclusion and recommendations.....	67
References.....	70

List of graphs

Graph 1: Enrolment statistics for School

Graph 2: Gender Distribution of toilets

List of figures

Figure 1: Schematic presentation of a VIP

Figure 2: Water and sanitation cycle within a school environment

List of tables

Table 1: Type of sanitation facilities and PTR

Table 2: The age of toilet facilities

Table 3: The state of toilet facilities

Table 4: Water source and storage

Table 5: Hand washing facilities

Table 6: Incidence of water-borne diseases

Table 7: Partnerships and service delivery experience

List of Pictures

Pic 1: Old Toilet structure

Pic 2: New toilet structure

Pic 3: Inside the new toilet

Pic 4: Cleaning Agent

Pic 6: Filth inside a new toilet

Pic 7: Broken sink taps

Pic 8: Dirty sink and broken tap

Pic 9: Single functioning tap

List of appendices

Appendix 1: Informed Consent Form

Appendix 2: Permission to interview educators and learners

Appendix 3: Data Collection Tool

Appendix 4: Map of the Study area (Ndwedwe)

Chapter 1: Introduction

1.1. Introduction

This study looks at the institutional partnerships in the provision of water and sanitation services in rural Ndwedwe schools and evaluates whether these partnerships are significant or not in service delivery. Ndwedwe Local Municipality is situated approximately 20 kilometres inland from Durban's KwaZulu-Natal North coast. The Municipality extends over 1 076 square kilometre and is populated by predominantly poor black communities whose livelihood depends on subsistence farming. The density in settlements is approximately 145 people per. Located in relatively close proximity to the major urban and economic developments of Tongaat and Durban, the area has remained considerably underdeveloped. External road access and internal connections are substantially limited to east-west roads, while north-south links are few and of poor quality (Ilembe District Municipality 2009).

The goal of this study is to examine the state of water and sanitation infrastructure at schools in Ndwedwe to establish the nature and extent of stakeholder development by agencies other than the education ministry. Furthermore the study seeks to analyze both successes and challenges of the partnerships at these schools. Literature indicates that whilst it is the government's primary goal to provide public infrastructure, due to financial and resource constraints, stakeholder involvement and external financial support are required. While institutional partnerships are presumed to be significant to aid service delivery, challenges do exist as far as planning, funding and maintenance of infrastructure are concerned, considering the financial returns a stakeholder may forfeit in the process. Thus two factors at play are lack of financial returns for the investor except for cost recovery from the department as well as lack of funding by schools to absorb maintenance costs.

The study took place at schools and since they are institutions of learning where learners spend most of their time, the schools require services that not only enhance learning but that also meet learner psychological and physical needs. Water and sanitation provision in schools is fundamental to creating a healthy environment for children. An adequate water supply is necessary for children's physical needs while proper toilet facilities are essential for a healthy environment, both of which have psychological implications for their well-being. Hygienic behaviour such as washing hands before eating and after using the toilet needs to be nurtured at home and reinforced at school.

Most schools have some kind of access to water and sanitation services; however, the study established that the type of infrastructure, its maintenance and operation remain a great challenge for schools due to budgetary constraints. Literature that has been reviewed gives a background to various theories and policies that support water and sanitation as a basic need especially to children. It has been noted by different authors that sanitation delivery tends to enjoy a lower profile than water provision despite high cost implications for the latter.

This chapter outlines the background information which introduces the motivation of the study and the statement of the problem. Furthermore, the aims and objectives, hypothesis, research questions, conceptual framework, methodology and the organization of the study are outlined in this section.

1.2. Motivation of the study

The study has been motivated by my involvement in supporting environmental education at schools in the Ndwedwe area since 2003. As an Environmental Education Officer my employer is Umgeni Water, a bulk water utility situated in KwaZulu-Natal (KZN). The work is done by the Environmental Education Services (EES) unit under the Social Development department. The department's vision is to deliver quality environmental education to customers who comprise primarily of school children and to improve the

wellness, health and hygiene of the communities in the area of operation. EES services are provided to improve the behaviour, knowledge, and attitudes towards sustainable management of natural resources through environmental and water education programmes. A significant challenge to meeting this vision satisfactorily within this area is the observed lack of potable water supply and poor sanitation infrastructure in some of the schools. Thus I have a professional interest in finding out whether partnerships can be an alternative way of enhancing service delivery effectively or not. Furthermore, Umgeni Water also runs comprehensive school sanitation programmes to assist the municipalities in providing toilet facilities to schools on a commercial basis. Since I am employed by Umgeni Water, which is a potential partner to service delivery, this might presuppose that I may be biased towards partnerships as being an effective vehicle to facilitate service delivery. This potential bias will be minimal in that I do not work for the section which provides water and sanitation facilities and infrastructure in schools and my employment status will not be affected by the outcome of this study.

1.3. Statement of the problem

The statement of the problem will be explored within the principles of human rights, whilst recognizing the water and sanitation infrastructure crisis as well as limited access to these services faced by the South African citizens in general and schools in particular. The study therefore seeks to ascertain whether systems are in place to address these challenges especially at schools.

Water is regarded as a basic need that sustains human life and access to water is regarded as a human right. This right is embedded in section 27 (1b) of the Bill of Rights of the South African Constitution (RSA, 1996) which highlights the need for access to adequate food and water, health care services. According to this section it is the duty of the state to ensure that these rights are realized through other appropriate measures within available resources. Thus, if resource constraints are experienced by state agencies, NGOs, private companies and community based organizations may be sourced to perform the task

(RSA, 1996). There are efforts to address the crisis according to Wildeman (2002) despite the mounting crisis surrounding the provision of general infrastructure particularly water and sanitation facilities in schools. This has also been reported by UNICEF (2008) in that improved access to safe water and private sanitation services at schools is considered necessary and efforts at different government levels need to be increased. This has led to the development and adoption of various legislation and policy frameworks in South Africa aimed at facilitating infrastructure provision. Wildeman (2002) further indicates that in South Africa national ministries like Treasury, Water Affairs as well as provincial Public Works and Education departments have assumed responsibility for building and maintaining water and sanitation infrastructure. In some areas, for example, the Department of Education in KZN has formed partnerships with water service providers like Umgeni Water and the Department of Public Works to build toilet facilities as well as to bring piped water to schools. Therefore some progressive school sanitation projects have been fast tracked in certain areas through partnerships between the Department of Education and other service providers.

Based on my observations when visiting the schools in Ndwedwe, toilet facilities appeared to be at an unacceptable level: some had been vandalized and were in a state of disrepair, while other schools had taps without running water. The poorly serviced schools rely on neighbouring schools to provide water. Some schools seem to be doing better than others and I wanted to find out why.

1.4. Aims and objectives of the study

The specific objectives of this study are:

- To assess the state of water and sanitation facilities in Ndwedwe schools.
- To assess the institutional and regulatory environment for the provision of water and sanitation infrastructure in Ndwedwe schools.

- To identify strengths and weaknesses of institutional partnerships in service delivery that pertains to provision of water and sanitation infrastructure in Ndwedwe schools.

More specifically, the study is interested in examining the following questions:

- What type of water sources and toilet facilities do the schools in Ndwedwe have?
- How are health and hygiene education and practice incorporated in water and sanitation infrastructure development?
- Is there any legislative/regulatory framework in place that sets the standard of water and sanitation infrastructure for rural schools?
- What role do partnerships and stakeholder involvement play in water and sanitation provision to these schools?

1.5. Conceptual framework

The conceptual framework of this study draws on linkages between health, hygiene, education and child development in the provision of water and sanitation. These factors are explored based on the principles of equality and human dignity as outlined in basic needs and rights-based approaches.

There is a strong relationship between water and sanitation provision and hygiene education and the quality of education for children (UNICEF 2009a&f). This link is based on the assumption that the density of contact between school children may encourage disease transmission. Consequently adequate water supply and proper sanitation services are essential to minimize these negative impacts (ibid.). Ensink (2009:1) describes hygiene as “the practice of keeping oneself and one’s environment clean and free of infection risk”. As a universal body that promotes children’s rights, UNICEF is engaged in global efforts to address lack of water and sanitation services to schools. These initiatives are driven by the underlying assumption of the importance of

safe drinking water and adequate sanitation provision which are crucial to child development. Proper provision of these services reduces disease and poverty while also making the school environment pleasant for children (Ensink 2009 and UNICEF 2009a&g). In sustaining efforts to water and sanitation access, UNICEF (2009a&b) is of the view that proper health and hygiene education should also be promoted in schools. According to Ensink (2009:1) hygiene promotion and hand washing practices with water and soap especially in schools is seen as critical to disease prevention such as diarrhoea, typhoid and cholera. However in this study disease incidences between schools with hand washing facilities and those without were not established. Evidence for whether hand washing facilities were used properly could not be gathered. It was observed that some schools had basins with broken taps, while others did not provide soap. Therefore even when children washed their hands, soap would seldom be used. According to the UNICEF, hand washing with water and soap is economical and effective and may reduce disease incidences (UNICEF 2009c).

As mentioned earlier water and sanitation provision is a matter of human dignity. The rights based approaches according to Gleick (1999:491) imply that the state has a moral obligation to promote and protect the rights of citizens. Then right to water forms part of large environmental rights that drive social conditions and general well being of the people. Thus we notice various international declarations that commit themselves to advocate for human rights. Among the rights overtly protected by these various declarations and covenants, according to Gleick (1999:491), are 'the rights to life, to the enjoyment of a standard of living adequate for health and well-being, to protection from disease, and to adequate food'. He further mentions that there are some implications worth exploring when considering water a human right. These implications encompass the amount considered adequate for basic living, which means that a right to water cannot entail a right to an unlimited amount.

Safe water and adequate sanitation are seen as a basic right for children as enshrined in the Convention on the Rights of the Child (UNICEF 2009e). Similarly the South African government has also adopted a stand to uphold water as a basic right and this is affirmed

in Section 27 (1b) of the Constitution, “Everyone has the right to have access to... sufficient food and water” and in Section 27 (2) “the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of each of these rights” (RSA, 1996:28).

Water and sanitation are regarded as a basic need and Streeten et al. (1981) point out that the basic needs approach seeks to enable poor people to obtain their basic needs. Streeten et al. (1981:9) note that the rights-based approach to development provides the political, moral, ethical and legal foundation for more equitable allocation of resources especially in rural areas. However it is argued that while the government can make every effort to address provision of basic needs the service will only be implemented within available financial resources, thus assistance from relevant stakeholders may be sought. The government needs to uphold human rights in providing basic needs but this has to be done within budget allocations.

1.6. Methodology and core findings

The study uses a qualitative research methodology with in-depth semi-structured interview schedules. The qualitative method consists of six in-depth semi-structured interviews held with school officials at selected rural schools in the Ilembe Municipality. The sample was purposely selected with the assistance of Department of Education (DoE) officials and all study schools belong to one particular cluster of rural schools.

The study concluded that water and sanitation are critical services that need to be prioritized in order to develop a healthy learning environment. Some schools still had old structures; those with new facilities especially needed to ensure that maintenance was taken seriously. This presented a challenge to school management. Cleanliness is one indicator of proper maintenance while vandalism is an indicator for poor maintenance. The pupil-toilet ratio varied across schools although the average compared well with the provincial average. Schools with newer facilities have had support from stakeholders such as Umgeni Water and Ithala Bank. Umgeni Water provided toilets, water tanks for

hand washing as well as health and hygiene education to learners. Ithala Bank offered monetary assistance to assist public works to build the toilets. Regarding water facilities, most schools bought their own tanks to harvest rain water. Schools still struggle to access potable water due to poor communication with the local and district municipalities.

1.7. Organization of the dissertation

The first chapter provides background information on the study. This introductory chapter has outlined the motivation for conducting the study, and has provided a statement of the problem, aims and objectives, in addition to describing the conceptual framework, methodology and organization of the study. The second chapter reviews relevant literature on factors influencing water and sanitation provision as well as the role played by partnerships in service delivery. The third chapter outlines the research methodology of the study, including the research questions, sampling methods as well as data collection and data analysis techniques. Furthermore, the ethical aspects of the study as well as the shortcomings and limitations are discussed in this section. The fourth chapter presents both the quantitative and qualitative findings of the study. The fifth chapter presents the discussion of the main findings of the study and also compares the findings to previous studies. Chapter six focuses on discussions linking the study findings and relevant literature to summarize the findings. The last chapter presents recommendations for future research on critical factors around institutional arrangements as well as provision of water and sanitation services in rural schools.

Chapter 2: Literature review

2.1. Introduction

This chapter explores the institutional regulatory environment for the provision of water and sanitation infrastructure in rural schools from a South African government perspective. The intention is to provide a comprehensive review of literature on water and sanitation since there are some indicators that provision of water and sanitation in rural schools is inadequate to fulfil the needs of these children even though provision of water and sanitation is a basic human right. This chapter also reviews institutional arrangements as factors that may inhibit or facilitate water and sanitation provision.

2.2. Overview of the South African water sector

Chang and Grabel (2004: 88) view the provision of water services as the state's responsibility in order to ensure that the rights of citizens to its access are maintained. This makes perfect economic and political sense because the role of government is to ensure improvement of standards for all citizens irrespective of socio-economic status. State regulated utilities have been responsible for the provision of water to South Africans. However, the status quo seems to be changing direction whereby partnerships are formed with multinational corporations to extend provision of water services.

The main custodian for provision of water and sanitation services in South Africa is the Department of Water and Environmental Affairs (DWEA), previously known as Department of Water Affairs and Forestry (DWAF). This department relies on Water Boards to fulfil this mandate. The role of public water utilities is to ensure that water resources are developed and managed for abstraction, purification and storage of water before it is distributed by the municipality to end users. The Water Services Act (RSA

1997) stipulates that water utilities as water services providers (WSP) act as bulk water suppliers to municipalities which are considered to be water service authorities (WSA).

The municipalities are responsible for extending water services to benefit individual citizens and other consumers including schools through managing reticulation systems (RSA 1998). Van Wyk (1998) points out that although all countries need adequate water infrastructure, those with dry or highly variable climates like South Africa need greater extension of water resources in order to augment their reserves, and hence the huge backlogs as far as water infrastructure is concerned.

Partnerships have been undertaken in South Africa to address these backlogs, and some of the partnerships that are emerging in the new South Africa are public-private partnerships (PPP) agreements that aim to address challenges pertaining to planning and delivery of essential services (Kotze, Ferguson and Leigland 1999:623). These partnership arrangements for water and sanitation have been established in order to address the lack of capacity and experience within the municipalities (ibid.). One of these is the partnership between the Dolphin Coast Transitional Local Authority and Siza Water in KwaZulu-Natal. This particular partnership however has not been without controversy in the implementation of projects. The controversy resulted from the inability of municipalities to provide adequate funding to expand services to previously disadvantaged communities due to the high cost of maintaining existing infrastructure. At the national level, ministries seem to be encouraging partnerships between municipalities and the private sector with the unilateral aim of facilitating service delivery by the municipalities. It is believed that skills transfer will be the result of such a collaborative relationship with experts (ibid. 625). Jackson and Hlahla (1999:556) concur that besides skills transfer and facilitating efficient and effective service delivery, private sector partnership has been regarded by the new government as a vehicle to raise capital to expand infrastructure.

