Women and water access in the Eastern Cape: an anthropological investigation into supply and sustainability in water scarce Rural Amatole Districts: with special reference to: Mbelu, Ntilini and Cwebe

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Kombi Sausi

DEDICATION

This dissertation is dedicated to my late mother Kavira Ephasy Syakena who passed on the 02/04/2017. I would have loved you to see me through the end of this process, but I have no doubt that you are proud of me getting to this stage. You always had the best smile ever and happy each time I gave you news about the progress I was making with my PhD. I would have loved you to be here and share the joy with me as usual. But God had different plans. I LOVE YOU MUM

In Loving Memory of my mother

KAVIRA EUPHRASIE SYAKENA

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Finally, I would like to dedicate this thesis to my late mother. I have been extremely fortunate in my life to have a mother who has shown me unconditional love and support. The relationships and bonds that I have with my mother hold an enormous amount of meaning to me. I admire her for all of their accomplishments in life, for her independence, for her hierarchical role in our family, and for all of the knowledge and wisdom that she has passed on to her children and grandchildren over the years. Personally, my mother played an important role in the development of my identity and shaping the individual that I am today. She taught me a great deal about being myself. It is because of her that I strive to excel so that she can continue to smile where she is. May Her Soul Rest In Peace.

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ACRONYMS

ANC- African National Congress

ASWSD- Accelerated Sustainable Water Service delivery

CPR- Common Property Resource

CSIR- Council for Scientific and Industrial Research

DWAF- Department of Water Affairs and Forestry

GAD- Gender and Development

GWA- Gender and Water Alliance

HRBA- Human Right Based Approach

HSRC- Human Sciences Research Council

IDWSSD- International Drinking Water Supply and Sanitation Decade

IWRM- Integrated Water Resource Management

MGD- Millennium Development Goal

NGO- Non-Governmental Organisation

NWA- National Water Act

PWV- Pretoria-Witwatersrand-Vereeniging

RDP- Reconstruction and Development Program

RWH- Rain Water Harvesting

SABC- South African Broadcasting Corporation

SASSA- South African Social Security Agency

UN- United Nations

UNDP- United Nation Development Program

UNEP- United Nations Environment Program

UNESCO- United Nations Education, Scientific and Cultural Organisation

WHO- World Health Organisation

WID- Women in Development

WPLG- White Paper on Local Government

WRC- Water Research Council

WSA- Water Services Act

WSSP- Water Sanitation and Supply Program

ABSTRACT

This study looks at domestic water supply within the context of household dynamics in a rural area with a particular focus on the acquisition of water. The study examines the implications for women and gender through customary norms and practices, local institutions, ideologies and cosmologies, household structures and people's practices. In the rural areas of Amatole District Municipality, women and men's relationships to water and its acquisition are fundamentally different, and the differences have deep consequences for women's status, standard of living and their survival. It also aims to explore the dynamic gender relations and women's vulnerability and dangers they face while trying to access water. Twenty-three years after the introduction of democracy, the provision of water in rural South Africa remains elusive and prevails as a blot to the country's legislature and their policy makers and advisers Thus this study is intended as a critique of this lack of provision and aims to provide an insight into some of the concealed realities in service delivery failures in post-apartheid South Africa. Water is the foremost human basic need and is crucial for sustainable development particularly in rural areas where there is limited access to clean and safe water. The internationally based Gender and Water Alliance (GWA) (2006) states that limited access to clean and safe water is associated with poor hygiene and sanitation at household level and that it widens the poverty gap, creates gender inequalities and fails to annihilate water borne diseases.

The target area for this study was Amatole District Municipality, where piped water to each household is non-existent. Situated in the wild coast of South Africa's Eastern Cape province, scattered households are a characteristic feature of the undulating terrain in the area. The villages under study were Cwebe, Mbelu and Ntilini, where infrastructure development and employment opportunities remain equally non-existent. The demographics of the areas consist of mainly women, young children and older men. The younger and middle-aged men migrate to the mines in other provinces, especially Gauteng Province, where most of the country's richest mines are located. Almost all of the residents in these three villages are unemployed and depend on remittances and social grants. Only a small number of the villagers depend upon working their land on a subsistence basis. Another small percentage is employed in the only tourist resort in the area, which can accommodate a maximum of 32 guests at a time, indicative of the rather limited employment opportunities in this soft industry.

The villages are sparsely scattered, and the terrain is hilly, which makes it difficult for the local residents to access the distantly available water with the relative ease for which they constantly hope. The nature of the terrain and the alleged high costs of a reticulation system is often blamed by the local state for its absence. In Ntilini and Mbelu, for example, women and children source their water from the dangerously deep gorge linked to the Mhashe River which is also difficult to access. The area also has five dry boreholes, which are not maintained. The more distant Cwebe on the other hand get its water from the Nlonyane River and its tributaries and springs. A water tank in the area also exists, but for agricultural uses only.

