

Title Page

**Community Development Approaches in Provision of Sanitation
Services to the Poor:**

A comparative study of the Urine Diversion Sanitation System Programme
in South Africa (Mnini) and Zimbabwe (Chihota).

by

Pulane Mafoea

Dissertation Submitted in full satisfaction of the requirements for the

Degree:

Master of Social Science.

Of the

School of Social Work and Community Development

At the University of KwaZulu-Natal. Howard College

December 2007

Declaration

I declare that this Thesis is my own work and has not been submitted in any other form to another University. References have been acknowledged, where the use of other people's work has been made.

Pulane Mafoea
202524043

Signature -----

Acknowledgements

With the deepest gratitude I thank GOD for carrying me through this journey and blessing me with the support and help from many people to whom I am deeply grateful. I am particularly thankful and indebted to the following people:

- Mr. Clement Mafoea, my father, for his unfailing support, inspiration and enthused interest in me to handle this work with confidence.
- Mrs. Mamatoane Mafoea, my mother, whose love for me has no boundaries and I am yet to see the limits for her wisdom.
- Dr. Xaba, my supervisor, for his insightful view that enormously improved the quality of this Thesis.
- To the Mnini and Chihota residents, eThekweni water and services and Mvuramanzi Trust officers for the time and the invaluable input they offered to the research.
- Dr. Morgan, Dr. Wilson and Professor Buckley for sharing their in-depth knowledge regarding Urine Diversion systems.
- Velakhe Solomon Mbingo, for reading this Thesis, constant encouragement and emotional support that carried me through difficult times.
- Mr. Tshishonga and Danielle for their assistance in reading this work.
- Patience Mtakwa, for making my stay in Zimbabwe, home away from home.

Acronyms

WHO	World Health Organization
UNICEF	United Nation Children Fund
UNDP	United Nations Development Programme
IDWSSD	International Drinking Water Supply and Sanitation Decade
MDG	Millennium Development Goals
DWAF	Department of Water and Forestry
UD	Urine Diversion
JMP	Joint Monitoring Programme
NMP	National Mater Plan
IRWSSP	Integrated Rural Water Supply and Sanitation Programme
VIP	Ventilated Improved Pit
RDC	Rural District Councils
ESAP	Economic Structural Adjustment Programme
NGO	Non Governmental Organization
PRA	Participatory Rural Appraisal
SIDA	Swedish International Development Agency
PPP	Participatory Planning Process
PHHE	Participatory Health and Hygiene Education
PESHE	Participatory Ecological Sanitation Hygiene Education
PSC	Project Steering Committee
HSRC	Human Science Research Council
AREX	Agricultural Research and Extension Services
SSA	Strategic Sanitation Approaches

List of figures

Figure 1.1 Concept map.....	4
Figure 1.2 Urine Diversion systems.....	25-26
Figure 1.3 Map of Zimbabwe.....	69
Figure 1.4 Map of South Africa.....	80
Figure 1.5 Example of how decompose human excreta looks.....	101

Abstract

Providing sanitation to poor communities entails delivering services to people that are marginalized in many aspects; the social, economic and political. The challenge to design sanitation projects that address the utmost need of the poor and are economically and environmental sound is enormous. Urine Diversion (UD) system is a sanitation technology that separates urine from human excreta. UD technology, offers potential solutions for some of the economic and ecological challenges generated by the conventional sanitation technologies. However, to make this technology work and acceptable effective sanitation approaches that work well at grassroots are required. This thesis highlights fundamental processes and principles that can help in designing and implementing effective UD sanitation projects.

Title Page	i
Declaration.....	ii
Acknowledgements	iii
Acronyms	iv
List of figures.....	v
Abstract.....	vi
Chapter 1: Introduction	1
1.1 Introduction to the Problem	1
1.2 Conceptual Framework.....	4
1.3 The choices of Cases: Why compare South Africa and Zimbabwe?.....	6
1.4 Definition of the Terms.....	7
1.5 Purpose of the Study	8
1.6 Objectives of the Study.....	8
1.7 Research Questions	9
1.8 Significance of the Study	9
1.9 Methodology	10
1.9.1.2 Case Study	10
1.9.1.3 Data Collection Methods	11
1.10 Data analysis.....	13
1.11 Chapter Outline	14
Chapter 2: Literature Review.....	16
2.1 Introduction.....	16
2.2 Sanitation Backlog	17
2.3 Key Challenges in provision of Sanitation.....	20
2.4 Urine Diversion as an alternative	24
2.5 Arguments for Dry Sanitation Systems	26
2.6 Sanitation: The South African Context	30
2.7 UD in South Africa.....	35

2.8 Sanitation: The Zimbabwean Experience	36
2.9 UD in Zimbabwe	39
2.8 Theoretical Framework: Community Development Theory	40
2.9 Community development process principles.....	41
2.10 Conclusion	51
Chapter 3: Research design and methodology.....	52
3.1 Introduction.....	52
3.2 Research design.....	53
3.3 Case study method	54
Criteria for selecting case studies	55
3.4 Source of Data	55
3.4.1 Secondary Data	55
3.5 Pilot Study.....	56
3.6 Fieldwork.....	57
3.7 Primary data.....	58
3.8 Data collection techniques.....	59
3.8.1 Interview structure	59
3.8.2 Respondents.....	59
3.9 Sampling Procedures.....	60
3.9.1 Sampling Method.....	60
3.9.2 Sample Size	61
3.10 Interview Techniques.....	61
3.10.1. Unbiased Questions.....	61
3.10.2 Probing.....	61
3.10.3 Taking notes	62
3.10.4 Record taping	62
3.11 Ethical requirements	62
3.12 Data Analysis.....	63
3.13 Validity.....	64
3.14 Conclusion	65

Chapter 4 Findings and Discussion 66

4.1 Introduction..... 66

4.2 Case study A: Chihota- Zimbabwe 67

4.2.1 Background of Chihota Sanitation Project 67

4.2.2 Description of study area..... 67

4.3 The Planning Process..... 69

4.3.1 Problem Identification and assessment..... 69

4.3.2 Selection of technology 71

4.4 Factors that informed the planning process in Chihota..... 72

4.4.1 Government policies 72

4.4.2 Financial arrangements..... 73

4.5 Implementation Process 74

4.5.1 Selection of Beneficiaries 74

4.5.2 Training of builders 75

4.6 Factors that influenced the implementation process 76

4.6.1 Job Creation 76

4.6.2 Sharing information 77

4.7 Case Study B: Mnini- Durban 79

4. 7.1 Background of Mnini Sanitation Project..... 79

4.7.2 Description of case study area 79

4.8 The Planning Process..... 81

4.8.1 Problem identification and assessment..... 81

4.9 Factors that influenced the planning process in Mnini 83

4.9.1 Government policies 83

4.9.2 Program dimension..... 84

4.10 Implementation Process 84

4.10.1 Recruitment and training of facilitators and builders..... 84

4.10.2 Community representation 85

4.11 Factors that influenced the implementation process in Mnini 86

4.11.1 Job Creation 86

4.12 Analysis 87

4.12.1 Problem Identification and assessment.....	87
4.12. 2 Community representation	89
4.12.3 Community participation.....	89
4.12.4 Job creation	92
4.12.5 Capacity building.....	93
4.12. 6 Community perceptions of UD	95
4.12.7 Operation and Maintenance	98
4.12. 8 Removal and use of excreta.....	99
4.12.9 Post-project support	104
5.13 Conclusion	105
Chapter 5 Summary and Conclusions	107
5.1 Introduction.....	107
5.2 Summary.....	108
5.3 Analysis	111
5.3.1 Similarities and differences between Mnini and Chihota	111
5.4 Key processes and principles	113
5.5 Implication for future Research	116
5.6 Conclusion	117
References.....	118
Appendix 1: Interview Questions for the services providers	128
Appendix: 2 Questions for the Community Member (Chihota and Mnini).....	129
Appendix:3 Questions for PSC and Water and Sanitation Committee.....	130
Appendix 4: Consent form.....	131

Chapter 1: Introduction

1.1 Introduction to the Problem

The issue of poor sanitation has provoked interesting debates in development discourses. This is important because many people consider environmental concerns such as environmental pollution, poor management of water resources, sanitation and irrigation, as a direct result of uneven development. Interestingly, questions about environmental concerns such as, water pollution and water-borne diseases are invariably linked to the issues of industrialization, growing inequities and population growth. A considerable amount of evidence is now available to prove that if unsustainable development continues, it will be at the cost of even greater human suffering, and it will create even more serious and pervasive ecological damage to the biosphere (Reid, 1995:4). The effects of unsustainable development are diverse, but the most affected are the world's poorest.

According to WHO and UNICEF 2003 (cited in Human Development Report, 2006:112), more than 2.4 billion people in the world, currently lack access to adequate sanitation, and about 2 million people die every year due to diarrhea related diseases. Most of these deaths are children less than 5 years of age. The sanitation backlog indicates unavoidable linkage between waterborne diseases and child mortality on one side and the lack of water and adequate sanitation on the other side.

It is therefore not surprising that, over the last decade many development programmes and efforts have been put in place to address the rapidly increasing environmental concerns especially those contributing to waterborne diseases. Yet, despite the huge investment in sanitation during the United Nations International Drinking Water Supply and Sanitation Decade (1981-90)¹, over 2.4 billion people still lack access to adequate

¹According to UN, (1998) Learning what works, "The 1977 United Nations 'Water Conference' at Mar del Plata set up an International Drinking Water Decade, 1981-1990 ". Its aim was to make access to clean drinking water and sanitation available across the world.

sanitation services and an estimated 3 million children die of dehydration related diarrhea (WHO, 2003).

Internationally, the sanitation problem has been interpreted and translated into the Millennium Development Goals for Water and Sanitation². In relation to sanitation, the Goal is: “to reduce by half the proportion of people who do not have access to water supply and safe sanitation facilities by 2015” (Human Development Report, 2003:9). Therefore, the MDGs potentially provide a strong foundation for the planning and implementation of sanitation programmes. However, it is interesting to note the amount of attention given to water programmes as opposed to sanitation programmes. For instance, current trends infer that, the world will miss the sanitation target by more than half a billion people (WHO and UNICEF, 2002:2).

Although sanitation is one of the major global concerns, it is vital to note that most of the people affected, are those in underdeveloped and developing countries compared to developed countries. For example, in South Africa, at the beginning of 2001 the national backlog of persons without access to adequate sanitation facilities was estimated to be 18 million, and statistics shows that diarrhea kills more than 50000 South African children each year; the majority of these persons live in rural areas, peri-urban and informal settlement areas (DWAF, 2001:1). These documented statistics imply that sanitation backlogs are greatest particularly in rural areas.

According to Human Development Report (2006:50), poor communities are far more likely to suffer infectious diseases—and children in these households are far more likely to die. This shows that inequalities in access to water and sanitation are closely related to wider inequalities in opportunity, starting with the opportunity to stay alive. The gap in sanitation between developed and developing countries is a striking example of inequality in human development (Human Development Report, 2006:112). As a result, efforts to eradicate sanitation backlog should enhance wider socioeconomic development.

² In 2000, the UN member States adopted the MDGs, setting clear time-bound targets for making real progress in the most pressing development issues (UNICEF and WHO:2004)

For this reason there is an enormous need for a consistent, analytic and systematic approach to the provision of sanitation that addresses the sanitation problem holistically. In his study of rural sanitation, Pickford (cited in Kerr, 1990:8) stated that rural sanitation often involves providing a service for people who are underprivileged in all aspects and for that, the issue of rural sanitation demands considerable attention in development work. Sanitation therefore should not only be viewed as a health issue but also as a step towards inequality and poverty alleviation.

Indeed, if the Millennium Goals are to be achieved, strategic approaches to development and sanitation services are essential. The focus should not only be the delivery of sanitation services but an application of community development with the aim of empowering individuals. Thus programmes and projects aimed to solve the sanitation problem need to be guided by the community-driven principles and processes to development. These approaches need to be participatory and developmental in nature to combat the issue of poor sanitation.

Shah and Guilt (1998) point out that in community development debates, the assumption is that participatory approaches empower local people with skills and confidence to analyze their situation, reach consensus, make decisions and take action to improve their circumstances. However the authors warned that, despite the stated intentions of social inclusion, it has become clear that many participatory development initiatives do not deal well with the complexity of community differences (Shah and Guilt: 1998).

The causes and effects of poor sanitation manifest themselves differently, in different communities and societies. A case in point is that, with regards to South African sanitation problem, there are two main causes, poor hygiene and lack of infrastructure (no toilets and no water for hand washing (DWA 2001:2). In some cases conventional systems and social norms may be key causes of sanitation problems. For instance, in Zimbabwe, apart from absolute lack of sanitation facilities, there is a limited access to existing facilities due to rapid urbanization (UNICEF: 2007). This implies that there is a

need for approaches that look at the social, economical, political, health and environmental aspect of sanitation.

1.2 Conceptual Framework

Whilst providing improved toilets for poor communities is a necessity in addressing sanitation, it has become clear that the sanitation crisis is not only a matter of insufficient facilities. For example, Tayler et al (2003:5) argued that sanitation crisis is actually increasing as efforts to provide sanitation services fail to keep pace with the remorseless growth in the urban population. An important aspect that contributes to the failure of sanitation projects is inadequate integration of technological and social aspects. This can be illustrated in Figure 1.1 below:



Figure 1.1 (conceptual framework) shows how the approach to sanitation delivery can affect the outcome

Lack of community participation can lead to projects that do not meet the needs of the people. In addition when people do not take part in decision making and control the process of development, they sense of ownership and belonging is lost. In such cases people end up either not using the facilities or not using them properly. When development planners provide communities with technological facilities that people do not know and projects that focus on supplying facilities without valuing the local processes and norms, the outcomes are often ineffective. According to Tayler et al (2003:16) their failure to take account of local situation and people's needs can lead to premature failure of services; at worst they can deliver facilities and services that are not used because they are not what people want.

Sanitation problem is undoubtedly one of the disturbing social issues in the lives of the poor. For example, good sanitation is vital for good health to avoid health problems associated with poor sanitation such as typhoid, cholera, diarrhoea and worm infections. All the above mentioned diseases affect school attendance, worker productivity and life expectancy. It is therefore important to note that sanitation is not only a health issue, but a social, economic, environmental and political issue. Rivett-Carnac, (1984) argued that the cost of not providing sanitation facilities is very high, especially in terms of productivity, social instability and human misery.

1.3 The choices of Cases: Why compare South Africa and Zimbabwe?

Historical Exclusion

South Africa is considerably larger than Zimbabwe both in terms of population and geography. Nevertheless, there are some similarities between the national sanitation programmes in South Africa and Zimbabwe. The two countries both have a history of oppression, whereby development, including distribution of resources, was based on racial issues (Blacks and Whites). Specific oppressive structures and policies were put in place to deny black people basic sanitation. Thus, the issue of poor sanitation in these countries is related social and political problems inherited from their pasts. For instance, racial division and economic inequality of the past still pervade the Zimbabwean economy (Human Development Report: 2006). And in South Africa whites continue to enjoy relatively affluent and comfortable lifestyles, while the vast majority of blacks survive in a state of impoverished deprivation (Edge, 2006:179).

Another similarity is that, with the transition to democracy, both Zimbabwe and South Africa embarked on major reforms and commitment in water and sanitation sector (Human Development: 2006). Their histories entailed political, economic and social exclusion. The transition to democracy meant shifting power to the people, and a move towards decentralization. For instance, after Zimbabwe gained its independence in 1980, rural local government structures were incorporated under one system. Rural District Councils, as local authorities were given the responsibility for managing rural water supply and sanitation projects, with assistance from relevant sector and ministries (Human Development Report: 2006:9). Since then, Rural District Councils have been directly involved in the rural water supply and sanitation facilities.

In South Africa, one of most important aspects of the post-apartheid reconstruction project was the establishment of decentralized local government. The first task of the developmental local government was to overcome the injustices of the past and open

opportunities for integrated holistic planning (Parnell et al 2002:85). This transformation characterized a move away from top-down to bottom-up approach in planning development. As a result, both the Zimbabwe and South Africa sanitation programmes emanated from the need to redress past injustices created by the oppressive structures. But more importantly, under these reforms, ideally development interventions are to be initiated at the grassroots and community driven.

1.4 Definition of the Terms

Sanitation means collecting and disposing of waste in a hygienic manner, it is therefore a system of protecting people against diseases linked to poor sanitation. (DWAF: 2001:2). Also sanitation refers to the hygienic principles and practices relating to the safe collection, removal or disposal of human excreta, refuse and waste water, as they impact upon users, operators and the environment (eThekweni Municipality, 2003). For instance, when people use toilets that are inadequate, dirty and unsafe, neighborhoods become dirty and people become sick.

Urine Diversion Sanitation system (UD) is a special kind of latrine that separates urine from faeces. The toilet has two chambers and a pedestal, the pedestal is designed to capture and divert urine while faeces drop into the chamber. The separate urinal is provided for males, urine is diverted to a soak away. When one chamber is full the pedestal is moved to the second chamber and the full chamber sealed. While one chamber is in use, the contents of the other chamber are left to decompose (DWAF: 2001).

Human waste collects in the chamber below, which dries quickly because there is no urine, to speed the process of decomposition. Sand or ash is then thrown into the pit after each use. By the time the second chamber is full, the waste in the first chamber will be dry and safe to remove. The faeces dry out rapidly, particularly if soil is added regularly

to absorb moisture, like dried cow manure, dried human faeces do not smell (eThekweni Business plan, 2003).

1.5 Purpose of the Study

The purpose of this study was to identify principles and processes fundamental to the delivery of sanitation services in rural communities. The premise for this study is that, community development can assist the effectiveness of sanitation projects. Fundamental principles and processes in the provision of sanitation are highlighted through a comparative analysis of approaches used by eThekweni Water Services (South Africa) and Mvuramanzi Trust (Zimbabwe) on the Urine Diversion System programme. Considerable attention will be put on the evaluation of these two projects. The assessment of the projects will be informed by the process principles of community development. These process principles are participation and empowerment.

1.6 Objectives of the Study

The objectives of the study were to:

- To determine systematic approach to the delivery of sanitation that enhances community development
- To compare the eThekweni municipality (Durban) approach with Mvuramanzi Trust approach (Zimbabwe)
- To analyze the extent to which the approach affects the effectiveness of the programme.

1.7 Research Questions

This study aimed to answer the following questions:

- What were the principles that informed the provision of sanitation services ?
- Was there a major difference in the approach used by Mvuramanzi Trust and the approach used by eThekweni municipality?
- What were the processes that enhance improved sanitation to the poor?
- Which programme responded to the needs and interest of the beneficiary?

1.8 Significance of the Study

The provision of sanitation services and promotion of health and hygiene are major issues in an effort to ensure public health and sustainable development. Therefore the study can be useful to development practitioners in both Zimbabwe and South Africa. In this way the study can help development practitioners in South Africa and Zimbabwe who yearn to take account of socio-cultural aspects but do not have a research to guide them.

In addition, the eThekweni and Mvuramanzi Sanitation Project(s) will benefit more from this study as it seeks alternative community-driven approaches to sanitation. Given the socio-economic crisis Zimbabwe is facing, it is envisaged that this study through its emphasis on broad-based bottom-up approaches to development interventions will add enlightenment to a more people-centered approach to policy-making.

The development of the water policy in South Africa is another area of target; the research offers a systematic approach to the implementation of the policy. It can also be used for policy formulation both organizationally and nationally in both countries as well as other Southern African countries, embarking on similar projects.

1.9 Methodology

1.9.1.1 Research Design

The study tackled the research questions by using an exploratory method. To address the research questions case studies were used. According to Sekaran (2003:119) “exploratory studies are undertaken to better comprehend the nature of the problem since very few studies might have been conducted in that area”. The premise of this study was that community development approach in provision of sanitation has a potential to contribute to sanitation improvement of the poor. For this reason, a study on literature and interviews with experts led to an overview of Urine Diversion sanitation systems, and the important issues that go along with the system. Data was collected using interviews, meeting with community members, undertaking discussions through observations and taking notes. The overall research strategy of this thesis was to address research objectives through qualitative approach. The process involved extensive literature review, conceptualizing research question, data collection (using interviews) and data analysis (using constant comparative method).

1.9.1.2 Case Study

The case study method was used, because it enabled the research to explore in more detail what was happening in the municipality as well as the Trust. This involved interviews, official publications and reports and programmes records. The following criteria were used in selecting the communities in both countries:

- The communities were to be located in Zimbabwe and South Africa
- The communities were situated outside the urban area
- The projects were to be completed intervention regarding UD sanitation system

It was anticipated that both the Zimbabwean and South African case studies would be useful in identifying effective and efficiency in the delivery of sanitation.

1.9.1.3 Data Collection Methods

Qualitative case study method was used to conduct the study; this is because the research is exploratory in nature. The following methods were used for the collection of primary data:

1.9.1.4 In-depth open-ended interviews

For this specific research, in-depth interviewing seemed to have evident advantages. Sanitation is a personal issue, thus people are not comfortable discussing the issues in public and other settings such as focus groups. Given that in-depth interviewing is more interactive, in-depth interviews were used to help the researcher to explore issues in greater depth. Another reason for using this method was to enable the research to explore how the respondents interpreted their situation without imposing ideas on their views. In addition to this, probing questions were used to get more information on particular issues. Interviewing techniques such as note taking and taping recording were used where appropriate.

1.9.1.5 Sampling

Availability and purposive sampling techniques were used to sample the population groups. These sampling techniques were prompt and efficient means of gathering information, because subjects were selected based on their convenient accessibility to the researcher. These subjects were chosen simply because they were the easiest to obtain for the study. This technique is easy, fast and usually the least expensive and troublesome. Another important reason for using purposive sampling was that it enabled the researcher to control the variables or elements; however the great danger on this type of sampling is that it relies more heavily on the subjective considerations of the researcher than on scientific criteria and often leads to uncontrollable results (Bless and Highson-Smith, 1995). In order to make sure that the sample was free of bias a sample size of 40 was used. According to Grinnell and Williams (1990:127) a sample of 30 is sufficient to perform basic statistical and even non statistical procedures.

1.9.6 Ethical Requirements

Information collected and provided by the respondents was treated with confidentiality and the names of the respondents were not revealed. A consent form was signed by all the respondents, where the purpose and the nature of the study were clearly explained to the respondents before filling in the form. The respondents were also told that taking part in the study was completely voluntary and if at any time they felt uncomfortable to continue, for any reason what so ever they were free to withdraw from the study at any stage, and if they decided not to take part, it would not affect them in any way. The consent forms explaining the nature of the research and ethical considerations were signed by the respondent in agreement with the contents of the form. The forms served as a legal document binding the researcher to the details of the forms. The researcher agreed with both the Mvuramanzi Trust and eThekweni municipality to provide a copy of the report once it has been accepted and corrected by the University of KwaZulu Natal. This served as a feedback to both these organization about the report.

1.9.7 Limitations to the study

- Due to time constraints, it was difficult to use in-depth interviews throughout, as De Vos et al (1998:300) warned that the most important disadvantage of unstructured interviewing is that it is time consuming and data collected makes ordering and interpretation difficult.
- The study compares sanitation projects implemented by two different structures; the government and the Trust. The differences raise questions about the nature and background of these structures, and whether it is fair to compare the two. Despite the clear divergence, the researcher felt that some valuable lessons can be drawn from each of these structures, and could inform the provision of sanitation to the poor without necessarily disregarding the uniqueness of each structure.
- Another concern was that, whether the lessons learned in one organization and one municipality are applicable to all municipalities in South Africa or

Zimbabwe. Despite lack of generalization, the research gains its value from the in-depth information drawn from the cases.