The reasons for considering partnerships are highlighted by Nigam and Rasheed (1998) who believe that although the state's mandate is to provide for its citizens, the establishment of partnerships can be valuable to expand service delivery. They view

public-private partnerships as a structure to assist the state in the allocation of resources to ensure that basic services are provided. This includes access to water and sanitation, for which the state has primary responsibility but it cannot fulfil all operations and maintenance tasks without external assistance. Non-governmental organizations and civil society have traditionally played a major role in fulfilling this role (ibid.).

While partnerships can have positive impacts on service delivery, Jackson and Hlahla (1999:557) and Hlahla (1999:567) describe the challenge of dealing with negative perceptions of private sector involvement, resulting in the public sector becoming a preferred service provider especially in water and sanitation provision. These negative perceptions are caused by the realization that the private sector inherently puts profit at the core of their business dealings, thus cost recovery is done through pricing of the commodity. This leads to trade-offs between profit motives and meeting human needs as identified by the Interagency Task Force on Gender and Water (2005) which also argues that the pricing of water leads to privatization of public goods since private companies are largely unaccountable to the people that are supposed to benefit from their services. Hence they point out that privatization of water services in countries like South Africa and Bolivia has led to water being unaffordable to some consumers (Interagency Task Force 2005:16).

Therefore partnerships have been initiated in South Africa to curb challenges in the water sector and to complement skills shortages in areas of service delivery. These partnerships according to Sinclair (1999:587) are informed by Municipal Services Partnership (MSP) policy developed to assist local authorities. An MSP is a contract between a municipality and a service provider or an implementing agent. The service provider may be another public utility (such as a water board or a district municipality), a private company, a non-governmental organization (NGO), or a community-based organization (CBO).

2.3. Service delivery in rural areas

Many governments face competition between rural and urban communities for access to services and delivering appropriate intervention schemes to meet demands for water and sanitation (IDS 2006:21). However the extension of these services to rural communities is seen to be largely inadequate. According to Hemson (2004:17), the rural backlogs lead to deprivation of rural areas as a result of lack of access to life sustaining services, under spending and poor management. He further observes that under delivery tends to deny rural communities of services that are their fundamental human right which may be crucial to reduce poverty and destitution of these people. Hemson (2004:19) cites some institutional challenges that contribute to service delivery under the municipal leadership which are as a result of lack of technical expertise. In response to these institutional challenges a policy framework for the provision of infrastructure was developed. This policy directs that "... infrastructure development in public schools is shared between many departments ... including relevant public utilities" (Wildeman 2002:1).

2.4. Water and sanitation service delivery at schools

According to the Interagency Task Force on Gender and Water (2004:13), rural and indigenous people are usually vulnerable to water shortages and water quality problems as a result of historical inequalities, dispossession, as well as their constant marginalization by government. According to Gleick (1999: 498), many water-related problems have worsened as a result of inadequate access to clean water. The incidence of cholera has soared, while huge populations remain undernourished. Even less success has been achieved in setting and meeting water-related goals. Although discussion on urban and rural competition for service delivery is not a central idea for this study, noting this contributes to an understanding of some of the underlying constraints to service delivery. Thus historically, urban communities tend to get quicker and more efficient responses to service delivery than rural communities. The assumption is that school children as a

section of society can be directly or indirectly affected by societal problems and that speedy service delivery would have a positive impact especially for rural women and girl children (Schooltrade 2006:1). Both the Water Affairs ministry and Department of Education (DoE) seem to be faced with an urgent need to address this crisis which has an impact on the health and education of children in South Africa. In response, certain service providers commissioned by Water Affairs have developed tools that will assist in what they call “child beneficial” prioritization of water services particularly in schools situated in remote rural areas (DWAF 2006).

The situation requires urgent attention and according to Wildeman (2002:22), although the government is making every effort to address backlogs, progress is slow as the percentage of schools without potable water in KZN only decreased from 38.5% in 1996 to 31.8% in 2000 in contrast to a target of a 60% reduction. According to Wildeman (2002) rural areas are often marginalized through exclusion from access to basic services. This may be due to their location, being far from service providers as well as the high costs attached to service provision which are further complicated by transport costs.

Provincial records indicate that the bulk of water and sanitation backlogs have existed in rural areas. The state of affairs in Ndwedwe schools (the research site for this particular study) is no different from what has been identified in other rural areas of KwaZulu-Natal as outlined in the Ilembe Integrated Development Plans (IDP) (Ilembe 2005). The IDP further reports that although Ndwedwe has a large number of schools, the majority of these schools are in a poor condition as they lack basic infrastructure like water, electricity and sanitation. Furthermore the schools have no extra facilities like libraries, laboratories or workshops, and sport and recreation facilities are inadequate. The next section looks at the institutional arrangements as far as extending water and sanitation services is concerned.

2.5. Institutional arrangements for water and sanitation provision

Institutional arrangements, according to Alaerts (1997:1) are established partnerships between government and appropriate organizations to execute programmes that aim at achieving national, regional and sometimes local objectives. This study examines institutional arrangements at the local level and how these arrangements are used to enhance service delivery to schools. Although it is primarily the role of government to provide services to the citizens, challenges that restrict sustainable service delivery rollout do exist and these form the foundation upon which institutional arrangements are designed. Some pertinent reasons for institutional arrangements to be formed are to address quality service delivery, to augment financial support, develop and maintain infrastructure, to support capacity building through skills transfer as well as to ensure sustainable services (ibid.).

Since water is a scarce natural resource it needs to be distributed fairly and used efficiently. Distribution of potable water in South Africa is primarily the role of local or district municipalities. Therefore water service delivery at the local level has been delegated to municipalities since these structures are close to the people; however, the municipality's poor performance in this role has been seen to be endemic due to poor management, insufficient funding as well as shortage of technical capacity. This has made their existence a weak link towards realizing national service delivery objectives. Institutional weaknesses have also been mentioned in the 2006 World Water Development Report as one of the major reasons for poor development performance (UN 2006). It has also been noted that institutional capacity building is thus essential to effective poverty alleviation programmes including those which strengthen basic service systems so that they better serve the poor and rural people. Poor functioning of institutions leads to wasted resources, inadequate infrastructure, shortages of supplies, corruption and ineffective service delivery. Therefore careful planning, execution and equitable resource allocation are imperative.

Sanitation services must be provided by building and maintaining facilities for all citizens. It is noted by various authors that more often than not sanitation receives low priority hence its low profile as far as addressing backlogs is concerned (Alearts 1997:1 and Borba et al. 2007:30). Water and sanitation are some of the services that define the quality of life of people and their inadequacy requires the government to draw on alternative assistance if its structures cannot fulfil this role. Sanitation, according to Borba et al. (2007:30), is given a low profile compared to water provision as the latter seems to be associated with overt poverty alleviation efforts because of its potential for productive use. Also government agencies seem to find it easier to respond to water needs than to the demand for toilets in communities including schools. This is attributed to a sense of embarrassment when discussing sanitation issues, although sanitation costs can be cheaper than water installations. The two seem to compete for attention from implementers, while policy addresses the two issues together (Alearts 1997:1).

2.6. Types of partnerships

The discussion on partnerships will encompass different types of partnerships and the legislative framework that governs their formation. A partnership as defined by Graas et al. (2007:23) constitutes “a [voluntary] agreement between two or more partners to share knowledge, skills and responsibilities in order to achieve, through synergy, a common objective, a better position and/or economies of scale”. Different types of partnerships in the water sector range from Public-Private Partnerships (PPP) to Public-Public Partnerships (PUP). Public-Private Partnerships sometimes take the form of service contracts or management contracts and concessions in which service providers seek ways to improve efficiency and responsiveness to consumer demands for water and sanitation services (Graas et al. 2007:24). Chang and Grabel (2004:89) further define Public-Private Partnership (PPP) as a ‘...contractual arrangement between a public entity and a private-sector organization for the creation of a business corporation to deliver services to the public [whose] underlying philosophy is contractual [in nature]’. ‘The contract

operates... from public to private sectors aided by... skills transfer and capital injection...; [aimed at rendering] affordable services for government and customers.’

Public-Public Partnerships (PUP) are partnerships that are formed by a public sector of a country, offering support services to another public sector through consultancy services, management, and finances and training. An example of a PUP in South Africa is the one between Harrismith local municipality and Rand Water (Graas et al 27). Multisectoral partnerships also exist between the public sector, private sector and civil society (ibid: 22). The keys to successful partnerships are clearly defined goals and timeframes (which need not be long-term or permanent) as well as synergy (ibid.: 6).

Graas et al. (2007:8) further argue that the partners need to understand the local situation and strive to apply local solutions which will be applied within an appropriate regional, national and international framework. By doing so, a consultative process takes place to ensure that all stakeholders participate in appropriate and productive ways. The stakeholders would range from government departments, public utilities, private service providers to NGOs and the local community. Graas et al. (2007:7) specify that the framework for partnerships would include “common objective and ownership, real communication, transparency, fairness, an enabling environment and trust and respect”.

Furthermore, Graas et al. (2007:4) indicate that partnerships are very broad and complex in nature and most have been created to facilitate the development progress. Thus partnerships are seen as a vehicle to ensuring that the set targets are met in the most efficient and effective way possible. They are of the view that successful partnerships should be created based on a “common need to fulfill a shared goal” (ibid.: 5). In addition, partnerships are a mechanism for “pulling together financial, technical, policy and human resources in order to address critical issues [at hand]”. The most common type of partnerships in the water and sanitation sector have been those that involve the public sector, private sector, NGOs and other interest organizations and institutions, and include public-private partnerships (PPP) and public-public partnerships (PUP). Graas et al. further observe that partnerships were critical in enhancing water and sanitation

development towards poverty alleviation. Hall et.al (2005:55) also states that alternative models have been suggested, but the most favourable were Public-Public-Partnership (PUPs) since they promoted public participation in terms of cross-subsidization of water services. Other reasons behind supporting PUPs were that they seemed to be able to lead to efficient management through strong commitment to public service only when effective and reliable monitoring systems are implemented.

Studies commissioned by the Water Research Commission (WRC) indicate that as a result of capacity problems experienced by the municipalities, some responses to the water and sanitation provision has led certain municipalities to build partnerships with the private sector to speed up service delivery (Atkinson and Ravenscroft 2002:1). This has been reviewed by Options, an international body that deals with institutional analysis, including capturing the views of consumers; policy and strategy development; human resource planning and development; financial planning and financial and management information systems.

In the policy documents by Options (2006) it is revealed that institutional capacity building is a dynamic process that helps organizations foster partnerships with institutions that have expertise in order to fast track service delivery and promote sustained change. Key to successful institutional capacity building is not only technical competence but also building rapport, identifying and working with drivers for change, and involving all key internal and external stakeholders. It is further argued that institutional weaknesses are one of the major reasons for poor development performance, as highlighted in the WWDR (World Water Development Report 2002). Thus, institutional capacity building is seen to be fundamental to effective poverty alleviation programmes including those that serve the poor (Options 2006).

Hemson (2004:7) asserts that in rural areas local government experiences both infrastructural and maintenance dilemmas compounded by lack of funding as well as local capacity deficiencies. These leave rural schemes and development programmes vulnerable and at risk of collapsing before the goals are met to fulfil the needs of the people. Also, Atkinson and Ravenscroft (2002:7), in their WRC commissioned report on

exploring alternative service delivery options for municipalities in rural areas, indicated that one of the major challenges faced by the present South African government is institutional capacity to manage development initiatives.

It is clear that water as a natural resource is crucial for sustaining lives of people. Provision to schools should take priority like any other service that enhances learning like textbooks and learning aids. Also sanitation plays a major role in improving people's lives physically, psychologically and economically. Also it has health benefits as it supports a healthy environment which is one of the development indicators. South Africa is working towards improving lives of people through extending basic services to people. Due to large backlogs assistance is necessary; hence partnerships have been developed between government agencies and stakeholders who offer various types of services from infrastructure development to technical skills and financial injection on special projects.

In summary this chapter describes how the South African water sector recognizes the importance of the support of other stakeholders for government to deliver on their national goals. The main reason for partnerships is to accelerate service delivery although some researchers highlight negative perceptions of partnerships. The positive views seem to outweigh these reservations in that the fulfilment of human rights seems to supersede motives to gain profits. Thus the need to extend services to rural areas has been addressed by government through establishing local structures like municipalities. However it is also noted that poor technical and financial capacity seem to be the biggest challenge for these structures to implement national strategies, hence the necessity of stakeholder involvement. Institutional arrangements form the basis for cooperative governance between government departments to pool their resources for accelerated service delivery.

Chapter 3: Theoretical Framework

3.1. Introduction

This chapter will review theories that explore the dynamics in water and sanitation service delivery in the context of public health and child development issues. These dynamics range from the understanding that water as a basic need is central to human development and realization of human rights. Rural people face challenges of being marginalized from development initiatives and service delivery is slow as a result, therefore in order to examine the effects of their marginalized status, basic needs and rights based approaches are explored. Both approaches presuppose themes of equity within the principles of equality and dignity for all. The rural development approach can be linked to these in that it suggests that capable institutions are needed to fulfil the objectives laid out by the former approaches through efficient and effective service delivery systems even in the rural areas. Cornwall and Nyamu-Musembi (2004: 1415) indicate that although there are many rights-based-approaches adopted by different development agencies, implications for development practice are unique for each agency. This means that the scope for advocacy depends on geo-political sphere of the implementing agencies. The point of contestation is the history of the rights and why some rights are chosen above others. This means that there is tendency for rights to compete according to priority, as some rights seem to be fundamental while others are considered secondary; the hierarchy of rights is evident in the case of water and sanitation whereby water is regarded as an inherent fundamental right like air, on which the fulfillment of certain secondary rights depends.

This study looks at factors that both hinder or accelerate water and sanitation service delivery which are regarded as basic needs for human livelihood. The deficiency of these basic needs affects human beings in ways that hinder their socio-economic progress and the improvement of their quality of life. Since the South African government has made the commitment to ensure access at all levels, it is important to explore some of the ways

in which it has attempted to accelerate service delivery in the provision of water and sanitation focusing on rural schools and to find out whether these attempts are yielding positive effects or not. The basic needs and rights based approaches give background information as to the extent of the importance of provision of these basic services to people regardless of their social status.