Localised belief systems and customary norms continue to prevail upon their existence in each of these villages, despite their relative hardships. At least three of repeated factors remain as justifications for their continued association with the land that they occupy viz. spatial identity, social identity and ancestral association. All of these factors remain interconnected by virtue of the obeisance they have towards the local leadership, and the spatial and social identities are conditioned by local marriage patterns, as well as their beliefs in the oversight of their ancestral spirits in their daily lives. By virtue of having them buried on their homestead properties the belief is that ancestral spirits

prevail as an omniscient and omnipresent force which requires permanent occupation by the living as an appeasement to their continued sustainable inter-relationships. The consequences of such a belief system is an unshakeable belief in an eternal association with the land, precluding any possibility of relocation for the sake of improved service deliveries, including piped water to their homes

Women bear the brunt of this belief system in the area and therefore have to travel long distances to collect clean drinkable water, often under challenging if not dangerous circumstances. Women in rural areas such as Cwebe, Ntilini and Mbelu (notwithstanding other areas all over South Africa) do not feel the impact these policies have made on the lives of women in urban areas. Rural women still feel isolated in the development planning that is theoretically intended to benefit them, because their views and experiences are not caucused. While post-Apartheid South Africa lays claim to a constitution that matches the most progressive in the world, there remains startling inconsistencies in the ways in which ground realities are given due conscience.

1 CHAPTER ONE: ORIENTATION AND BACKGROUND

1.1 INTRODUCTION

An estimated 1.3 billion people in the Globe live below the poverty line and of that 1.3 billion, two hundred and forty million are in sub-Saharan Africa (World Bank 200a cited in Mullen 2002: 147). Mullen (2002: 147) asserts that Sub-Saharan Africa presents a more cynical profile considering the fact that the number of the poor has even increased both absolutely and proportionally. Mullen adds that the depth of poverty or the distance below the poverty line has also intensified and economic growth has been weak in many countries. Given these dynamics, it is also imperative to affirm that the highest rate of the poor population is found in the rural areas. Simultaneously, Sub-Saharan Africa failed to meet its Millennium Development Goal (MDG) target on water and sanitation at the beginning of 2015. These baselines are determined through an analysis of data from 35 countries in sub-Saharan Africa representing 84% of the region's population. The data shows significant differences between the poorest and richest fifths of the population in both rural and urban areas. Hence, based on the poorest of the populations which are in the rural areas, piped-in water is non-existent in 40% of these households and less than half of the population have access to improved sources of water (UN Water, 2015). This study therefore views the issues of Amatole Municipality within the broader context of the woes of Sub-Saharan Africa and emphasizes recognition of the Integrated Water Resource Management (IWRM) in South Africa to meet its demand on water access and supply.

The United Nations Development Program (UNDP) predicted that halving the proportion of people without access to safe water would become a reality in sub-Saharan Africa by 2050. However, 884 million people of the world's population do not have access to safe drinking water and by 2050, at least 1 in 4 people is likely to live in a country affected by chronic or recurring shortages of fresh water. Access to clean water for all is an essential part of the world we want to live in. However, the global socio-economic glitches have had a causal effect on the deaths of millions of people from diseases associated with inadequate water supply, sanitation and hygiene annually (UN water watch, 2014). Furthermore, water scarcity, poor water quality and inadequate sanitation have a negative impact on food security, livelihood choices, and educational opportunities for poor families across the world. Stevenson (2014) highlights a central issue by concentrating on two dimensions, water access and adequacy in an anthropological perspective. He highlighted the cultural or "lifestyle dimension of water insecurity, its implications for access/adequacy and the phenomenology of water insecurity. The anthropological perspective revealed that scores on a water insecurity scale derived from ethnographic observations are associated with emotional distress" (Stevenson, 2014: 392). Therefore, it becomes clear that water scarcity is becoming rife in the world and water is likely to become more expensive than petrol. As a result, major multinational companies are even ready to exploit the situation. It is against this background that water scarcity has risen so high up on the agenda of the United Nations. Kalnicka (2005) highlighted, that the world body has declared that the 21st century is the "century of water".

There are diverse macro-scheme sources of supply of domestic water in rural areas. These include conventional communal sources and self-supply sources. The conventional communal sources are justified for improved water quality and the use of high-level technology such as drilled boreholes

equipped with hand pumps, collection tanks and protected springs (Carter, et al., 2005). Other macro-scheme techniques include powered systems such as submersible pumps and gravity flow schemes (Carter, 2006). However, the conventional communal facilities in most of the rural areas in the developing countries have been proved to be unsustainable because of their high rate of breakdown as a result of poor operation and maintenance, congestion, difficulty in operating the pumps and long distances because sources are too few and rural households are often many and scattered (Brett, et al., 2007; Singh, et al., 2004). Conventional communal sources have also been observed as grounds for social unrest within communities and are insufficiently funded to achieve the MDGs water target (Davidson, et al., 1993, Sutton, 2008). In the case of Uganda for instance, the coverage of facilities has increased, but such facilities have been abandoned by beneficiary communities because of the high iron content in the water (Martin, 2007). In South Africa, challenges emerge from the fact that 15 million people, according to the 2011 census, still reside in the rural areas where water scarcity remains a perennial problem.

This study focuses on water scarcity and the problems that women face in the Eastern Cape Province of South Africa with a distinct focus on three areas in the Amatole District Municipality viz. Cwebe, Mbelu and Ntilini. This study is hinged upon known factors that have emerged as a result of several personal visits to the area, as well as numerous anthropological studies that have been carried out on the subject. Anthropologists such as Zdenka Kalnicka (2005) in Nepal, Ghana, Kenya (Africa, Asia and South America), Nandita Singh in India (2006), and Edward Stevenson (2014) in Ethiopia, have raised issues around water and women engagement in their varying roles that provide a broad attention to the fact that women are both major role players and managers of water, especially in rural areas. The study undertaken by Singh affirmed that at least 70% of women in Africa are directly responsible for accessing water for domestic use and for food production. This study draws inspiration particularly from Singh's work in India, which provides a close comparative basis against the target areas chosen for investigation in the Eastern Cape in South Africa.