1.10 Data analysis

Data from open-ended interviews was grouped thematically and a constant comparative method used for analysis. This method involved the cut-and paste and coding method of preparing data for analysis, making data cards that are easy to work with. Constant comparative method also involves inductive analysis, whereby what is important to analyze emerges from the data itself (Maykut and Morehouse, 1994:127). For this study constant comparative method was helpful in simplifying yet categorizing data into different meaning for the in-depth interviews.

1.11 Chapter Outline

- Chapter 1:** This chapter provides an introduction to the issue of sanitation and the background of the study, by contextualizing sanitation in community development context. It delineates the purpose of the study, objectives of the study, research questions and sub-questions. It further outlines definitions of the terms used in the study, significance of the study, limitations, methodology, and research design and data analysis.
- Chapter 2:** The second chapter is a review of current literature pertaining to sanitation approaches and Urine Diversion sanitation systems. It introduces the paradigm shifts in water and sanitation sector regarding conventional sanitation systems and approaches. It looks at relevant arguments and debates made by different scholars and authors, and the contribution their work made in the understanding of the study. The last section of literature review chapter consists of the theoretical framework, which develops and investigates at the theoretical level the role that community development can play in sanitation.
- Chapter 3:** The chapter discusses the research design and methodology conducted in collecting data. This chapter is divided into four sub sections: Firstly, data collection methods, secondly, the area of the study, then population and sampling methods, and lastly the research design and data analysis, which provides an interpretation behind the selection data analysis procedures.
- Chapter 4:** Chapter 4 presents and discusses the major findings of the study. Important issues, in relation to the findings of the study are discussed in this chapter. Thus the chapter identifies relationships, hypothesis and theoretical implications of the findings.

Chapter 5: The final chapter outlines the summary and conclusions about the research; hence provides facts and conclusions drawn from the research and provides implications for future research. The conclusion chapter provides answers to the research problem.

Chapter 2: Literature Review

2.1 Introduction

Provision of adequate sanitation services to the poor is both a public health and development issue. Yet, if sanitation delivery is not integrated with other social issues such as inequality, standards of living, and approaches to sanitation delivery are not designed to improve people's lives, efforts to reduce sanitation backlog will be ineffective. The purpose of this chapter is to provide a review of current literature regarding UD and sanitation approaches. This will be accomplished by examining relevant studies and presenting specific theories that are most relevant in the study and which make the greatest contribution to the understanding of the research. As a result the chapter acts as a framework in understanding the issue of poor sanitation.

This chapter is divided into two main sections: the literature review and the theoretical framework. The literature review determines ways to understand gaps in previous research by describing the relationship between each work presented. Hence the section commences with comprehensive descriptions of sanitation backlogs, key challenges in the provision of sanitation, Urine Diversion system as an alternative technology and the Zimbabwean and South African experiences on sanitation. This section presents the reader with the current situation, the nature and the scope of sanitation in South Africa and Zimbabwe.

The main purpose of this thesis is to identify principles and processes that are essential in the delivery of sanitation, and enhance community development. For this reason, an understanding of theoretical framework of community development is important; since it helps to provide an insight to the nature of the problem in community development approach. This is used in the study because it acts as a reference and an outline by drawing on community development perspective within which this study examines the sanitation problem. The theoretical framework follows the literature review, with the

objective of explaining how the application of a community development perspective is useful in answering questions raised in the literature review as well as the research problems.

2.2 Sanitation Backlog

To understand the magnitude of the problem one only need to consult the data collected by World Health Organization in preparation for UN water conference in Mar del Plata in spring 1977 (Kalbermatten et al 1982:3). According to that report, only one third of the population in developing countries had adequate sanitation; that was about 630 million people. Since 1977, there has been enormous interest and investment put in place to address the water and sanitation backlogs. However, much progress has not been achieved. For instance Beyer (cited in Kerr, 1990:2) pointed out that although governments and communities around the world took the International Drinking Water Supply and Sanitation Decade (IDWSS, 1981-1990) seriously, the results were not as encouraging as everyone had hoped.

Almost 3 billion people lack access to a decent toilet, and over 2 million deaths can be attributed to improper sanitation (UNICEF and WHO: 2006:3). In fact in 2004 the Joint Monitoring Programme (JMP) of the WHO and UNICEF reported that the number of people lacking basic sanitation services rose from 2.1 billion to 2.6 billion from 2001 to 2004. The backlog demonstrates that despite the international attention, that water and sanitation received both in the 1980s and 1990s, with time the sanitation problem has only intensified. This shows that while the provision of sanitation for all has been a key development goal since the 1970s, progress has been glacial (Human Development Report, 2006:111).

Indeed various studies reveal that efforts to address poor sanitation have largely been unsuccessful. For example, Beyer's research (in Kerr, 1990) revealed cases where ceramic latrine pans were being used as flower pots and where hand pumps were out of order after three months or a year of installation. Chandler (cited in Kerr 1990:16)

asserted that in the rural communities of developing countries, examples of past project failures were common: pumps in disrepair, taps broken or left unfitted, public latrines abandoned to nature, pipes and other materials damaged or diverted to unplanned uses. This shows that, efforts to improve sanitation have had limited progress in effecting considerable change in the sanitation backlog. Sub-Saharan Africa well illustrates the magnitude of sanitation backlog. Recent estimates indicate that, it is a region of the world where over the period of 1990-2004, the number of people without access to drinking water increased by 23% and the number of people without sanitation increased by over 30% (WHO and UNICEF, 2006:7).

There were various reasons that contributed to past sanitation attempts falling short of attaining their objectives. But what stood apparent was the lack of involvement of people in these initiatives. As Tayler et al (2003:7) argued “sanitation projects and programmes tended to be supply-driven, ignoring the concerns of the community”. According to McGranahan (2001) with supply-driven model, experts identified the physical dimensions of the problem; public authority planned for the removal of the problem, and the implementing agency executed the planned projects. In other words the solution was defined in technical terms, it was technocratic approach. Although it is necessary to provide, the technology, the hardware of pumps, pipes and latrines; this alone cannot bring lasting changes to people’s health (Krishna cited in Kerr, 1990:6).

In reality academics, environmentalists, politicians and economists have customarily treated sanitation with a degree of respect: that adequate sanitation is vital for public health. Esrey, et al (1998:5) for example, noted that sanitation is a key determinant of both equity and society’s ability to sustain itself. Similarly, Khan (1997:2) pointed out that to deny people basic sanitation is not just inhumane- it also kicks the first step from a country’s ladder of development.

Virtually all studies addressing sanitation problem reviewed in this study, confirm the significance of education and community involvement in the provision of sanitation (Morgan, 2007:2; Simpson Hérbert 2002; Austin et. al 2005:2). Pacey (1990:9) agreed

that “the essential point is that good sanitation depends primarily on people and on how they organize hygiene-related activities”. Appropriate sanitation is that which meets the needs of the people in a satisfying way in relation to the resources available and other aspects of local situation (Pickford, 1995).

Approaches to water and sanitation have partly reflected the changes in the wider development environment (Odi, 1999:6). According to Zurbrugg et al (2004) the typical conventional approach addressing the problems related to urban environmental sanitation has been one in which planners and engineers defined the needs of the poor, and then decided what type of infrastructure and service will be provided.

Good sanitation includes appropriate health and hygiene awareness, acceptable, affordable and sustainable sanitation services (The White Paper on Basic Household Sanitation, 2001). This has its foundations in the perception that sanitation services should benefit and meet the needs of the users. Morgan (2007:2) argued that a good toilet, with a safe reliable water supply and the practice of good personal hygiene can do much to improve personal and family health and well being.

However as Mulenga et al (2001:186) argued, lack of coordination, communication and participation between planners and the poor are some of the causes of failures in the conventional approaches to development. This approach to sanitation is normally known as supply-driven. Wright (1997:5) argued that “traditionally utility planners developed demand projections based on demographics and economic progress indicators, failing to take into account the expressed needs of the users”. Hence limited progress has been achieved with regards to improvement in sanitation.

On the other hand, even if the sanitation crisis can be communicated to and understood by more people, the need to find sustainable alternatives to conventional alternatives for both developed and developing countries remains (Austin et al 2005:4). Moreover there is a need for new technologies and alternative approaches to address sanitation backlogs.

2.3 Key Challenges in provision of Sanitation

Like most fundamental issues in development, poverty poses a primary challenge for sanitation at various levels of development. For instance, failure to develop sanitary solutions to waste disposal problems results in massive environmental problems which will be difficult to deal with in the future (Tayler et al 2003: 4). Also poor sanitation raises questions about public health, inequality, equity and people's ability to participate in the economy.

Challenges related to sanitation delivery to the poor, involves conveying services for people who are underprivileged and have little cash (Pickford in Kerr; 1989, Lagardien and Cousins: 2005). According to Fraser and Howard (cited in Pacey 1978:139) another standard concern regarding urban and rural sanitation is providing sanitation for people who do not have proper houses to live in and for whom a household latrine is therefore inconceivable. As a result the cost of providing services in such circumstances must find alternative means for the ability to pay for services (Lagardien and Cousins, 2005:16). The important issue is that sanitation interventions ought to integrate broader social and economic issues that face communities.

Nearly all reviewed studies addressing the sanitation problem of the rural and urban poor in developing countries affirm the importance of social and cultural factors (Kalbermartten, et al 1982:77). The idea is that provision of sanitation should take into consideration the processes that occur in the community. A case in point is that the provision of water supply and sanitation services has considerable potential to alleviate poverty through the creation of jobs, use of local resources, improvement of nutrition and health, development skills and provision of a long term livelihood for many households (DWAF: 2003). The strategy is very important as it acknowledges poor sanitation as both the cause and the consequence of poverty. As a result any attempt to address sanitation backlogs, must establish and incorporate strategies for poverty alleviation.

Indeed, literature pertaining poor sanitation, in developing countries locates rapid urbanization as one of major challenges regarding rural and urban sanitation. Urbanization, the process by which an increasing proportion of a given population resides in urban rather than rural areas, has the potential for positive as well as negative effects on rural environments (Main, H in Binns, T. 1995). Rapid urbanization is occurring throughout the developing world, creating a demand for housing, infrastructure and services, including excreta disposal, and surface water drainage and solid waste management (Tayler et al 2003:1). According to the WHO and UNICEF, Water Supply and Sanitation assessment report (2000) as more people move to the cities, urban services will face great challenges over the coming decades to meet fast-growing needs: at the same time, rural areas will also face the daunting task of meeting the existing large service gap.

Currently, many scholars reviewed in this chapter, stress that as people move from rural areas to the urban, efforts to alleviate water borne and communicable diseases will fall short. Cohen (1989:216) argues that “the new migrants are taking up residence in informal urban human settlements, urban fringe or marginal communities, in the form of either squatter settlements or overcrowded pre-existing slums, most of them rickety accretions onto the core cities which were solidly built to house the rich and middle classes of the past few hundred years; water is often scarce and human excreta is deposited on the ground or in open ditches”. It is for the same reason some authors proclaim that urban sanitation is far worse compared to rural sanitation. Simply put, the more people in a given space, the greater the potential for contact with human waste (Khan, 1997). However, in most countries the real problem is not just the drift of population, but the draining of all resources away from rural areas (Pickford in Kerr, 1989:8).

Despite the obvious dangers of urbanization Main (cited in Binns, 1995:55) argued that “urbanization presented opportunities for rural environmental sustenance, as well as dangers of rural environmental degradation”. The principle behind Main’s argument was

that as people move to the urban area there is more demand for food, water, labor and other commodities, creating an environment where rural producers are able to supply urban consumers through accessible and effective market systems.

Notwithstanding the validity of Main's (1995) argument, one may argue that the effects of rapid urbanization are evident in many informal areas. The situation is exacerbated by the government policies which do not regard the informal settlements as legal settlements. According to UN-HABITAT, (2003:104) preconditions³ necessary for sanitation providers to work on these areas may not be present. For instance, in Kolkata a refugee settlement in India, people do not have legal tenure and are therefore denied access to basic sanitation and drainage improvement (Tayler et al, 2003:2). The process of moving from illegal to legal is difficult as it requires not only economical, but also legal, political and social contributions.

According to Simpson-Hérbert (cited in Austin et al, 2005:3) sanitation sector must continue to innovate low-cost facilities for people with different needs from different climates and with different customs. This means that there is a need to shift from the idea that conventional sanitation systems are the only means of solving sanitation problem. To address the sanitation backlogs there is need for alternative sanitation facilities as well as new approaches for provision of sanitation to the poor.

In the light of these challenges many approaches have been suggested and recommended as significant in the provision of sanitation services to the poor. An example is the recent Strategic Sanitation Approaches⁴ (SSA) by Wright (1997:11); he argued that the Strategic Sanitation approach differs from past approaches in that, it is demand-based and incentive-driven. Wright's work on SSA is of particular importance to this study, as it offers a different and alternative approach in planning for sanitation. The idea behind the SSA is that sanitation programmes of the past did not respond to the needs of the poor,

³ The preconditions may include, documents that show the boundaries of plots and who owns each plot, or legal documents that allow residents to be registered as citizens.

⁴ Wright(1997) argues that SSA provides guidelines on how to assess the true demand for services and the importance of incentives to motivate people to act in ways that lead to a more efficient and effective investments.

nor the challenges created by rapid urbanization, population growth, industrial development, and concerns for the environment.

An important principle derived from SSA, focuses on demand based and incentive driven approaches to sanitation. In other words, the idea behind SSA is that sanitation interventions should respond to informed demand and there should be incentives to encourage people to act in ways that help improve their sanitation. The idea of demand based intervention is similar to the community development approach; in that they both stress the importance of community involvement and that sanitation projects must be driven by the needs of the people who are to benefit.

However practically, the SSA approach provides limited guidance for effective application by local authorities and relevant stakeholders (Lagardien and Cousins, 2005:23). This is mostly because the SSA focused on the outcome of the projects and not the direction of the development process. For example, Wright (1997:29) himself pointed out SSA can only work if adaptable and flexible institutional systems already exist. Therefore creating more challenges for rural municipalities and NGOs, who are unable to adapt, due to financial and institutional capacity.

Given the limitation in the current approaches to the provision of sanitation, this study aims to highlight the guiding principles for the effective delivery of sanitation. Urine Diversion system can provide answers to some of the key challenges in addressing the sanitation backlog. However, even with innovative technologies, there is still an enormous need for new approaches if progress is to be achieved in the near future.

Thus with the introduction of new technology (UD) the need for a new approach is important in order to effect change.

2.4 Urine Diversion as an alternative

Urine Diversion (UD) toilet is a special kind of latrine that separates urine from faeces. As a dry sanitation technology UD is based on the concept of keeping these two substances separate (Austin. et al 2005:4). According to Morgan (2007:44) UD uses a special pedestal or squat plate in which the urine enters the front part of the pedestal and is diverted through a pipe and is thus separated from excreta, which fall directly downwards into a vault or container. A pit is not necessary as the entire structure may be constructed above ground, or may even be inside the dwelling (Austin et al 2005:5). Prominently UD does not require any use of water; hence it is manageable for people who do not have access to water.

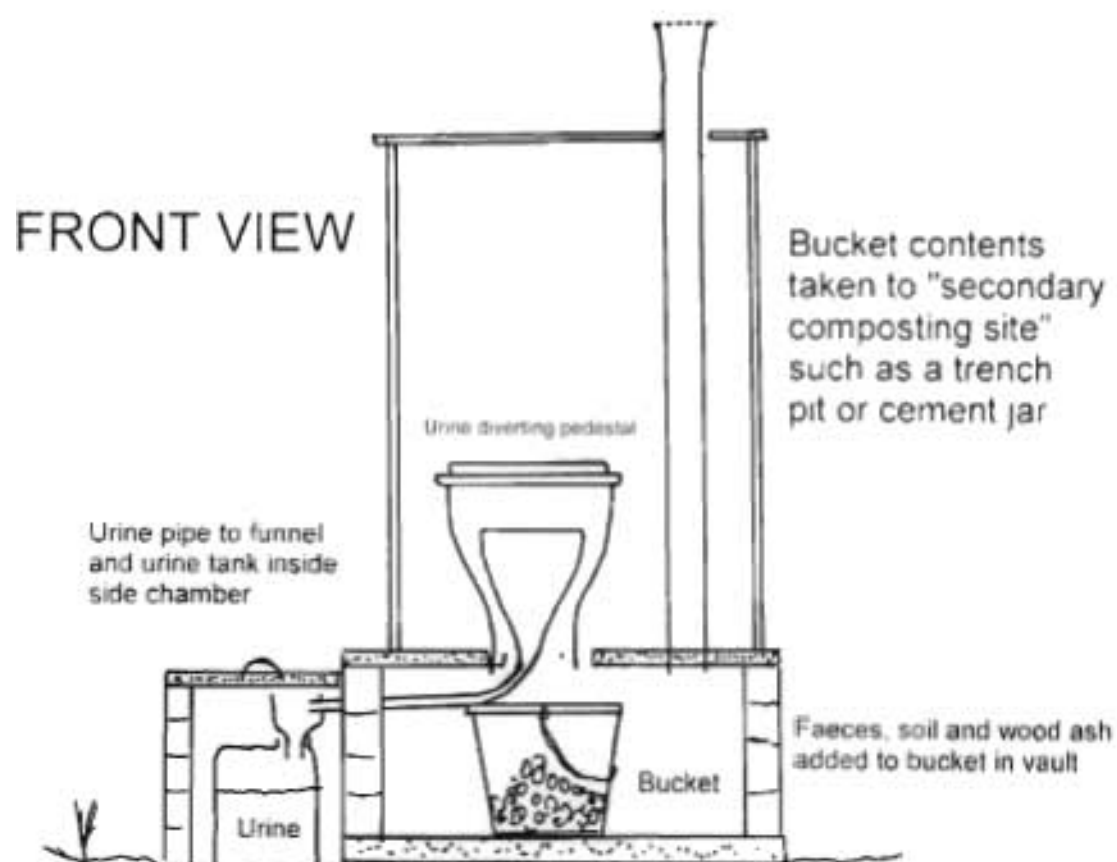
The Urine Diversion toilet may have one or two chambers and a pedestal. The pedestal is designed to capture and divert urine while excreta drop into the chamber. In some cases a separate urinal is provided for males, urine is diverted to a soak away (see fig1.2). Human waste collects in the chamber or bucket below, which dries quickly because there is no urine. To speed the process of decomposition, sand or ash is thrown into the pit after each use. Excreta dry out rapidly, particularly if soil is added regularly to absorb moisture. Similar to dried cow manure, dried human excreta do not smell (DWAF: 2001).

When one chamber is full the pedestal is moved to the second chamber and the full chamber sealed. While one chamber is in use, the contents of the other chamber are left to decompose (DWAF: 2001). By the time the second chamber is full the waste in the first chamber will be dry and safe to remove. In the case of UD with one chamber, once the vault is full, the vault can be emptied to the secondary composting site. The secondary composting site is where the raw excreta are converted into a product which is normally called humus (Morgan, 2007:58).

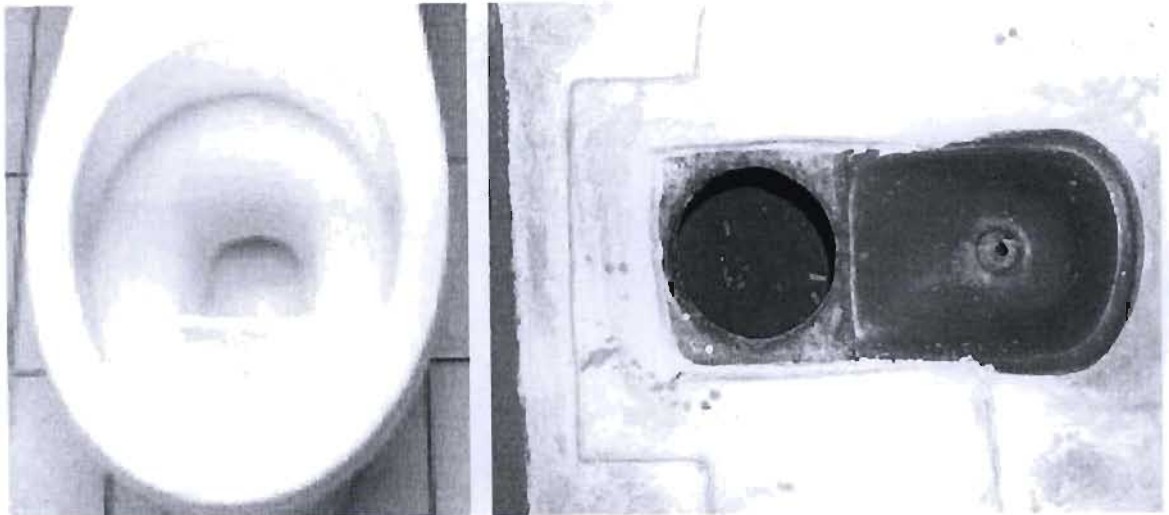
UD is one of the many examples of dry sanitation system or what is commonly known as ecological sanitation. The objective of dry sanitation system is to protect human health and the environment while reducing the use of water in sanitation systems and recycling

nutrients to help reduce the need for artificial fertilizers in agriculture (Austin and Duncken: 2005, 4). Therefore UD has potential to be more economical and ecologically sustainable compared to the conventional pit latrine and flush toilets.

Figure 1.2 Urine Diversion systems



SOURCE: Morgan. (2004:59)



Examples of urine diversion system (sitting and squatting) by Langegraber and Mullengger (2004:438)

2.5 Arguments for Dry Sanitation Systems

Public Health and Environment

Despite a widespread myth that waterborne sanitation system is environmentally friendly, there seems to be an agreement among scholars that flush toilets damage the environment. Esrey et al (1998:2) expressed concern that globally sewage discharges from centralized waterborne collection systems are a major component of water pollution. In addition, groundwater pollution is one major challenge for the environment and ecosystem. More importantly the quality of drinking water is affected, which in turn affects the health of individuals.

Ground water pollution is caused by the waste discharged into rivers and streams, this can occur not only in poor countries but in industrial and developed countries as well. For instance, in the United States, fertilizers and pesticides spread on farms and lawns filter through the ground into the water table or wash into streams and lakes which supply half of the nation's drinking water (Tibbetts, 2000: A 69). In addition in many places, sewered sanitation results in polluted ground and surface waters (Werner et al 2006, 4).

According to Austin et al (2005:8) data on Wastewater Management shows that over 90% of all sewage in developing countries is discharged completely untreated. In addition, Tibbetts (2000: A71) argues that in many poor villages people have to rely on the water that is easiest to reach through shallow groundwater wells, which are frequently polluted by animal and human waste conventional sanitation system. Simply put, flush toilets have a dismal track record because all sewage systems contaminate the environment, and from environmental point of view, none of the available options are sustainable (Winblad, 2002: 1). The connection between water and diseases is well documented, but nowhere is it more obvious than in 1990 report prepared by WHO.

It is interesting to note that there appears to be a general agreement on the harmful impact of waterborne (flush toilets) systems on the environment. A good example of a critique of waterborne systems, which puts environmental perspectives at the forefront, is found in Pickford, Austin and Wright's work. For Pickford (cited in Pacey 1978:70) the greatest criticism of waterborne sanitation is that, quite a substantial volume of water is required simply as an excreta- carrier in sewage systems. Austin et al (2003:10) also maintain that while this type of sanitation system has been widely successful in controlling the transmission of excreta-related diseases in most cities of industrialized countries; it has also created severe damage to ecosystems and to natural water resources where the waste water is inadequately treated. As agricultural and industrial demand for water continues to grow, the progressive degradation of water resources and the inability to treat and recycle water means that demand is outpacing supply at an accelerating rate (Wright, 1997:3).

The above criticisms convey aspects of sanitation technology and the environment. Sanitation is often exposed to technological approaches, with the belief that hand pumps and toilets are the only necessary means of breaking cycle of cholera. Yet, over the past decade there has been much criticism of the approaches to sanitation while limited solutions have been established. The most common failing of sanitation programs in the past have been the failure to take into account the expressed needs of the users (Wright 2005: 5). He pointed out that the environmental and water resources implications of

planned investments were not compared with those of other technological options, and this led to ineffective projects or projects that were not environmentally sound.