3.2. Water and sanitation provision as a basic need

In the IDS policy document (2006) it is stated that water and sanitation are some of the basic services that are crucial to improving the standard of living of people. Also Calaguas (1999:5) mentions that improved service delivery, through the expansion of services is the sympathetic approach to the poor to help them maintain their dignity while enhancing their social status. Adequate water and proper sanitation provision have both health and socio-economic benefits. Health benefits imply that people experience less waterborne and health related ailments related to lack of clean water and unhygienic disposal of human waste. Socio-economic benefits can be described as indirect advantages that are indicators of development in communities. There are also psychological benefits linked to healthy living conditions. Streeten et al. (1981) indicate that strategies that put satisfaction of basic needs such as water and sanitation at the core of development interventions help in removing mass deprivation and poverty. Therefore service delivery should also be focused on schools as children spend most of their young lives at school. Schools should be treated as an extension to homes and school children are a section of society that can be directly or indirectly affected by societal problems like lack of water and toilets.

3.3. Basic needs and rights based approaches to water and sanitation services

The basic needs approach according to Streeten et al. (1981:9) is an approach that seeks to enable poor people to obtain their basic needs with the aim of removing mass deprivation and elevating the quality of life. They further declare that the basic needs approach is incorporated within the principles of ‘growth with equity’, ‘integrated rural development’ and ‘redistribution with growth’ and all these principles are core to growth and development as well as to the rights based approach. The latter is further regarded as an approach that emphasizes that development strategies implement selective and targeted approaches in the fulfilment of human needs (ibid.: 22).

Although there was a paradigm shift in the 1970s from a basic needs approach within anti-poverty strategies towards a rights-based approach to development, the issue of human rights can be traced back to the 1948 Universal Declaration of Human Rights. Similarly, the 1969 declaration on social progress and development in Article 2 declares that “social progress and development shall be founded on respect for dignity and value of the human person and shall ensure the promotion of human rights and social justice” Gready and Ensor (2005:16). Water as a human right is reflected in the Universal Declaration of Human Rights (1948), Article 25 which states that:

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services.

Also, Article 22 of the Declaration confers on everyone “...economic, social and cultural rights indispensable for his dignity and the free development of his personality”. Furthermore, the Vienna Declaration and Plan of Action on Human Rights 1993, affirm the ‘right to development’ as a “universal and inalienable right and an integral part of fundamental human rights”. These are implicit provisions of water as a human right; explicit provisions are found in Article 14 (2) (h) of CEDAW and Article 24 (2) (c) of CRC as cited in Nigam and Rasheed (1998). Since water is essential for life and

development, it fulfils all the criteria to qualify as a fundamental human right to which everyone is entitled. Consequently, fulfilment of these rights would require implementation of effective development policies at both national and local levels.

Nigam and Rasheed (1998) go on to mention that the rights based approach to development provides the political, moral, ethical and legal foundation for more equitable allocation of resources especially in rural areas. Hence the South African government has adopted its stand to uphold water as a basic right. Furthermore, Section 3 of the Water Services Act (No108 of 1997) endorses the right of access to basic water supply and basic sanitation and the procedures applicable for disconnecting water services (RSA 1997). This act guides the government to ensure that service provision is extended to all society members. Since water and sanitation are viewed as public goods the unequal distribution of these services may have a negative impact on the whole nation.

Thus the right of access to water and sanitation, both being basic human needs, is seen as fundamental to development. The denial thereof is regarded as a serious infringement of human rights according to Gready and Ensor (2005:15). I strongly believe that children also have a right to enjoy these services, not only at home but also at school. Therefore when building a school it is necessary that planning for water and sanitation services and infrastructure is given priority. It is also observed that when schools are built, the budget allocation is for classrooms, learning aids and materials, with minimal attention paid to the water and sanitation needs of the children and educators. The schools in this study indicated that historically the building of toilets would be undertaken by the schools with assistance from community members resulting in sub-standard facilities that deteriorate with time.

3.4. Water, sanitation and public health

Proper water and sanitation services act as a catalyst to the prevention of waterborne diseases in many parts of the world. Thus, according to Nigam and Rasheed (1998) the

positive spin-offs of improved access to safe water and sanitation would include that the nation as a whole would benefit through reduced cost of health care and the curbing of the spread of disease. Toilets may be available; however, if water is not present for washing hands, toilets cannot be used hygienically. This is the main reason for the adoption of a holistic approach towards water and sanitation projects that strive to link health and hygiene in their ultimate project goals since these factors are all closely inter-related to ensure sustainability of a project (UNWWDR 2003:7). Thus school sanitation projects led by Umgeni Water provide toilets that are stipulated by DWAF standards and these are accompanied by health and hygiene education to sustain proper use and maintenance of the toilets (Umgeni Water 2006).

According to the UN Habitat (2003:2), the issue of water and sanitation provision is not confined to access or actual provision since it is observed that everyone has some kind of access in one form or the other. Rather, the challenges faced with providers are adequate provision and the standard of the service and infrastructure. Also, a complexity as far as water supply is concerned is within the principles of safety, sufficiency for people's needs, regularity, convenience and affordability. Therefore these principles entail the form of service delivery required to improve facilities rather than isolating access as the main objective of service delivery. The argument is further portrayed in scenarios whereby people access water from unsafe sources and also in the use of substandard sanitation services that undermine the dignity of the people. Thus the issue of sanitation is about whether people are aware of the best service options they have in comparison to those available for their use. Therefore principles of convenience, affordability, and health benefits need to be taken into consideration when assessing sanitation standards (ibid.).

The UNWWDR (2003: 6) report indicates that improved sanitation facilities can impact on people's lives in terms of safety, privacy, convenience and dignity especially for women. Hence international water policies suggest that women play a central part in the provision and safeguarding of water. This chapter has shown that water and sanitation provision is fundamental to improving the standard of living for people. Since these are basic needs, adequate water supply from a safe source is required to meet other human

basic needs like improved health status. Proper and safe sanitation also enhance human dignity. Hence water and sanitation delivery is seen as a human rights factor whose inadequacy is viewed as an infringement of human dignity and equality. These theories are important to this study in that they give an overview of human rights concerns that inform water, sanitation and hygiene issues as well as the role of government in ensuring that these services are equitably distributed to the people.

Chapter 4: Methodology

4.1. Introduction

This chapter looks at the method of data collection used in the study. The study applied a qualitative methodology. The qualitative data was drawn from in-depth interviews. The chapter starts by providing a brief description of the study setting and then discusses the methodology used in the study and the method of data analysis.

4.2. Description of the site and population

The Ilembe District Municipal Area (Appendix 4) is situated on the East Coast of KwaZulu-Natal adjacent to the northern boundary of the eThekweni Municipality. The district extends about 75km north of the metro boundary to some 25km beyond the mouth of the Tugela River (approximately 110km from central Durban). The western extent of the District Municipal area runs roughly parallel to the coastline at an average distance of about 45km from the coast. Geographically, the Ilembe District is the smallest of the ten District Councils of KwaZulu-Natal with a population estimated at 560 377 people (2001 census). The Municipal area encompasses four local municipal council areas, namely eNdongakusuka, Ndwedwe, Maphumulo, and KwaDukuza. The Water Services Authority (WSA) for the area, Ilembe District Municipality, is responsible for appointing Water Services Providers (WSPs). The WSA is responsible for appointing an Implementing Agent (IA) and currently the District Municipality uses the services of agencies listed below to perform the role of an IA in order to fulfil this function internally. The WSP are required to enter into legal and binding contracts with the WSA and to assist with the development and implementation of new water services schemes. The WSP is also responsible for the provision of water and sanitation services to all consumers within the area to which the contract applies. They may also appoint local

management teams to assist with ongoing administration and routine operation and maintenance of the schemes. These management teams are required to report both to the community and to the WSA on key performance indicators.

Currently in the Ilembe District Municipality area the following bodies act as WSPs:

- the District Municipality
- the local municipalities in the former Traditional Local Council area
- Umgeni Water, in Ndwedwe and Groutville (RAWSP Projects) and other Masibambane projects
- Mvula Trust, on minor sanitation projects
- independent consulting engineering firms
- Siza Water, under the concession for the former Dolphin Coast area
- Aquamanzi, as part of the BOTT programmes.

It should be noted that there are various incomplete schemes in the area due to budgets having been exceeded.

4.3. Research methodology and design

4.3.1. Qualitative methods

There is no good evaluative tool that exists to compare the effectiveness of partnerships in rural schools, thus the study will adopt a qualitative approach aimed at developing such a tool, finding key variables and asking appropriate questions to develop this tool. The main aim of the study is to develop a detailed description of the state of water supply and sanitation facilities in the chosen schools. Furthermore data was gathered to understand critical success factors for water and sanitation provision in rural schools. In addition, the study analyzes financial resources, capacity and mandates which will reveal whether the government is the weak link in service provision to rural schools. As a qualitative

research method, the study “seeks to establish a socially constructed nature of reality to emphasize the value-laden nature of the inquiry” according to Wellington (2000:8).

The proposed study took place in schools in the eastern region of Ndwedwe and permission to conduct the study was sought from the Department of Education. All schools have the same characteristics in terms of socio-economic disposition. They are all public schools and are in close proximity to each other. The role of the researcher was to interact with informants and participants and seek to understand their perspective and meanings of the state of service delivery at the selected schools using interactive interviews as a primary data collection instrument. In-depth interviews were used with school managers in order to elicit a detailed understanding of the financial situation of the Department of Education and the implications this has on service delivery. The goal of in-depth interviews according to Lofland and Lofland (1995) is to gather rich and comprehensive information. I had to be aware of my personal values, assumptions, and biases in order not to influence the study, as emphasized by Cresswell (2002:198), by taking notes and avoiding rephrasing the informants’ words. It was however my work relationship with these schools that prompted this study and that increased my sensitivity to challenges experienced by rural educators and children as a result of poor water and sanitation in their schools. Every effort was made, however, to ensure objectivity and lack of bias in the way data was collected and analyzed.

4.3.2. In-depth interviews

A data collection tool was formulated around objectives of the study. Interviews were chosen as a method to collect data as this is one of the recognised qualitative methods that can be used to collect comprehensive data and is not too time consuming. Moore (1997) noted that the essential factor in research is the ability to select a method which is likely to meet the objectives of the research. Seidman (1991:3) observed that “... at the root of interviewing is an interest in understanding the experience of others and the

meaning they make of that experience”. While Moore (1997) claims that interviews afford the researchers an opportunity to obtain extensive answers, Terre-Blanche and Durrheim (1999:128) add that “... the interview gives interviewers an opportunity to get to know what people think and feel”. As Keats (2000) points out, through interviews researchers are able to explore the reasons for a person’s responses and verify the reliability of those answers with further questioning.

The information used in this research was collected through in-depth interviews carried out in six rural schools in the Ndwedwe area after permission was granted by the provincial education ministry (see appendix 2). These in-depth semi-structured interviews were administered to six Department of Education (DoE) officials who represented school management of their respective schools. The permission was granted by respondents to conduct and record responses on the interview sheet. The questions covered identified broad themes regarding the state and maintenance of water and sanitation facilities in schools, public health issues, institutional regulatory environment of water and sanitation provision, and lastly, the strengths and weakness of institutional partnerships in service delivery. An in-depth semi-structured interview is described by Lofland and Lofland (1995) as a qualitative research method that is open-ended and discovery-oriented aimed at obtaining detailed information about a topic from a stakeholder and its goal is to explore in greater detail a respondent’s point of view, experiences, feelings and perspectives. Furthermore, an in-depth semi-structured interview is a dialogue between an interviewer and an interviewee and its goal is to elicit rich, detailed material that can be used in analysis (Lofland and Lofland, 1995). The interviews were conducted face-to-face with DoE officials, management representatives, and individuals representing DoE. This method is most appropriate when the researcher wants in-depth information from respondents as it allows for different information that is targeted for specific individuals.

Since the research is exploratory in nature, it was assumed that in-depth semi-structured interviews would be best suited to this research as they are characterized by extensive probing and open-ended questions which solicit richer information than closed questions

in a questionnaire (Lofland and Lofland, 1995). I prepared an interview guide that included a list of questions or issues that were explored and suggested probes for following up on key topics. The guide helped me pace the interview and made the interview process more systematic and comprehensive (ibid.). The in-depth semi-structured questions also allowed me to explain or clarify questions increasing the likelihood of useful responses. Posting a questionnaire does not provide the respondent with an opportunity to ask for clarity in the absence of the interviewer (ibid.). Interviews took place at school to suit the respondent during a scheduled appointment in an attempt to be minimally disruptive.

The major advantages of in-depth interviews are that questions can be tailored to meet the need of any situation. For example, there is an assumption that each school has its own problems regarding water and sanitation; there is therefore an inherent need to structure questions differently to suit different participants and to capture their particular viewpoint and opinions. In-depth interviews also give room for unprompted responses that are not premeditated as well as honest individual perspective and thus provide uncensored data (Patton 1980 cited in Mathabathe 2006). Having face to face interviews had the advantage of putting respondents at ease and as a result, participants were more willing to answer questions that they may not have answered in a group setting such as is the case with focus group discussions.

There are complexities to using in-depth interviews outlined in various studies that argue that the researcher needs to be alert to and note any contradictions arising and ask follow-up questions for clarification. Also if questions are not understood clearly the respondent may be unwilling to respond or may fail to give sufficient thought to the questions asked and if the participant does not understand a question properly s/he may give inappropriate answers. I made every attempt to ensure that the respondent fully understood the questions being asked and that the responses were appropriate in the context. Respondents might have perceived the purpose of the research to be an input into the policy on the provision of water and sanitation services in rural schools with the aim of promoting policy change. To avoid such problems from arising, it was important to

carefully explain the objectives of the study, identify myself, and outline what was expected from the respondent.

In an interview setting, it is quite possible that one will come across the problem of 'courtesy bias', which is the tendency for respondents to give answers that they think the interviewer wants to hear, rather than what they really feel. The respondent may not wish to offend the interviewer, and may therefore attempt to give 'safe' answers no matter how strongly s/he feels about the issue. This courtesy bias can be an obstacle to obtaining useful and reliable information and therefore, needs to be minimized (Patton 1980, as cited in Mathabathe 2006). I had to guard against leading participants. Interview data was written down. I took notes throughout the interview especially to capture the key issues from the interviews. The major advantage of writing responses is to capture responses exactly as they are expressed at the time without needing to rely on memory at a later stage.

4.3.3. Sampling methods

The sample was composed of six schools in a rural area in close proximity to each other. In order to ascertain positive and negative consequences of institutional partnerships in water and sanitation provision, purposive sampling was used to select the respondents for the in-depth interviews across sectors responsible for water and sanitation provision. These respondents included the municipality, principals, private sector like Umgeni Water (UW) and the Department of Education. According to Babbie and Mouton (2001), purposive sampling is suitable for studies that target a specific pre-defined group, particularly where issues of sampling for proportionality and statistical inference are not the main objective.

The main advantages associated with purposive sampling are that it allows the researcher to get to the target sample quickly and the researcher is likely to get the opinions of the target population. The major disadvantage of the purposive sampling method is the fact

that findings cannot be generalized to the whole population (in this case everyone attending the schools or all schools).

Observations and photographs were taken at the research sites to show the state of the toilets. Members of the Department of Education were also interviewed to find out if there was an existing legislative framework that guides the standard of acceptable infrastructure erected in schools. The municipality representative responsible for water and sanitation in the area was also interviewed to ascertain the extent to which service delivery systems are handled around the issues of water and sanitation provision that emanated from the IDP.