1.2 BACKGROUND OF THE STUDY

Beyond the appeal of the ethnographic settings in India, are numerous other studies that complimented this project. Kisten Hastrup (2013) for instance, asserts that anthropologists provide a critical examination of Integrated Water Resource Management (IWRM), which he believes has become hegemonic in the global discourse of sustainable development and water access and supply sector. Anthropologists, he argued, offer ethnographic insights into key water sites, water regimes and waterscapes found in all settings with a wide variety of characteristics. A paper, written by members of the Interagency Task Force on Gender and Water, Marcia M. Brewster, Thora Martina Herrmann, Barbara Bleisch and Rebecca Pearl, titled "*A Gender Perspective on Water Resources and Sanitation*," (in Kalnicka, 2005), offers an almost global overview of the relationship between water and women throughout the world (especially, but not exclusively in the global south). The authors explore the issue of water supply and sanitation within the framework of the United Nations' program on water and sustainable development. They analyze it from an interdisciplinary perspective which is usually omitted from the global commitments in these areas.

From that perspective, they address the connection of water supply and sanitation with health, education, land ownership, agricultural capacity and resource development, alleviation of poverty, privatization, and even war, clearly showing the urgency and importance of the problem. They also point out several positive results of actions pursued and proffer recommendations for further actions.

Their recommendations acknowledge that there is a major problem which lies within the confines of gender division in water management in rural areas. The authors further argue that in most cultures the primary responsibility for the management and use of water resources at the household level rests with women, but they are often voiceless in the decision-making process. Hence, this study deems it necessary to rally to this situation by involving both genders in the process of improving the water supply and sanitation in rural areas, gradually gravitating towards a global scale.

Planning involved in the construction of water-distribution systems has always been with men. They are also in charge of implementing the water resources (Curtis, 1994). Men determine the design and supervise the construction, whereas women are only credited with determining water usage (UNESCO, 2000). Water problems are not related to scarcity or quality alone, hence the main problem is when men's needs and standards provide a standard against which women's interests are measured and often minimized (Michael, 1998). Placing emphasis on women as water providers and users in the households alone without providing them a space in the planning process would further obstruct their access to the general benefits attained in the public (Curtis, 1994). In post-apartheid South Africa, development policies have constantly reflected on the broad trend in gender awareness (Rangan and Gilmartin, 2002). After the African National Congress (ANC) won the 1994 elections, it clearly outlined a strong commitment to gender and human rights in its approach to development. South Africa has further promulgated a number of legislative and policy reforms that empower women and provide new ways to govern gender relations in the private and public sectors (Rangan and Gilmartin, 2002). However, the actualities of implementation still derail in rural areas where women are still viewed as weaker and operating under the shadows of men in major decision-making processes.

In low-income households' women's work includes three areas viz., reproductive work, productive work and community management work (D'Haese and Kirsten, 2006). Reproductive work includes childbearing and rearing responsibilities, which are required to guarantee the maintenance and reproduction of the labour force. Productive work is also done when women work as secondary income earners, and community-managing work is undertaken at a local community level in both urban and rural contexts. Furthermore, women are severely constrained by the burden of simultaneously balancing these roles, while only productive work is recognized as "work". Reproductive and community managing work are often viewed as social responsibilities for which there should be no expected praise, recognition or remuneration. In contrast, most of men's work is valued either directly through paid remuneration or indirectly through status and political power (D'Haese and Kirsten, 2006: 106). Hill (1986) also argues that both anthropologists and sociologists neglected women's work, particularly African women. Boserup (1970) adds that women are economically underdeveloped because economists have failed to make any impression on their lives.

Hill (1986: 141) argues that the word work is biased against women as it excludes domestic labour performed within the home which includes arduous food processing as well as cooking. Thus in this study, women's work is also not defined as real work. Policies and development models are replete with examples that display sheer insensitivity to the needs of women and the roles that they can play in policy making and planning. Unless policy makers and planners are familiar with the details of women's duties in areas where water deficiency prevails, it is unlikely that their sensitivities towards women will be improved. It is through rich and persuasive ethnographic data that such role players in the lives of marginalized women can actually make a difference. As stated by Grillo and Rew (1985: 28) there is widespread agreement on the contribution that an anthropologist, as opposed to any

other social scientist can make to the field such as development; thus, illuminating the social and cultural dimensions of the problem. Given this argument, Curtis (1986: 103) states that anthropologists are useful in providing background information on the people involved or identifying the nature of social problems. However, he also points out that they scarcely ever conceive their studies within a framework that would enable authorities to predict what would be the effect of changing any relationships to interventions.

In the context of the rural communities, the Gender Mainstreaming Strategy is divorced from the traditions and cultural beliefs of most villages. Consequently, women's empowerment and gender mainstreaming occupies the centre stage of the transformation process in all institutions, policies, procedures, practices and programs of the government. South Africa has a range of policies that inform gender mainstreaming in the provision of water services such as: the Constitution of the Republic of South Africa (RSA, 1996), the White Paper on a National Water Policy for South Africa (RSA, 1997), the Department of Water Affairs and Forestry gender policy (DWAF, 1997a) and the South African National policy framework for Women's Empowerment and Gender Equality (RSA, 1997). In spite of the introduction of this vast amount of legislative and policy frameworks to influence the provision of water services, the involvement of women is still minimal when compared to that of men, who still handle the management decisions regarding water services. Synchronously, Singh (2007) believes that the Gender Mainstreaming Strategy does not represent a truly bottom-up approach, and it further raises the concern that if the strategy is contradictory to the traditions and cultural beliefs of the rural communities, then its objectives are unlikely to be achievable. The key challenge is to make sure that gender constraints and gender mainstreaming become central in all development efforts, not as a marginalized issue (Kotze, 2009). As a result, this study is cautiously ambitious that it has the capacity to create an enabling platform that will facilitate women empowerment in the challenges underlying water scarcity in the Eastern Cape province in South Africa.