Recycling as central component of UD

At the heart of the UD sanitation debate, is the recycling perspective drawn from the ecological perspective. The assumption is that unlike conventional sanitation systems, where energy contained in the natural nutrients from excreta is lost, dry systems allow containment of such nutrients. Ideally ecological sanitation systems enable an almost complete recovery of all nutrients and trace elements from household wastewater and their reuse in agriculture; in addition the system helps preserve soil fertility and safeguard long-term food security (Austin et al 2005).

Unlike the waterborne and a normal pit latrine, waste is not washed down as sewage or stored in the pit. With ecological sanitation no substance is wasted, everything is recycled to produce another useful product. Werner et al (2004:27) affirmed that ecological sanitation can also restore a remarkable natural balance that is between the quantity of nutrients excreted by one person in one year and that which is necessary to produce his or her food (7.5 kg nitrate, phosphorous and potassium for 250 kg grain).

Ecological sanitation offers an alternative to conventional sanitation, and attempts to solve some of society's most pressing problems: infectious disease, environmental degradation and pollution, and the need to recover and recycle nutrients for plant growth (Esrey et al, 2001). It is important to note that it is only when the Urine Diversion technology is used as part of the ecological sanitation system and contents recycled, that it becomes useful in agriculture. Morgan (2004:97) argued that ecological sanitation concerns the recycling of human excreta to form products that are useful in agriculture. He maintained that dry sanitation system is important; it is also part of system that fits into a concept of recycling compostable materials.

For Simpson- Hérbert (2002) there is a need for recycling because much of the waste and garbage is thrown into streets, vacant lots and canals. Her argument is that during the

rainy season, storm drains and canals often clog with garbage, causing flooding, and pit toilets and septic tanks overflow, mixing excreta with drinking water. Through human waste recycling, public health can be improved and the environment protected.

Much of the current work on ecological sanitation emphasizes the containment, sanitization and recycling of human excreta. Despite the importance of recycling, reviewed scholarly literature on ecological sanitation neglects health risks on handling excreta and in agricultural use. Esrey et al (1998) earlier work on '*closing the loop*' concentrated more on the linear and the cycle systems. The focus of their work is on recycling of human excreta, but gives little guidance on how social factors such as attitudes, perception and culture can affect the concept of ecological sanitation. Morgan's work (2007) is mostly focused on construction of low cost ecological sanitation system, while Simpson- Hérbert (1996) looked at principles in sanitation. In reality, while much is known on epidemiological evidence concerning ecological sanitation and waste water irrigation, there is significantly less information about excreta use in agriculture (Strauss 1997).

The issue of the use of human excreta in agriculture is fundamental to dry sanitation technology. Jensen et al (2005) argued that the use of human excreta for agricultural purposes provides cheap fertilizers for crops and is a good soil conditioner. Jensen et al (2005: 873) carried out a study that focused on sanitation promotion and the use of latrine waste in agriculture. They stated that more than 75% of the farms studied in Nghe, Vietnam, were reported to use fresh or partly composted human excreta to fertilize their farmlands or gardens. The continuous use of fresh or partly composted human excreta was linked to high rate of infections with intestinal parasites in Vietnam. Thus illustrating that, whilst there are some advantages with the use of human excreta in agriculture, there are differences in opinions about the exact time that human excreta are safe to handle and use for agriculture.

According to Feachem et al (1983) health hazards associated with excreta reuse are of two kinds: the occupational hazard to those who handle the excreta and the risk that

contaminated products from reuse may subsequently infect humans or animals through consumption or handling. Human excreta, specifically faeces, can be made safe in several ways. At the point of excretion, the addition of absorbents, such as lime and ashes, to excreta can destroy the resistant pathogens in a reasonable amount of time (Esrey et al 1998:8).

2.6 Sanitation: The South African Context

In the social context of apartheid legacy and as a developing country, South Africa continues to face numerous development challenges, many of which are embedded in the prevailing high inequality. During the apartheid regime, the South African government had oppressive policies and laws that were specifically intended to deny African people the basic necessities such as education, water and proper sanitation facilities. DWAF(2002:2) argues that during the apartheid era, sanitation services provision were primarily focused on toilet building; sewage systems and maintenance, with little consideration given to community needs and health as a result those who had inadequate sanitation systems were forced to stay using bucket system, rudimentary pit latrines or the veld.

DWAF (2002:2) further highlighted that the absence of an institutional framework which established clear responsibilities and the overlapping institutional boundaries as well as the exclusion of many areas of great need, contributed to increased poor sanitation. In addition lack of political legitimacy and failure to make resources available where they were needed contributed to poor sanitation (DWAF, 2002:2).

It is therefore not surprising that at the beginning of 2001 the national backlog of persons without access to adequate sanitation facilities was estimated to be 18 million, and statistics shows that diarrhoea kills more than 50000 South African children each year; the majority of those persons live in rural areas, peri-urban and informal settlement areas (DWAF, 2002).

Nonetheless, after the 1994 elections, the new government of South Africa committed itself to rectifying the injustices of the past, through service delivery and meeting the basic needs of the poor. Various policies were put into place in order to bridge the gap between the rich and the poor. For example the following two documents; the 1994 Reconstruction and Development Programme (RDP⁵), and the 1996 Constitution originally set out a mandate for level of basic services under the new democratic government (Ralo et al, nd: 7). The RDP, section 1.4.3 stated that:

“In Meeting Basic Needs, our people should become part of the decision-making process on job creation, land reform, housing, services, water and sanitation, energy, telecommunications, transport, the environment, nutrition, health care, social security and social welfare”

With regard to water and sanitation, RDP (1994) aimed to provide households with adequate facilities for health by establishing a national water and sanitation programme which aimed:

- to provide all household with clean water supply with 20-30 litres per day within 200 meters
- An adequate sanitation facility per site and a refuse removal system to all urban households.

By the end of 1994, a new water and sanitation policy in support of the RDP objectives and targets was established. The White Paper on Water and Sanitation emphasized the political importance of a speedy delivery of water and sanitation services and established the ambitious target that: “the policy of the DWAF, in full support of the objectives and targets of the RDP is to ensure that all South Africans can have access to basic water supply and sanitation services” (DWAF, 1994: 4)

In addition, the South African government had to undergo major institutional restructuring in order to achieve these objectives. As a result, in 1996 a new South African constitution was adopted. Chapter 2 of the Constitution of the Republic of South

⁵ RDP is an integrated, coherent socio-economic policy framework. It seeks to mobilize all people and the South Africa's resources towards the eradicating the impacts of apartheid, and the building of a democratic, non-racial and non-sexist future. (RDP; 1994:1)

Africa (1996) states that everyone has a right to an environment that is not harmful to their health and well being. It is in this manner that the government has a constitutional responsibility to ensure that everyone had access to adequate water and sanitation.

Whilst the Constitution mandated the government, particularly the local government, to provide basic services including sanitation to the people; it gave little guidance on how that was to be achieved. Thus, in 1997 the Water Services Act (Act 108 of 1997) was developed; it required that all Water Services Authorities prepare a Water Services Development Plan (WSDP) as part of the municipality's overarching (IDP) Integrated Development Plan (DWAf, 2004:9). The IDP is the principal tool for planning the provision and expansion of water services and for allocating resources towards water services (DWAf, 2004: 9).

Further, the White Paper on Basic Household Sanitation 2001 was established, it recognized and stretched the focus on community needs and health in provision of sanitation services to the communities. The policy (2003: 4) indicated that the lack of basic water and sanitation is a key symptom of poverty and underdevelopment; and that the provision of such services must be part of a coherent development strategy if it is to be successful.

The White Paper on Basic Household Sanitation (2001) provided the following principles to guide sanitation intervention strategies.

The principles included:

- Sanitation must be responsive to the demands of the people and must be supported by the Health and Hygiene programme
- Community Participation
- Integrated planning and development
- Sanitation is about Health and Environment
- Basic sanitation is a human right
- To provide access to sanitation service

- Access to sanitation for all

However, there were various challenges with regards to the White Paper on Basic Sanitation policy, particularly in providing sanitation services to the poor. According to DWAF (2002:4) some of the policy gaps identified in the White Paper on Basic Household Sanitation included, farm dweller sanitation, informal settlements, emergency sanitation, norms and standards and free basic services.

Onabolu and Ndlovu (2006:2) reported that in South Africa the pace of sanitation delivery is hampered by many challenges. Some of these constraints are related to the absence of a methodological approach to health and hygiene implementation and the failure for service providers to integrate livelihoods with sanitation delivery. For Muller (cited in Onabolu and Ndlovu 2006:7) slower progress in sanitation in South Africa reflects both lower priority attributed to sanitation by the people and the government, as well as the perceived difficulty of working with individuals at the household and community level.

Given the challenges and the policy gaps identified in the White Paper on Basic Household Sanitation, the South African government adopted a Strategic Framework for Water and Sanitation services (2003) as a guide for service delivery. The Strategic Framework for Water Services provides a summary of policy with respect to water services sector in South Africa and a strategic framework for implementation over the next ten years (DWAF, 2003: 3). The policy focuses on the vision of how water sector will work in providing water services to the people. As a result it includes a string of strategies such as institutional, regulatory, support, monitoring and evaluation strategies.

In a paper presented at the AfricaSan conference (DWAF 2002) stated that social issues are often not considered or properly integrated into sanitation programmes (Onabolu and Ndlovu, 2006:7). For example, Ralo et al (2003:64) carried out a study of water policy in relation to rural people's experience, in the Eastern Cape. One of the key findings from their study was that water and sanitation schemes often do not provide the level of sanitation service that can stimulate local economic development. They recommended

that governments view water and sanitation subsidy as a kick-start to local economic development and a worthwhile investment in long term rural sustainability.

The Human Development Report (2006:27) warns that the lack of water supply and adequate sanitation also reinforces the deep inequalities in life chances that divide countries and people within countries on the basis of wealth, gender and other markers for deprivation. For example, in South Africa a high level of inequality means that there are two different groups of extremes. It is an unequal economy with large discrepancies in wealth between the rich and poor (Austin et al 2005:2). At all levels, sanitation problem is related to socio-cultural, educational and institutional issues, with the lack of appropriate facilities and inadequate guidelines being a contributory factor (Austin et al. 2005:2). Hence any sanitation intervention needs to be developmental and community driven if it is to be successful.

In 2001, eThekweni municipality embarked on Water and Sanitation Programme because of the cholera outbreaks that had occurred in rural communities of KwaZulu Natal province (eThekweni Municipality Business Plan, 2003:4). The Water and Sanitation Programme under eThekweni municipality has been involved in water and sanitation programmes with the objective of providing communities with water and basic sanitation services. The 5 year target of the programme was to reduce the sanitation services backlog by 25% and to reduce the water services backlog by 100% (eThekweni municipality Business plan, 2003:7). To achieve these targets, sanitation needed to be perceived as more than just a provision of facilities but also had to be a participatory and community driven process.

In South Africa, the basic level of sanitation was defined as ventilated improved pit (VIP) in a variety of forms and its equivalent, as long as it meets certain minimum requirements in terms of cost, sturdiness, health benefits and environmental impact (DWAf:1996). However, Urine Diversion Sanitation system consisting of two chambers or vaults was adopted as a level of service for this particular programme. This was based on the 2001 White Paper on Basic Household Sanitation policy principles, that sanitation should be

sustainable, cost effective and environmentally sound. Furthermore in a water-scarce country like South Africa, sanitation options are needed which minimize the demand on water resources (Schutte and Pretorius, 1997).

2.7 UD in South Africa

In South Africa, DWAF (2004, 8-9), reported that the government sanitation programmes main focus has been on the provision of waterborne sanitation or Ventilated Improved Pit (VIP) toilets. However, a significant number of Urine Diversion (UD) toilets, approximately 30,000, have been built to counter the problem of difficult ground conditions (Northern Cape) and maintenance issues (eThekweni Municipality).

Since 1997, when South Africa's first urine diversion sanitation project was implemented in the three rural villages near Umtata in the Eastern Cape Province, thousands of these toilets have been installed in various parts of the country (Austin et al, 2005:9).

Research undertaken by Duncker et al (2006: 11) titled, "*Acceptance of Urine Diversion in South Africa*" revealed that a number of challenges need to be addressed to ensure the successful and sustainable implementation of sanitation interventions. The research highlighted that some of the factors that hamper the progress of the Urine Diversion sanitation projects in South Africa included:

- Lack of involvement of local council
- Community not included in the decision to implement
- Lack of information sharing
- Insufficient and ineffective training
- No form of support to community after implementation.

But more importantly, their research showed that in South Africa many people appear to have accepted Urine Diversion toilet. For example 75% of the respondents liked UD while only 25 % did not like it. However Duncker et al (2002:20) argued that while there

was a general acceptance of the users of the UD as a toilet, there was a huge problem in using UD as a technology. This was indicated by the resistance in emptying and handling of human excreta, across the four provinces in which the study was conducted. For Duncker et al (2002) in South Africa, UD toilet might be accepted as sanitation facility as long as someone else removed the waste from the vaults.

2.8 Sanitation: The Zimbabwean Experience

The Republic of Zimbabwe came into existence after a prolonged uprising against the former Government of Rhodesia⁶, which finally led to elections and Zimbabwean independence in 1980 (Government of Zimbabwe, 2001:1). Like South Africa, colonization in Zimbabwe was largely characterized by oppression and racial discrimination. For example in Rhodesia, education for the Africans was regarded as necessary by the colonial government, only in so far as it enabled them to better serve the interest of the white man (Auret,1990:18).

As a result, since the independence in 1980, the Zimbabwean government, committed to rural development, attracted considerable funding from external support agencies eager to assist in the reconstruction and development of Zimbabwe (Human Development Report, 2006:3). For Robinson (2002:2) the happy coincidence of Zimbabwe's independence in 1980 with the start of the International Drinking Water Supply and Sanitation Decade provided an ideal basis for rapid expansion of the country's rural water supply and sanitation.

In 1985 a National Master Plan (NMP) was launched and as part of its recommendation a Water Supply Division of the District Development Fund was established (Auret, 1990:49). The development of National Master Plan for Water Supply and Sanitation under Integrated Rural Water Supply and Sanitation Projects (IRWSSP) incorporated the promotion of health and hygiene education, community mobilization and capacity

⁶ Rhodesia was the name that was used to refer to Zimbabwe before the country attained independence (Stoneman, 1981:1).

building of personnel and institutions. This was to be achieved through decentralization of power by enabling rural councils to manage water supply and sanitation projects (Human Development Report: 2006:8).

The primary goals for IRWSSP, set out by NMP, specified that by 2005, 100% of population was to have safe drinking water from a protected primary water supply within 500m of their homes and 100% households to have (at least) Blair VIP latrines (Robinson, 2002:3).

Indeed, considering the centralized Zimbabwe government system inherited from Rhodesia, major structural changes had to be put in place if IRWSSP was to achieve its objectives. Robinson (2002:5) argues that the reform that most affected the IRWSSP came in 1988, when Rural District Councils (RDCs) were created through the amalgamation of the existing Rural and District Councils. RDCs were mainly responsible for local service delivery. Under the IRWSSP, RDCs were the managers and resources were channeled directly to the RDCs instead of ministries (Human Development Report, 2006:8)

According to the national rural sanitation inventory carried out in 1997/98 it was found that national sanitation coverage among the rural households was nearly 40% (National Environment Health Policy: 1999:3) Recently, several new pieces of water and sanitation legislation have been promulgated in Zimbabwe, the new Acts are further attempts to correct injustices of a colonial past and to trigger development towards effective, equitable and efficient integrated water resources management (Jaspers, 2005:322).

In recent years, many Third World countries have come to realize, that the development strategies they had pursued in the past two decades were inappropriate and even irrelevant to their needs; and that rapid economic growth has further aggravated the problems of poverty, unemployment and inequality (Aziz, 1978:1). For instance, Zimbabwe recognized that IRWSSP neglected gender issues and adopted the Sustainability Strategy for the National Rural Water Supply and Sanitation Programme.

For Mulenga et al (2001:3) the strategy recommended measures to enhance women participation in rural sanitation programmes including participation in traditionally male-dominated chores such as latrine building

Furthermore, the Water and Sanitation Sector recognized the direct impact and role it can play in the fight against HIV/AIDS and the potential towards improving the lives of people (GoZ, 2003: 9). In collaboration with NGOs and the private sector, water and sanitation sector has developed a multi-sectoral (Government department, private and NGOs) approach with community management and development at the core (Government of Zimbabwe, 2003: 13). The primary goal is to improve health conditions and the quality of life for the poor and underserved population. The aim is to promote integrated approach in the provision of sanitation.

The Integrated Rural Water Supply and Sanitation Projects (IRWSSP) in Zimbabwe has been on going since the mid 1980s in response to the recommendations of the National Master Plan 1985. Since then, Zimbabwe's rural sanitation coverage rose from 7% in 1985 to 39% in 2001(GoZ, 2003:9). Despite the progress made by IRWSSP since 1980s, in 1991 Zimbabwe was forced to implement an Economic Structural Adjustment Programme (ESAP) which involved restricting government expenditure (Human Development Report, 2006:5). Due to the (ESAP), the government of Zimbabwe had to rely on external support to carry out some of its functions (Robison, 2002:8). Given that international and national NGOs are a major aid route for external and donor support, the government of Zimbabwe had to work closely with NGOs. For example, through collaboration with the government of Zimbabwe, national NGOs such as ZimAHEAD and Mvuramanzi Trust have provided support to communities in need of water and sanitation (Human Development Report, 2006:11).

Whilst IRWSSP has played a vital role in sanitation and development in Zimbabwe, the IRWSS was not able to meet many of the sanitation demands because of limited funds, rising material costs and shortages of foreign currency needed for importation of non-domestic products such as cements (Robison, 2002:9). More importantly, as Robison

(2002) argued, in Zimbabwe, the sanitation component has achieved only a fraction of the planned coverage and has not had the expected health benefits. This places Zimbabwe amongst countries that are in need of effective and innovative sanitation technologies and approaches.

2.9 UD in Zimbabwe

Zimbabwe is the home of several important rural water supply and sanitation (RWSS) technologies, including the Bush Pump, the Upgraded Family Well and the Blair (or VIP) Latrine (Morgan cited in Robison, 2002:3). With regards to UD, referring to Esrey et al (2001:21), Urine Diversion as an ecological sanitation approach was introduced in Zimbabwe several years ago and is based on the following premises:

- Providing a means of removing human excreta safely and simply from the toilet
- Preparing human excreta for use in agriculture by encouraging the formation of humus
- Reducing the polluting of groundwater and atmosphere as much as possible.

Mvuramanzi Trust is a Zimbabwean NGO involved with water and sanitation in rural and urban areas and it is highly involved in the promotion of UD in the country. Austin et al (2005; chapter 4) noted that in a case study on ecological sanitation in Harare, the main challenge was to engage the beneficiaries throughout the process in order to ensure the acceptance of urine-diversion technology.

2.8 Theoretical Framework: Community Development Theory

Embedded in this study is the recognition that provision of sanitation to the poor requires more than sanitation technologies but also a developmental approach. While various reviewed approaches have attempted to understand the magnitude of the sanitation problem, in this study the community development framework is used to identify principles and processes fundamental in provision of sanitation to the poor. The process principles of community development are useful in examining and explaining the process of sanitation delivery to the poor.

As mentioned earlier, the implementation of UD in South Africa and Zimbabwe has tremendous potential in terms of addressing sanitation backlogs. However the process needs to be community driven and developmental if it is to be effective. Community development approach in the provision of sanitation has a potential to function as a tool for poverty alleviation both in Zimbabwe and South Africa.

In South Africa attempts have been made by the government and water sector to use the community development approach in service delivery. Yet, according to Onabolu and Ndlovu (2006) while the community based sanitation delivery approach has become the leading concept for effective sanitation intervention implementation, in South Africa, it has had challenges, leading to limited achievements in large scale sustainable systems.

Similarly, the Zimbabwean water and sanitation sector has made considerable efforts towards the community based sanitation delivery approach, through the promotion of community participation in sanitation programmes. However as Auret (1990:64) stated, in reality the mass of the population who are the major consumers of the health services in Zimbabwe, have limited influence or power over decisions made with regards to the services.

In response to these realities, this research identifies a framework through which community development can best be applied to sanitation delivery approach. It highlights

some of the challenges faced by development agents in promoting local participation and community development in sanitation delivery.

2.9 Community development process principles

Community development, in essence, is the process of improving the livelihoods of the people. For Roberts, (1979:34) an important feature of community development is its assertion that an individual must take responsibility, that he/she is an important and capable partner in the shaping of his/her life and the life of the society he/she lives in. Thus community development supports and promotes capacity for and a process of learning. According to Homan (1999:37) fundamental to community development is the belief that members have the primary responsibility for decision making and action.

While the process principles are an essential driving force in community development, it is equally important that these principles do not become a '*one size fit all*' instruction. Each situation calls for a process that perceives the importance of community development principles, and can be applied within specific local contexts (Ife, 2002:216). The process principles perspective is fundamental in any development work or intervention. Primarily, this is because the process principles perspective looks not only on the outcome of development but the process of development. More importantly process principles are derived from the need for projects to become ecological, social and economically sustainable. Hence process principles provide a useful framework for examining the sanitation programmes.

Ife (2002:218) argued that not only is the process in community development more important than the outcome, in a very real sense it is the outcome; the aim after all is to establish viable community processes. Thus the process of community development cannot be seen as just the end or the means but rather the relations and combined processes of means and end. The process principles are useful in examining sanitation programmes because these principles ensure integrity of the process, so that the process does not contradict with human rights, ecological sustainability and so on.

Therefore the central aspect of the process principle is that the entire process must be owned by the community itself, so that it is a bottom-up approach that encourages learning and self-awareness. Community development theory is similar to the local collective action model⁷. However the collective action model provides little room for greater understanding of how local conditions can be linked to broader socio-economic and political issues. As a result sanitation does not form part of other social issues such as poverty, unemployment and so on.

The challenge to design development interventions, whereby that the local people act together, to benefit and to further improve their living conditions is enormous. This suggests viewing sanitation projects in terms of a system, whereby each element is essential to the system as a whole. What is essential is how the principles of community development are applied throughout the intervention in order to achieve an empowering and developing approach. Community development must maximize participation, with the aim for individuals to be actively involved in the processes and activities; it is therefore an important part of empowerment and consciousness raising (Ife, 2002:219).

The process principles are consequently against the idea of development agents planning for the people. If community development is to be successful, the approach to development needs to encourage community participation. This means that the approach should value the local, allow participation in decision making and implementation as well as facilitating empowerment. Community development should not be about fast and quick fixes, as they have a potential to put both the community and development agents under pressure. Korten (1980:172) argues that excessive pressures for immediate results, drive out attention to institution building and make it difficult to move beyond a relief welfare approach to poverty; for example, the distribution of food is a lot faster than teaching people how to grow it.

⁷ With the collective action model residents organize, decide what sort of sanitary improvements are necessary, determine how they are to be achieved and bring their implementation (McGraham, et al, 2001)

The major criticism that has been placed on the process of community development is that it treats people as homogenous. According to Burkey (1993:43), many community development projects seem to have been trapped in their own nomenclature; since we are carrying out a community project, we have to treat the village as a whole entity. However the key issue should be to appreciate the differences within the community, that people are not the same and may not have the same interests.

Participation

The term 'participation' is beset by development controversy. For some it is closely linked to involvement of local people in development projects and acts as an indicator for development and progress. Burkey (1993:56) for example, perceives participation as an essential part of human growth- that it is the development of self confidence and pride. He argues that without such development within the people, all efforts to alleviate their poverty will be immensely more difficult, if not impossible. In this view, participation includes and has to do with people taking control of their lives. However, Shah and Guijt (1998:129) argue that despite the stated intentions of social inclusion, it has become clear that many participatory development initiatives do not deal well with the complexity of community differences, including age, economic, religious, and ethnic and in particular, gender.