4.3.4. Analysis of interviews

Data analysis started with open coding and was followed by axial coding. Strauss and Corbin (1990:63) define open coding as "... the part of analysis that pertains specifically to the naming and categorizing through close examination of data". They emphasize that this process of conceptualizing data is the first and a crucial step in data analysis.

Categories helped in identifying sub-categories, the process which Miles and Huberman (1994) and Strauss and Corbin (1990:65) refer to as axial coding. Strauss and Corbin (1990:65) endorse their point by stating that "... categories have conceptual power because they are able to pull together around them other groups of concepts or sub-categories". All codes with similar colours were grouped as sub-categories under a particular category. Quotations were also coded according to the colours of their categories or sub-categories. This process enabled similar responses to be grouped. Through this conceptualization process, categories were developed. The research questions were used in the process of developing categories.

Thematic analysis was also used to analyze the data collected in the interviews. Aronson (1994:1) cited in Mathabathe (2006) states that from the conversations that take place in a researching process, ideas emerge that can be better understood under the control of a

thematic analysis. Thematic analysis focuses on identifiable themes. To supplement this tables and graphs were also used to consolidate responses and present them in a way that would make it easy to summarize common themes that emerged and make statistical calculations like averages where applicable.

Patterns of experiences and direct quotes from the interview notes were listed and common ideas paraphrased. Themes that emerged from the responses were gathered to form a comprehensive picture from which conclusions could be drawn. For this study, the main themes examined were water and sanitation infrastructure, public health issues, operation and maintenance, service delivery ratings in the schools as well as the role played by partnerships during an infrastructure upgrade process. The next step after the thematic analysis was to identify all data that related to the already classified patterns. Identified patterns were then developed. The quotations and statements that relate to a specific pattern were identified and placed with the corresponding themes. For example, each respondent's attitude towards DoE, management representatives, and other officials that work on water and sanitation were classified as partnerships.

Following a thematic analysis, related patterns were combined and catalogued to form themes. The themes were identified by "bringing together components or fragments of ideas or experiences, which often are meaningless when viewed alone" (Leininger 1985:60). Themes that emerged from the respondents' stories were put together to form a comprehensive representation of their collective experience. By gathering sub-themes to obtain a broader view of the information collated, it was easier to see a pattern emerging.

The last step in the data analysis process was to construct a valid discussion and argument for choosing the themes and linking the latter to the literature review. Aronson (1992) in Mathabathe (2006) argues that by referring back to the literature, the interviewer gains information that allows him or her to make conclusions from the interview. Once the themes have been collected and the literature has been studied, the researcher is better equipped to formulate theme statements to develop conclusions and recommendations. When the literature is interlinked with the findings, the story that the interviewer constructs is one that stands with merit. A developed story line helps the reader to

comprehend the process, understanding and motivation of the interviewer, according to Aronson (1992) cited in Mathabathe (2006).

4.4. Limitations of the study

Given the sampling procedures as well as the small sample size, the study does not claim to be representative of the entire population of rural schools. According to Zeisel (1981:65), using this method tends to yield results that cannot be generalized to other situations as the sample is not representative of the population as a whole. This implies that the data generated on water and sanitation in rural schools at Ilembe District Municipality will not necessarily be applicable to other rural schools across the province of KwaZulu-Natal or South Africa. Therefore by covering a limited number of schools, the study reflects perceptions, attitudes, and opinions regarding water and sanitation provision in research sites and cannot reflect situations in other municipalities within the province nor the country as a whole.

Chapter 5: Presentation of results and findings

This chapter presents the findings of the research as far as provision of water and sanitation in the selected schools is concerned. These findings seek to give insight to the research questions outlined earlier. As reported in chapter 4, data was generated through interviews with school representatives most of whom are in the school management such as a Principal or a Head of Department (HOD) using a data collection tool in the form of an interview schedule (appendix 3).

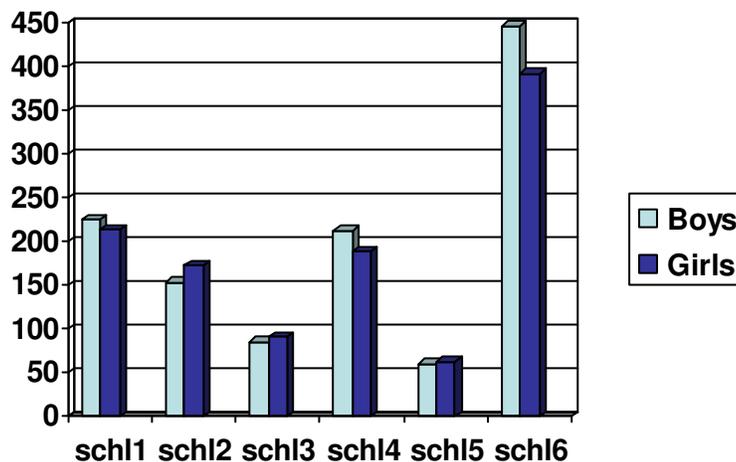
In line with the thematic analysis method, themes have been formed in order to assist with the flow of emerging arguments. The first section (section 5.1) of this chapter reports the demographics of the schools in which the Pupil Toilet Ratio (PTR) is calculated based on the number of available toilets according to gender as well as the school enrolment. Following is section 5.2 which discusses the type of toilet facilities in the schools as well as highlighting the acceptable standards of the infrastructure in terms of cleanliness, ventilation and lighting. Operation and maintenance is also central in this section. Pictures captured during school visits are used to contrast the actual state of the toilets as opposed to the perceived state as reported by the respondents. Then, section 5.3 discusses water facilities focusing on factors like sources of water, distance of water facility, available alternative water sources and views on water service delivery. In addition personal hygiene issues are also discussed since proper sanitation is closely linked to hygiene practices and the latter depends on the availability of properly functioning hand washing facilities and soap. Waterborne disease prevalence is therefore discussed against the backdrop of these factors. The last section (section 5.4) provides a discussion on how the respondents perceive the role played by other institutions to facilitate service delivery in their respective areas in general and in schools in particular. These partners may have either played a pivotal role or failed to ensure water and sanitation is provided for in the schools. The respondents shared their experiences of having to build toilets and have water in their schools with the help of an outside agent like a private service provider or a government implementing agent. The final section

describes various issues central to their experiences including the length of time the schools had to wait to get feedback, the source of funding for maintenance as well as how they rate service delivery of each of the identified potential partners.

In some sections of the chapter, exact words of the interview respondents have been used to illustrate how they supported their perceptions in their actual responses. In order to maintain confidentiality the schools have been coded as 'schl 1', 'schl 2' etc.

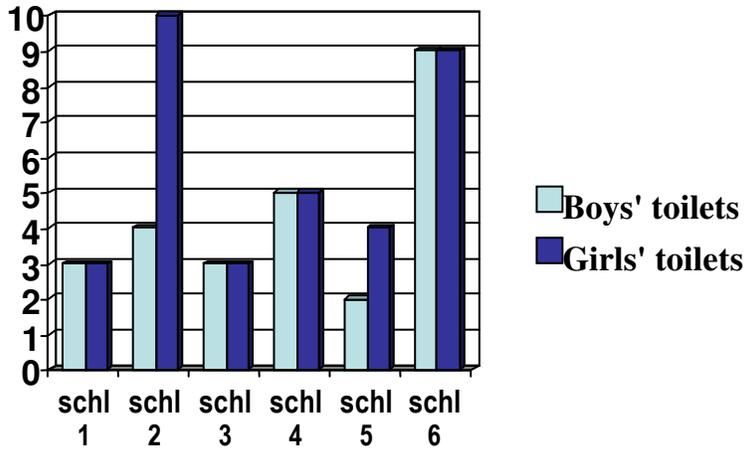
5.1. Profiling and demographics of the study area

5.1.1. The physical environment



Graph 1: Enrolment statistics for schools

The physical environment of the school includes a description of the enrolment of learners as shown in Graph 1. School enrolment information assists in calculating the pupil toilet ratio (PTR) which links the learner statistics and gender distribution of toilets. The pupil toilet ratio forms part of the physical environment. It indicates how the distribution of toilets at a particular school compares to national standards. Gender distribution is useful to know because girls require more toilets than boys (Department of Education 2008:30).



Graph 2: Gender distribution of toilets

It was found that the number of toilets available for learners at all schools compares favourably to national and international standards. Furthermore gender disparities were examined to ascertain whether girls' and boys' toilets are comparable. Enrolment indicates that there are more boys than girls in three out of six schools and most schools have an equal number of toilets for both boys and girls. There was also no significant gender bias in terms of enrolment in the schools with some schools having a higher number of boys whilst in others there were more girls. School 6 was the only senior secondary school and this could have resulted in some differences in key statistics in terms of higher enrolment in the school as well as pupil toilet ratio standards. Even these were within national standards set by the Education department.

The Department of Education has its own acceptable pupil toilet ratio (PTR) standards that indicate the level of access to toilet facilities. These standards also seek to control overcrowding, overuse as well good hygiene in schools. The average standard for South African schools is 20 girl learners sharing one toilet seat and for 25:1 for boys (DoE 2008:30). PTR in the schools in the study area differed significantly: the highest ratio for was 43:1 and 45:1 for girls and boys respectively. It is interesting to note that the school Register of Needs Survey collected through the Education Management Information System (EMIS) indicates that while other provinces were specific in their reports, KwaZulu-Natal reported information that could not be helpful for analysis as far as

minimum standards set for access to water. Even those that reported access to basic water and toilets failed to specify and explain what they meant about basic facilities (DoE 2008:30). Graph 2 shows the gender distribution of toilets and this translates to ratios shown in Table 1 whereby School 1 has the highest of both boys' and girls' toilet ratio at 75 and 71 respectively. The lowest ratio is 28 for boys in School 3 and 16 for girls in School 5. The school with the highest ratio has no new toilet facilities. 50% of the schools have an equal number of toilets available for both boys and girls making the average ratio of toilets to pupils 45:1 for boys and 43:1 for girls.

Table 1: Type of sanitation facilities and Pupil: Toilet Ratio (PTR)

	Type of toilet facility	Pupil: Toilet Ratio (Boys)	Pupil: Toilet Ratio (Girls)
Schl 1	VIP*	75	71
Schl 2	VIP & flush toilets for teachers	51	17
Schl 3	VIP	28	30
Schl 4	VIP	42	37
Schl 5	VIP & flush toilets for teachers	30	16
Schl 6	VIP	50	44

*Ventilated Pit Latrines

Different provinces in South Africa have different minimum standards for toilets. For example in the Eastern Cape the standard is 1 to 5 toilets per classroom with one toilet catering for wheelchair access. In the Free State it is specified that if the number of girls exceeds 300, then one toilet must be added for every 30 additional girls. Northern Cape's minimum standards for VIP latrines are 20:1 for girls and 25:1 for boys. The North West uses 20:1 or two toilets per classroom. By comparison, rural schools in some African countries like Uganda, Zambia and Ethiopia have an average of 80 pupils per toilet, while

their urban counterparts have 23 pupils per toilet on average (African Water Development Report 2006:6). In the case of Nairobi the national standard set by the Education Ministry for the pupil: toilet ratio is 25:1 and 30:1 for girls and boys respectively which compares fairly with South African standards (Ngware, Oketch & Ezeh 2008). These comparisons indicate that the South African situation is no worse than other African countries.

5.2. Sanitation facilities

All the schools in this study are situated in a typically rural area, about 100km away from an urban area. These schools have some kind of sanitation facilities even though these differ in outside structure with a varying number of years since construction. Common to all schools is the Ventilated Improved Pit (VIP) toilet, a dry form of sanitation technology which does not require water to flush and dispose of human excreta (see figure 1 on the following page for a schematic representation of a VIP toilet). There are flush toilets with a septic tank for teachers in two schools. Safe sanitation according to Borba et al. (2007:30) and contributes to health and environmental improvements as well as poverty reduction. They further argue that when children do not have proper toilets they use the veld or open space to relieve themselves which encourages the spread of disease and related infections. Therefore provision of toilets will afford school children an opportunity to enjoy better health and spend more time learning, thus enhancing the learning environment.

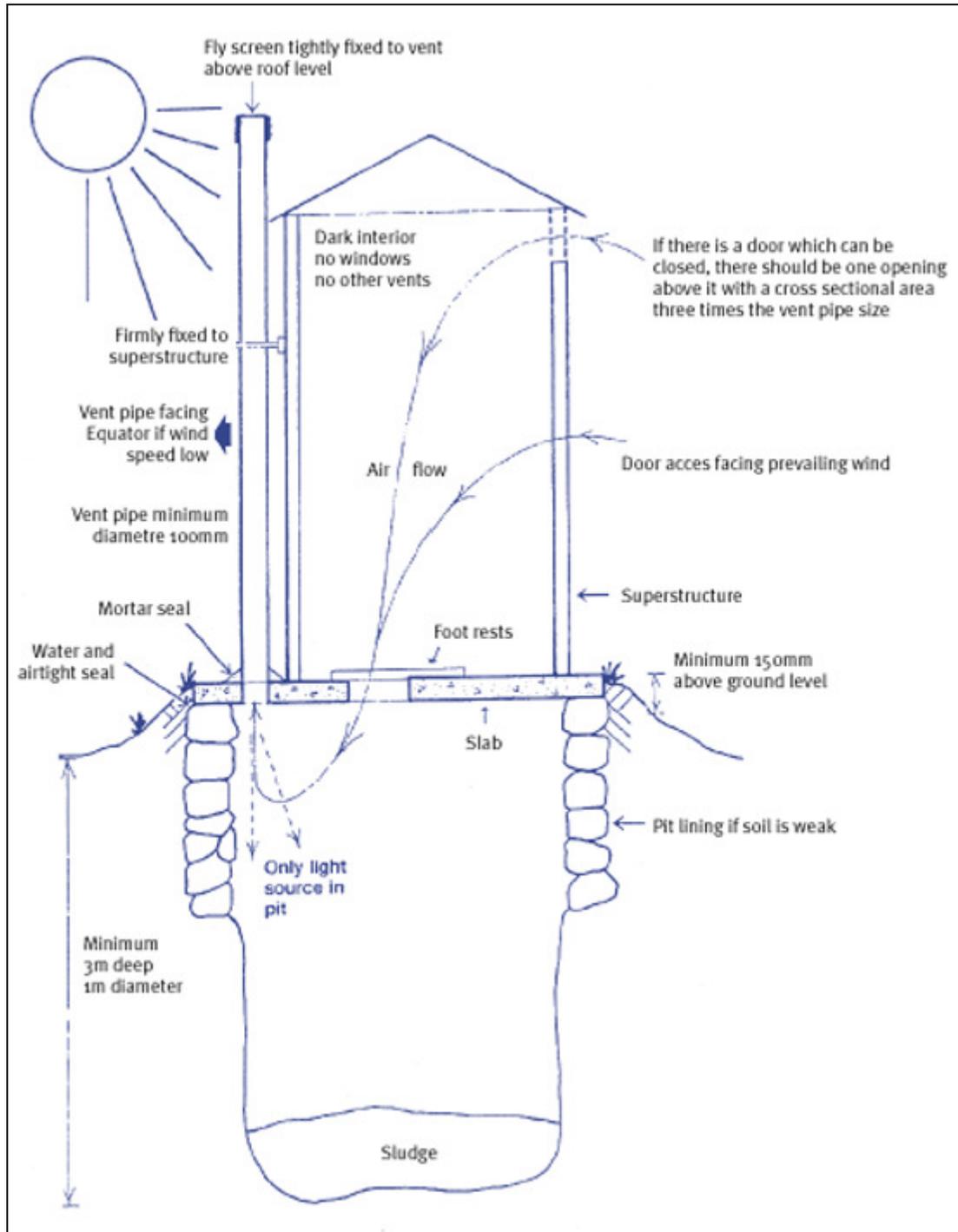


Figure 1: Schematic representation of a VIP

Water Aid (2008)