1.2.1 An Analytical Framework: The Causal Effect Of Water Scarcity On Women In Low-Income Households In Africa

In developing countries the cause of the water crisis has more to do with poverty, inequality, unequal power relations and flawed water management policies than it has to do with mere scarcity (UNDP, 2006). The fact that the voices of the marginalized groups especially women, are rarely heard by the policy makers illustrates another truth behind the water crisis (Perkins, 2008). Governments do not prioritize the needs of the marginalized, and without support even NGO activities become unsustainable (Perkins, 2008). As a result, 1.1 billion people across the globe in 2004 had no access to an improved drinking water source, with the majority of them living in the rural areas (UNDP, 2006; Alford, 2007).

Although water is seen as a source of life and a valuable natural resource that sustains the environment and supports livelihoods, it is increasingly being seen as a source of risk and vulnerability especially to the women (UNEP, 2004, UNDP, 2006). Women are the most vulnerable because in most societies, it is women's responsibility to ensure that there is enough clean and safe water for their households (Buckingham, 2000). It is often emphasized that in developing countries where coping with the water crisis is almost impossible, millions of women and girls spend most of their time looking for water to meet their households' needs (UNDP, 2006). These searches limit their participation in productive economic activities especially for the women and low school enrolment for the girls (Coles, et al., 2005). This is exacerbated by policy constraints and gender inequalities that have resulted in

low sustainability of the conventional communal water supplies leaving more people in the rural areas with no access to safe water for domestic use (Sutton, 2008).

One of the critical components of the MDGs is increasing access to domestic water supply coupled with improved water resource management and development in rural areas (Lenton, et al., 2008). According to the World Health Organization (WHO), domestic water is water used for all domestic purposes which include drinking, cooking and bathing. Therefore, when measuring adequacy of water in the household all such uses should be considered (WHO, 2003 :16). It is necessary to evaluate the number, geographic location, yield, dependability, season and quality of the water sources to ensure that rural households are water secure (Kahinda, et al., 2007). Equipping people in rural communities with appropriate technologies and skills are crucial. It is to enable them to harvest rain water and to excavate underground water for effective management and a drive towards a sustainable solution (Malley, et al., 2008). Improved water supply services in rural areas can in turn give women more time for productive endeavors, adult education, empowerment activities and leisure.

1.2.2 *The Co-Existences Flanked By Water Scarcities And Gender Typecasting*
Fact figures:

- 1.7 billion people have gained access to safe drinking water since 1990 but 884 million are still without.

- 2.6 billion people lack access to basic sanitation services, such as toilet or latrine.

- Each day, an average of 5000 children die due to preventable water and sanitation-related diseases.(source)

Water is the foremost human basic need and is crucial for sustainable development particularly in rural areas where there is limited access to clean and safe water. The Gender and Water Alliance (GWA) (2006) presents two inter-related issues that highlights the current situation with water shortages. Limited access to clean and safe water is associated with poor hygiene and sanitation at household level that further widens the poverty gap by creating gender inequalities and the prevalence of water borne diseases. This study highlights the domestic water supply within the context of household dynamics in rural areas with a particular focus on the acquisition of water. The study further examines the implications for women and gender through customary norms and practices, local institutions, ideologies and cosmologies, household structures and people's practices. In the Amatole District, women and men's relationships to water are fundamentally different and the differences have grave consequences for women's status, standard of living and survival. Thus, the aim of this study is to explore the dynamic gender relations and women's vulnerability and dangers they face while trying to access water in rural areas. The study examined the strategic moves women make within the institutional and household contexts in the provision and access to water.

1.2.3 *Exploring The Modalities Underlying Access To Water For Gender Mainstreaming In South Africa*
It is estimated that in Africa, women and girls spend 40 billion person-hours annually in collecting water and it has been noted that, in the rural areas of South Africa, girls spend up to 6-7 hours per day in water related activities such as water collection, washing, cooking and aligned activities (Van Wijk, 1998: 118). Men sometimes carry water for usage by livestock, however this water is only half of what

is used for domestic purposes (Lubis, 1998). As water collection is an activity particularly reserved for women and children in many countries, for a man to be seen collecting water is deemed as embarrassing. As consequence, gender differentiation in water carriage is misaligned such that water carried for domestic usage is done by women and the commercial scale of water is carried out by men (Curtis, 1994).

Given this context, it becomes apparent how women bear the brunt of water scarcities by travelling long distances to collect water under dangerous circumstances. Despite the implementation of policies aligned to women's rights women in rural areas such as Cwebe, Ntilini and Mbelu and others all over South Africa do not feel the impact of these policies on their lives. Rural women still feel alienated from development planning, irrespective of the fact that they are in a better position to comprehend the dynamics of water management in the household. As a result, isolating women from the decision-making processes and structures denies them the opportunities to air their views thereby undermining their potential to make rational decisions. Various analytical frameworks such as Women in Development (WID) and Gender and Development (GAD) that deal with women's exclusion and marginalization have been proposed to challenge gender stereotypes (Cornwall 2003: 1326). Thus this study unravels the complexities surrounding the dynamics of water management within rural areas and ultimately proposes a working framework which is sustainable for both women and men given the challenges of water scarcity.