The key issue is that in participatory development, people will take part in different ways, meaning that people will not participate in the same manner. Thus development agents and service providers need to adopt strategies that enable local processes to occur while people are still participating. Different people have different skills and interests; good community work will provide the broadest possible range of participatory activity and will legitimize equally all people who are actively involved (Ife, 2002:220).

For Roodt in Coetzee et al (2001:469) participation means "people involving themselves to a greater or lesser degree in organizations indirectly or directly concerned with the decision-making about and implementation of development". In this way participation becomes more than just involving people, it is about people making decisions and taking

ownership of their own problems. From this perspective participation becomes an initiative of the people to partake in decisions that affect their lives. It is therefore about the shift in the power relations, where participants take power to control the development process.

Indeed, participation is a jargon word, separate from any context, and has been manipulated by vastly different groups of people to mean entirely different things (Coetzee et al, 2001: 470). Besides the difficulty in defining participation there are various conceptions with regards to participation, showing that participation is context specific and should be understood in that manner.

For instance, Davids et al (2005:10) cite seven typologies to public participation as follows:

- **Passive participation-** people participating by being told what is going to happen.
- **Participation in information giving-** participate in answering questions, such as interviews and questionnaires.
- **Participation by consultation-** people participate by consultation but do not participate in decision making
- **Participation for material incentives-** people participating by providing resources so as to get cash or food
- **Functional participation-** people participating in a group context to meet predetermined objectives related to the project.
- **Interactive participation-** people participating in a joint analysis, the development of action plans and capacity building
- **Self-mobilization-** people participate by taking initiatives independent of external institutions to change systems.

The above typologies demonstrate different levels that development processes can adopt; however not all the typologies can be empowering and developmental. In the context of this research, interactive participation that has the potential to develop to self-mobilization is critical for the effectiveness of the sanitation projects. This is because only when participation is interactive and transformational can the process of development occur. It is interesting to note how different institutions such as (governments, private sector, NGOs, international institutions and development agencies), advocate for more inclusive and participatory methods in development, and yet

they all have different agendas. Nevertheless, the question of how to ensure maximum participation for the benefit of the community still remains vague.

In attempting to clarify the nature of participation, Moser (1983: 3) makes an important distinction between participation as-a-means and participation -as-an-end. Participation as-a-means is gauged by the outputs of the process; hence it involves organizing people with the intention of achieving desired outcomes. Supporters of participation as-a-means, argue that participation can be used as tool for the effectiveness of a project. This can equally be government directed and top down to achieve specific development objectives, or bottom up to obtain a larger immediate share of resources (Moser, 1983:3).

On the contrary, participation-as-an-end is measurable in terms of the transfer of power. It is this form of participation that facilitates the process of community empowerment. Participation as-an-end focuses on consciousness raising, democracy and empowerment, rather than just the effectiveness and efficiency of the project. What is essential in participatory development is that people will take part in different ways, meaning that people will not participate in the same manner. For example, in a project men may participate differently from men depending on the roles and responsibilities of each group. As such, development intervention should take into account such differences within the community.

Chambers (1994) also makes reference to the significance of local knowledge in participatory development, showing that Participatory Rural Appraisal (PRA) methods, such as participatory mapping and matrix scoring not only provides fascinating and useful information and insight but local people controlled the project. He argued that the PRA entails requesting local people to be teachers while outsiders become students. To community development practitioners, and many development agents, PRA poses a challenge, in that they need to acknowledge that community members have valuable information to contribute, and that there is a need for dialogue to draw in the insights of all those who are concerned (Hope and Timmel, 1996:17). Valuing local knowledge implies that, community development worker should not assume that she/ he is the only

one with the expertise. Hence the role of a community development worker is to value local knowledge, s/he should also understand that there are norms and traditions among communities, valuing the traditions will not only gain one respect but also allow freedom within the community. Respect is important in the process of development as it brings people together and builds the spirit of belonging to the group.

Another contribution of Chambers' PRA praxis is the focus on behavior and attitudes of outsiders. For Chambers (1994:129), outsiders had to sit down or hand over the stick and allow local people to express their own knowledge. It is at this stage that the community is able to critically reflect on what they are doing. It is essential to note the value of this reflection-action cycle, which also characterizes Freire's work. Thus the role of community development worker is to create a setting in which the community can be able to identify skills or resources needed in order to act. The cycle of reflection-action (praxis) is vital in the process of transformation. It is also through this praxis that people become aware of their situations and start to question existing knowledge. The use of praxis in sanitation projects can also encourage and promote community control. It is when the community is in control that the process of learning through doing and acting can occur.

The PRA approach is similar to problem posing approach which Freire argues that it offers a search for knowledge. The implication for community development workers is to become a problem poser not problem solver. The problem poser asks thought provoking questions and encourages students to ask questions (Shor quoted in Freire). Thus from Freire's perspective, education is related to the process of critical consciousness, meaning it cannot exist outside the praxis. Therefore problem posing education raises questions; participants are active, analyzing, suggesting, deciding and planning. It is this kind of change in behavior and attitudes that Chambers refers to as critical in PRA.

The third basic component of PRA in the process of empowerment and community development is that of 'sharing'. Chambers puts emphasis on the significance of sharing, whereby local people share their knowledge and experiences. Using the PRA approach

outsiders are encouraged not to own ideas or methods but to share their experiences with other people (Chambers, 1994:130).

However it is the very issue of sharing that creates wrong impression for community development workers. The idea that an educator should not impose their ideas on the community and that community development worker should value local knowledge and culture can become rather challenging. It is challenging, in the sense that for community development worker, sharing her/his ideas with the community is also vital in creating and encouraging critical learning. Managing sanitation projects along the path of community development is challenging and in some cases a contradicting task. Many approaches fall short due to misconception of the community development processes principles particularly the principle of participation. This research attempts to clarify such principles that can be useful in the provision of sanitation services.

Critical learning can be affected if this opportunity of sharing and exploring is missed and misinterpreted. For example Von Kozte, (1998:158) pointed out that; “instead of working towards a greater, deeper, broader understanding of how local conditions are linked to national and global issues, how people forge a relationship with and from nature in order to establish sustainable livelihoods we stopped at ‘sharing’ moment”. In other words, because of the idea of allowing local people to share their experiences, they (outsiders) failed to facilitate critical learning. This is because they did not encourage dialogue, whereby development workers could help to problematise the situation to the community. Thus, important information was left unexplored. It could also be argued that it was because of trying to be *neutral* that led to failure in critical learning. However, Horton (1990;104) asserts that “ a teacher has the responsibility to put whatever s/he is teaching in a social context relating, it to society not just acting as if it had nothing to do with the people, with humanity, because it does”. Service providers need to help community members link their personal problems with the wider social and political issues.

Being neutral affected the service provider's ability to share information with the community and thus failing to create new knowledge. It is therefore critical for community development practitioners to create a situation where dialogue and sharing of ideas, experiences and knowledge among the people and then with the outsiders with the intentions of being problem posers not problem solvers. In dialogue with the learners the educator asks questions and encourages asking questions; the questions are designed to stimulate, to identify and clarify new and more interesting questions to be asked (Newman, 1993:225). Thus opportunities for learning are expressed and explored, with an understanding that the community development worker should respect and value the community.

However, the role of community development practitioners is not to separate themselves from the dialogue. What is important is that outsiders should be able to create a situation where local people can learn by posing questions that encourages questioning existing structures. Therefore good performance would come then not from external quality control but from internal quality assurance, and through personal critical awareness trying to do better (Chambers; 1994:133). Whilst it is essential that a distinction is made between participation as-a-means and an end, an important focus should rather be on the dynamic and processes through which participation as a means has the capacity to develop into participation as an end (Moser, 1983: 84).

Empowerment

The principle of empowerment has customarily been treated by many, such as politicians, economists and development agents, with a degree of reverence; that it is significant in improving the standards and livelihood of the marginalized. It is therefore not surprising that the literature from different sources is littered with proclamations that empowerment enables some form of freedom and progress, as well as development.

Ife (2002:208), regards empowerment as providing people with resources, opportunities, vocabulary, knowledge and skills to increase their capacity to determine their own future and to participate in and affect life of their community. In his view empowerment is a

form of radical change, which should overturn existing structures and discourses of domination. Homan (1999) argues that it is important to increase individual skills, such as media relations, fundraising, group meetings, computer skills and a host of other important skills, to increase the confidence in addressing future situations with competence.

The principle of empowerment implies that participation is necessary so that people can learn and interact with others, thus changing and shifting relationships. But empowerment is more than just empowerment of individuals; Price (cited in Rowlands 1997: 17) also argued that “empowerment also moves beyond (personal change and growth) to increasing participation in the broader field of politics and needs-identification”.

This form of power Rowlands referred to as ‘power with’. ‘Power with’ is a sense of a whole being greater than the sum of the individuals, especially when the group tackles problems together (Rowlands, 1997; 13). However, it is vital to note that this form of power can only be possible if there is ‘power to’. This form of empowerment is therefore important as it enables relationships between individuals and groups to form and grow. Rowlands (1997:17) stated that empowerment can take place on a small scale, linking people with others in similar situations through self-help, education, support, or social action groups and network building; or on large scale community organizations, campaigning legislative lobbying, social planning and policy development.

This perspective is supported by authors such as Paulo Freire, on his theory of ‘the pedagogy of the oppressed’. Freire (1972; 22) argued that it is only when the oppressed discover themselves to be the host of the oppressor that they can contribute to their liberating pedagogy. The marginalized or the poor need to personally take power in their hands and challenge oppressing structures and systems.

Rowlands (1997:12) also supported this by saying “if power can be bestowed, it can just as easily be withdrawn; empowerment as a gift does not involve structural change in

power relations". Rowlands highlighted the importance of structural change and shift in power relations where oppressive structures are dismantled by the oppressed. Another standard argument of the shifts in power relations is that it is only when these shifts occur that the poor are able to change the oppressing structures.

Using this model, empowerment starts from an examination of how power is present in multiple and heterogeneous social relations. In these social relations, individuals are simultaneously undergoing and exercising power, through which they constitute their subjectivity and participate in each others oppression (Hartsock, quoted in Nelson and Wright, 2000:8). It is shifts in power relations that indicate whether people are empowered or not. It is not surprising that this is also Freire's central argument in the pedagogy of the oppressed. He makes an important note that development or learning must be forged *with* and not *for*, the oppressed. This implies that community development workers should not force change, or force people to develop but should create situations and conditions where people will take power and control over their lives.

The key issue is that the powerless not only become aware of the power relations but they need to develop ways in which they can control their own lives. It is through this awareness that an individual is able to have 'power to' and ability to sort alternative ways on ending 'power over'. It therefore becomes much easier for individuals to collectively form groups in order to address their needs. For an empowerment approach to development to be successfully implemented, changes are needed in the abilities of individuals and groups to identify and meet their own needs, as households, communities, organizations, institutions and societies (Rowlands, 1997:26).

This leads to consciousness raising, whereby individuals are able to link their personal life and the political, thus community members would need to be allowed to express their feelings and perceptions. Ife (2002) said that there should be a dialogical relationship where the focus is learning. In this way community members also have an opportunity to share their experiences as well as their problems among themselves. This is also encourages 'power with' among community members.

2.10 Conclusion

The first section of this chapter reviewed several studies regarding UD and the challenge in implementing sanitation projects. By discussing the key challenges in provision of sanitation, the chapter has attempted to show that the question is not whether there are enough or adequate sanitation facilities, but rather how sanitation projects are implemented. The problem lies with the implementation of the projects and projects that do not integrate the technology and the social aspects of sanitation. Nevertheless, the chapter has also highlighted and referred to various authors on “dry sanitation system” giving a clear picture of how UD can be used to combat some of the environmental and social problems associated with sanitation facilities.

The community development theories and principles were used not only to guide the study but show the trends and the relationships in the manner in which these principles can be applied in development projects. This gave some insight to some of the debates regarding community development projects. The purpose was to assess and to determine fundamental community development principles in the provision of sanitation to the poor. In order to analyze the process of sanitation delivery; planning and implementation of each project, assumptions and propositions drawn from community development were used.

Chapter 3: Research design and methodology

3.1 Introduction

While the manner in which the research proceeds depends on many factors, research methodology is the most important one (Sarantakos, 2005:133). This is because the quality of the research mostly rests on the precision of the methods used. This chapter looks at the approach used in this study. This study assumes a qualitative stance in investigating the application of principles and processes informing the provision of sanitation to the poor. Qualitative approach permitted exploration of principles fundamental in the delivery of sanitation and processes that enhance community development.

Therefore, this chapter outlines how the research was conducted in order to gather information to answer the research question. The chapter is divided into four parts; the first part gives the research design. The research design looks at the approach and how the research was conducted. The second part covers the data collection methods, it involves discussion on the choices of methods such as case study, pilot study and interviews.

The third part consists of population and sampling. This section looks at the way in which the key informants were selected. The last part summarizes the methods of data analysis; it looks at methods that were followed in assigning meaning and formulating theories from data. The section takes the reader through the journey that the researcher encountered in the field and when analyzing data. It is important to include this chapter in the thesis as it offers order and clarity in the way in which the study was conducted.

3.2 Research design

A qualitative study focused on in-depth understanding of sanitation was used to collect data. White (2000:25) pointed out that, using this approach, data is collected in the form of descriptions, even though some of the methods used such as interviews are also used in quantitative research, the difference is that qualitative researchers only use non statistical procedures when interpreting and explaining their research. The rationale for using a qualitative study was that poor sanitation, a notion of central importance in this study, is a private and health issue, thus requiring an in-depth study.

The specific objective of the study was to determine community development approach in the provision of sanitation. The strategy involved comparing data collected from two separate and distinct locations. The intention was that information resulting from the comparison of these two would highlight the principles of community development fundamental in the success of projects.

In addition, the essential goals of sanitation improvements are extremely subjective and personal, requiring more than a description or hypothesis testing. For instance, Krishna (cited in Kerr, 1990) pointed out that after reviewing 50 studies he found that many studies which claim to show an improvement in sanitation were unreliable and incomplete. One of the reasons was that people are embarrassed or afraid to admit having diarrhea and many illnesses. As a result a qualitative research on sanitation is limited. Thus this study is exploratory as it examines the process of sanitation delivery. According to Sekaran (2003:119) “exploratory studies are undertaken to better comprehend the nature of the problem since very few studies might have been conducted in that area”. In order to explore the concept of sanitation in rural communities, a case study method was used to collect data.

3.3 Case study method

In this study people's perceptions about their own sanitation problem and the wider social problems were essential. The assumption was that local people understand the problems they face; as a result they can provide richer information. Case study research allowed for interaction between the researcher and the informants. Sarandakos (2005:216) stated that case studies employ methods that encourage familiarity, thus allowing in-depth research and focus on direct and verifiable life experiences. For the purpose of this study, familiarity was extremely important as it allowed trustworthy and openness for people to discuss personal and health issues surrounding sanitation.

Case studies are usually qualitative in nature and aim to provide an in-depth description of a small number of cases (Mouton, 2001:149). According to (Yin 1991 cited in Sarandakos 2005:211) "a case study is an empirical inquiry that investigates a contemporary phenomenon with its real life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources are used".

Another important component that the case study method provided for this research was that, the research occurred in natural scenery. Natural scenery provides the research with a '*reality*' which is often absent from surveys and similar types of situation (White, 2000:42). Nevertheless, it is important to note that case study approach has been criticized that it cannot be replicated nor the result be generalized. For example Mouton (2001:150) emphasized that one of the limitations of case studies is that they lack generalization of results and that data collection can be time consuming.

Criteria for selecting case studies

In selecting the cases to study the following criteria were used;

The communities were to be located in Zimbabwe and South Africa- The focus of this research rests upon the comparison of the manner in which UD sanitation system was introduced and implemented in Zimbabwe and South Africa. As mentioned in the earlier chapters, Zimbabwe and South Africa share similar historical experiences and the sanitation backlog in both these countries is largely influenced by the injustices of the past racial discriminations. For the purpose of this study one case had to be located in Zimbabwe and the other in South Africa.

Communities were to be situated outside urban areas- This condition signified the need for the community at hand to be rural. The reason behind was that most people in urban areas used flush toilets than pit latrines. This study focuses on UD, a sanitation that is normally suitable for people who are unable to afford a waterborne sanitation system.

There should be a completed activity or intervention regarding UD sanitation system- In order to compare the two projects it was important that the research focused on completed projects rather than projects that had not been completed. The lessons learnt from these projects played an important role in the analysis of this thesis.

3.4 Source of Data

3.4.1 Secondary Data

According to Sekaran, (2003:59) secondary data is information that already exists and does not have to be collected by the researcher. In the study, secondary data was obtained through the review of vast literature of community development and sanitation. Academic books, government reports and publications, annual reports and project records were all used to gather secondary data. Information collected from secondary sources was

important in identifying similar trends from other cases. Mouton (2001:164) insists that one of the advantages of secondary data analysis is that it forces one to be explicit about the assumptions and theory that underlie the data. Most of this information was collected before the fieldwork was conducted and was used for data analysis to compare the case of Chihota (Zimbabwe) with Mnini (Durban). The intention of the comparison was to identify similarities and the differences in the approaches, principles and processes used.

3.5 Pilot Study

Besides the data collected from the interviews, a great deal of this research draws upon the experience gained by the researcher from a pilot study. A pilot study is a small-scale replica and a rehearsal of the main study (Sarantakos, 2005:256). This type of study was conducted in November 2006 as part of my Honours degree in community and development studies. The pilot study was conducted in Bhekulwandle in Amanzimtoti, about 17 Km south of Durban in KwaZulu Natal. Only 8 community members and 2 project managers (eThekweni municipality) were selected and interviewed. The respondents were selected on the basis of the availability and also purposive sampling. The objectives of the pilot study were to:

- Examine the nature and the degree of participation in the eThekweni UD sanitation project
- To evaluate eThekweni municipality model for UD sanitation project
- To analyze the extent to which participation affect the outcomes of the project.

The pilot served an important goal in this study as it offered the researcher an opportunity to become familiar with the research environment. Contacts and relationships were formed with the eThekweni municipality, major organizations and people involved in the Urine Diversion sanitation system in Durban. Piloting also ensures that research questions are clear to understand and helps identify ambiguity (White, 2000:31). This was particularly important in the main research, because the study focused on two different areas. The research questions had to incorporate the differences in the two communities and organizations, and yet be clear and easy to understand. The researcher

benefited from the pilot study by identifying issues that needed clarity and more focus. This helped to boost her confidence in conducting the interviews particularly in Zimbabwe a country that is foreign to the researcher.

3.6 Fieldwork

Fieldwork for this research consisted of two phases. Phase 1 involved a trip to Zimbabwe (from 26 June 2007- 04 July 2007), in which interviews with Mvuramanzi Trust officials and Chihota community members were conducted. During this visit, focus group sessions were also conducted with the students from local secondary school (Materera) and some elders in the Chihota old age home.

The rationale behind using the focus group was to identify the common traits, and belief systems that may allow insight into the research. The focus group mainly consisted of Grade 12 students aged 15-18. The reason was that students below that age would not be able to respond and engage in the discussions, and might have felt intimidated by the older peers. The primary goal of the discussion was to identify some of the advantages and challenges that UD toilet users face.

Initially the researcher had no intentions of conducting focus group sessions; however after noticing that the Mvuramanzi Trust had implemented the UD sanitation system not only in the household but at communal setting (school) around the same area of investigation, I felt a need to get more data regarding the attitude and belief systems of the people. Data collected in the focus group sessions was also used to confirm the finding from general themes for data analysis. With focus group sessions the 'quality' of response is important, and the purpose is to detect directions of behavior rather than magnitude (Folch-Lyon and Trost, 1981: 445). Thus, despite the fact that these sessions were not the primary source of information for this research, data collected from the session was used to expose and affirm the underlying attitudes and opinions about UD and sanitation issues in Chihota.

Phase 2 of the fieldwork was in Durban, South Africa (from 31 August 2007 to 17 September 2007). During this phase, interviews were conducted with the eThekweni Water Services officials, the community caretakers and the Mnini community members. Furthermore essential contacts were established with different people involved with UD in Durban. Such people included Professor Buckley (from the engineering department in UKZN) and Dr. Wilson (from Development Studies in UKZN). Both Professor Buckley and Dr. Wilson are currently working with the eThekweni municipality on UD sanitation system. The interviews with the two lecturers revealed important areas on which the review of literature for this study needed to focus.

3.7 Primary data

The primary data for this study was collected through semi-structured and in-depth interviews. Interviewing is similar to investigating, since it also involves making careful study of something to discover the facts about it or to make a systematic search or to examination. There are no simple guidelines that one has to follow in an interview. This is simply because the best way to interview depends on many variables. Dexter (1970:25) argues that: “the most nearly universal rule for elite and specialized interviewing is that the best way to interview in a concrete situation depends upon the situation, including the skills and personalities of the interviewer”.

The interviews took place in Durban (eThekweni Water and Services offices and at Mnini community) and in Zimbabwe (Mvuramanzi Trust and Chihota community). Community interviews were conducted in English except in two cases where they were in isiZulu. An interpreter helped with the translation as the researcher was not fluent in isiZulu. An interpreter was also used in Zimbabwe in three cases where the respondents did not understand English. The interviews were in the form of face-to face interviews. The advantage of face-to-face work is that the researcher can also pick up non-verbal respondents; this can be detected through nervous tapping and other body language unconsciously exhibited by the interviewee (Sekaran, 2003:233).

3.8 Data collection techniques

3.8.1 Interview structure

Since the research progressed from an understanding that issues involved in the provision of sanitation to the poor are inevitably challenging, and because this study aimed to discover how to address the conditions inherent in the provision of sanitation, the purpose of the interview questions was two-fold. Firstly, most of the people interviewed were directly involved in the running of the project and had an influence in policies and direction of the project. Most of the people in this category were the organization founders, organization directors, project managers, fieldworkers or caretakers. Secondly, several of the people interviewed were part of the community members, and were closely involved with the project, those included, the beneficiaries, target groups and project steering committee members. As such different interview questions were designed for different stakeholders to help gain deeper and detailed information regarding the feelings and thoughts of the informants.

3.8.2 Respondents

For the purpose of gaining broader information, different questions were designed for different stakeholders. The different stakeholders were selected due to the major role they played in the project. These stakeholders were, eThekweni municipality and Mvuramanzi Trust, Chihota and Mnini community members, Project steering committee members and community facilitators. Separate semi-structured interview questions were used for data collection. According to Bernard and Russell (1994:209) semi-structured interviewing is based on the use of an interview guide which may be a list of written questions and topics that need to be covered.

The study focused on the following stakeholders:

- eThekweni Water and Services department and Mvuramanzi Trust - the objective was to investigate the project objectives and the processes that were followed during the entire project cycle. Another important aspect of the interviews was to

find out about the successes and challenges encountered in provision of UD system to the communities.

- Community members (beneficiaries, both in Chihota and Mnini) - for the beneficiaries, the aim of the interviews was to find out the opinions and experiences of community members of the UD technology, as well as the perceptions on the processes and principles that were followed in the project and the role they played in the project.
- Project Steering committee - the aim was to establish the role that PSC members played in various stage of project cycle and their experiences and perceptions of sanitation project.
- Community facilitators - questioning the facilitators was meant to reveal the assumptions that the facilitators had before the training, the opinions on UD, sanitation and problems encountered on facilitating the project.

3.9 Sampling Procedures

3.9.1 Sampling Method

Sampling is a way of finding information about a particular population by only examining a smaller portion of that group. In this way if the sampling is conducted correctly, the results will be representative of the group as a whole. According to Bless and Higson-Smith (1995: 86) gathering data on a sample is less time-consuming and less costly and is a practical way to collect data when the population is vast or extremely large.