5.2.1. The state of sanitation facilities

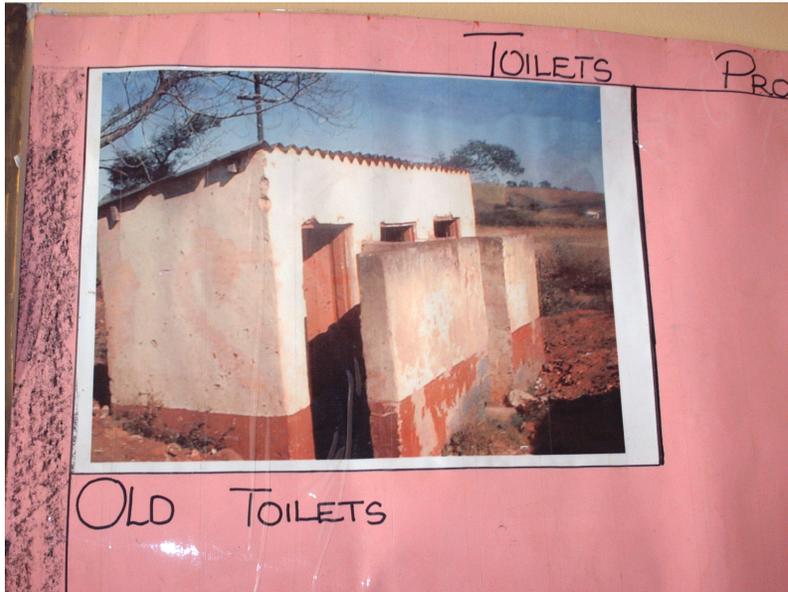
This section will discuss the state of sanitation facilities in the research schools and whether a school has new toilet facilities as well as the implementing agent for new facilities. The age of facilities will also be highlighted. Central to infrastructure management are factors of maintenance and cleanliness which will be presented in the form of tables.

Table 2: The age of toilet facilities

	Installing/implementing agent	Age of facilities in years
Schl 1	No new toilets	6
Schl 2	New toilets funded by Public Works	3
Schl 3	No new toilets	4
Schl 4	No new toilets	10
Schl 5	New toilets funded by Ithala Bank and built by Public Works	1
Schl 6	New toilets funded by Umgeni Water and municipality	2 (UW toilets) 5 (Municipality toilets)

The state of sanitation facilities is represented in Table 2 which indicates that 50% of the schools have no new toilets; they rely on self-built sanitation facilities. The other 50% have new toilets built by either the Municipality, Public Works or by Umgeni Water. The average age of facilities is four years, with three schools having the most recent facilities, which are less than five years old, and three having the oldest facilities, over five years. The schools with newer facilities have had their toilets built by Umgeni Water, an independent contractor funded by Ithala Bank and Public Works as commissioned by the Department of Education. Those schools that do not have recently built toilets have old structures that were either built by the community or by the school and have not received

any response from the DoE's planning section with regard to their applications for new toilets. Pictures 1 and 2 show old and new toilet structures respectively:



Picture 1: Old toilet structure



Picture 2 : New toilet structure

5.2.2. Sanitation facilities maintenance

The responsibility for cleaning the school toilets lies with the school. Only two of the schools hire cleaners. Those that opted to using learners for cleaning reported that they did so as a result of lack of funding. One of the schools opted to get help from the community members. Toilets that are cleaned by hired workers were better looking in my assessment than those that were cleaned by learners. Toilets in four schools were well ventilated while two lacked ventilation which led to toilets having a bad odour and poor lighting inside. The latter observation applied to both old and new toilet structures.



Picture 3: Inside the new toilet



Picture 4: Cleaning agent

Table 3: The state of toilet facilities

	Cleaning responsibility	Ventilation	Lighting	Maintenance frequency	Observed state of cleanliness
Schl 1	Hired cleaners	No	No	Quarterly	Clean
Schl 2	Learners	Yes	Yes	Monthly	Not clean
Schl 3	Community	No	No	Monthly	Not clean
Schl 4	Learners	Yes	Yes	Weekly	Not clean
Schl 5	Learners	Yes	Yes	Weekly	Not clean
Schl 6	Hired cleaners	Yes	Yes	Twice a year	Very Clean

All respondents perceived their toilets to be in an acceptable state of cleanliness. The respondents indicated that scrubbed floors as well as absence of flies are indicators of clean toilets. The cleaning agents used are ashes brought by children from home which are put inside the toilet pit as well as bleach mixed in water which is used for scrubbing the floor and the toilet seats. Maintenance done at the school includes fixing broken taps.

However during visits to schools it was observed that toilets were not actually in the state of cleanliness that had been described. The observed state of the toilets, both old and new structures, did not confirm the perceived state of cleanliness as outlined by the respondents. Picture 6 shows filth that is collecting inside the toilets with little evidence that these toilets are cleaned on a regular basis. Some of the urinal systems were leaking and the urine covered the floor to an extent of eroding the paint on the cement floor as captured by Picture 5. Picture 7 illustrates broken basin taps that have not been fixed despite the school claiming to do maintenance weekly.



Picture 5: Urine on the floor



Picture 6: Filth inside a new toilet



Picture 7: Broken basin taps

5.3. Water infrastructure

Water facilities refer to the main source of water for the school. For the purpose of this study acceptable water comes from a reliable source which has a purification system and if a tank is used for water storage it should be a clean container.

5.3.1. Source of water and other related issues

Table 4 shows that four out of six schools have a water source in the school premises which is within 150m. Those that do not either rely on tank ferried water or rain water tanks. Even if the school has a tap on site they still have rain water tanks. Tap water is supplied through a reliable municipality reticulation system of purified water from a nearby reservoir. Tap water acts as an alternative source to some schools since all but one of the schools experience water shortages during the winter season. Other alternative sources are rivers and springs for three schools.

Table 4: Water source and storage

	Water within 150m	Water source	Water shortage incidences	Alternative water source	Number of Tanks
Schl 1	Yes	Tap/tank	Yes	River	3
Schl 2	Yes	Tap/rain water tanks	Yes	None	5
Schl 3	No	River	Yes	Spring	3
Schl 4	Yes	Tap	Yes	River	3
Schl 5	Yes	Tap/tank	No	Tanks	6
Schl 6	No	Ferried tank	Yes	River	8

One school has neither a reliable nor an alternative water source and children have to bring water from home or use a nearby river and spring as an alternative source. Water shortages are common in the schools during the winter months with the exception of one school that does not experience water shortages: they have three taps with constant running water as well as six tanks.

5.4. Public health and personal hygiene

This section discusses the availability of hand washing facilities, health and hygiene issues as well as the children's hand washing behavioural patterns. Hand washing facilities include basins with running water and access to soap. Children's behavioural patterns are exhibited through proper use of soap after every toilet use.



Picture 8: Dirty basin and broken tap



Pic 9: Single functioning tap out of three taps

Table 5: Hand washing behaviour

	Soap availability	Availability of hand washing facilities
Schl 1	No	No
Schl 2	Yes	Yes
Schl 3	Yes	Yes
Schl 4	Yes	Yes
Schl 5	No	Limited
Schl 6	Yes	Limited

Four schools reported on having soap available to learners; however they claim that the soap disappears as soon as it is placed at the basins. Hence there was no soap visible at the basins. Three schools have hand washing facilities in the form of basins inside the toilets. Two schools reported to have functioning taps and basins only in the boys' toilets with those in the girls' toilets frequently being broken. The latter is attributed to the fact that "girls seem to use hand washing facilities more than boys do" (interview respondent

at school 6). At School 2 hand washing facilities are broken and unused, but there is no alternative source of hand washing available for learners. At School 5 there are hand washing basins at the boys' toilets but none at the girls' toilets, but there is a basin built outside for learners to use.

5.4.1. Waterborne diseases

Clean water is life. Contaminated water is death. (Porto 2004:5)

The above statement neatly summarizes the adverse effects of the lack of safe drinking water on people's well-being. Lack of water and sanitation can be considered a matter of life and death. Availability of proper sanitation straddles two key objectives: protection of water resources as well as preservation of human life through public hygiene education. This is the primary reason for UNESCO adopting the human right to water in November 2002: "...the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use" (Porto 2004: 18). Porto goes on to say that the provision of safe water promotes human health and is central to sustainable development. Furthermore prevention of waterborne diseases carried by contaminated water is also central to human health. Similarly adequate water supply and good hygiene practice are important factors in sanitation. Table 6 below gives an indication of the frequency of waterborne diseases at the research schools.

Table 6: Incidence of waterborne diseases

	Waterborne disease frequency	Type of waterborne disease	Common symptoms
Schl 1	sometimes	bilharzia	diarrhoea
Schl 2	sometimes	bilharzia	urinary tract
Schl 3	sometimes	bilharzia	diarrhoea
Schl 4	sometimes	cholera	diarrhoea
Schl 5	never	none	none
Schl 6	never	none	none

Since most schools have tanks, they indicated that they were uncertain of the water quality since the frequency of cleaning the inside of the tank takes place once a year for three schools, while the rest did not know that the tanks require flushing and cleaning. About 66% of the schools reported to have had incidences of children with symptoms of diarrhoea, which can be linked to waterborne diseases. However, this information was not verified with any clinic records. Two of the schools however, have never had any reports of suspected waterborne diseases.

5.5. Institutional arrangements, partnerships and service delivery

This section will discuss how the respondents assess the role of partnerships as well service delivery in their areas. These views are based on respondents' observations and experiences regarding service delivery in their respective areas in general and their schools in particular. Active partners in the areas have been identified as the municipality, Public Works which responds to applications lodged with the Department of Education's physical planning section, as well as Umgeni Water.

5.5.1. Service delivery

The livelihood strategy will be used as a point of reference when defining dimensions of service delivery especially to poor rural areas as the schools in this study are all based in a poor rural area. The livelihood approach according to Borba et al. (2007:15) suggests that considerations for service delivery to the poor should be informed by factors like gender, financial situation, age groups and societal position of service recipients because these are factors in which certain sectors of societies are marginalized. In the case of this study the relevance of the livelihood approach is considered vital in defining the scope of service delivery as far as infrastructure maintenance and operation is concerned.

Four schools indicated that their water and sanitation infrastructure is better because they have had new structures built and installed compared to the situation in other schools as well as the wider community. The remaining two schools considered their facilities to be worse as they have old infrastructure. Table 7 indicates that the longest waiting period has been over ten years for one school whilst other schools have waited for less than a year to have their facilities built or installed. The waiting period has been longer for toilets than for water facilities in five schools. The respondents indicated that they did not know the criteria used for quick results from Department of Education. For water service delivery, schools relied on the municipality for connections. In some areas however there are no pipelines so they rely on the Department of Education to supply tanks to the schools. The rate at which the Department responds ranges from better in the case where the schools have had some kind of feedback to their application, to worse in cases where they have not had any response from the department official. While two of the schools have had a good response from all the partners, another has had a good response from only the Department of Public Works (DPW) and Umgeni Water. One school has been helped by a local NGO to install water tanks.

Table 7: Partnerships and service delivery experience

	Type of facility	Implementing agent	Waiting period for new facility after applying	Source of maintenance funds
Schl 1	Water	DPW	5 yrs	School fees
	Toilets	DoE	6 yrs	
Schl 2	Water	Municipality	1yr	School fees
	Toilets	DoE	10 yrs	
Schl 3	None	None	None	No maintenance funding
Schl 4	Water	Municipality	5 yrs	No maintenance funding
	Toilets		10 yrs	
Schl 5	Water	Municipality	10 yrs	School fees
	Toilets	DoE / Ithala	10 yrs	
Schl 6	Water	DPW and Ithala	6 yrs	No maintenance funding
	Toilets	DPW and Umgeni Water	2 months	

5.5.2. Partnership involvement and service delivery experience

Partnerships that have been identified to play a role in service delivery in some schools have been through Public Works, Umgeni Water and Ithala Bank. Public Works is a government department that is responsible for government infrastructure development projects. The Education Ministry uses the services of Public Works to build and provide toilets and water tanks for schools. Umgeni Water’s role has been that of an implementing agent to implement projects using funding from Water Affairs, Treasury and Education ministries. Ithala Bank has been involved in one project as a funder, representing private sector involvement in state infrastructure development.

Most schools indicated that the toilets they are using were provided when the schools were built, which is now over 50 years ago for some. It has been the school's responsibility to apply for new infrastructure, which means that some schools have to wait for an average of five years. Since some schools have been on the backlog eradication list from the Education department, turnover time has been as minimal as a year on average. The criteria for including some schools on the backlog list have not been established: respondents indicated that some schools that need the infrastructure have not been included in the backlog list.

The average impressions on partner involvement have not been good for all respondents. This does not mean however they do not view partnerships as crucial to service delivery. It was noted that "quality of life [is] affected" and "their involvement is important although there is none" (interview respondent from school 5).

One of the respondents indicated that service delivery in the rural areas would be significantly improved if service providers would be more accessible and visible to the people: "They [stakeholders] will speed the process and quality standards will be good" (interview respondent from school 4). Another respondent said that although some service providers like "UW- [are] good, professional and willing to help" others are approached but do not respond to queries: "Municipality was asked, they looked at the taps but nothing happened" (interview respondent from school 6).

Another kind of partner that was identified to be crucial for service delivery was the community based organizations (CBO). One respondent indicated that "CBO can play an important role in the training of Community Health Workers (CHW), to do public hygiene education" (interview respondent from school 1). Another respondent reiterated that "it is important to co-opt councillors as SGB members" (respondent from school 4). One respondent indicated "prioritizing services and social responsibility [is important]" and that "municipality [must] survey needs adequately and plan properly" (school 5 respondent).

Some respondents were of the opinion that service delivery in the rural areas is not of the same standard as in the urban areas (respondent from school 3). Questioning why rural areas get pit latrines and not flush toilets, respondents noted that the nature of toilet depends on water supply which means that rural areas will always get this type of facilities as a result of water shortages (respondent from school 3). Although partnerships were seen to be crucial to service delivery these have their own challenges and respondents cited the following as key to the success of partnerships.