Consequently, women empowerment and gender mainstreaming occupies the centre stage of the transformation process in all institutions, policies, procedures, practices and programmers of the South African government. In spite of the introduction of legislative and policy frameworks to influence the provision of water services, the involvement of women is still minimal when compared to that of men, who still handle the management decisions regarding water services. In the context of the rural communities, the Gender Mainstreaming Strategy is divorced from the traditions and cultural beliefs of most villages. Singh (2007) argues that the Gender Mainstreaming Strategy does not represent a truly bottom-up approach and asserts that if the strategy is contradictory to the traditions and cultural beliefs of the rural communities, its objectives will not be achievable.

The key challenge is making sure that gender constraints and gender mainstreaming become central in all development efforts, not as a marginalized issue (Kotze, 2009). Women are increasingly being seen as active agents of change and the dynamic promoters of social transformations that can alter the life of humankind (Sen, 1999). However, the manner in which decisions and choices on water resources are handled has major implications for women who are end-users of the water technologies in the households (Rydhagen, 2002; Rodda, 1993). It becomes essential to ensure that gender mainstreaming is given attention in the development programs in South Africa (Kotze, 2009). Gender mainstreaming is about challenging prevailing attitudes and about introducing changes as various levels, including the physical landscapes and the attitudes with which they are approached. This is especially viewed in the diverse degrees of success in its implementation and the relationship between macro (national and international), (organizational and departmental) and micro-level (groups and individuals) where changes are still problematic (Morley, 2006).

South Africa, like many other countries, is facing a variety of intractable challenges in the application of the Gender Mainstreaming Strategy. Conversely, the success of the Gender Mainstreaming Strategy is demonstrated by its capacity to ensure participation of the under-represented groups by enabling

them to partake in decision-making as drivers of change. Even though there are policies, measures and initiatives to ensure that gender is mainstreamed in almost all sectors, the challenge of practicing the actual realities is still obscured in cultural delineations. This is because even in instances where women may be involved in a water supply project, they are often not given a chance to influence the focus of the projects. Yet women's involvement in the planning of the water projects could actively enhance sustainability since they are the end users of such projects (Rydhagen, 2002). This study maintains that access to clean water can transform gender relations in the household and offer women the opportunity for productive use where their mobility is not socially constrained (Sutton, 2007; Karl, 1995). This can only be possible if those responsible for making choices for the technologies of water supply, water payments at household level and those who attend water management meetings at community level (Rydhagen, 2002).

1.3   PROBLEM STATEMENT

The water services sector is a very complex environment, since it has various role players from the national level and communities, households and authorities at the local level. Different role players at the catchment and municipal level, the National Advisory Council, Water Service Sector Leadership Group and other government department also support the Water and Sanitation Department. The complexities underlying the role players within the water sector create rigid barriers for rural communities to understand and interact with different departments. Singh (2007: 926) argues that often communication lines are not visible. Furthermore, Gender Mainstreaming Strategy is not cognoscente of the traditions and cultural beliefs of most villages, which further alienates the women (Singh, 2007: 926). Due to the contradictions between the Gender Mainstreaming Strategy and the traditions and cultural beliefs of the rural communities, the objectives empowering women within the dynamics of water management, access and provision become indistinct.

While 122 countries have voted in favour of water as a basic human right, South Africa has demonstrated its commitment to a person's right to water by including in its constitution a section, which states, "Everyone has the right to have access to sufficient food and water" Singh (2007:920) However, despite ongoing efforts to improve management and quality, the number of rural households with access to potable water still falls well below the universal goal championed in the country's constitution. In rural Eastern Cape, as in other parts of the world Kalnicka (2005), Singh (2006) and Stevenson (2014) confirm how women are the drawers of water and the managers of it. Their responsibilities extend to domestic management and childcare as well, all within the harsh reality of extreme poverty, bringing into sharp focus the stress factors to which women succumb in rural areas. The situation therefore raises questions on the sustainability of the social context within which rural women in South Africa are surviving in the intricacies of water scarcities. It is with these issues in mind that the study seeks to draw conclusions about their kin and neighbourly networks and the meanings that being managers of water and households bring to their lives. Hence, this study is an explorative attempt to examine the impact of domestic water access and supply on women in rural households for sustainable access to water within the limitations of water scarcity.

1.3.1   Research Questions

To fulfill the aim of the study, the specific research questions are as follows:

- What is the fundamental link between the liberal, radical and Marxist feminism theories on gender mainstreaming in the provision and access to water?

- What is the extent to which women and men's opinions are taken into account with regard to water provision and access in Cwebe, Ntilini and Mbelu?

- What is the impact of household dynamics in the management, provision and access to water in Cwebe, Ntilini and Mbelu?

- What are the management strategies considered to enhance gender equality in domestic water supply within rural households in Cwebe, Ntilini and Mbelu?

- What are the appropriate alternative coping mechanisms and adaptations to water scarcity for the women in Cwebe, Ntilini and Mbelu?

This study analyses the application of policies on women and water and increases the understanding of water service provision management by aiding sustainable development of water supply projects in Ntilini, Cwebe and Mbelu by asking the following questions:

- Where do you source your water?

- How far it is and how much time do you spend in order to access water?

- What type of containers do you use? If bigger than 10 litres how do you carry them?

- Do you have any health issues that may have occurred while collecting water?

- Have you queried your situation to the local authorities?

- What changes would you like to see in order to change your situation?