Since the study was exploratory, sampling methods that were used were availability and purposive sampling. Respondents were selected on the basis of their involvement in the Urine Diversion sanitation project. All the respondents were therefore, organization founders, managers and stakeholders in the projects.

In addition, availability sampling method was selected based on the principle that it was the quickest and efficient ways of getting information. Due to limited resources and time this sampling technique was helpful and efficient to the researcher. Availability or convenience sampling refers to the collection of information from the members of the population who are conveniently available to provide it (Sekaran, 2003:276).

3.9.2 Sample Size

A sample size of 20 community members (in each community) was interviewed. Only the heads of the families either male or female were allowed to be informants. The reason for this was that children would not be well set to respond to questions, as they would not have directly participated in the project. In both Chihota and Mnini, 10 of the 20 people were beneficiaries of the project. The other 5 people were the facilitators and the last 5 were members of PSC. For the eThekweni water and service and Mvuramanzi Trust 2 staff members were questioned. All together the sample size accounted 22 people in each project.

3.10 Interview Techniques

3.10.1. Unbiased Questions

The importance of asking unbiased questions is that they do not influence the answer from the respondents. Dexter (1970:55) claimed that: "a question which sharply defines a particular area is far more likely to result in omission of some vital data which the interviewer have not even thought of". Unbiased questions were therefore used to gain more information from the respondents. The technique became useful in encouraging people to express their feelings and attitudes.

3.10.2 Probing

Probing questions were used to get more information on particular issues raised by the informants. Probing techniques used were silent and long question probe. Silent probe

consists of remaining quiet and waiting for an informant to continue (Bernard and Russell, 1994:215). Silent probing may also include nodding that may encourage the informants to produce more information than direct questions because the interviewer does not interrupt the interview subject.

3.10.3 Taking notes

Notes were taken during the interviews, and were elaborated later after the interview. This ensured that the evaluation of the final results was informed by factual evidence. Because taking notes in an interview is time consuming short hand and abbreviations were used.

3.10.4 Record taping

Tapes are permanent record of primary information that can be archived and passed on to other researchers (Bernard and Russell, 1994: 222) hence a tape recorder was used in the interviews. In the case where the tape was used, permission was granted by the respondents to do so. The tapes made an important contribution during the analysis of the data, as information was readily available for the researcher.

3.11 Ethical requirements

Access to conduct interviews was sought through communicating with the Mvuramanzi Trust Director (Mr. Rwazemba) and UD project manager in eThekweni Water and Services (Mr. Sibiyi). A research proposal was mailed to Zimbabwe before the permission was granted. In both cases the first meeting involved a briefing about the objectives and purpose of the research. For Zimbabwe permission was granted on the basis that the researcher would provide her own resources, however accommodation was organized by HR manager for the researcher. Thereafter, the researcher was granted permission by informants before each interview took place.

Information collected and given by the respondents was treated confidentially and where necessary the names of the respondents were disguised. A consent form was signed by all the informants, where the purpose and the nature of the study were clearly explained to the respondents before filling the form. The respondents were also told that taking part in

the study was completely voluntary and if at any time they felt uncomfortable to continue for any reason whatsoever they were free to withdraw from the study at any stage and if they decided not to take part that would not affect them in any way. The consent forms explaining the nature of the research and ethical consideration were signed by the respondent in agreement with the contents of the form. The forms served as a legal document binding the researcher to the details of the forms. A copy of the consent form is provided in the appendix.

3.12 Data Analysis

Data was collected and presented in the form of interview notes. Thereafter each interview script was carefully typed and prepared for analysis. Data analysis is about understanding the topic that is under investigation or study. Qualitative research produces large volumes of data in non-standard format; this poses a challenge in terms of how to interpret the data (Denscombe, 2003:270). Therefore data analysis is about interpretation of what one has learnt during the study. Data analysis is about developing propositions, statements of fact inductively derived from a rigorous and systematic analysis of data (Maykut and Morehouse, 1994). Mouton (2001:108) shares the same sentiments; that analysis involves breaking up the data into manageable themes, patterns, trends and relationships. For this study data was analyzed using a constant comparative method.

Constant comparative method involves putting all data in similar pages or cards for coding. When preparing data for analysis it is vital to code each page, the code can be used to mark the data cards. Data pages come from one or more sources such as interview transcripts, and it is important to maintain an easy way of identifying these various source (Maykut and Morehouse). Coding data involves breaking the data down into units and categorizing those units (Denscombe, 2003:270). When all the data pages are coded to their source and photocopy completed, the photocopies can be divided into 'chunks of meaning' for analysis. The search for meaning is important and can be obtained by identifying the smaller units of meaning in the data which will be used as a basis for defining larger categories.

Data analysis using constant comparative method provided an understanding of commonalities and relationships between data. This method was particularly useful since data collected was in the form of narrative and stories, informed by local people. When revisiting the filed notes, transcripts or text the researcher should be in the lookout for themes or interconnections that recur between units and categories that are emerging (Denscombe, 2003:272).

3.13 Validity

Validity refers to the extent to which a claim or conclusion is based on sound logic (Dane 1990:34). To Sarantakos (2005:83) validity is a measure of precision, accuracy and relevance and it offers a guarantee to the researcher's work. It therefore refers to the degree to which the research tool is measuring what is intended to be measured. For the purpose of this study, validity was explained in terms of content validity. This means that the procedures focused on the type of information collected.

According to Sekaran (2003:206) content validity ensures that the measure includes an adequate and representative set of items that tap into the concept. However the case study approach as predictable provides poor basis for representation and scientific generalization. Nevertheless, setting this limitation of scope is essential to ensure the analysis was detail enough to provide some insights to the issue addressed.

In addition content validity was fundamentally projected from the review of the literature on sanitation and in the course of discussion with experts (Professor Buckley, Dr. Wilson and Dr. Morgan). These academics were extremely helpful as they are experts in UD sanitation field, particularly Dr. Morgan who has published numerous books and articles on UD and Sanitation in the African context. It was after the researcher had critically reviewed the literature, that researched questions were constructed to cover the relevant and known content represented in the literature.

3.14 Conclusion

This chapter has attempted to draw on the research process and approach that was followed in collecting data for the study. In order to gain understanding of people's perceptions on the issue of sanitation and the attitudes towards Urine Diversion sanitation system, qualitative research approach was used. This method enabled the researcher to focus on the sanitation project processes and to strive to understand the underlying principles fundamental to enhance community development in sanitation projects.

Case studies method was used, this involved in depth interviewees with the respondents. Conducting the interviews both in Zimbabwe and South Africa, required brief yet in depth semi structured interviews. This was mostly because of the difference in the cases and the natural setting in which the research was conducted. As a result the interview schedules were categorized in terms of the role the individuals played in the projects.

This chapter has presented the research process from the introductory stage of research design, methods of data collection and data analysis. Furthermore, the methodology chapter has organized the foundation for the next chapter, the comparative case studies chapter. The comparative case studies chapter presents the sanitation projects, the history of Urine Diversion sanitation system in Zimbabwe and South Africa. It also looks at the manner and the approach in which these projects were implements in the communities.

Chapter 4 Findings and Discussion

4.1 Introduction

The result presented in this chapter aim to address the primary purpose of this study, which was to identify fundamental principles and processes in the provision of sanitation to the poor. Themes that frequently emerged throughout the interviews were selected and discussed in this chapter.

The findings of the research trace the failure of sanitation projects to the ineffective planning and implementation strategies. Given the profound need of development work in sanitation services, the chapter looks at the planning and implementation strategies adopted by the two cases studies.

Categories used to present these results are derived from the conceptual framework which guided this study, as well as the concepts extracted from the literature review and theoretical framework. For each case study, the results are provided under two main subtitles; the planning process and the implementation process. The last section of this chapter illustrates similarities and differences between the cases with regard to planning, implementation and the processes that were employed in each project.

4.2 Case study A: Chihota- Zimbabwe

4.2.1 Background of Chihota Sanitation Project

The data revealed that Urine Diversion sanitation project in Chihota was implemented by Mvuramanzi Trust, a non-governmental organization established in 1993. The main goal of Mvuramanzi is to contribute to the development and growth of the rural and peri-urban areas in Zimbabwe by providing technical support, training, education and consultancy services in the sustainable use of water resources, sanitation facilities and related social services. As a member of the Water Supply and Sanitation Emergency Relief Working Group, the organization's main areas of focus are water and sanitation projects. The organization has been targeting vulnerable members of the community since 1993 and the OVCs⁸ since 2001 improving access to water and sanitation (Mvuramanzi Annual Report: 2006:2). Mvuramanzi Trust is the leading water and sanitation organization in Zimbabwe, with its vision to continually strive to improve the standard of living in the rural areas of Zimbabwe. The Trust has also been working in partnership with the ministries of Health and Child Welfare, Local Government, UNICEF, Oxfam GB, USAID and the National Action Committee (Mvuramanzi Annual Report:2006:4).

4.2.2 Description of study area

The Zimbabwe case study was conducted in Chihota. Chihota is a rural communal area located in Marondera District found in Mashonaland East Province, Zimbabwe (refer to figure 1.3 for the map of Zimbabwe). It has nine wards, each with five to six villages. Chihota is relatively close (50-80km) to the city of Harare (Bellon et al, 1999:2).The people of Chihota are predominantly Shona. Stoneman (1981:1-2) noted that the Shona majority of the population (about 80%) have lived in Zimbabwe for at a least thousand and possibly sixteen hundred years.

There are very few economic opportunities for women and men in Chihota village, as the area is rural and has little industrial or business activity. The people living in Chihota are generally engaged in livestock farming as a means of living. It is a rural settlement that

⁸ OVCs stand for Orphans and Vulnerable Children

comprises of poorly structured houses, which makes the area looks economically disadvantaged.

The roads leading to Chihota are not tarred and there is neither electricity nor running water. It appears that the newly constructed UD systems are the only sanitation facilities and services to support the environment and public health. Chihota falls under Marondera, a district which was identified as one of the areas in need for emergency relief intervention in terms of water and sanitation (Mvuramanzi final report; 2006). Interviews were conducted in two of these wards, based on the availability of the participants.

Groundwater is the most important source of domestic water; it is drawn up at thousands of boreholes and wells throughout the country (Moyo et al, 1991:38). However, a great majority of Chihota members still have an inadequate water supply. Despite the lack of water and adequate sanitation, HIV/AIDS and food security are also major problems in Chihota. The AIDS pandemic has destroyed the societal resilience capacity and ability to cope with emergency and catastrophic situation and has worsened the threat of food security (Mvuramanzi: 2006:6).



Source: www.infoplease.com/atlas/country/zimbabwe.html

4.3 The Planning Process

4.3.1 Problem Identification and assessment

Data revealed that during the planning phase (Chihota), a Participatory Planning Process (PPP) strategy was used. The PPP strategy involved participatory workshops; the purposes of these workshops were to assess the nature of the emergency and extent of the vulnerability in order to map the appropriate mitigation measures to improve the water and sanitation situation in Chihota. It was a long process, involving meetings with the community and various stakeholders. The intention was to help community members understand the crisis and emergency situation they were in, so as to mobilize locally available resources that may be required to address the problem. The need for sanitation project was felt within the organization; derived from a situational analysis carried out by the organization. The major outcome of the situational analysis focused on water supplies, environmental sanitation, food security, unemployment and HIV/AIDS. From

the participatory analysis it became apparent that at least every household has been affected by the AIDS pandemic in one way or another. During this process the water and sanitation committee was elected, with the objective of steering the project.

The urine sanitation project was designed with the objective of providing vulnerable groups particularly children, with a sustainable sanitation technology. While the project was an emergency relief intervention, the aspect of development was very critical and central to the project. As stated in the Mvuramanzi UD final report (2006) the objectives of the project were as follows:

- To improve access to adequate safe water for domestic and productive uses for orphans and vulnerable people in the project districts.
- To improve access to appropriate sanitation facilities for OVCs and vulnerable community members
- To improve the food security situation of the vulnerable communities by encouraging the development of nutrition gardens and seedling supply centers
- To build the capacity of the vulnerable communities to cope with emergency disaster situations in future through training in water, sanitation and productive water management.

The following are some of the statements made by the respondents about the planning process:

“I did not really participate in the planning of the project. I mean there were lots of educated people, from the Mvuramanzi, and the government, they told us about the problems and how they were going to help us”.

“The workshops were really interesting; there were lots of issues that came up, about the situation in our community. I felt like the organization and the government really cared about us. They wanted to know what we thought and the kind of changes we wanted”

“Those people came with all the answers. They said we were going to be part of the planning process, but none of our ideas were taken into consideration. They had their plan worked out before the workshops”.

“You know, since the political and economic crisis, quite a number of people died, especially the breadwinners and the rest fled the country, so that is the cause of poverty. So for us to begin, and plan with the people from the government and the organization was very promising. During the workshops anyone would come and listen, and most of the people who came were survivors (elders, women and youth and few men). We discovered that there are many ways in which we can improve our lives”.

Involving the beneficiaries in the planning of the project may not be an easy task, simply because people have different expectations about the project. As such it is the responsibility of the service provider to ensure that people are empowered enough to want to participate and take control of the project from the beginning. For example it is important that people do not feel like the plan of action had been worked out for them before the start of the project.

4.3.2 Selection of technology

A number of factors emerged as significant in the selection of sanitation technology. The research findings indicated that the adopted level of sanitation service was Urine Diversion sanitation system. The choice of sanitation technology was proposed by the Mvuramanzi Trust in consultation with the communities involved. Given the range of sanitation systems, the UD system was chosen as a priority in Chihota. This was because in Chihota, the water table is very high. When the water table is high, using Blair Ventilated Improved Pit can easily contaminate ground water. This is very dangerous especially to people who use ground water and wells. Some of the reasons for selecting UD system included:

- Inadequate water supply
- In addition most VIPs systems easily collapse if the underground pit is not strong thus affecting the entire structure of the toilet.
- Finally, most of the residents in Chihota are active farmers; therefore the idea of ecological sanitation seemed advantageous for this particular community

Some of the respondents mentioned that in the beginning they did not understand the concept of ecological sanitation; however the Participatory Health and Hygiene Education (PHHE) and the Participatory Ecological Sanitation Hygiene Education (PESHE) helped residents to understand better. Respondents also mentioned that during these workshops, the organization explained why the UD system was recommended and chosen as appropriate for their community. However, some respondents felt that they should have been consulted about the choice of sanitation technology, before the decision was made. Note that respondents were not satisfied with the manner in which the technology was chosen; as such many had negative feelings towards UD even before it was implemented. The important issue is that people will only buy into the new idea when they understand about it and have been part of the decisions regarding the system.

4.4 Factors that informed the planning process in Chihota

The research indicated two factors within the organization that facilitated and influenced the process of planning. These were government policies and funding strategy.

4.4.1 Government policies

Government policies such as the National Master Plan released by the government of Zimbabwe in 1985, for Integrated Rural Water and Sanitation were seen as supporting participatory approach. One of the fundamental principles in the National Master Plan was that water supply and sanitation, health and hygiene education must be integrated in order to achieve the full health benefits of improvements in water supply and sanitation

facilities (GoZ, 2002). The following statement from Chihota UD project manger illustrates the role of policies in water and sanitation projects.

“One of the key points of the National Master Plan has been to promote decentralization of power, by allowing Rural District Council to assume responsibility for local services. As a result, the government has placed emphasis on demand responsive, participatory local provision. This document highlights the latest thinking on planning, implementation and management of Rural Water supply and Sanitation”.

With regards to the process planning in community development interventions and with reference to the government policies guiding development process in Zimbabwe, there is a clear emphasis on involving people decisions that affect them. This means that Mvuramanzi Trust has a legal responsibility to promote participatory development, rather than a top down planning.

4.4.2 Financial arrangements

The research revealed that financial support can assist in process of planning. The project Manager stated that participatory planning requires more funding than top-down planning, which may be challenging for a non-governmental organization such as Mvuramanzi. One of the challenges is that the organization depends on donations and government subsidies to carry out its programmes. The project manager reported:

“We had to make sure that not too much money is spent on the planning process, rather than the actual project”.

For the purpose of this research, financial support received by the organization was important, because it influence the direction of the planning process. While it maybe important to involve the beneficiaries in the planning it becomes evident that financial constraints can force development providers to take a top-down approach., in order to safe money.

An analysis drawn from the Mvuramanzi annual report (2006) indicated that, because the organization is registered with the Department of Social Welfare, Mvuramanzi programmes are partly subsidized by the government. In addition, capital is raised through donations and assistance from other businesses and organization. For the urine diversion sanitation, the programme was financed by SIDA (Swedish International Development Agency). The total amount requested for two years was US\$ 672 000.00, this amount was allocated for the entire programme including skills training, transport, management support and advocacy (Mvuramanzi final Report; 2006:12).

4.5 Implementation Process

4.5.1 Selection of Beneficiaries

Data on the implementation process of the UD in Chihota indicated that the Rural District Council and the village head called for submission of names from people who considered themselves vulnerable or had been orphaned by either HIV/AIDS or any other disease. The lists were submitted to the councilor and the village committee, who verified that the people on the lists were vulnerable. This involved door to door interviews with the vulnerable household. Thereafter the lists were examined and compiled according to different categories and order of priority. The final verification process was carried out by Mvuramanzi Trust, Ministry of Health and Child Welfare Environmental Health Technicians, Agricultural Research and Extension Services (AREX), ward councilor and village committee.

The verification process involved interviewing individual vulnerable households. During the verification process, data forms were compiled indicating the orphans category and vulnerability class of households. The forms also acted as an informal yet legally binding agreement that were signed between community members, Mvuramanzi Trust and community leadership. The forms were then arranged in order of their priority and used to compile a priority list. The list was used by Mvuramanzi to purchase and distribute material to the households. According to the project manager, the involvement of the

council and village head in the final verification was important as it ensured community representation throughout the project. However some respondents indicated that the selection of beneficiaries was not transparent. For example Mrs. Rawaze⁹ reported:

“I submitted by name to the village head in 2003, but I have not received any toilet. Some people received the toilets but some did not. I do not know why, but I think the village head and the councilor selected people that were their favorites. I will just have to wait; maybe next year they will give the rest of us. In the mean time, my family and I are forced to use the bush, sometime we use my neighbors old VIP. But the VIP is also full and smelly, so I prefer the bush”.

4.5.2 Training of builders

Selection of trainees was done by the village committee; priority was given to orphans above 15 years and not going to school. Efforts were made to ensure that the inclusion of the orphans did not degenerate into child labor but to give them survival skills. Training on construction focused on guiding builders in technological aspects and also rapid implementation. The brigade group learning by construction approach was adopted, this involved grouping trainees into groups with six people each-four orphans and two trained and qualified builders.

Rapid implementation was ensured by multistage construction technique, which involved the trained builders laying examples of UD for different stages of construction on different households. The unqualified builders (trainees) followed up and constructed to a point where they were unable to proceed. Assistance would then be given by the qualified builders; this resulted in rapid completion of facilities and quality control. There was general satisfaction about the training that was offered. Some respondents mentioned that:

⁹ Rawaze is a 51 years old widow. She has three children, aged 10, 12 and 13. none of her children go to school

“We were building the toilets together with the professional builders. We learnt a lot from them, I think I can now be able to build a house”.

“Of course, the training was important, now I can get a job anywhere in the country as a builder”.

“UD is a special technology, of course we needed training. It was very good to learn from the professional builders”.

The research also indicated that efforts have been made to promote agricultural skills. The main driving force of the training has been on the activities related to health and hygiene and the use of latrine waste in agriculture. This showed that the Chihota project used an integrated approach and had substantially broadened the scope of training in development of local skills. Despite such efforts, by and large the training of women was insufficient in almost all the activities in Chihota. As noted already, the significant training focused on agriculture and construction. Most respondents felt that women participated more on the PHHE, yet their participation in construction and agricultural training was limited. For example, women respondents in Chihota mentioned that they would have liked to receive training in crop production in kitchen gardening. For these women crop production and kitchen gardening would help them to feed their families without depending on their husbands for food security.

4.6 Factors that influenced the implementation process

The research findings on the implementation process of UD systems in Chihota indicated that implementation was characterized by use of labor intensive methodologies. Job opportunities and effective communication emerged as the main factors that influenced the implementation process.

4.6.1 Job Creation

Job opportunities during the implementation phase seemed to have played a major role. Local skills and knowledge were acknowledged through allowing local people to participate in the construction of the systems. However respondents indicated dissatisfaction about the jobs created by the project as well as frustration about the level of unemployment in the area. The majority of the respondents that received training on construction were unemployed and not using any of the skills that they had acquired from their training in the project. In response to the question: “*did you see the UD project as part of job creation initiative?*” some respondents said:

“At first, the people who provided us with the toilets told us we were going to get jobs but then the jobs were not permanent as soon as the project was completed we lost our jobs”

“Yes, but the government did not pay us enough; now that the project is completed we are back to poverty and no income”.

“Of course, only few people were able to get jobs, not everyone benefited. But if you look at it this way; since the introduction of UD, I have had to hire more workers on my farm. We are now growing butternuts, chilies, beans, bananas, lemons and garlic. We sell all these on local market or in Harare”.

The above statements show the importance of community development principles in interventions. For instance, the principle of empowerment lacked an element of sustenance in the sense that though skills were gained, there was not enough ‘room’ for them to be practiced. Ife (2002: 208) purports that though skills are necessary as a form of empowerment, people are not empowered if their skills can not be used to determine their own future. Whilst job creation is a vital attribute of development, the nature and durability of the job is equally imperative.

4.6.2 Sharing information

One of the issues that frequently emerged in the interviews was the importance of communication and sharing of information with all stakeholders. Respondents mentioned

that people who did not like the UD felt so because they did not get enough information about the UD system.

According to the respondents, there was a persistent suspicion and doubt about the safety of using human excreta in the gardens. However as the project managers from the Mvuramanzi engaged people in PESHE and PHHE, people began to realize the importance of UD in agriculture. As active farmers, many of the respondents in Chihota made an important link between the UD and possible economic advantages. Some of the responses were:

“I like UD system because I can now save money. Commercial fertilizers have become so expensive, I am so happy that I can now use ECOFERT¹⁰ in my farm. The UD has improved my standard of living. Now I can produce more and better crop and fruits, most of which I sell to the local market and still be able to feed my family. I never have to worry about what my children are going to eat. I produce enough to feed the entire nation”.

“In the beginning I did not understand the whole concept of emptying the pit and using latrine waste in the garden, but the after using the toilet and sharing some of my experiences with other farmers, I decided to give it try. I am so happy I did, my cabbages, maize and tomatoes are so big and fresh”.

“I think people, who do not like the UD system, hate the toilet because they do not understand how it works. I used to be worried about the safety and health implications in using the system. I still think there should be more workshops on operation and maintenance of the toilets”.

¹⁰ ECOFERT, this is a term used in Zimbabwe to refer to the compost from the UD. Once it has decomposed and ready for use in agriculture it is no longer referred to as waste.

4.7 Case Study B: Mnini- Durban

4. 7.1 Background of Mnini Sanitation Project

The government of the Republic of South Africa has a constitutional responsibility to ensure that all South Africans have access to adequate water and sanitation. Everyone has the right to an environment that is not harmful to their health or well-being; and the right to have the environment protected, for the benefit of the present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation (Section 24 and section 7(2) of the Constitution, Act of 1996).

Through the activities of eThekweni municipality the government is able to carry out the above mandate. eThekweni Municipality is the only Category A Metro Municipality in the province of KwaZulu Natal, meaning that it has an exclusive municipal executive and legislative authority in its area. eThekweni Water and Sanitation Programme under eThekweni municipality is involved in sanitation programme with the objective of providing communities with water and basic sanitation services.