Factors that were contributing positively to partnerships range from trustworthy workmanship and professional delivery, especially by Umgeni Water, as well as school cooperation (respondent from school 6). Good workmanship and commitment by all parties whereby specifications were followed was another enabling factor. Persistence was also raised as a reason that helped schools in ensuring that the work was followed through within specified time frames (respondent from school 6)

Challenging issues ranged from funding issues to schools working alone without enough departmental support. Some schools experienced difficulties in working alone and feeling that their “voices were not heard by department officials”. Some respondents indicated that they were ignored and felt there was lack of information (respondents from schools 1, 3 and 4).

5.6. Conclusion

The findings presented in this chapter indicate that there is a fair distribution of toilets for both boys and girls. It could however not be established whether the schools were aware of national standards as far as pupil toilet distribution is concerned considering the missing data as reported in the EMIS records. The minimum standards seem to be also set by many countries, but in South Africa it is unclear whether there are measures in place that monitor adherence, considering the huge backlog the government has to deal with.

All schools had VIP toilets except for some which built flush toilets for educators; consideration has been done into the maintenance cost associated with flush toilets since

many rural schools seem to be faced with water shortages and scarcity. Therefore VIP toilets seem to be an ideal sanitation technology since they do not require water. There are improvements in the sanitation service delivery while water services seem to be lacking. The improvements have been attributed to assistance from stakeholders. Service delivery needs to be consistent in addressing needs of a particular area so as to avoid imbalances. Service delivery seems to be more reactive than proactive as schools have to make their own applications and be persistent in ensuring that their needs are addressed swiftly by the department. Also Public Works department was seen to be a weak link to speedy and efficient service delivery, seeing that it was noted that occasionally they would not finish work that they have started. However, overall attitudes and perceptions for partnership involvement were positive. Some suggestions were also made as to incorporating local structures like NGOs and CBOs as well as strengthening the role played by school governing bodies in addressing pertinent issues faced by schools.

Inconsistencies in the maintenance of infrastructure had been seen to be the result of budgetary constraints experienced by the schools. Some schools could afford to hire cleaners while others use children and community members to perform this task. The reasons were not explored further than utterances for financial affordability of the specific schools. Some schools indicated that the economic state of the area in which schools are situated has a negative bearing in the recovery of school fees which is the sole income for schools to perform certain tasks like provision of toilet paper and soap for learners. Supply of soap and toilet paper is crucial to ensuring health and hygiene practise. Absence of these items as well as lack of water supply increase the risk for health hazards and water borne diseases. While some schools received health and hygiene education during the process of building toilets, reinforcement of hygienic behaviour is linked to functioning hand washing facilities and constant water supply.

Chapter 6: Discussion

According to Nigam and Rasheed (1998), in allocating resources like sanitation and water, governments are often faced with difficult choices based on resource scarcity and wide institutional support. Whether that particular government has a high regard of human rights can also be an important and determining factor in influencing those decisions. Consequently, the allocation criteria based on rights would ensure the fulfilment of basic needs and efficiency of service delivery. Thus considering water and sanitation as fundamental to a fully functional education system would have a positive impact on service delivery. This chapter discusses the findings in the previous chapter in an in depth manner.

6.1. Water and sanitation facilities, public health and gender issues

All schools have some form of sanitation facility even though these facilities differ in structure and outlook. Most schools seemed to have very old structures that were built by community members and the conditions of the toilets have not been acceptable. The average age of old facilities is over ten years while the newer structures have an average of five years. This observation indicates that building of proper sanitation facilities has not been a priority for schools. The conditions at schools are the same as in the case of household sanitation in the area. The common form of toilets is VIP (see section 5.2) since these do not require flushing and are therefore advantageous for areas with limited water resources.

According to Porto (2004:7) water is a basic need because it is essential for human survival. Basic uses of water include meeting physiological needs of human beings and most household needs. Water in schools is used primarily for children's physiological and sanitation needs as well as hand washing. A high percentage of schools have access to water; usually this is rain water harvested in tanks that are attached to school buildings.

Even those that have tap water from a reliable source still have tanks as they use tap water as an alternative source when the tanks are empty. A total of 67% of schools have upgraded water points within 150m of school whereas two schools still rely on river water since the latter do not have large tanks to sustain themselves during the dry winter season. However a total of 83% of schools still experience water shortages in winter and this can have adverse effects to schools.

Porto (2004:15) observes that sanitation services require more water than any other human need, accounting for approximately 20 litres (40% of total water needs) per person per day. Lack of availability of proper hand washing facilities may lead to spread of diseases (UNICEF 2009g). Gleick (1996) in Porto (2004:14) suggests that the minimum amount of water required for meeting individual human needs is 50 litres per person per day. However this amount depends on the distance of the water source which can range between 500m to over a kilometre since the further the distance, the lower the average consumption. When children have water within the school premises it enhances their quality of life in contrast to when the water is scarce and they have to get it from rivers. Direct connections or availability of water within the school premises is an essential condition to effectively improving health conditions (Porto 2004:16). However the supply of water poses considerable challenges in schools. On one hand children misuse water and are not conscious of water conservation, on the other, hand washing facilities are often not in a good condition for long-term usage. Thus although environmental and hygiene education emphasize hand washing, poor infrastructure and reinforcement remain a challenge to educators.

Snel (2003:12) suggests that availability and the conditions of physical facilities is one dimension of providing water and sanitation. Another important dimension of sustainable water and sanitation programmes is the availability of hand washing facilities that would contribute to improved hygiene especially in schools. Hand washing facilities require water and soap. While hand washing basins are built within the toilets, most have broken taps and the soap is reported to be missing as soon as it is placed at the basins (interviewee observation). Furthermore, apart from the quantity of water often being

insufficient in some schools, e.g. for hand washing, the quality of drinking water may also be inadequate, inevitably exposing pupils to the threat of diseases. Many children therefore have to rely on an unreliable source like nearby rivers for water.

Snel (2003:20) also indicates that there is a need for well maintained physical facilities as these are necessary to produce a healthy environment in and around the school premises. Some of the problems faced by poorer schools are broken water facilities and toilets that are broken or unsafe to use. The scenario observed at some schools indicates that the situation is more of a norm than an exception. Sometimes, it is argued by Snel (2003:20), toilets are not adapted to the specific needs of children, especially girls, part of the broader issue is the lack of child and gender-friendly designed facilities. Another major issue is that of lack of maintenance of facilities or even lack of finance for maintenance. As a result Borba et al. (2007:12) suggest that adopting a people-centered approach to development makes service delivery respond to local needs and deliver facilities that do not impinge on people's lives. In the case of toilet facilities it is important to consider issues of water availability as well as maintenance requirements of the facility when building one. A dry form of toilet is sustainable in a rural area where water scarcity is common. Water availability and low maintenance is central to the sustainability of the facilities (Borba et al. 2007:12). Thus all the schools in the study area have VIP latrines, a dry form of sanitation which is less costly to build and has low maintenance demands (interviewee observation). Only one school has flush toilets allocated to teachers and they sometimes have problems when their water supply is limited or cut off.

Hygiene is a factor that links water and sanitation, and it is imparted to learners through targeted health and hygiene education programmes. Snel (2003:20) suggests that encouraging learners to practise key hygiene behaviours is a major contribution to two Millenium Development Goals - Education and Health - because healthy children participate better in their education. Attendance is higher and incidences of diseases and illness that may contribute to absenteeism are greatly reduced as a result. Waterborne diseases can have adverse effects on children and are often linked to lack of concentration and even school drop-out (WSP 2007:3).

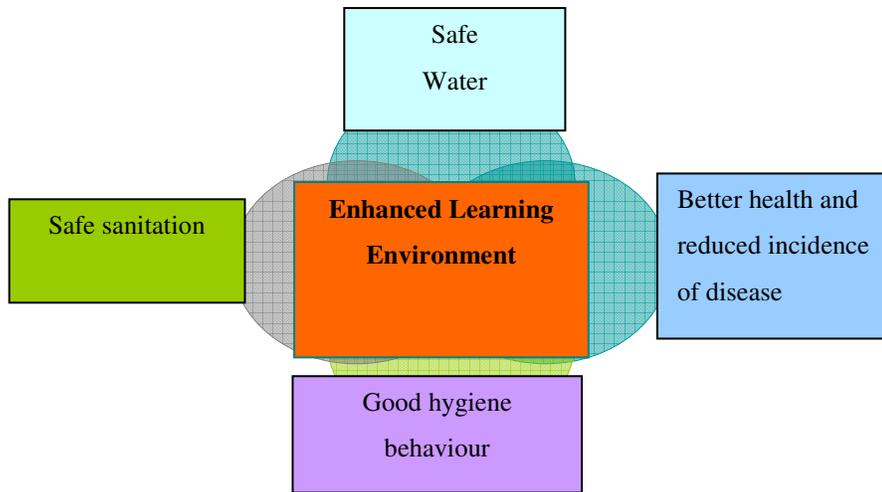


Figure 2: *Water and sanitation cycle within a school environment*

Water and sanitation provision is seen as a way of enhancing people’s livelihoods by having a positive effect on their quality of life. The above figure indicates that the relationship between safe water, sanitation, better health and hygiene will enhance a positive learning environment. This presents a holistic view towards learning that takes into consideration the physical and psychological needs of learners. Similarly proper hygiene behaviour means that school children should continuously practise good toilet habits as well as proper hand washing with water and soap after toilet use and before handling food. Undoubtedly it is important that schools cater for children’s hygiene needs by building proper toilets and enhancing good hygiene habits to make the learning environment pleasant for children.

Evidence from the Senegal studies presented in WSP (2008:3) indicates that knowledge about good hygiene does not necessarily translate to good practice. Learners also need to appreciate benefits of proper hand washing using soap and water and realize that they have a responsibility to protect their infrastructure by avoiding vandalism. Evidently, even though hand washing facilities and soap were provided by the schools, basins were vandalized and soap disappeared within days.

It was observed that in the study area parents and communities have minimal influence in deciding about water and sanitation in schools. Snel (2003:12) and UN (2004:2) agree that investing in school sanitation and hygiene education has many benefits. Also it is reported by UN (2004:1) that the quality of life of children in Swaziland's rural schools improved as sanitation conditions were renovated in the schools. The benefits are based on the notion that school sanitation and hygiene education are core to sustainable investment in the future of children which also fulfils the following developmental objectives:

- **Promotes effective learning:** Children perform better when they function in a hygienic and clean environment.
- **Increases enrolment of girls:** The lack of private sanitary facilities for girls can discourage parents from sending girls to school and contributes to the drop out of girls, particularly at puberty.
- **Reduces incidences of disease and worm infections:** If school sanitation and hygiene facilities are absent, or are badly maintained and used, schools can become a health hazard.
- **Promotes environmental cleanliness:** Presence and the proper use of facilities will prevent pollution of the environment and limit health hazards for the community at large.
- **Implements children's rights:** Children have the right to be as healthy and happy as possible. Being clean, healthy and having clean water and proper sanitation facilities contribute to a happy childhood.

UN (2004:2)

It is impractical to separate water, health and sanitation from gender issues. Inadequate, poor quality service and substandard infrastructure have a negative effect on the quality of life of women and girls as suggested by Borba et al. (2007), Snel (2003) and Graham-Harrison and Louw (2007), Ngware, Oketch and Ezeh (2008). In the case of girl children lack of private toilet facilities can greatly affect school attendance. Kirk and Sommer (2007:1) agree that poor facilities in schools are said to affect girls more than boys. At schools in the study area, this issue of separate toilet was not a challenge for schools as

allocation per gender was maintained. Reports from countries like Uganda, Australia and Mexico indicate that lack of privacy for girls was common in the schools and this had a negative impact on the well-being of girls, especially those that have reached puberty and beyond (Kirk and Sommer 2007: 6). These challenges require that the toilets must be clean, safe and private for girls to manage their sanitary needs and eliminate embarrassing incidences.

It is therefore apparent as observed by Saskia (2008: 64) that water and sanitation provision in schools have direct benefits for children in that they ensure enhanced school performance due to less illnesses as well as reduced absenteeism and drop-out rate especially in adolescent girls who need privacy when using toilets. Kirk and Sommer (2007:10) reiterate the importance of a gender sensitive approach when planning, building and maintaining toilet facilities in schools as this will enhance a health-promoting learning environment.

The gender factor is important in that it considers prioritizing the needs of the girl children with particular sanitary needs and the need for privacy when building toilets. Secondly, in terms of financial implications to infrastructure maintenance, the schools seem to have no set reliable budget to maintain the toilets nor for providing soap and toilet paper on a continuous basis, thereby compromising hygiene standards that need to be maintained. In addition there is the consideration of age groups: children at primary schools need facilities that are child-friendly and that do not promote vandalism. For instance taps with a hand sensor could be installed rather than the common ones that are frequently broken. Wall mounted toilet paper holders and soap dispensers could be a better alternative than those that are put on the basin or on the floor making it easy for them to disappear. Lastly, the societal position of children makes them vulnerable and they are not usually consulted regarding servicing which can lead to inferior services. As children are minors, the school principal has to act on their behalf. The maintenance and management of facilities is dependent on hired cleaners as well as the involvement of teachers in upholding acceptable standards.

6.2. Institutional arrangements and partnership as determinants to level of service delivery

This section looks at how institutional arrangements impact on service delivery. The state according to Calaguas (1999:15) is the main agent of ensuring that its people can realize their human rights. Human rights realization is the responsibility of the state and it is obliged to fulfil this role for the people under its jurisdiction. This requires public investments, and the formulation of effective regulation to ensure that marginalized groups get adequate and acceptable levels of service, and that the environment is protected (Calaguas 1999:15).

Calaguas (1999:15) does however recognize that there are situations whereby state resources are reduced due to economic and financial crises, including unsustainable debt. It is under these conditions that the state may seek alternative sources of financing for service including water supply and sanitation services. This is also outlined in the 'Basic sanitation policy principles' (DWAF 2002:2) as well as the National Water Act, whereby the state recognizes that these services will be provided by the state "within available resources". The responsibility of ensuring that schools receive adequate water supply and sanitation services lies within the Ministry of Water Affairs and Forestry and this department has thus formed intergovernmental/multi-stakeholder partnerships to facilitate service delivery. The scenario in South African schools is such that different government departments work in partnership to address backlogs and improve infrastructure in schools. These partnerships are further arranged with public utilities as well as the business sector that are prepared to invest in infrastructural development. These partnerships are also formed within the principles of sustainable provision of water supply and sanitation with the common purpose of reforming the water and sanitation sectors. The state plays a regulatory role while the other partners act as implementing agents (Borkey 2003:1).