1.3.2 Research Objectives

The general aim of the study is to highlight how women can be empowered throughout the domestic water management and supply chain in rural areas, pending the plight of water scarcities in relation to domestic water access in Cwebe, Ntilini and Mbelu villages in the Eastern Cape.

The research objectives of this research are highlighted below:

- To establish the fundamental link between the liberal, radical and Marxist feminism theories on gender mainstreaming in the provision and access to water.

- To identify how women and men's opinions are taken into account with regard to water provision and access in Cwebe, Ntilini and Mbelu.

- To explore the household dynamics in the management, provision and access to water in Cwebe, Ntilini and Mbelu.

- To understand the management strategies considered to enhance gender equality in domestic water supply within rural households in Cwebe, Ntilini and Mbelu.

- To explore and recommend the appropriate alternative coping mechanisms and adaptations to water scarcity for women in Cwebe, Ntilini and Mbelu.

1.4 SIGNIFICANT CONTRIBUTION OF THE STUDY

Water is a core component in any situation. It is becoming increasingly significant in anthropological analyses, especially where the dynamics of inequities and unequal power relations manifest. This study broadly explores determinants of sustainability of rural water supply and contributes on two levels. Firstly, it is a critique of water supply in three villages in South Africa's Eastern Cape Province; and secondly, it is a contribution towards the knowledge base in water supplies in developing countries. This involves assessment of household water use practices and communities' attitudes towards water safety, benefits of safe water supply and women's contribution to household water needs. A corollary to this will include an investigation into community contributions for water source protection and maintenance, and institutional approaches charted to enhance the sustainability of the water supply system.

Orlove and Caton (2010) state that water has become an urgent theme in anthropology as the global community needs to provide adequate supplies of clean water to all people and consequently becomes more challenging and even more burdening on women. Anthropologists contribute by seeing water not only as a resource, but also as a substance that connects many realms of social life. They trace the different forms of valuing water, examine the often unequal distribution of water, and explore the rules and institutions that govern water use and shape water politics and study the multiple, often conflicting knowledge systems through which actors understand water. It is against this background, and having coordinated the social mobilization on water and sanitation for the Human Sciences Research Council (HSRC) in rural areas, that the interest to do further research on household dynamics with regard to domestic water access arose. There is a reasonable chance that the application of anthropological knowledge will have a positive contribution on the existing body of literature on water studies in South Africa. In addition, the study certainly has the potential to contribute to the contemporary water discourse, because what happens in the Eastern Cape is a microcosm of what prevails in most of the developing countries.

1.4.1 The South African Legislative Framework On Water Policy

The final section of this chapter presents the policy framework on water in South Africa. Post-apartheid South Africa brought in reforms to redress the disparities inherited from the racial segregation policies which resulted in distinct inequalities between black and white communities. One such reform was the policy on water provision for the majority of non-whites who had no access to water. The White Paper on Water Policy (1997) was more concerned with water reform and water justice in terms of the new government's reconstruction and development. According to Coning and Sherwill (2004) the provision of water in South Africa had to meet environmental requirements and international obligations for it to be considered a priority of policy. Hence MacKay (2003) points out that the provision of basic water and sanitation to the majority of South Africans who had none of these including the need for equity in the allocation of water and benefits of water use became the priority at the water agenda. Similar to other policy formulation processes, the South African government goes through stages of policy formulation namely agenda setting

The 1997 White Paper on National Water Policy for example had a resounding key agenda in terms of the process of reform of the water sector as a whole. The policy had far reaching effects on social, economic and environment issues. The White Paper was developed to put in place an equitable sustainable system of water allocation. Coning and Sherwill (2004) argue that this system was brought into being to give guidance over the use of water in order to benefit all as water is a basic human need.

The White Paper also stipulates that it is the obligation of the state to provide water as a basic service without prejudice.

Water is an economic good and a social right however evidence shows that large pockets of the South African population have no access to water simply because of their social and economic status. Water is the key to development and substance of all communities (Singh); hence the South African government's agenda priority is water provision. Gowlland-Gualtieri (2007) states that the natural scarcity of national freshwater resources contributes to the depleting water supplies and also increases the competition between users. The United Nations (2007: 4) point out that as "populations increase and development call for increased allocations of ground water for domestic, agriculture and industrial sectors, the pressure on water intensifies, leading to tensions, conflicts among users and excessive pressure on the environment". Thus, the limited availability of water has demanded the designing of new globally sustainable water management strategies aimed at balancing between the use of water as a basis for livelihood and its protection in order to ensure its sustainability for the present and future generations (Agarwal et al., 2000).

South Africa has the most advanced and progressive constitution in the world. Under this constitution the country has thus implemented a progressive law and policy framework for water (Gowlland-Gualtieri, 2007). The water reform was a rare legislation to develop a modern water policy appropriate to South Africa (Lange, Merrey, Levite and Svendsen (2003). The policy was formulated under Kader Asmal the then Minister of Water Affairs and Forestry. The policy resulted in the National Water Act of 1998 which was seen as a model piece of legislation. The bill of rights of the Constitution 1996 gave basic rights status to access to water to support life and for personal hygiene and a healthy environment for future generations. The basic rights bill to access to water was bound by the National Water Act (NWA) and the Water Services Act (WSA). The White Paper on National Water Policy 1997 was based on the following principles:

- All water in the water cycle is part of the indivisible national asset

- This asset is held in trust for society by the national government

- Water to meet basic human needs, to sustain the environment, and to meet legitimate needs of neighbouring countries is reserved

- All other water uses must be beneficial in the public interest

- The riparian system of allocation is abolished

- Allocations will no longer be permanent but for a reasonable period e.g. 40 years and can be traced

- Water resources will be managed on a catchment basis by specialized bodies

- All water use in the water cycle is subjected to one or more charges intended to reflect the full financial costs of protecting and managing the water resource

- Water based waste disposal is subject to appropriate charges

- Charges for water for basic human needs and for small scale production may be waived for disadvantaged groups

The water principles thus stipulate that all water was an indivisible national asset. Through these principles the government implemented the right to water through the policy of entitlement to water consumption and domestic use. However, there remains inequality in access to basic water services and allocation, a legacy of separate development.