The Water and Sanitation Programme was established in 2001. Its main responsibility is to provide communities with water and sanitation to areas that had been affected by outbreaks, as those communities had been underserved in terms of water and sanitation (eThekweni Water and Sanitation Business plan 2003:4). The Programme involved building toilets (Urine Diversion toilets) and educating communities about health issues related to poor sanitation.

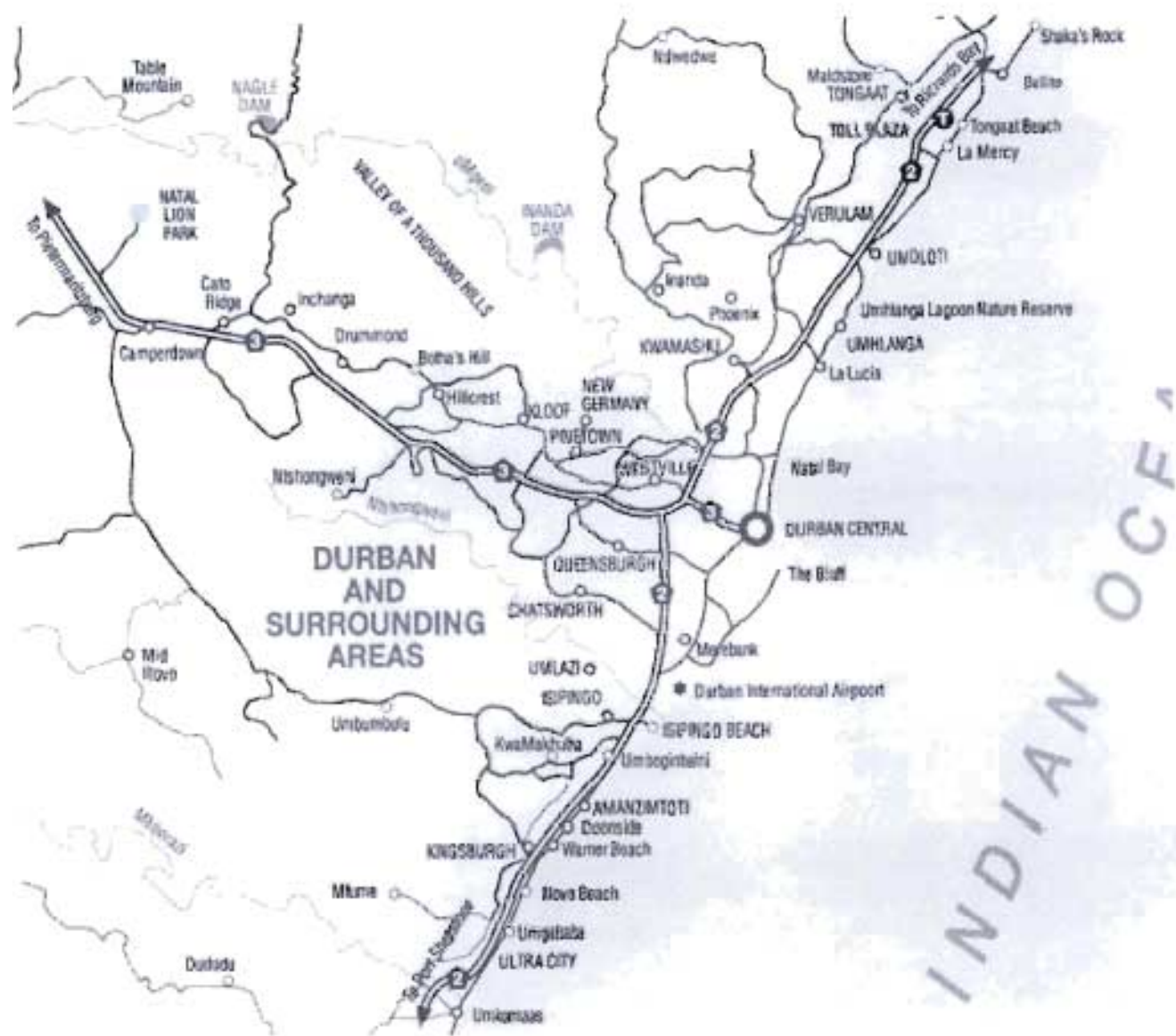
4.7.2 Description of case study area

Mnini is an informal area, found in the district of Umgababa. It lies about 45 km in the south of Durban in KwaZulu Natal. The broader Umgababa district widens between the

N2 and the Indian Ocean (see figure 1.4). Some of the communities surrounding Mnini are Amanzimtoti, Bhekulwandle and Lovu; most of these areas face the sea front.

The settlement of Mnini consists of predominantly Zulu speakers. The roads that lead to Mnini are not tarred and there is limited access to water, sanitation and electricity. It almost looks similar to an informal settlement and like many other South African communities; there are semi-urban communities and sections right next to Mnini. The houses are close to each other, with a combination of brick houses, mud houses and shacks and are in poor condition.

Based on appearances of poor housing conditions and the manner in which the residents live, Mnini appears to have very poor economic background. In a research carried out by Gopaul (2006: 105) about “the significance of rural areas in South Africa for tourism Development” he found out that about 82% of the respondents in Umgababa (Mnini is found in Umgababa) are unemployed, 67% were either semi-skilled or unskilled, while a total of 45% earned between R100 to R500 a month. Gopaul (2006) concluded that the majority of the people living in Umgababa earned below the breadline, indicating that the socio economic living conditions of Umgababa are quite low. In many cases, community members are unable to afford a decent housing, as a result Mnini looks almost like an informal settlement characterized by inadequate housing, water and sanitation.



Source: www.kzn.org.za/travelguidemaps/Durban

4.8 The Planning Process

4.8.1 Problem identification and assessment

Research findings revealed that, the provision of water and sanitation in Mnini was carried out by the local government under eThekweni municipality. The municipality, by virtue of its position as a government structure has a constitutional responsibility to provide water and sanitation to the public. Mnini was identified by the Department of Health as one of the areas in KwaZulu Natal which had the highest cholera incidents in

2001. It is within this context that the need for water and sanitation project was recognized. The findings indicated that the planning process involved upfront investigations, budget developments and council approvals. According to Mr. Sibiya, UD sanitation project manager;

‘The community was not involved in the planning phase. After the 2001 cholera outbreaks, the Department of Health conducted a series of studies to find out what had happened. The results of the studies revealed that many people did not have enough water supply and adequate sanitation facilities. The eThekweni Water Services then, embarked on water and sanitation programme with the aim of providing basic water and sanitation to the affected areas. The planning process included research on the technical feasibility, provision of funding and availability of resources. The process was conducted by eThekweni municipality before the community could be consulted.’

The Urine Diversion sanitation project in Mnini was designed, with the objective of providing the community with basic water supply and sanitation facilities. The beneficiaries of the project at Mnini were households who fell under the target area and did not have adequate sanitation system. Inadequate sanitation system was defined as the service level where a household has an unimproved pit latrine such as long drop or bucket system or no sanitation facilities at all (eThekweni Municipality Business plan, 2003: 5). The main objectives of the project were as follows:

- To provide a cost-effective sanitation system
- To promote participation in development project
- To increase effectiveness of the project
- To build capacity through transfer of skills

According to data collected, the exclusion of people in the planning process resulted in an enormous doubt about the transparency of the project. Respondents from Mnini mentioned that even though they may not have direct power in decision making, they would have at least liked to have expressed their views in the process during the planning

phase. For instance, according, to Mr. Zwane¹¹ people were not involved in planning or given a choice of the type of sanitation system. Significantly Zwane claimed that the government promised to deliver adequate sanitation (flush toilet) for everyone, and now they (the poor) are given the UD. According to him UD is one way the government is reintroducing the bucket system. Zwane claimed that it is not true that the flush toilet damages the environment, but it is the intention of the government and the elites to keep the poor marginalized.

4.9 Factors that influenced the planning process in Mnini

In Mnini, the factors that informed and influenced the planning process were government policies and the program design

4.9.1 Government policies

It emerged from the research findings that the provision of sanitation services in the Mnini was informed and influenced by the Water Services Act (108 of 1997) (WSA) and the National Water Act (36 of 1998) (NWA). The policies provided the legislative framework within which water as well as sanitation services should occur. Under these policies the minimum standard for basic sanitation system has been interpreted as “the provision of appropriate health and hygiene education; and a toilet which is safe, reliable, environmentally sound, and easy to keep, provides privacy and protection against the weather, well ventilated, keep smells to a minimum and prevents the exit of flies and other disease” (DWAf:2001). The introduction of Urine Diversion system whereby the municipality assumed a leading role is the policy and expectation of the local government in the provision of sanitation all the poor communities. The Water Services Act (108 of 1997) confirms the constitutional right of Local Government to take the lead in water service delivery planning and decision-making.

¹¹ Zwane (not his real name) is a 55 year man who has lived in Mnini for the past 30 years. He is unemployed and depends on social grants to subsist.

4.9.2 Program dimension

The national dimension of the program also emerged as one fact that influenced the planning process. It appeared from the research findings that the Mnini project fell under a larger water and sanitation programme in which source of funding came from grant funding from the Department of Water and Forestry and supplemented by eThekwini municipality for the Water Supply portion of the project (eThekwini Business Plan, 2003:11). Standardized procedures were followed by the municipality to ensure efficiency in the projects. The project manager reported:

“The Mnini project was part of national programme. It was very important that we follow similar procedure when implementing these projects. Hence a programme plan was outline by the municipality, and the communities were involved during the implementation phase, this occurred in Mnini.”

4.10 Implementation Process

4.10.1 Recruitment and training of facilitators and builders

The first step when introducing the sanitation project in Mnini involved detailed discussions with the councillor and ward committee about the project. The main role of the councillor was to mediate between the people and the municipality. The ward committee, chaired by the councillor, is an elected area-based committee within a particular municipality. It also acts as an institutional body that links the community to the local government. The councillor and the ward committee operate as gate keepers and decision points which precede every stage. Thus approval from the council and the ward committee is critical if any project is to take place in the community. Relating the process, one of the respondents from the eThekwini municipality reported that:

“Institutional Social Development consultants (ISDs) were appointed by the municipality to intervene through rural system liaison whereby appointments were scheduled with the amakhosi (chiefs) and traditional leaders to inform them

about the project. ISD consultants played a substantial role throughout the project cycle. ISDs were responsible for informing the community about the project, awareness creation, promotion of health and hygiene. During this phase, information regarding the number of people without proper water supply and sanitation was collected”.

It appears from data collected, that the principal goal of ISD consultants was to recruit and train the facilitators. These facilitators were recruited from the community; they received training on health and hygiene education, and capacity building. Three local facilitators were employed to carry the health training and education within the community. At the end of the project, the eThekweni Municipality issued certificates to the facilitators. The Department of Labour also trained and supplied local builders with building materials. Blocks for making the toilets were bought from the local people, and in payment for the blocks the money of the building materials was slowly deducted.

4.10.2 Community representation

The Project Steering Committee (PSC) was formed to allow local representation and participation; it also acted as a communication mechanism between the community and the Programme manager (eThekweni Municipality Business plan, 2003:10). Members of the PSC members were elected by the community. PSC members were paid for attending once a month committee meetings – all other services voluntary (eThekweni Municipality Business Plan 2003). However the data collected indicated that there strong discontent about the PSC and the local councilor. The majority of the respondents mentioned that the selection of PSC members was not transparent.

One respondent explained that the community did not choose the PSC. He reported that the community was merely told by the local council and officials from the municipality, that certain individuals were part of the PSC. This contradicted the response given by the project manager and some of the PSC members. The project manager reported that several community meetings and consultations were held where community representatives were elected. Some people mentioned that only ANC members were

elected and given an opportunity to participate. This issue showed that there was little consideration made regarding the tensions within the community.

The findings of the research showed that the community and households were involved in a number of ways as follows:

- Decide with the contractor where the toilets were to be constructed.
- Households dug their own pits
- Construction of the toilets done by the local builders
- Households were responsible for operating the urine diversion toilet and emptying the composted contents as required.

4.11 Factors that influenced the implementation process in Mnini

4.11.1 Job Creation

To the majority of the respondents, the implementation process was regarded as an important phase of the project. According to the project manager, in Mnini project implementation involved the mobilization of the project management and construction teams, and setting up a central construction camp within the community. All construction work was conducted by local contractors and builders. These local builders were identified by the community and trained for building and bricklaying by the Construction department.

During the implementation process, the local people were responsible for digging trenches and pits for the toilets. The municipality lent local builders tools such as picks and shovels for digging, and the materials for building the toilets were given to them when most of the digging was done. The bricks were bought by the municipality from local builders, and those were used to build the toilets within the community. Once the building of the toilets was completed, the community was entrusted with the responsibility for looking after the toilets. The facilitators trained and showed people how

to care for their toilets. However the majority of the respondents complained that the jobs were not permanent.

4.12 Analysis

4.12.1 Problem Identification and assessment

Zimbabwe and South Africa are at present engaged in a process of developing their approaches to provide adequate sanitation for their people. In South Africa for instance, the Strategic Framework (2003) states that the provision of water supply and sanitation services has significant potential to alleviate poverty through the creation of jobs, use of local resources, improvement of nutrition and health, development skills and provision of a long-term livelihood for many households. And in Zimbabwe, through partnering with local NGOs and CBOs, IRWSS aims to provide increased service and to reach rural households (GoZ, 2003:11).

The starting point for such approaches needs to promote community based approaches in sanitation projects. Community development projects start with identification of a problem and with the focus on local people taking control of the project. The entire process can be defined as helping communities to articulate their needs, and then to act, so their needs can be met, and so the people must own and control the process of need assessment and definition (Ife, 2002:210).

It is apparent from the description of the case studies and the research findings that both projects were preplanned by the service providers. The case of Mnini is arguably an example of top down planning. This is against the intention of the eThekweni municipality and the objectives of the project to ensure community based approach. This was evident in the use external consultants to carry out field assessments, the results of which were then assessed and intervention strategies developed. In the same manner, in Chihota beneficiaries were not involved in the actual planning of the project. However

some respondents felt that PPP workshops enabled them to express their feeling and perceptions about the project.

However the limited success (in terms of dissatisfaction of community members and not enough job created) of these projects cannot only be attributed to the inadequate or lack of involving beneficiaries in the planning phase but rather to a combination of various factors in the project. However most of these factors stem from poor planning and designing of the project. First, the perception that all communities are homogenous is considerably misleading and that the standardized procedures used by eThekweni municipality can meet the needs of all the communities. Many of the processes and activities designed by the eThekweni municipality appeared to be limited in meeting the basic needs of the community. For instance, in Mnini there were many cases where people had removed their UD toilet doors and put them on their shacks and houses.

Second, the assumption that local people are incapable of finding solutions or contributing to designing the project greatly hindered the process of learning. In Chihota for example, whilst Mvuramanzi conducted the participatory workshops, where roles and responsibilities of all the stakeholders were discussed and project plans drawn, there was no transfer of power. Planning with the local people means that outsiders must be prepared to learn and draw insights from those concerned and should be able to understand the internal dynamics and differences with the community. It is important to stress that the involvement of beneficiaries in the planning process can help tailor services to the expressed needs and thereby gain more political credit for the service providers (Knight et al. 1980:66).

Evidence suggested that there are numerous interrelated debates associated with problem identification and assessment. For example, whose problems are identified, what interpretations are drawn and what action should be taken? Several questions with regards to factors that may stop beneficiaries from participating also need resolution, so that people may effectively participate in identifying and analyzing their problems.

4.12. 2 Community representation

The literature reviewed in this study indicated that supply driven approaches in sanitation have had little success; such approaches often excluded the primary concerns of the people. Furthermore, as mentioned earlier, many participatory approaches do not deal well with community differences; too often the concept of '*community*' has been viewed naively, or in practice dealt with, as a harmonious and internally equitable collective (Shah and Guijt: 1998).

Gender, age, race and class often generate differences within the community. For instance, making assumptions about people based on the fact that they live in the same community is misguided. There are many conflicts, disagreements and structural disadvantages that happen in communities based on social and cultural norms. The effects of difference are specific both to the cultural setting and the context and cannot be generalized about, with any accuracy (Cornwall in Shah and Guijt, 1998). Consequently, community representation may not necessarily mean that actual needs and concerns of the people are represented.

Both cases assumed that existing structures in the communities were actual demonstration of the needs of the people. This appears in the fact that the traditional authorities such as the village head and local councilor were given enormous power to decide on selection of beneficiaries.

4.12.3 Community participation

Community participation is keystone of any development intervention. In the case of community development, Ife (2002:220) argued that different people have different skills and interests; good community work will provide the broadest possible range of participatory activity and will legitimize equally all people who are actively involved.

The eThekweni municipality was committed to ensuring community participation and recognized that it was critical to the success of projects (eThekweni municipality Basic Water and Sanitation Business plan 2003:10). The research revealed that throughout the

project, community participation was promoted in Mnini in several ways. This was to be achieved through the *Imbizos*¹², voting of PSC members and water and sanitation committees. Some of the PSC members mentioned that they participated by solving immediate problems that the people faced during and after the project. Respondents acknowledged that they played an important role by linking the municipality with the people.

Besides acting as community representatives, PSC members reported to have played an important role in steering the project. However when asked to explain their participation, the only role mentioned was that they acted as medium of communication between the eThekweni Water and Services and the community. PSC members also admitted that even though they steered the project, that did not mean that they had the power to make any decision. For example, respondents mentioned that PSC members had no power to decide on the level of sanitation services. One respondent reported:

“We could not make any decisions regarding the choice of system or the direction which the project would take”

It must be noted that even the facilitators, caretakers and builders mentioned that they had no role in decision making regarding the UD in the community. Many participated in digging and building of the toilets, training community members and compiling reports for eThekweni Water Services.

Indeed the research findings indicated a difference in the manner in which the community of Chihota participated compared to Mnini. In Chihota, respondents mentioned that they were involved in participatory workshops that Mvuramanzi conducted before the project. Many indicated that whilst there was some resistance towards the UD, the establishment of water and sanitation committee in the area was helpful. These committees were tasked to manage community development issues, health and hygiene issues.

¹² Imbizo is a traditional Zulu term for community meeting. It is normally called and chaired by the traditional leaders and village heads.

When asked about the role they played in the project, respondents in Chihota, said that they participated in the selection of beneficiaries, gathering of local material and monitoring. However, in explaining how their involvement influenced the project, respondents mentioned that their participation did not give them an opportunity to take part in the decision making. For example, whilst people participated in the selection of beneficiaries; the village head and Mvuramanzi Trust had the final say as to who made it onto the list. As a result there were some people who claimed they needed the sanitation system but have not yet received it because the village head and Mvuramanzi did not put them on the list.

Although during the implementation phase the community participated in both the projects, it is important to note that participation is more than involvement of the people in the project. In both the cases the projects involved local people, in that local people were represented in the PSC and water and sanitation committees. Also local resources and knowledge were acknowledged whereby facilitators and builders came from the community. Local people built their own toilets rather than outsiders, more importantly through participation people gained skills and were able to share their experiences and knowledge.

Nonetheless an important aspect of participation that both the Mnini and Chihota sanitation project overlooked was that of taking part in decision making. The decision to implement the UD in these areas was taken by the respective municipality and organization without involving the community in the choice of system. Perhaps this was one of the reasons why in some cases, these toilets were used for unintended purposes, such as storage rooms. For any developmental project to be successful there should be maximum participation of all those involved especially the community, meaning development should be a joint venture. This principle was not used accordingly in the above projects, because none of the projects acknowledged that community members are the ones who are going to use the toilets, thus they play an important role throughout the process, especially in deciding on how to solve their own problems.

Even though there was no consultation in the planning in either of these projects, there was among the respondents general satisfaction with the way participation was maximized during the implementation phase. Significant attention was given to the jobs created by the project. However the level of participation in decision making even at the implementation phase remained blurred. None of the respondents felt that as individuals and as group they had any power to change or go against what the municipality or the Trust had planned.

It must be stressed, however, that the differences between participation in Chihota and Mnini are far less pronounced than I generally believed. Nor for that matter is there a reason to believe that people's involvement in the participatory workshops as in Chihota, influenced the decision and direction of the project. Rather in many respects, the adoption of labor intensive approach in the projects is merely another reflection of the common tendency to neglect the importance of decision making in development interventions. From this view development agents are merely perceived as the employer with all the power to make decisions, whilst the people are employees with no power to influence the project

4.12.4 Job creation

The perceptions about the jobs created by the projects at community level, as viewed by respondents seemed to differ from the perceptions of the municipality and Mvuramanzi. The case studies reported very few community members who were still employed after the project had been completed. In the case of Mnini, those reported were the facilitators, who were now working as caretakers. The role of caretakers is to follow up on the project to see if people are operating and maintaining the UD appropriately.

In both cases respondents were unanimous that there had been a number of job opportunities during the implementation of the project. However an overwhelming majority of the respondents reported that the jobs created by the sanitation project were

not permanent. Virtually all the people trained as builders were unemployed and depended on government grants to subsist.

There was a considerable difference in the response given by the eThekweni municipality and Mvuramanzi Trust and the respondents' views. In the interviews with both these organizations, the project managers indicated that the projects aimed to contribute to the economic development of the people, and that through the projects substantial jobs were created and local people benefited. Consequently, the research findings suggest a very strong need for development agents to redefine the nature of the job opportunities in sanitation projects. Jobs created through these projects need to make a profound change in the lives of those benefiting.

4.12.5 Capacity building

In KwaZulu-Natal one of the main objectives in the establishment of Water and Sanitation Programme, was to meet the pressing needs of the sanitation backlogs in KwaZulu Natal. Because of its 5 year minimum target of reducing sanitation backlog by 25%, the municipality committed itself to ensuring community participation and recognized that it is critical to the success of projects. As a result, despite the lack of community participation in the planning phase, community participation was encouraged during implementation. But even the most determined efforts to promote local participation can be threatened by lack of skills, training and in some cases illiteracy. The aim should be to provide people with the resources, opportunities, vocabulary, knowledge and skills to increase their capacity to determine their own future and to participate in and affect the life of their community (Ife, 2002:208).

In Mnini, participation and capacity development of local people was encouraged through education and training. For instance, individuals from the community were selected and trained as facilitators. The facilitators endured an intensive two days training programme at the eThekweni municipality. At the end of the training facilitators were granted a certificate indicating that they had successfully completed the training.

The major responsibility of the facilitators was to train the community at the household level about the operation and maintenance of UD and Health and Hygiene. In addition, local building contractors were identified and trained to manage the pipeline, laying contracts and to build the UD toilets. While there was a general satisfaction about the skills and training that both the facilitators and builders gained respondents felt that the time invested in training the community was not enough. This was because there were some people who were still not clear on how to operate the UD such that some toilets had water and urine in the vaults.

In Chihota, efforts have been made to promote agricultural skills. The main driving force of the training has been on the activities related to health and hygiene and the use of latrine waste in agriculture. Compared to the Mnini project, Chihota project used a more integrated approach and have substantially broadened the scope of training in development of local skills. For example, not only were people trained for construction, but the project took in consideration that Chihota citizens are active farmers and focused on ecological sanitation, with the objective of improving residents' food security.

Despite such efforts, by and large the training of women was insufficient in almost all the activities in Chihota. As noted already, the significant training focused on agriculture and construction. Most respondents felt that women participated more on the PHHE, yet their participation in construction and agricultural training was limited. For example, women respondents in Chihota mentioned that they would like to receive training in crop production in kitchen gardening.

In spite of their limited participation in planning, both Chihota and Mnini have shown considerably sensitivity to the societal position of men, women and children and have made an attempt to provide different activities relating to the different interests in the communities. For example, in Mnini more women were trained as facilitators, and men as builders, similarly women participated in PHHE while men participated in construction in Chihota.

4.12. 6 Community perceptions of UD

The findings on people's perceptions of UD sanitation system are both interesting and bewildering. There was a consensus among the community on the acceptance of the UD system. Whilst respondents reported that they liked UD, there was a general consensus of UD sanitation system as a secondary and lower class compared to the flush toilet. To many respondents on-site sanitation system is normally regarded as second class.