The analysis of water partnerships according to Borkey (2003:1) especially where public water utilities are used, indicates that these partnerships are starting to emerge in

countries like France and the UK. South Africa seems to be following suit and in KwaZulu-Natal, Umgeni Water as a public water utility is becoming a partner of choice by the Ministry of Water Affairs in implementing water and sanitation programmes in schools. In the case of Umgeni Water, the state retains the responsibility for setting and enforcing performance standards, while UW implements the programme by building infrastructure, community capacity building and offering health and hygiene education to end-users (DWAF 2008). Cost-recovery does not feature in these partnerships since the state funds the infrastructure and water bills are payable to the municipality.

In this study, institutions that have been involved in water and sanitation programmes have been para-statal: Umgeni Water acting as an implementing agent commissioned by the Education ministry, Ithala Bank financed Public Works projects as well as education projects. There is a range of service providers, which makes it difficult to conclude the effectiveness of the UW and Ithala as the projects seem to be random commercial projects that are school driven.

The common factor in schools with newer facilities is that school management seems to have taken the initiative in applying for infrastructure through the planning department of the Education ministry. Therefore the school's initiative, persistence and cooperation seem to have yielded change in the respective schools. However some schools do not apply directly to the implementing agents (IA) as selection seems to depend on a tender process by the DoE to choose an agent to build toilets. While the process of building toilets is undertaken by the Public Works ministry and selected IA, no department seems to be at the forefront of supplying water. The supply of water is a primary role and responsibility of the district municipality. However the schools indicated that the distance between the schools and the district municipality affects the rate in which the schools are serviced as far as water is concerned. They indicated that the shift from local municipality to district makes the latter inaccessible. Most schools resort to using river water or rely on truck ferried water to meet their drinking needs.

Evans (2004:6) suggests that although water and sanitation are issues that become coupled together in terms of service delivery plans and policy statements, the reality is that in practice water delivery takes priority over sanitation. This affects the rate in which sanitation issues are addressed. Some schools also found that priority has been given to ensuring water availability rather than to building toilets. However some schools dispute what Evans (2004:6) says about sanitation getting a low profile compared to water provision in that schools believe that they tend to get intervention to address sanitation needs more than inadequate water supply. Although the water intervention will be a temporary one for years (tanks and truck ferried water), once sanitation infrastructure is built, it is often a facility that is of good quality and standard. However the length of time schools have to wait for toilets is longer than waiting for water due to costs attached to building toilets.

Evans (2004:6) calls for political commitment whereby all stakeholders national and local governments, communities and civil society, households and private sector work together towards a common goal of ensuring that sanitation issues are prioritized for all communities. National government's role would be to review policy and institutional arrangements, allocate budgets and ensure accountability of local and district governments in the implementation, monitoring and evaluation of sanitation services for all. Furthermore local governments as implementing agents can be involved in capacity building and mobilizing communities to be involved in addressing their local needs (Evans 2004). The expanded public works programme is a typical example of how sanitation issues can be addressed in schools whereby the Department of Education can empower community people through training and skills transfer to build toilets and budget can be explicitly allocated to meet this demand.

Communities also need to realize that it is their responsibility to lobby for appropriate service delivery from government (Evans 2004: 6). People-centred approaches to service delivery remains a challenge for governments since communities rely on the government itself to provide for their basic needs. The role played by the private sector depends on the individual company's social responsibility policy. Therefore it becomes difficult for

communities to lobby the private sector to assist the government in speeding up service delivery. Ngware et al. (2008:26) suggest that service provision in schools have significant implication for the education policy, and proposed that school infrastructure be expanded in order to create more opportunities for disadvantaged children. Also improving the quality of education by fostering public-private partnerships initiatives and that such must be supported by the government. Lastly, education stakeholders need to adopt a sector-wide approach to address matters beyond the educational field at schools such as supporting provision of school toilet facilities and safe drinking water, electricity etc.

6.3. Conclusion

In summary this chapter outlined that in providing sanitation facilities to schools certain factors were taken into consideration. Water availability is one factor that determined the nature of toilets that were built in these schools. Although access to water is not at a crisis level for the schools, however the nature of source is a variable that leads to the conclusion that when planning and building schools, water availability is not given much priority, hence some schools would rely on unsafe water sources such as rivers and streams. Also critical to service delivery are issues of sustainable use of facilities which is linked to hygiene education, working hand washing facilities, availability of soap as well as continuous water supply. Proper maintenance of these facilities is also an important factor that requires proper planning. Though it is an indirect variable, gender is another issue that is seen as important when assessing the holistic nature of toilet facilities since girls need privacy and safer toilets to meet their sanitary needs adequately.

The adapted water and sanitation cycle within a school environment (see figure2) is an indication that the mentioned factors are critical to holistic implementation of infrastructure development initiatives. Other underlying factors would be the role played by communities as well as other institutions in ensuring that water and sanitation service are sustainable. A wide range of service providers would contribute to the service

delivery ethics that prioritise essential services in schools. Institutional framework and political climate need to support and be conducive to proper service delivery.

Chapter 7: Conclusion and recommendations

In concluding I would like to note that this study offered me an opportunity for direct access to real conditions faced by the rural schools. There are some urban schools that face the same plight, however in rural schools poor conditions seem to be the norm rather than the exception. The critical challenge observed was that although it is clear as to whose responsibility it is to provide water and sanitation, school management also has to play an active role in ensuring that these services are provided for in their individual schools. Addressing backlogs by the government was seen to be erratic in the sense that schools in the same cluster or close proximity have different levels of services.

This study's strength lies in its exploratory and qualitative character nature as it sheds light on the institutional regulatory environment for the provision of water and sanitation infrastructure in rural schools. Such a study is not only intended to assess the institutional regulatory environment for the provision of water and sanitation infrastructure but also to find out the strengths and weaknesses of institutional partnerships in service delivery that pertains to provision of water and sanitation infrastructure in schools. The study revealed some crucial issues pertaining to water and sanitation provision which might require urgent attention in rural schools. Such issues may include improvement of protocol between provincial education and public works departments in order to speed up service delivery and minimize frictions during project implementation. Also relationships between the municipality and the education department need to be improved.

A similar study in Senegal indicates that 50% of schools in rural Senegal lack toilets and water. Although the national scenario could not be concluded from this study, it can be recommended that policy implications require that hygiene and sanitation in schools be put higher on the health agenda. Parents and communities are seen as pivotal in pressurizing planners to include toilets and water when building schools (WSP 2008:3). Infrastructural recommendations would be that in order to prevent vandalism of basins, mounted liquid soap dispensers and sensor taps could be installed to improve hand

washing facilities. Health and hygiene could be improved in schools by placing hand washing facilities at strategic points around the school. For instance each classroom can have its own bucket, soap and towel at the entrance which could be monitored by learners. This could teach learners about and enable them to contribute to responsibility for their own health behaviour. Ongoing health education programmes need to be incorporated into the school curriculum: posters can be used as well as talks from relevant departments can be organized.

Operation and management of facilities remain the schools' responsibility. Learners can be tasked to clean the toilets themselves which might encourage care when using toilets. It has been found from other studies by Karanja (2005) in India that giving this responsibility to learners not only increases ownership of facilities but also made learners become more active recipients of services.

In conclusion the use of a structured interview schedule as a data collection tool as well as visits to the schools enhanced the information gathering exercise. The interviews were structured according to objectives of the study. Face to face interviewing afforded me an opportunity to clarify points so as to avoid misquotations and misrepresenting the respondent during data analysis. Some themes that resulted from the information gathered as well as reviewed literature were incorporated into the study with the view to indicate their significance to the main themes of the study. Some added themes included gender and child development concerns linked to water and sanitation services. On the other hand the scope of the study limited the opportunity to explore actual hygienic behaviour by learners as well as economic matters in the governing of schools.

The study set out to explore whether there is any difference in the water and sanitation service provision by either public or partnership arrangements. Although there might be other variables influencing service delivery this study conclude that there is a significant difference in the quality of outcomes in terms of services for schools. Services rendered by Implementing Agents (IA) were of better quality than those done by Public Works department even though they are both guided by the same terms of reference from the

Water Affairs ministry and other government departments. The Implementing Agent seems to have a holistic view to service delivery complemented by health and hygiene education for end users. Whilst the Public Works service delivery is spoiled by incidences of incomplete workmanship and poor response to subsequent queries. In addition, the study also showed that institutional partnerships, whether with the private sector or non-governmental organizations, can be more effective than public sector alone in the delivery of water and sanitation in rural schools. The institutional arrangements, theories and the information gathered indicate that the private sector would generally be involved in financing infrastructure development while the schools remain responsible for the maintenance. Therefore negative consequences can be associated with the withdrawal of financial support after the work has been done leaving schools with no option but to manage the operation and maintenance on limited budget or rely on public works to do the maintenance.

In summary the schools with partnership involvement have better toilets than the ones without any assistance. Water facilities remained the responsibility of the school because even the water in the tanks built with toilets is used for hand washing purposes only. Schools also need to be aware of the water supply chain which involves municipality involvement. Thus an active role played by the education ministry in liaising with municipalities when planning school infrastructure may minimize water shortage challenges experienced by schools.

References

Alaerts, G.J. (1997) **Institutional Arrangements** in Helmer, R. and Hespanhol, I. (Eds.) **Water pollution control- A guide to the use of water quality management principles**. WHO/ UNEP New York

Anand, B.P. (2007). **Right to water and access to water: an assessment**. *Journal of International Development*. 19, pages 511-526.

Atkinson, D. and Ravenscroft, P. (2002). **Alternatives service delivery options for municipalities in the rural areas: Kamiesburg Local municipality case study**. Water Research Commission. WRC Report No KV 137/02.

Babbie, E. and Mouton, J. (2001). **The Practice of Social research**. Cape Town: Oxford University Press.

Borba, M-L., Smet, J. & Sijbesma, C. (2007). **Enhancing Livelihoods Through Sanitation**. Thematic Overview Paper 19. IRC International Water and Sanitation Centre. Downloaded on 22 January 2008 from www.irc.nl Netherlands

Borkey, P. (2003). **Water Partnerships: Striking a balance**. Downloaded in January 2009 from www.oecdobserver.org/

Calaguas, B.U. (1999). **The Right to Water, Sanitation and Hygiene and the Human Rights-Based Approach to Development**. Downloaded in January 2009 from www.righttowater.info

Chang, H. and Grabel, I. (2004). **Reclaiming development: An Alternative Economic Policy Manual**. Dhaka, Global Issues Zed books and David Philip

Cornwall, A and Nyamu-Musembi, C. (2004). 'Putting the 'right-based approach' to development into perspective.' *Third World Quarterly*. 25(8), 1415-1437

Cresswell, J. W. (2002). **Research Design -Qualitative, Quantitative and mixed Methods Approaches** (2nd ed.) London: Sage.

Department of Water Affairs and Forestry (2001). **Water Services Act, 1997**. Pretoria: DWAF.

Department of Water Affairs and Forestry. (2008). **Implementing Agent Performance Agreement, Umgeni Water**. Pretoria: DWAF.

Ensink, J. (2009). **Health impact of hand washing with soap**. Downloaded on 19 August 2009 from www.iboro.ac.uk/well/resources/fact-sheets.handwashing

Evans, B. (2004). **The sanitation challenge: turning commitment into reality**. WHO, Geneva.

Gleick, P (1999). **'The Human Right to Water'**. Water Policy 1(5) 487 -503

Graas, S., Bos, A., Figueres, C. and Adegoke, T. (2007). **Partnerships in the Water and Sanitation Sector**. Thematic Overview Paper 18. IRC International Water and Sanitation Centre. Downloaded on 22 January 2008 from www.irc.nl/page/33062 Netherlands

Graham-Harrison, K. and Louw, M. (Eds). (2007). **Can Hygiene Be Cool and Fun? Insights from School Children in Senegal**. WSP. Downloaded on from www.esa.un.org-senegal/

Gready, P. and Ensor, J. (Eds.). (2005). **Reinventing development? Translating rights-based approaches from theory into practice**. New York.

Hall, D., McKinley, Santiago and Yavari (2005) **Public Water: achievements, struggles and vision from around the world**. Transnational Institute (TNI) & Corporate Europe Observatory (CEO)

Hemson, D. (2004). **Beating the backlog: meeting targets and providing free basic services**. HSRC. Downloaded on 25 June 2005 from www.eldis.org

Hlahla, N. (1999). **The Municipal Infrastructure Investment Unit: the government's PPP-enabling strategy**. *Development Southern Africa*, 16(4), pp 565-570. Development Bank of Southern Africa. Pretoria, South Africa

Ilembe District Municipality. (2005). **Ilembe District Municipality Integrated Development Plan Review 2004/5**. Downloaded in March 2008 from www.ilembe.org/ Stanger, South Africa

Ilembe District Municipality. (2009). Ndwedwe Local Municipality. Downloaded on 16 July 2009 from www.kzntopbusiness.co.za/ndwedwe Stanger, South Africa

Interagency Task Force on Gender and Water. (2004). **A gender perspective on water resources and sanitation**. Background paper no.2. Downloaded on 22 January 2007 from www.unicef.org/ New York

IDS (2006) Policy Document. Sussex, UK

Jackson, B.M. and Hlahla, M. (1999). **South Africa's infrastructure service delivery needs: the role and challenge for public-private partnerships**. *Development of Southern Africa*, 16(4) pp 551-564. Development Bank of Southern Africa.

Karanja, B. (2005). **Voices of the pupils, Teachers and Parents**. Network for Water and Sanitation International. Downloaded on 16 July 2009 from www.wsscc.org/ Nairobi, Kenya

Keats, M.D. (2000). **Interviewing: A practical guide for students and professionals**. Buckingham: Open University Press.

Kirk, J. and Sommer, M. (2007). **Menstruation and body awareness: linking girls' health with girls' education**. WHO, Geneva.

Kotze, R., Ferguson, A. and Leigland, J. (1999). **Nelspruit and Dolphin Coast: lessons from the first concession contracts**. *Development Southern Africa* 16 (4), pp. 623-628. Development Bank of Southern Africa.

Leininger, M. M. (1985). Ethnography and ethnonursing: Models and modes of qualitative data analysis. In M. M. Leininger (Ed.), **Qualitative research methods in nursing**, pp. 33-72. Orlando: Grune & Stratton

Lofland, J. and Lofland, L. 1995. **Analyzing Social Settings: A Guide to Qualitative Observation and Analysis**. Wadsworth, Belmont.

Mathabathe, T.A. (2006). *Relationships between social marketing strategies and school participation in environmental competitions: A case study of Collect-a-Can annual schools competition*. Unpublished Masters thesis. Rhodes University, Grahamstown.

Miles, M. and Huberman, M. (1994). **Qualitative data analysis**. California: Sage.

Moore, N. (1997). **How to do research**. (2nd Ed.). London: Library Association.