1.4.2   Constitutional Rights To Water

The bill of rights not only focuses on the right to access to water but other basics such as social and economic rights, but for the purpose of this study this section focuses on the water policy framework in South Africa. The Constitution of 1996 Act 108 documented right of access to water as a law and policy framework. This Act became the foundation of the water policy reform. The framework was based on 'Batho Pele' People First as a principle of bill of rights that not only focuses on access to water but also on social and economic rights. Gleick (1998) adds that the right to water transcends human rights.

The progressive framework's Section 27 (2) states that 'The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of each of these rights.' Such resources include access to water as a basic right. The 1996 Constitution stipulates that all levels of government; national, provincial and local government should recognize the right to access to water. This also includes physical and economic access to water as stated in Section 27 (2). As mentioned earlier WSA and NWA acts became the legislative policy documents that were adopted as part of the water framework. NWA Act 36 (1998) is a legal framework for the management of water resources, rivers, streams, dams and ground water. WSA on the other hand regulates domestic water services. This is the responsibility of local governments. The regulated water covers drinking and sanitation water services supplied by municipalities to households and other municipal users. The Department of Water Affairs and Forestry (DWAF) is responsible for formulating and implementing water policy. This implies that DWAF regulates household water and other uses for the support of life and personal hygiene (WSA Section 1 (iii)).

1.4.3   Access To Water Policy

In 2001, DWAF set up a Free Basic Implementing Strategy Document which targeted the water needs of the poor. The strategy was to provide each household with free potable water measured at six kilolitres per household per month. This amount is the same for every household regardless of income bracket, wealth or number of people residing in that household. The idea behind the Free Basic Implementing Strategy Document was to accelerate the delivery of water particularly to the neediest. This was a government strategy to address poverty and improve public health. Gowlland-Gualitieri (2007) argues that the Free Basic Water Strategy implies that every person has the right to affordable basic water. The author adds that the implementation of the policy faced obstacles and still faces hurdles in terms of remedying the existing inequalities as will be explained in the next section.

1.4.4   Policy Challenges To Water Delivery

The design strategies for implementation of policy are characterized by intra and inter organizational conflicts which are endemic in any government. Implementation is usually used by ambitious politicians or agencies as a platform to influence the process of addressing a problem. In normal instances it is the norm to seek policy options when the formulated one fails. Although the South

African policy on water is based on people first or human rights, it has faced many challenges. As with other developing countries the economic and administrative dimensions struggle to meet their water provision goals. This is partly to do with limited finances and other resources such as human resources responsible for translating and implementing policies.

Due to limited economic resources that can assist the country to deliver free access to basic water it was important for WSA to come up with an alternative to save resources. Section 19 of WSA saw the legal framework applying economic approaches to water. This approach has seen many households in poor townships in particular losing their water rights through disconnections of service for non-payment. In order to reduce non-payment and having to give reasons for actions taken; municipalities under the tutelage of WSA installed pre-paid water meters.

The White Paper 1997 Paragraph 6.5.3 stated that in order 'To achieve the objectives of water management all significant water resource use will be charged for, regardless of where it occurs, and including the use of water for effluent disposal or interception of water to the detriment of other users'. The only exception will be in respect of the reserve for basic human needs. Water disconnections and meter installations was a reverse on the policy on access to basic rights and an obligation to supply free water to all regardless of wealth. The NWA 1998 water pricing policy of cost recovery was developed to manage water resources so that they can be protected and conserved for beneficial use. Chapter 5, Part 1. NWA authorizes WSA to put in place a pricing system for domestic water. Although WSA aims to provide affordable water it does not clearly set tariffs according to ability to pay (Gowlland-Gualitieri 2007).

In addition to the pricing system set by NWA, the 2003 Strategic Framework Paragraph 4.5.3 states that the consumption of basic water services and sanitation has to be met by consumers. This implies that those people who had been promised free basic water services would have to pay for water services. However, Paragraph 4.5.8 stipulates that providers should be compassionate over the pricing of water. This means that local governments had to devise and implement credit control policies that take into account the poor and vulnerable households. It must be noted that cost-recovery is meant to manage water services.

1.5   CHAPTER LAYOUT

Chapter Two: Research Design, Methodology and fieldwork experience

This chapter outlines the research design, target population, sample and sampling techniques of the study. The chapter further outlines a description of the data collection instruments and the data analysis techniques that were applied in the research.

Chapter Three: A Theoretical exposition of liberal, radical and Marxist feminism theories on gender mainstreaming in the provision and access of water.

This chapter provides a comprehensive elaboration on the fundamental link that exists between liberal, radical and Marxist feminism theories on gender mainstreaming in the provision and access to water.

Chapter Four: Gender perspectives and South African legislative framework on water provision and access

The chapter reviews different literature on gender and South African water legisaltion. It offers an insight on legislative implications to women with regard to water access and traditional gender roles.