In an answer to the question, "*what are your views/feelings about the UD*", most respondents said that they liked the UD sanitation system. In Mnini, the majority of the respondents mentioned that in the beginning there were some resistance and negative feelings about the UD system. However with education and time perceptions of most people changed as they became aware of the benefits of UD system. Yet, emptying the pits was generally pointed out as an obnoxious and filthy exercise. From the interviews it became apparent that excreta removal was the reason behind the perception of UD system as a second class system.

Likewise in Chihota, the response to the above question revealed that, while the majority of the people seemed to have accepted the UD system, when compared to the flush toilet the UD was considered second class system. Nevertheless, respondents felt content with UD system, respondents mentioned that with UD system they can produce more crops on their farms.

In Mnini, those who did not like UD toilets were mostly people who owned a VIP/Flush toilet previously. And in some cases respondents pointed out nearby communities who had the waterborne system as reference and indicator for adequate sanitation system. The comparison acted as a gauge of class and inequality, such that those who had flush toilets were classified as rich and those who owned on site sanitation system as either middle class or in many cases poor.

Unlike Mnini, where respondents felt UD toilets categorized them, in Chihota there was no indication of class division. Perhaps it is because Chihota is mainly surrounded by rural and poor communities, and also because many people did not have any sanitation system before the project; as a result people consider themselves belonging to the same class. For instance, respondents indicated that UD was the first form of sanitation system they had owned and some had never seen as flush toilets at all. While in Mnini, respondents mentioned that they wanted flush toilets because it symbolized a middle class or rich society.

People's perception about technology also needs to be taken into consideration in sanitation projects. Inadequate integration of technology and social beliefs has been one of the problems that has confronted Mnini sanitation project. Mr. Mbele¹³ indicated that

“Just outside Umgababa there is running water, electricity and adequate sanitation facilities (flush toilet); there is no reason why the government cannot provide them with free water supply, electricity and flush toilets”.

In his view the South African government has enough money to provide these services; the only problem is that no one cares about the poor. He regards UD as government strategy for keeping them primitive.

Despite the perception of UD as a second class system, it was evident in both Mnini and Chihota that UD had gained popularity because of its good structure and comfort. However, the technical standard of the UD raised questions about the choice and decisions on the type of sanitation system needed for the communities. Respondents reported that, the Urine pipes block easily, making the operation of the system complicated for elders and small children.

¹³ Mbele is a 45 years unemployed man. He lives with his wife and is a father of two daughters. His family depends on social grants to survive.

One of the issues that frequently emerged in the findings was that some respondents initially liked the UD because of the structure however their interest lessened after using it for a while. The reason for such behaviour was attributed to the problems experienced with operating and maintaining the UD system. For example supported Mbele reported:

“The people, who gave us these toilets, told us that the UD was easy to operate, but UD requires lots of attention specially if there are children and elders in the household. I have to check after my child or my grandmother use the toilet to ensure that they use it properly. It is difficult to monitor all time.”

In response to these realities, large numbers of respondents have begun to use the UD for other purposes such as storage or convert it into flush toilets. When introducing a new technology, especially something as personal as a new way of going to the toilet and the handling of faeces and urine, social and cultural considerations must be uppermost in one’s mind (Holden and Austin cited in Austin et al, 2005:4-4).

It is important that the community is educated about the sanitation system such that questions and problems are clarified in advance. I assume that if the project process is defined clearly and transparently, then people will undoubtedly voice their cultural and social taboos that might hinder the success of the project. For example, Austin et al (2005:4-4) maintained that factors found to be important in South Africa when introducing UD, included men’s urinating method (i.e. standing up), the disposal of anal cleansing material and the disposal of urine and human excreta. Because in South Africa, men stand up when urinating, for people to accept the UD it was important that a separate urinal pedestal is provided for men.

In Chihota emptying of single pits containing fresh excreta presented problems, unlike in Mnini where the second vault can be used while the first decompose. It is these social and cultural factors that play an important role in shaping the use and acceptance of new sanitation system. Perhaps it could be argued that some of the success of the projects can be attributed to the integration of such social issues with the technology. Indeed, the

choices of appropriate sanitation system need to take into account the habits and customs of the people if it is to be successful.

4.12.7 Operation and Maintenance

Patterns for operation and maintenance of UD sanitation system indicated mixed feelings about the UD systems in Mnini. It must be noted that there were a number of households that I visited in Mnini and found the toilets in a bad condition. There were newspapers on the floor, flies, and the floors kept unclean. According to the eThekweni Water Service project manager, an evaluation on the water and sanitation programme, conducted by the HSRC¹⁴ revealed that some households with the UD toilets do not use them at all, or they used them for unintended purposes.

Some users felt that the UD toilet was unique and had to be used only on special occasions or when there was a visitor, whilst others used it because it was they only one they had. To add to these some residents had converted their UD into flush toilets. However there was an overwhelming lack of ownership in the toilets and many respondents referred to the UD toilet as the ‘municipality toilet’. As a result of lack of ownership respondents felt no responsibility in the use and the maintenance of the toilets. One of the respondents explained the behaviour by saying:

“These “*municipality*”¹⁵ toilets are not easy to operate; they require a lot of attention such as pouring ash or soil. There are so many rules to follow, it is complicated”.

Lack of responsibility was also evident in the manner in which the community cared for their toilets. While the majority of the respondents agreed that operation and maintenance of the system are fundamental for UD to be effective, there were some cases where

¹⁴ Human Science Research Council is a statutory structure, leading on human science research. The eThekweni municipality appointed HSRC to monitor the effectiveness and acceptance of the project and the health education

¹⁵ Most respondents in Mnini referred to UD system as Municipality toilets

people had removed toilet doors and used them in their houses. During my field visit in Mnini, I noticed that many of the households that had removed the toilets doors from the toilet structures were households with poor housing such as shacks and poorly structured mud houses. In cases like these, plastics or curtains were used to cover the toilet. Not surprising, all the toilets that had no doors were in bad condition; they had bad smell and in some cases water in the vaults.

The major difference in Chihota and Mnini that was visible was users' behaviour towards the UD. When I was collecting data in Chihota, I noticed the cautious attention that residents placed on the UD system. For example, many of the respondents kept their toilets clean and the verandas were well polished. In addition, some respondents said that it was important to keep the toilet clean as it discouraged the flies and disease spreading. Their responses indicated some level of understanding of the relationship between health and hygiene and sanitation.

4.12. 8 Removal and use of excreta

The removal and the use of human waste in agriculture are of vital importance in this study as well as in the arguments supporting ecological sanitation. The development argument for such activities is obvious. Improved health, improved diet and cheap fertilizers can improve the livelihood of the community. There are also sound reasons for not engaging in ecological sanitation. The project management in eThekweni pointed out that, the municipality was unclear about the safety and health implications of using human waste in agriculture, as a result eThekweni municipality decided not to encourage the use of human waste.

Nonetheless, the research findings indicated that the University of KwaZulu-Natal (UKZN) has embarked on research for eThekweni municipality to find out, whether it is safe for individuals to use latrine waste in agriculture. In spite of the fact that the eThekweni municipality did not promote UD as an ecological system such as the use of excreta, the study indicated that the majority of the people were aware of the value of

human excreta in agriculture. On the contrary almost all the respondents felt that urine fertilizer cannot be used in the gardens because it is unsafe to the crops and plants.

The majority of the respondents indicated that, many of the UD sanitation systems in Mnini were not yet full. Hence many had not yet engaged in the latrine waste removal activity. eThekweni municipality reported that only households who had more than 8 house members and were only using one toilet, had emptied the toilet. In such incidents, human waste was removed from the vault and buried in the ground. Nonetheless the feelings about emptying and use of human excreta in agriculture were undisputed; many felt that it was unhealthy.

The discourses about the use of latrine waste in agriculture emanate from the health perspective, characterized by the uncertainty of the health implications for people. It was this uncertainty, that eThekweni municipality did not promote the aspect recycling of human waste and its use in agriculture. According to the project manager:

“First, it is not clear how long it takes for human excreta to fully decompose and be ready and safe for agriculture use; secondly, the standard of hygiene during handling can affect the health of community people if it is not done appropriately”.

From a direct observation of the pawpaw trees planted for research at UKZN, to compare the difference between the trees with latrine waste as fertilizers and those with commercial fertilizers, it was apparent that latrine waste offer huge benefits in agriculture. I was able to note that the trees with latrine waste looked bigger and healthier. Professor Buckley¹⁶ indicated that although no formal analysis was conducted, the outcomes were evident in the size of the trees and that specific research was still underway to examine the specific time that is needed for all the germs and pathogens in excreta to completely decompose. According to Buckley matters such as the weather,

¹⁶ Professor Buckley is member of Population Research Group involved in the UD research for eThekweni municipality. His main area is on the safety of latrine waste on agriculture.

geographic location and demography of the area are very important in determining the exact time required for pathogens to decompose. He regards eThekweni municipality decision, to not promote the use of human excreta until scientific research gives a go ahead, an important one and a lesson to other countries promoting UD. For Buckley, this is an important part in developing projects that are sustainable for communities.

In Mnini, while the majority of the respondents recognized the benefits of human waste in agriculture, most respondents mentioned that they were not willing to handle latrine waste. The reasons that were provided were that it is unhealthy and unpleasant to touch human waste. This was one of the main reasons that contribute to most respondents saying that they were not prepared to use human fertilizer in the gardens. For example Mr. Mbele said:

“It is unhealthy to handle human waste. Nobody wants to do it, let alone eat crops and fruits produced using human fertilizers, human beings were not made to live like that, it is not only unhealthy and dangerous but a disgrace. If the government can afford to build the toilets for us, surely it can afford to empty the pit”.

Other responses regarding emptying of the toilets were:

“There is no way I am willing to empty the toilet, I rather pay someone to do it for me”.

“Can you imagine it? It’s like eating food produced from the toilet. I do not understand how anyone can use human excreta on the garden”.

Most of the respondents indicated that the emptying of the pits should be done by the municipality and should be free. However a few respondents were willing to pay for that service if made available, though many respondents complained about lack of money to pay for such services. Nonetheless, eThekweni Water and Services has already embarked on joint initiative, with the local contractors to offer disposal and collection services.

Implementing this approach will mean creating job opportunities for local people and giving local people the power and responsibility to maintain their sanitation systems.

Perhaps the removal and the use of excreta in agriculture is the major difference in the approach used by eThekweni water and services and Mvuramanzi Trust. From the beginning of project, Mvuramanzi aimed to not only combat water and sanitation backlog in Chihota but also to address food shortage and insecurity through UD system. As a result the use of human waste was a central component of the project.

In Chihota many of the respondents had begun to use human fertilizers in their fields and gardens. In all the cases urine was diluted with water before use and latrine waste buried in the composting area for some time before use. There was no exact time given for the human waste to fully decompose and be safe for use. For example, some respondents mentioned that they buried latrine waste for about six months to a year while other people, buried it for only three months. Many respondents indicated that composted human excreta does not smell and does not even look like human waste. I assume it was because of the way it looks and does not smell that many people felt it was safe to handle and use in the gardens. During the interviews I was invited to touch and smell the compost (human waste) about three times. This showed the level of acceptance and satisfaction respondents had about the use of human excreta in agriculture. Below is a picture of Peter Morgan (one of founding members of Mvuramanzi Trust and promoter of Ecological sanitation) holding human compost. Morgan felt that once it has decomposed human excreta is harmless and does not look anything like waste.



Picture by Peter Morgan

When asked whether ecological sanitation has made a significant change in the lives, most respondents said that they are now able to produce more and better crops and fruits. Many indicated that they either sell or store some of their products. In Chihota unlike in Mnini many of the respondents were involved in farming either to provide for their families or for commercial purposes.

In addition ecological sanitation was perceived as important because now farmers did not need to spend money on expensive commercial fertilizers. However, respondents expressed a concern that human fertilizers take long to prepare. For example for a family of 4 to 6 it took about two to three years for the UD vault to fill and then another three to six months to compost, thus households have nothing to use in their gardens, while they wait for their UD to fill up.

In the light of these challenges in some parts of Zimbabwe, people have begun to trade human fertilizers. A case in point is the old age centre nearby Chihota, where the centre has begun to collect urine and human excreta for sale. According to director from the old

age centre, petty cash made from the fertilizers is used for fundraising and day to day running of the center. For example since they have begun selling the fertilizers they have also managed to start a candle making business.

In the beginning, when Mvuramanzi Trust implemented the UD in the old age centre, there was no intention of venturing into community economic development; there has been some indication that UD can be used as a vehicle for such developments. It must be noted that not all respondents were willing to engage in such activities, like buying human excreta from other people. Resentment was expressed in many ways. In one interview, the respondent claimed that it was difficult enough to have to handle their household latrine waste and use in the garden, but handling and using strangers' human excreta was unimaginable.

Furthermore, respondents seemed to be in agreement that human waste is an effective and cheap fertilizer compared to commercial fertilizers. It is from this common point that the success of the project lies. Community development requires people to share a common need and problem. As active farmers community members in Chihota were able to link their need for fertilizers with the UD. Comprehension level of the community about the removal and the use of human excreta were largely associated with livelihood of the people. In Chihota it appeared that the driving force behind acceptance of UD was the fertilizers and that people's perceptions changed as result of the financial benefits of UD. These benefits included the cost of fertilizers, food security and in some cases income generation.

4.12.9 Post-project support

The Mnini case study illustrates well the importance of post-project support. The caretakers acted as major communication medium between the eThekweni municipality and the community. From the responses it was clear that there was some form of support given to the communities by the development agents after the completion of the project. Most of the problems that the households encountered after implementation were reported to the municipality through the help of caretakers. Respondents mentioned that

having the caretakers in the community helped, especially in cases where there were urine pipe blockages and shortage of water supply. However, respondents mentioned that in some cases the competence and ability of caretakers fell short. During rainy days for example, water gets inside the vault and caretakers could not guide people on how to get rid of the water, or how to stop the water from getting in.

Despite the vital need for post project support in sanitation projects, Mvuramanzi appears to have measured the success of its project primarily on the implementation of the UD by the community. This was reflected in the rareness of the support after the completion of the project. For example, unlike Mnini there were no caretakers or community workers in the project to follow up on the use of the system. One of the reasons was the lack of funds; however households were expected to report their problems to the village head and sanitation committee who would in turn send those to Mvuramanzi.

It is important for service providers to offer support to the community after the completion of the project. This contributes largely to the sustainability of the project as problems are solved as they arise.

5.13 Conclusion

The main findings of the research were presented and discussed in this chapter. The findings of the study shed some light on the principles of community development and how there were employed in the projects. Also, this chapter has attempted to highlight the processes that enhanced community development. This was obtained by examining in a comparative manner the approach used by eThekweni Water and Services and Mvuramanzi Trust. More prominently, the basis for the chapter was to look at the factors that inform planning and implementation strategies.

To sum up, the findings show that though both project aimed to promote community development, often these fell short and were not community driven. This was caused by the lack of participation as well as power, particularly in decision making. In terms of involving local people to participate in identifying and defining their own problems and

need, I found that it is challenging and difficult to involve communities in that phase, however it is important that at least the community is consulted and given an opportunity to voice out their concerns about proposed developments before implementation.

In general the findings show that the Mvuramanzi Trust approach was more people centered compared to eThekweni municipality, this is because the project tied well with the lifestyle of the people, as farmers. As a result people were able to relate and easily identify how they could benefit from UD. But more importantly, the research found too often job opportunities that are created by sanitation project are neither permanent nor change their lives of those benefiting. In the next chapter the summary and conclusions drawn from the findings will be presented.

Chapter 5 Summary and Conclusions

5.1 Introduction

In this chapter, the summary and the conclusions drawn from the entire research are discussed. This will be done in a way that presents a summarized version of the study, followed by a discussion of findings from where subsequent recommendations will stem.

This chapter will therefore be divided into three main sections namely: summary, discussion of findings and lastly, implications for future research. The first part (summary) will outline the major chapters of the research. Under this section the researcher aims to take the reader throughout the entire research approach.

The second part (discussion of findings), provides a detailed array of key areas of research interests. These will be discussed in relation to the initial intention of the research which was to investigate the usage of community development approaches in development planning and intervention. The objective is to highlight and summarize the key processes and principles that are fundamental in the delivery of sanitation services to the poor.

The third and last part provides implications for future research. This section will help to identify some areas that need to be developed in order to meet sanitation challenges. However, more importantly it will provide suggestions on how current approaches to sanitation, like the EcoSan can effectively meet the needs of the people in a holistic manner that addresses the socio-economic, cultural, political and environmental concerns.

5.2 Summary

Whilst sanitation is one of major global concerns, it has become evident that the majority of the people without sanitation are in poor countries, indicating the link between sanitation and inequality in human development (Human Development Report, 2006:50). Although innovative sanitation technologies are vital in provision of sanitation services to the poor, technology driven approaches will alone not eradicate sanitation challenges faced by poor communities. Poor sanitation should not be viewed in isolation from other 'poverties'.

The prime objective of this research was to determine community development approach in providing sanitation services to the poor. For the comparative analysis on which the major findings presented in this research were based, two cases were carefully studied. The two cases were in Chihota in Zimbabwe and Mnini in South Africa. The two communities were selected because their sanitation histories and challenges are a direct result of racial division and economic inequality of their pasts. Their histories entailed political, economic and social exclusion. Through transition to democracy, both countries embarked on specific programmes that focused on restoring balance in access to basic services including sanitation. As a result, both the sanitation programmes emanate from the need to redress past injustices created by the oppressive structures.

Sanitation improvement interventions in these countries, have therefore received a great deal of attention in recent years in development discourses and political forums. However the knowledge as to how to plan and implement sanitation projects to meet the needs of the local poor is still very limited. This study was carried out in response to such limited knowledge hoping to provide some guidelines based on the analysis of the two case studies presented in this research.

Over the past decade the role of both government and sanitation service providers has evolved in many ways regarding water and sanitation. Sanitation service providers have attempted to play a participatory role in providing sanitation to the poor. Many attempts

have been constrained by lack of understanding in working with local people which subsequently led to failure of overcoming inequalities through sanitation interventions. Pickford (cited in Kerr, 1990:8) maintained that rural sanitation requires considerable development work as it often involves people that are underprivileged in many respects. Furthermore, poor sanitation undermines any development intervention and instills a severe setback for human development. Yet current approaches on sanitation delivery have given little attention to development of the community through sanitation projects.

Evidence suggests that conventional sanitation technologies such as flush toilets and pit latrines have had limited progress to holistic development because of the harm they cause to the environment. Urine Diversion system as an ecological sanitation, offers opportunity for economical, environmentally safe sanitation for rural and urban communities.

The literature reviewed and discussed in Chapter two indicated, however, that the key challenges in providing Urine Diversion sanitation to the poor includes lack of participation, sanitation projects that do not meet the needs of the people and inadequate integration of technology with the socio-cultural aspects. For instance, most sanitation projects are oriented and focused on only providing sanitation and ignore other influences ranging from the political to the social. As a result, there were cases in Mnini where some of the toilets were used as storage rooms, thus not serving their intended purposes.

Chapter three argues that the choices of my cases have been based on methodological considerations and that my research approach helped in explaining the sanitation problem. The criteria used for selecting the case studies were that the communities had to be situated outside the urban area and must have completed activity or intervention regarding UD sanitation system.

The primary techniques used to collect data for this study were case studies, semi structured and in-depth interviews. In-depth interviews were used as a technique because

they allow for a more interactive setting; this also enabled the researcher to explore issues in greater depth. Data collected from the interviews was analyzed using a constant comparative method, which involved coding information and dividing it into meaning and themes for analysis.

In chapter four, I discussed the main findings of the research. Evidence from the case studies indicated that, sanitation projects should be community driven, and tailored in such a way that they meet the needs of the poor if transformation is to occur. However, as has been pointed out earlier, emphasis on infrastructure and technology has shown to divert the sanitation projects away from community development.

In effect, the case studies revealed that current approaches used by Mvuramanzi and eThekweni Water Services are still far from attaining effective level of sanitation delivery. These approaches have played limited roles in supporting and sustaining the livelihoods and development of the poor. In addition, the widespread perception that passive involvement of the poor automatically translates to participation means that sanitation projects have been designed for the poor and not by the poor.

The principle goal of community development is self-reliance; empowerment and sustainable development. Sanitation service providers have realized the need to encourage community participation if expected change is to occur. However, the research revealed that there are various challenges that face the water and sanitation sector in meeting these objectives. The manner in which these projects were planned, executed and monitored did not necessary present an environment where people can learn critically and empower themselves.

Community development approach to sanitation should not be seen as only a component of service delivery but a driving force behind development projects. Essentially, both the case studies have provided evidence that there is an obvious need to include social, cultural and economic aspects in sanitation projects as they are crucial in the acceptance and sustainability of the systems. In Chihota, the study revealed that people are more

accepting to new technologies if they can benefit socially and economically through their usage.

5.3 Analysis

5.3.1 Similarities and differences between Mnini and Chihota

5.3.2 Similarities

The main similarity in the two UD sanitation projects is that they both aim to promote community participation. In this sense the two approaches appear similar and thus fitting in with community development model which epitomizes participation. In both the projects, community participation in provision of sanitation received considerable attention as a strategy which offers both social and political advantages. The point is that only when people participate that they will learn and change their situation. This is consistent with Freire's (1972) view, that to achieve true liberation, it is necessary to trust in the oppressed and their ability to reason.

The methods used during the project implementation in Mnini and Chihota were also similar. These methods included the mobilization of the construction teams, control of materials and setting up a central construction camp within the community. In both the projects, the implementation phase was characterized by labor intensive methods with the intention of also valuing local skills and knowledge.

In Mnini all construction work for brick-laying and toilet constructions were conducted using local contractors, health and hygiene training at household level was done by facilitators who lived within the community. Furthermore, the strategies adopted by these projects suggested that provision of sanitation can play a major role in poverty-reducing strategies. For instance, in both these project emphasis was placed on use of local labor and creation of job opportunities for local people.

5.3.3 Differences

One of the major differences between UD sanitation project in Mnini and Chihota was found in their project approaches. Mvuramanzi adopted an ecological sanitation (EcoSan) approach to UD, which generally fits with community development model. This model maintains that any intervention to revitalize the community, must take into consideration the socio-economic aspects of the community. The EcoSan approach therefore appreciated that people may use the environment for both cultural practices and as tools for income generation.

In Chihota, the ecological sanitation approach and the use of human excreta for agricultural purposes had several positive effects on sustainable food security and income generating means. This approach slowed the widespread perception that sanitation interventions often do not integrate the ecological, social and economic aspects of the community in their approach. It also facilitated costs savings for farmers and low income population. For example, not spending money on commercial fertilizers was regarded highly valuable; money could then be used for other expenses such as school fees and hospital fees.

Mnini project, on the other hand did not adopt an ecological sanitation approach. Urine Diversion systems in Mnini have been promoted only as dry sanitation systems with no emphasis on the use of latrine waste in agriculture. The viewpoint sees the social and cultural factors around UD sanitation more important than the recycling component.

Another difference between the Mnini project and Chihota was that in Mnini, the focus was on separating urine from human waste, whilst the Chihota project focused on recycling of urine and human waste into nutrients that are fit for agricultural purposes. In support of the approach used in Mnini, Holden, Terreblanche and Muller (cited in Austin et al. 2005: 4-5) pointed out that householders do not primarily choose ecological sanitation in order to recycle nutrients, but rather because it is the technology that best satisfies their aspiration and physical requirement.

The approach rests upon the understanding that, social and cultural considerations should be uppermost in order for people to accept UD. For example, in South Africa, the social and cultural norms and taboos (*such as men urinating whilst seated demeaned their social status, it made them feel like women*) influenced the approach adopted by the municipality. This resulted in a provision of a separate urinal pedestal to accommodate men. This was, however, not the case with Chihota, no separate urinal pedestal was provided for men.