Ndwedwe local municipality (2005) **KZN Municipal Portfolio**. Downloaded on 12 April 2007 from www.kzntopbusiness.co.za/2005/KZN Stanger, South Africa

Ngware, M., Oketch, O. and Ezeh, A. (2008). **What Quality of Primary Education are Children in Urban Schools Receiving? Evidence from Nairobi.** Policy Brief No. 4, 2008 African Population and Health Research Center. Downloaded in July 2009 from www.aphrc.org Nairobi, Kenya

Nigam, A. and Rasheed, S. (1998). **Financing of Fresh water for all - A Rights Based Approach, Zimbabwe.** Downloaded on 22 November 2006 from www.africanwater.org/Documents

Nigam, A. and Rasheed, S. (1999). **Strategic approaches to freshwater management.** Downloaded on 4 December 2006 from www.righttowater.org.uk

Options (2006). **Institutional Capacity Building.** Downloaded on 1 December 2006 from www.options.co.uk/te-institutional-dev

Porto, M. (2004). **Water and Ethics. Human Health and Sanitation.** UNESCO, France

RSA (1996). **The Constitution.** Constitution of the Republic of South Africa. Downloaded in September 2006 from www.info.gov.za/ Pretoria, South Africa

RSA (1997) **Water Services Act.** Water Services Act [No. 108 of 1997]. Downloaded on 12 May 2007 from www.wrc.org/downloads/legislature Pretoria, South Africa

RSA (1998) **The National Water Act.** National Water Act [No. 36 of 1998]. Downloaded in June 2003 from www.dwaf.gov.za Pretoria, South Africa

RSA (2008). **Department of Education School Realities, EMIS.** Downloaded on 15 May 2008 from www.education.gov.za Pretoria, South Africa.

Saskia, I. (2008). **Does Increased Water Access Empower Women?** *Development* 2008, 51, pp 63-67.

Schooltrade (2006). **A serious sanitation problem.** Downloaded in December 2006 from <http://www.schooltrade.co.za>

Seidman, I.E. (1991). **Interviewing as qualitative research: A guide for researchers in education and social sciences.** Teachers College Press, New York.

Sinclair, M.D. (1999). Regulation and facilitation of public-private partnerships: the MSP policy framework. *Development Southern Africa*, 16(4) pp. 585-598.

Snel, M. (2003). School Sanitation and Hygiene Education downloaded on 19 August 2009 from www.irc.nl/ Netherlands

Strauss, A. & Corbin, J. (1990). **Basics of qualitative research: Grounded theory and techniques**. Newbury Park: Sage.

Streeten, P., Burkie, S.J., Ul Hal, M., Hicks, N. and Frances, S. (1981). **First things first; Meeting basic human needs in developing countries**. World Bank, Oxford University Press.

Terre-Blanche, M. T. and Durrheim, K. (1999). **Research in practice: Applied methods for the social sciences**. Cape Town: University of Cape Town Press.

UN (2006). **African Water Development Report**. Downloaded in November 2008 from www.uneca.org/ UNESCO

UNICEF (2008). **Water, Sanitation and Hygiene Annual Report 2008**. Downloaded on 19 August 2009 from www.unicef.org New York.

UNICEF (2009a). **Lack of safe water and sanitation in schools jeopardizes quality education**. Downloaded on 19 August 2009 from www.unicef.org/media New York

UNICEF (2009b). **Basic Education and Gender Equality**. Downloaded on 19 August 2009 from www.unicef.org/girlseducation New York

UNICEF (2009c). **Water, Sanitation and Hygiene: The importance of hygiene; Links to health and education and development**. Downloaded on 19 August 2009 from www.unicef.org/wash New York

UNICEF (2009d) **Water, Sanitation and Hygiene: Real lives, Clean water and improved sanitation for a school in Tamil Nadu**. Downloaded on 19 August 2009 from www.unicef.org New York

UNICEF (2009e). **Water, Sanitation and Hygiene: The big picture; Environmental hazards and young children**. Downloaded on 19 August 2009 from www.unicef.org/wash/index_bigpicture New York

UNICEF (2009f). **Water, Sanitation and Hygiene: Basic education and Hygiene** downloaded on 19 August 2009 from www.unicef.org New York

UNICEF (2009g). **Why programming for school hygiene, sanitation and water?** Downloaded on 19 August 2009 from www.unicef.org New York

Umgeni Water (2006). **Infrastructure Development Plan for the supply of bulk potable water to Ilembe District Municipality**. Pietermaritzburg: South Africa.

UN (2004). **Swaziland: Water and sanitation project helps rural school children.**

Downloaded on 22 November 2006 from <http://www.irinnews.org/report>

UNWWDR (2002). **United Nations World Water Development Report: Fitting the pieces together.** UNESCO, Paris, France

UNWWDR (2003). **United Nations World Water Development Report: Water for People, Water for Life.** UNESCO, Paris, France.

UNWWDR (2004). **United Nations World Water Development Report: Water scarcity: Fact or fiction?** UNESCO, Paris, France

Van Rooyen, C. (2002). **Gear must go! The case of water delivery.** Department of Anthropology and Development Studies, RAU.

Van Wyk, J. (1998). **Towards Water Security in Southern Africa Department of Political Sciences,** University of South Africa. Published in *African Security Review* 7 (2), 1998. Downloaded on 12 December 2006 from www.iss.co.za/ASR/7No2/VanWyk.html

Water Aid (2008) **Sustainable Technologies.** Downloaded on 05 January 2009 from http://www.wateraid.org/international/what_we_do/sustainable_technologies/technology_notes/2064.asp

Wellington, J. (2000). **Education research: Contemporary issues and practical approaches.** London:

Wildeman, R. A. (2002). **Infrastructure provisioning in schools and the right to basic education.** Downloaded on 15 November 2006 from www.sadtu.org.za

WUP (2007) **The Water Utility Partnership for capacity building in Africa: Reform of the Water Sector.** Downloaded on 03 April 2007 from www.wupafrica.org/reform

Appendix 1

Informed Consent Form

(To be read out by researcher before the beginning of the interview. One copy of the form will be left with the respondent; one copy to be signed by the respondent and kept by the researcher.)

My name is Bukiwe Alexia (Dudu) Duma (student number 982112385). I am doing research on a project entitled '**A critical analysis of institutional partnerships in the provision of water and sanitation services in rural Ndwedwe schools**'.

This project is supervised by Ms Zoe Wilson at the School of Development Studies, University of KwaZulu-Natal. I am managing the project under Ms Zoe Wilson's supervision, and should you have any questions our contact details are as follows:

Bukiwe (student) at Umgeni Water Training Center (031) 2687165/2 or 0832878354; my work email address is dudu.duma@umgeni.co.za
Zoe (Supervisor) at UKZN (031) 2602917; her email address is wilsonz@ukzn.ac.za

Thank you for agreeing to take part in the project. Before we start the interview I would like to emphasize that:

- Your participation is entirely voluntary;
- You are free to refuse to answer any question;
- You are free to withdraw at any time.

The interview will be kept strictly confidential and will be available only to members of the research team. Excerpts from the interview may be made part of the final research report. Which information do you approve to be used in the report?

(Please tick one of the options below)

Your name, position and organization, or	
Your position and organization, or	
Your organization or type of organization (<i>please specify</i>), or	
None of the above	

Please sign this form to agree that the contents were read and explained to you by the researcher.

Signature

Date

Print Name

Should you wish to receive a copy of the research report please fill in your address details: _____

Appendix 2: Permission to interview educators and learners



PROVINCE OF KWAZULU-NATAL
ISIFUNDAZWE SAKWAZULU-NATALI
PROVINSIE KWAZULU-NATAL

DEPARTMENT OF EDUCATION
UMNYANGO WEMFUNDO
DEPARTEMENT VAN ONDERWYS

228 Pietermaritz Street
Pietermaritzburg, 3201

Private Bag X9137
Pietermaritzburg
3200

Telephone : 033 341 8610
Fax : 033 341 8612

INHLOKOHHOVISI

HEAD OFFICE

PIETERMARITZBURG

Enquiries:

Imibuzo:

Navrae: Sibusiso Alwar

Reference:

Inkomba: 0004/2008

Verwysing: 0004/2008

Date:

Usuku: 04 April 2008

Datum:

Ms Bukiwe Duma

PERMISSION TO INTERVIEW LEARNERS AND EDUCATORS

The above matter refers.

Permission is hereby granted to interview learners and educators in selected schools of the Province of KwaZulu-Natal subject to the following conditions:

1. You make all the arrangements concerning your interviews.
2. Educators' programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, educators and schools are not identifiable in any way from the results of the interviews.
5. Your interviews are limited only to targeted schools.
6. A brief summary of the interview content, findings and recommendations is provided to my office.
7. A copy of this letter is submitted to District Managers and principals of schools where the intended interviews are to be conducted.

The KZN Department of education fully supports your commitment to research: A Critical Analysis of Institutional Partnerships in the Provision of Water and Sanitation Services in Rural Ndwedwe Schools.

It is hoped that you will find the above in order.

Best Wishes

R Cassius Lubisi, (PhD)
Superintendent-General

Appendix 3: Data Collection Tool

Name: Bukiwe A Duma

Student Number: 982112385

4.1. To assess the institutional regulatory environment for the provision of water and sanitation infrastructure in rural schools. [Delivery and maintenance]

4.2. To assess the state of toilet and water facilities in schools.

4.3. To identify strengths and weaknesses of [institutional and community] partnerships in of water and sanitation service delivery that pertains in rural schools.

THE PHYSICAL ENVIRONMENT

School Statistics

1. What is the total enrolment of the school?
 - 1) 100- 300 pupils
 - 2) 300-500 pupils
 - 3) 500+

2. How many educators are in this school?
 - 1) Less than 5
 - 2) 5-10
 - 3) More than 10

5. How old are the toilets?
 - 1) Less than 1 year
 - 2) 1 year -5years
 - 3) More than 5 years

6. Do teachers have separate toilets from children?
 - 1) Yes
 - 2) No

7. How many toilets service educators?
 - 1) 1-3
 - 2) 3-5
 - 3) 5+

8. How many toilets service girls?
 - 1) 1-3
 - 2) 3-5
 - 3) 5+
 - 4) None

9. How many toilets service boys?

- 1) 1-3
- 2) 3-5
- 3) 5+

The state of sanitation facilities

10. What type of facilities does the school have?

- 1) Latrines
- 2) lavatories
- 3) Ventilated Improved Pit
- 4) Toilets

11. Are these sanitation facilities functioning? 1) Yes 2) No

12. Are the toilets clean? 1) Yes 2) No

13. Are the toilets well lighted and ventilated? 1) Yes 2) No

14. Are all toilets in working order? 1) Yes 2) No

15. Are there hand washing facilities? 1) Yes 2) No

16. Is soap provided at the washing facilities? 1) Yes 2) No

17. How often the toilets are maintained?

- 1) Weekly
- 2) Monthly
- 3) Quarterly

18. Are toilets cleaned 1) Daily 2) Weekly 3) Monthly

19. Who cleans the toilets 1) Cleaners 2) Children 3) Community

20. Do families and community provide finance and other support for maintenance and repair of school facilities? 1) Yes 2) No

Public Health Issues

21. When school sanitation facility is not functioning, where do children relieve themselves?

22. Do children suffer from water related diseases etc?
1) Always 2) Sometimes 3) Never

23. What type of diseases?

- 1) Cholera 2) Dysentery 3) Diarrhea 4) Bilharzia

Water Infrastructure

24. Is there a functioning water point within the school area within about 150 steps from school? 1) Yes 2) No

25. Does the school ever experience water shortages?
1) Yes 2) No

When? _____

26. What is the source of water?

- 1) River
- 2) Ferried Tank Water
- 3) Tap
- 4) Rain Tank Water

27. If you have taps/ tanks, how many?

- 1) 1-3
- 2) 3-5
- 3) 5+

28. Who connected the taps or supplied the tanks?

- 1) Department of Education
- 2) Department of public works
- 3) Private company
- 4) NGO
- 5) CBO

29. Is the water source functioning during whole school year?

- 1) Yes 2) No

30. When school water point is not functioning, how do children drink water?

31. Who is responsible for cleaning the container and maintaining the facilities?

32. How would you rate water service delivery in your school in relation to other schools in the area?

- 1) Good 2) Better 3) Worse 4) Same

33. How would you rate water infrastructure in your school in relation to other schools in the area?

- 1) Good 2) Better 3) Worse 4) Same

34. What are your reasons for that? [Probe: water service delivery and water infrastructure]

PARTNERSHIPS AND SERVICE DELIVERY EXPERIENCE

[Both partnership and non-partnership schools] Schools with new water and sanitation infrastructure

Please answer questions for each of the infrastructure available

35. Which new infrastructure does the school have?

- 1) Toilets
- 2) Water
- 3) Both

36. Who funded the building of the toilets?

- 1) Department of Education
- 2) Department of Public Works
- 3) Private company
- 4) NGO
- 5) CBO

37. Who funded the building of the water infrastructure?

- 6) Department of Education
- 7) Department of Public Works
- 8) Private company
- 9) NGO
- 10) CBO

38. Describe the condition of water infrastructure before the new one was erected?

39. Describe the condition of toilet infrastructure before the new one was erected?

40. How long did it take for the school to get new toilets?

41. How long did it take for the school to get new water?

42. Who was involved in securing the contracts?

43. If the project was a success, what contributed to that?

44. What challenges were experienced during the implementation?

45. Who is responsible for maintenance?

46. If it's the school; is there any budget for this? [Ask all schools?]

Institutional aspects

47. Has the private companies been asked for assistance? What has been the response?

48. Has the Municipality been asked for assistance? What has been the response?

49. Has the bulk water supplier (Umgeni Water) been asked for assistance? What has been the response?

50. What impression do you have about the involvement of other stakeholders in providing water and sanitation?

51. What challenges were experienced in not having a partner?

52. What role have community-based organizations played in water and sanitation provision to the school?

Social and educational aspects: Community involvement

53. Are parents, SGB or other community groups involved in supporting the school?

1) Yes

2) No

54. Do the parents know about the sanitation and water facilities provided by the school?

1) Yes

2) No

55. Do the parents provide a financial contribution towards the sanitation and water facilities at the school?

1) Yes

2) No

56. How would you rate water and sanitation service delivery in your area?

1) Good

2) Fair

3) Poor

What are your reasons for that:

LEGISLATIVE FRAMEWORK AND REGULATORY ENVIRONMENT

I would like to ask questions about partner organizations and service providers.

57. Is there any legislative framework in place that set the standard of water and sanitation infrastructure for rural schools?

1) Yes

2) No

If so, what are the critical characteristics of acceptable water and sanitation infrastructure for rural schools?

58. What is your impression of this factor towards service delivery?

[Probe: Have these been achieved in your work?]

59. If none [legislative framework] exists, what implications does this have on service delivery?

60. How would you rate the involvement of the following sectors in infrastructure development in the schools?

	1)Good	2)Fair	3)Poor	4)Reason
Bulk water supplier				
Department of Education				
Department of Public Works				
Private sector				
Municipality				

61. How would you rate service delivery in your area (satisfaction)?

1) Good

2) Fair

3) Poor

What are your reasons for that:

Thank you for your participation.

Appendix 4: Map of the Study area