5.4 Key processes and principles

5.4.1 Bottom-up approach

Urine Diversion sanitation system, as an alternative approach for sustainable sanitation, has potential to be economical and ecologically sustainable as compared to the conventional flush and pit latrines. However the challenge of promoting UD and making it acceptable appears to rest on effective planning and implementation strategies. The Chihota and Mnini experiences have indicated that, underlying the Mvuramanzi or eThekweni municipality approach is the need to involve people in the process of their development. Even if the idea for development originates outside the community, people must feel that they are driving the process. Using bottom-up approach can help projects meet the needs of the people by not only empowering them in terms of skills but also creating an opportunity for self-sustenance. Also in working with communities, it is essential to note that what works in one community may not work in another. For example the standardized procedures and the reluctance on the part of eThekweni municipality to involve local people in the planning phase did not foster for learning process.

5.4.2 Communication

Although the importance of communication in sanitation project is widely recognized, in practice, sharing of information between different stakeholders is beset with many difficulties such as differences in opinions, level of skill, knowledge and assumptions. Often the possibility for effective communication depends mainly on local and national politics as well as political institutions.

In Chihota some people did not know why they had not been put on the beneficiary list or even what to do in order to get answers. The most critical point is to create a dialogue between all the stakeholders, and more importantly to encourage local people to share their experiences. A dialogue between all stakeholders prevents a top-down communication and promotes local knowledge. Dialogue requires openness to new information, a willingness to be challenged and a deep hope that change and transformation is possible.

5.4.3 Participation

The arguments presented in this research confirm the need for strategic sanitation approaches that emphasize the *process* of development rather than its *outcome*. Lack of participation, particularly in decision making in Mnini had substantial adverse effects on the projects' progress. It often led to lack of ownership of the projects and created considerable dependency on the service providers. Respondents in this area referred to the UD as "*Municipality toilet*", in addition maintenance of the toilet and emptying of the pits were considered to be the municipality's responsibility.

While participation has received a wide appreciation in development literature, establishing who should participate and on what grounds presents a challenge. This provides a dilemma because without participation of local people, the project may be deemed unsuccessful because 'the community' does not have full ownership. Local participation at decision level is important as it allows the community to understand the project and thus relate to it.

5.4.4 Empowerment

Where considerable effort has been made to transfer skills and knowledge to local people like in Chihota, the response was remarkable, the community used the UD toilets appropriately. Through education and training, local people gained various skills that proved essential in the project process. The principal aim of education, training and transfer of skills should be to increase people capacity to solve their problems. More importantly, as Ife (2002:215) argued, community development must always realize that community members themselves possess important skills, and that ultimately these are what will drive the process. This means that people should take power and change oppressive structures.

5.4.5 Community Economic Development

The support and acceptance of UD sanitation system, in the case of Chihota can largely be attributed to the contribution of the project to community economic development. For example some respondents were able to earn more money by selling some of their products, while some reported that they were able to save money and use it for other income generating activities. The experience of Chihota indicates UD sanitation projects can gain much popularity if they can adopt community economic strategies such as gardening and construction projects. Such approaches to rural sanitation need to be oriented to generate economic self-reliance by developing community's existing resources.

5.4.6 Monitoring and Evaluation

The study revealed that inadequate monitoring as well as evaluation poses constraint in the success of UD sanitation projects. Monitoring and evaluation are important in the process of learning, frequently however, there is less focus on these aspects. For reason of preconceptions or financial constraints in offering monitoring and evaluation to the communities, far too less emphasis is placed on the need for post-project support. This is despite the fact that frequently people encounter problems about UD once they have started using the system and way after the project has been completed. The Mnini

community where the toilets were later used as storage rooms signifies the importance of continuous evaluation and learning in such sanitation approaches. Unlike flush toilet and pit latrines, UD requires careful operation and maintenance.

5.5 Implication for future Research

The experience of the two case studies presented in this research, call for greater attention in designing Urine Diversion sanitation projects if the Millennium Development Goals¹⁷ for sanitation are to be achieved. For a variety of reasons discussed earlier, planning and implementation of UD sanitation services requires considerations substantially different from conventional sanitation systems. Therefore, if the emphasis in UD sanitation projects should be on local participation and meeting the needs of the people, it would seem necessary that sanitation projects be viewed as part of a continuous, self-motivated process rather than static and standardized process. Hence, there is a need for research relating to the capacity of service providers in provision of UD sanitation projects to the poor.

Given the low income levels and subsistence in rural and poor communities, it seems necessary that rather than viewing sanitation projects as only about health issues, these projects must be linked to broader socioeconomic development and form basis for integrated development. As a result, considerable emphasis on designing such sanitation projects is needed, so that the intensity of UD sanitation projects and the number of other sanitation services may be increased gradually over time.

Finally, and of importance, the two case studies indicate that if the UD sanitation system is to be accepted, there is need to discourage the perceptions that UD systems are designed for the poor. Research may be needed to assist in developing promotion methods and marketing strategies for UD as a mainstream sanitation system in the eradicating sanitation backlogs.

¹⁷ See chapter 1 for the MDGs target on sanitation

5.6 Conclusion

Throughout, this study has attempted to highlight the importance of community development in provision of sanitation to the poor. Perhaps the most important conclusion to be drawn from this study is that in order to sustain UD sanitation system, some kind and degree of community development is essential. What is apparent is that local participation can not only be translated into involvement of the people during implementation phase. As an approach to development and empowerment, participation renders to power in decision making.

The reality that the Mvuramanzi and eThekweni sanitation projects, failed to endorse and promote power in decision making, in the projects that aimed to promote participation illustrate the extent of the obscurity and difficulties in promoting participation in sanitation projects. As such community participation becomes futile and worthless. It is imperative therefore to note that not all participation is developmental, and that in order to achieve local participation and community development, communities need to be understood as unique and different. The absence of the above premise, affects the ability for service providers to put into their plans the differences among and within the community, hence affecting the success of the project. This is particularly important in planning for UD sanitation projects, because UD requires transition in the behaviors and attitudes of the people., Therefore planning should not be top-down, rather than attempting to fit people into programmes that have already been planned for them. Fitting people into these programmes can only result in catastrophes for both the people and the development agents.

References

- Auret, D. (1990) **A Decade of Development Zimbabwe 1980-1990**, Mambo Press, Harare
- Austin, L. Duncker, L. Matsebe, G. Pasha, M. and Cloete, T. (2005) **Ecological Sanitation- Literature Review**, Water Research Commission, Pretoria.
- Aziz, S. (1978). **Rural development: Learning from China**, Macmillan Publishers, London.
- Bellon, R. Gambara, P. Gatsi, T. Machenedze, T. Maminimini O. Waddington R. (1999) **Farmers' Taxonomies as Participatory Diagnostic Tool: Soil Fertility Management in Chihota, Zimbabwe**. CMMYT Economics Working Paper NO. 13 Mexico. DF: CMMYT.
- Bernard, H. and Russell (1994) **Research methods in the anthropology**, USA Sage Publication.
- Binns, T (1995) **People and Environment in Africa**, John Wiley & Sons Ltd, London.
- Bless and Highson-Smith (1995) '**Fundamental of Social Research Methods; An African perspective**, Juta & Co Ltd, Lusaka.
- Burkey, S. (1993) **Self-reliant Participatory Development** in Stan Burkey, People First, Zed Books: New Jersey.
- Chambers, R. (1994) **Participatory Rural appraisal: Challenges Potentials and Paradigm**. **World Development**. Vol.22 No10.

- Coetzee, K. Graff, T. Fred, H. and Wood, G. (2001) **Development Theory, policy and Practice**, Oxford University Press, Cape Town.
- Cohen A. (1989). **Journal of Public Health Policy**, Vol. 10, No. 2. (Summer, 1989), pp. 214-221.
- Dane, F.C. (1990) **Research Methods**, Brooks/ Cole Pacific Grove.
- Davidow, J. (1983) **Zimbabwe Is a Success**. Foreign policy vol, No 49 winter 1982-1983, pp. 93-106.
- Davids. I Theron, F. Maphunye, K. (2005).**Participatory Development in South Africa; A development Management Perspective**: Van Schaik, Pretoria.
- Denscombe. M. (2003) **The Good Research Guide**, 2nd Ed. Open University Press, Philadelphia.
- Department of Water Affairs and Forestry of South Africa (2001) **White paper on basic household sanitation**. South Africa
- Department of Water and Forestry, (2004) **A history of the first decade of Water Services delivery in South Africa 1994 to 2004**. Pretoria
- Department of Water and Forestry (2002) **The Development of Sanitation Policy in South Africa**, Pretoria.
- Department of Water And Forestry (2003) **Strategic Framework for Water Services, Water is life, sanitation is dignity**, Pretoria.
- Department of Water And Forestry (2004) **Current use of Urine Diversion Toilets in South Africa with special reference in Kgalagadi DM Site**, Pretoria.
- Dexter, L (1970) **Elite and Specialized Interviewing**, Northwestern University Press.

- De Vos, A.S. (1998) **Research at Grassroots; a Primer for the caring Professions**, Van Schaik, Pretoria.
- Duncker, L. Matsebe, G. and Austin L. (2006) **Use and Acceptance of Urine-Diversion Sanitation Systems in South Africa**, WRC, Pretoria
- Edge, W. (2006) **Africa**. Global Studies, McGraw-Hill/ Duskin, Iowa
- Esrey, S. Gough, J. Rapaport, D. Simpson Hebert, M. Vargas, J and Winblad, U. (1998) **Ecological Sanitation**, Sida, Stockholm.
- Esrey, S. Anderson I. Astrid H. and Ron S. (2001) **Closing the Loop ecological sanitation for food security**, Publications on Water Resources No. 18, Stockholm, Sweden.
- eThekweni Water and Services, (2003) **Draft Business plan for the Provision of Basic Water and Sanitation**, Durban.
- Feachem, R G. Bradley, J B. Garelick, H and Mara, D. (1983). **Sanitation and disease: health aspects of excreta and wastewater management**, John Wiley & Sons (published for the World Bank), Washington DC.
- FitzGerald, P. McLennan, A and Munlow, B. **Managing sustainable Development in South Africa**, Oxford University Press, Cape Town.
- Folch-Lyon, E and Trost, F. (1981) **Conducting Focus Group Sessions in Studies in Family Planning**. Vol. 12 pp443-339.
- Freire, P. (1970) **Pedagogy of the Oppressed**. Continuum, New York.
- Gopaul, M. (2006) **The significance of rural areas in South Africa for tourism development through community participation with special reference to**

Umgababa, a rural area located in the province of KwaZulu-Natal, University of South Africa, Durban.

- Government of Zimbabwe, (2001) **National Action Committee for Rural Water Supply and Sanitation**, Zimbabwe.
- Government of Zimbabwe (2003) **Water and Sanitation sector; HIV/AIDS response, Programme, strategies and Guideline**, Zimbabwe.
- Grinnell, R.M. and Williams, M (1990) **Research in Social Work; A primer** Itasca, IL Peacock.
- Guijt, I and Shah, M K. (1998) **The Myth of Community: Gender issues in participatory development**, ITDG Publishing, London.
- Homan. S. M. (1999) **Promoting Community Change- Making it Happen in the Real World**, 2nd Edition, Brooks/ Cole Publishing Company.
- Hope, A and Timmel, S (1996) **Training for Transformation**, Gweru Mambo Press Edition, Brooks/ Cole Publishing Company.
- Horton, M and Freire, P. (1990) **We make the road by walking**. Philadelphia: Temple University Press.
- Human Development Report (2006) **Beyond scarcity. Power, Poverty & Global Water Crisis**, Published for UNDP, New York.
- Human Development Report (2006) **Rural Sanitation in Southern Africa: A focus on Institution and Actors**, Published for UNDP, New York.
- Ife, J. (2002) **Community Development: Community-Based Alternatives in the Age of Globalization**, Longman Press, Sydney.

- Jaspers, F. G. W (2001) **International Environmental Agreements: Politics, Law and Economics**, 2001 (Vol. 1) (No. 3) 305-325
- Jensen, P.K, Phuc. D.P. Dalsgaard, A. Konradsen, F. (2005) **Successful Sanitation promotion must recognize the use of latrine waste in agriculture—The example of Viet Nam**. Bulletin of World Health Organization Nov, 2005 83 (11)
- Kalbermatten, M. J. Julius, S. D and Gunnerson, G. C. (1982). **Appropriate Sanitation Alternatives: A technical and Economic Appraisal**, The Johns Hopkins University Press.
- Kerr, C. (1990) **Community Health and Sanitation**. Intermediate Technology Publications Ltd, London.
- Khan, A.H. (1997). **The sanitation gap: Development's deadly menace**, UNICEF.
- Knight, T. Colletta, J. Esman, J. Mbindyo, J. Meerman J. Montgomery, D. Rogers, M.Safilios-Rothchild, C. Uphoff, N (1980) **Implementing Programs of Human Development**, World Bank. Washington, D.C.
- Korten, D. C. (1980) **Community Organization and Rural Development: A Learning Process Approach**, in Development Perspective; Urban, Rural and Theoretical Issues, New York.
- Lagardien, A, and Cousins, D (2005) **Strategic approaches in provision of sanitation services to informal and unserved areas**, Pretoria.
- Langergraber, G and Muellegger, E. (2004) **Ecological Sanitation—a way to solve global sanitation problems?** Institute of Sanitary Engineering and Water

Pollution Control, BOKU—University of Natural Resources and Applied Life Sciences, Vienna, Muthgasse 18, A-1190 Vienna, Austria.

- Matsebe, G & Duncker, L. (nd) **Urine Diversion in South Africa: Is this a solution?** CSIR, Building and Construction Technology, Pretoria.
- Maykut, P and Morehouse, R (1994) **'Qualitative Data Analysis;** A Philosophic and Practical Guide, Falmer Press, London and Washington, DC.
- McGranahan, G. Jacobi, P. Songsore, J. Surjadi, C. and Kjellen, M. (2001) **The Citizens at Risk: From Urban Sanitation to Sustainable Cities,** Earthscan Publications Ltd, London.
- Morgan, P. (2004) **An Ecological Approach to Sanitation in Africa: A Compilation of Experiences** Stockholm Environment Institute, Sweden.
- Morgan, P. (2007). **Toilets that make compost. Low-cost, sanitary toilets that produce valuable compost for crops in an African context.** Stockholm Environment Institute, Sweden.
- Moser, C. (1983) **Evaluating Community Participation in Urban Development Projects,** Development Planning Unit UCL.
- Mouton, J. (2001) **How to succeed in your Master's and Doctoral Studies,** Van Schaik publishers, Pretoria.
- Moyo, S. Robinson P. Katerere, Y. Stevenson S. and Davison G, (1991) **Zimbabwe's Environmental Dilemma; Balancing Resource Inequalities.** Published by ZERO.

- Mulenga, M. Manase, G and Fawcett B (No: date) **An Analysis of Sanitation Policies in Southern Africa: The Case of Gender Policies in Sanitation in South Africa, Zambia and Zimbabwe.** Water, Engineering and Development (WEDC), Southampton.
- Mulenga, G. Manase, M and Fawcett. (2001) **Linking Urban sanitation agencies with poor community needs.** 27th WEDC Conference, Southampton.
- Mvuramanzi Final Report (2006) **Improving Access to Water, Sanitation and better Nutrition for Vulnerable People,** Zimbabwe.
- National Environmental Health policy (1993) Zimbabwe.
- Nelson, N and Wright, S. (2000) **Power and Participatory Development.** Intermediate Technology Publications, London.
- Newman, M. (1993). **The Third Contract,** Steward Victor Publishing, Sydney.
- Odi, N.A. (1999). **A Poverty-Reduction Approach to Water, Sanitation and Hygiene Programmes.** Water Aid July Briefing paper
- Onabolu. B. and Ndlovu, M. (2006) **A Methodical Approach to Health and Sanitation integration.** Water Research Commission, Pretoria.
- Pacey, A. (1980). **Rural Sanitation: Planning and Appraisal,** Intermediate Technology Publications, Oxfam.
- Parnell, S. Pieterse, E. Swilling, M. Wooldridge, D (2002) **Democratizing Local Government-** The South Africa Experiment, University of Cape Town.
- Pickford, J. (1995) **Low cost Sanitation,** IT Publication, London.
- Rahnema, M. (1992) **Participation. The Development Dictionary** Ed by W. Sachs. Johannesburg: Witwatersrand University Press

- Ralo, T. Grinker, R. Kruger, V. Steele, L and Weitz V. (2003) **A study of Current Water policy in relation to rural people experience of its implementation-case studies from the Eastern Cape.** Water Research Commission, Pretoria.
- Reid, D. (1995) **The Global Crisis in Sustainable Development,** London: Earthscan.
- Rivett-Carnac J.L. (1984) **Sanitation for Peri- Urban and Rural Communities in Natal/ KwaZulu.** Institute of Natural Resources, University of Natal, Durban.
- Roberts. H. (1979).**Community Development: Learning and action.** University of Toronto Press.
- Robison, A. (2002) **The Zimbabwean Experience; Lessons from a review of 15 years of Zimbabwe IRWSS,** Water and Sanitation programme, Africa region, World Bank, Nairobi, Kenya.
- Rowlands, J (1997) **Questioning Empowerment. Working with women in Honduras,** Oxfam.
- Sarandakos, S. (2005). **Social Research** 3rd edition PALGRAVE Macmillan London.
- Schutte, C and Pretorius, W. (1997) **Water demand and population growth,** Water SA 23 (2) 127-133.
- Sekaran, U. (2003) **Research Methods For Business- A skill Building Approach,** John Wiley & Sons, Ltd, West Sussex.
- Simpson Hérbert. M (2002) **Ecological Sanitation and urban sustainability.** EcoSanRes, Stockholm, Sweden.

- Stoneman, C. (1981) **Zimbabwe's Inheritance**, The Macmillan Press LTD, London.
- Strauss, M. (1997) **Health and Pathogen Consideration regarding the use of Human waste in Agriculture**. Environmental Research Forum 5/6 83-98
- Tayler, K. Parkison J. and Colin, J. (2003) **Urban Sanitation A Guide to Strategic Planning**, ITDG publishing, London.
- Tibbetts, J. (2000). **Environmental Health Perspectives**, Vol. 108, No. 2. (Feb., 2000), pp. A68-A73. Water World.
- Thaw, D and Randel, M. (1998) **Project Planning for Development**. Olive publications, South Africa.
- UN-HABITAT (2003) **Global Report on Water and Sanitation in the World's Cities: Local Action for Global Goals** United Nations.
- Von Kotze, A. (1998) **Monologues or Dialogues? Missed learning opportunities in participatory rural appraisal**. Convergence, Vol XXX1, No4, South Africa.
- Werner, C. Fall, A.P. Schlick, J and Mang, H. (2003). **Reasons for and principles of ecological Sanitation** .GTZ EcoSan Project, Stockholm Sweden.
- Werner, C. Panesar, A.R. Münch, E. Maksimovic, C. Scheinberg, A. Schertenleib, R. Bracken, P and Gilbrich, W.H (2006). **Capacity building for ecological sanitation; Concepts for ecologically sustainable sanitation in formal and continuing education**. The International Hydrological Programme (IHP) of the (UNESCO) France.
- Winblad, U (2002) **Final Report SanRes 1992-2001**, Stockholm Sweden.

- Winblad, U. and Simpson-Hébert, M. (2004). **Ecological Sanitation** (2nd Ed.) Revised and enlarged edition. Stockholm Environment Institute: Stockholm, Sweden.
- Wright, A. (1997) **Towards A strategic Sanitation Approach, Improving Sustainability of Urban Sanitation in Developing Countries**, World Bank, Washington DC.
- WHO and UNICEF (2006) **Meeting the MDG Drinking Water and Sanitation Target: A mid term Assessment of Progress**, WHO Library cataloguing-publication Data, Switzerland.
- WHO and UNICEF (2006) **Water and Sanitation Target, the urban and Rural challenged of the Decade**, Published for UNDP, New York.
- White, B. (2000). **Dissertation skills for Business and Management Students**. Thomson Copyright, Casell, London.
- Zurbrugg, C. Morel, A. Schertenleib, R (2004) **New approaches for improved sustainability in urban environmental sanitation infrastructure and services**, SANDEC, Paper presented at the Conference entitled "Social sustainability of environmental technologies in developing countries", Desenzano del Garda, Italy, 21st October 2004.
- **The White Paper on Water Supply and Sanitation** (1994). Pretoria

Websites

Map of Durban www.kzn.org.za/travelguidemaps/Durban (accessed 10/11/07)

Map of Zimbabwe www.infoplease.com/atlas/country/zimbabwe.html (accessed 10/11/07)

Appendix 1: Interview Questions for the services providers

eThekweni Water and Sanitation Services and Mvuramanzi Trust

- How was need for sanitation worked out?
- Given the range of sanitation systems, why was Urine Diversion Toilet System a priority?
- What procedures were followed in order to begin the Programme?
- Who and how was planning for the project conducted?
- How was community participation defined?
- What challenges were encountered in promoting participation?
- What role did the community play?
- At what stage did the community get involved
- What were the factors that affected participation?
- How were those factors eliminated?
- Was there mentoring or training processes that took place in the project?
- What was the nature of the training?
- Did you do any evaluation of the impact of training inputs?
- What follow- up process have you done on the acceptance, efficiency and effectiveness of the UD system?

Appendix: 2 Questions for the Community Member (Chihota and Mnini)

- What do you know about the UD sanitation project?
- What are your views and feelings about the UD sanitation system?
- Who were the role players in the sanitation project?
- What was your role in the project?
- How were the PSC/ Water and Sanitation Committee formed?
- What were the roles of the community?
- Was there interaction between the community and development agents?
- Were there consultations with community and Development agents?
- What were the goals of these consultations?
- Were you satisfied with the way the meeting/ consultations were conducted?
- How were decisions taken in the project?
- What were the main barriers in project sustainability?
- How should be responsible or pay for operation and management of the UD system?
- In what ways has the UD sanitation project changed your life?
- Given the experience so far with UD system do feel that, it was the correct choice?
- What could be done to improve the delivery of UD system in poor communities?

Appendix:3 Questions for PSC and Water and Sanitation Committee

- Who initiated the formation of the committee?
- At what stage was the committee formed?
- What were the responsibilities of the committee in the project?
- How often did the committee meet with the community and the service providers?
- What problems were encountered and why?
- How were those problems solved?
- If you had any opportunity to make changes the UD sanitation delivery, what would you change?

Appendix 4: Consent form



My name is Pulane Mafoea, I am a Masters Student in Community and Development programme of the School of Social Work and Community Development at the University of KwaZulu-Natal. If you need further information about this study you can contact my supervisor Dr. T. Xaba on this number (031) 260 1085.

I am conducting research for the Dissertation that would enable me to complete the Masters degree. I would like to discuss some of the issues relating to the topic with you. The Topic of my research is:

Community Development approach in the provision of Sanitation to the poor; a comparative study of the Urine Diversion Sanitation System in South Africa and Zimbabwe.

Ethical considerations for this research:

- There will be confidentiality regarding the information you give me. Your name and identity will not be divulged to anyone else, even my supervisor. The information you share with me will not be shared with anyone else except my supervisor.
- The data collected will be well secured.

- The participation is not forced and you can withdraw from the research at any time you feel uncomfortable.
- You have right to review what I reported if you wish so in order to consider if it is really your views that are reported.
- During the discussion I will take notes to keep track of what has been covered. However so that I do not worry about getting every word on the paper, I will use a tape recorder. This will help me remember what you have said. As soon as the tape has been transcribed, what you said will be erased, thus your name and any information that identifies you will not appear in my report.

The above information has been explained to me, I understand and I agree with it.

.....
Signature of participant	Place	Date
.....
Signature of Witness	Place	Date