Chapter Five: Women's kin networks, social networks and neighbourly inter-dependencies: social fabric as support mechanisms

This chapter identifies how women and men's opinions are taken into account with regard to water provision and access in Cwebe, Ntilini and Mbelu. The context of this chapter was extensively discussed by highlighting an expanse of literature on the link that exists between kin networks, social networks and neighbourly inter-dependencies in rural areas for water access.

Chapter Six: An overview and insight into 75 selected households

This chapter explores the household dynamics in the management, provision and access to water in Cwebe, Ntilini and Mbelu. It is an elaboration of the situation in Cwebe, Ntilini and Mbelu and their dynamics of water scarcities.

Chapter Seven: Daily requirements and responsibilities: Women's coping mechanisms and adaptations to water scarcity and Implementation of Gender Mainstreaming in water management

This chapter disentangles the misperception underlying the daily requirements and responsibilities within the context of women as "water managers" by highlighting their coping mechanisms and adaptations to water scarcity.

Chapter Eight: Conclusions and recommendations

This chapter presents a synthesis and conclusion of the study findings and concludes with suggestions for further research, through a proposed framework for sustainable access, provision and management within the modalities of gender mainstreaming.

This chapter also offers an insight into the roles, responsibilities and future possibilities within the households that were observed. The exploration was based on the responses from the selected respondents within the target population, regarding the household dynamics in the management, provision and access to water. The aim of this chapter was to explore and recommend the appropriate alternative coping mechanisms and adaptations to water scarcity for the women in Cwebe, Ntilini and Mbelu.

1.6   CONCLUSION

This chapter introduced the study by presenting the background of the research; its objectives and defined the problem and justified the research. It has also outlined the thesis structure. It introduced water as the source of life and a valuable natural resource that sustains the environment and supports livelihoods. It argues that women are the most vulnerable in most societies and cannot always access water. Millions of women and girls spend most of their time looking for water to meet their households' water needs. Furthermore, the chapter presented the background of the research and its objectives. The chapter also defined the problem and justification of the research.

2 CHAPTER TWO: RESEARCH DESIGN, METHODOLOGY AND FIELDWORK EXPERIENCE

2.1 INTRODUCTION

This chapter presents the research design and methods that were used for data collection during fieldwork. The first section discusses the research approach and justifies why qualitative and quantitative approaches were adopted. The second section of this chapter provides an insight into my fieldwork experience. This chapter is an overview of the sources of data, the type of data collected; the sampling approach and a description of the sample size, the sampling procedure and the different instruments, tools and techniques used.

2.2 FIELDWORK PLANNING

In 2009, I was appointed by the Human Sciences Research Council (HSRC) as a coordinator of the Accelerated Sustainable Water Service Delivery Project in the Eastern Cape Province. The project was implemented in eight villages namely Mxekazi, Jali, Khubaku,Kwenuha, Nyandeni, Cwebe, Mbelu and Ntilini in the OR Tambo and Amatole district municipalities. The objective of the project was to fast track access to water in remote communities without water reticulation and without the Water Board having to service these areas. The project introduced innovative but simplified water purification technology in order to instigate and facilitate change towards water accession within the target communities. The HSRC's purpose was twofold: to create a sense of ownership over the project within the communities and to build a sustainable relationship with them.

My engagement in this area started as a social responsibility project of the HSRC but gradually transformed to a more reflexive approach that could add value to a PhD project – for three reasons. Firstly, my interest as a student in anthropology was easy to pursue while working on the HSRC project. Secondly, it allowed me to view the impact of water provision on the lives of people we were working with, especially the women, children and elderly in the target areas. Implementation research promotes the use of research findings to improve the implementation of specific intervention. I opted to focus on implementation research since the result on my work was visible in communities. In the current case implementation research was used to engage communities, planners, policy makers and funders to improve water provision in the villages' central to this study.

Thirdly, coming from a place which was neglected for years motivated me to do more development related research. Butembo my hometown is located in the North- Eastern part of the Democratic Republic of Congo (DRC). There is hardly evidence to show that revenue collected from tax is used to deliver services to citizens or to developing the town. Despite its rich deposits of natural resources such as gold and diamonds, the DRC's reputation for lack of commitment in service delivery is internationally known.

The delivery of basic social and utility services such as health care, education, water, electricity, transportation and communications is often problematic in conflict-affected situations. The lack or ill functioning of these services can have negative consequences for people's health and income-earning capacity and other crucial aspects of development (Stel et al., 2011). In its second national development and poverty reduction strategy, the DRC government expressed its intent to provide access to basic services to the whole Congolese population (Ministère du Plan, 2011). However, as

Weijs et al. (2012) and other authors also point out, basic services such as water, health care, education, sanitation and transport are weak and insufficient. This is due to lack of funds and mismanagement. Weijs et al. (2012) explain that this has resulted in a complex system, in which quality and prices of services are constantly up for negotiation. The main reason why services such as education and health have not fully collapsed in the DRC is related to the role played by church-based structures and non-governmental organizations (NGOs) since the Mobutu era. Despite international support to service provision, clients often have to pay considerable contributions, not only for direct costs (such as costs for teachers, educational material, infrastructure), but also to cover costs for local and provincial administration services.

The situation in South African villages resonated with me considering my background. The Eastern Cape is ranked as one of the poorest provinces in South Africa. In the Eastern Cape "poverty is visible" in most of its rural villages and even in the metro city. Out of the seven villages where the project was implemented, I selected three sites for my research. These three sites are remote and have a poor service delivery record. The local government in the area has attracted significant negative publicity in the media with detailed accounts of service delivery failure. Extensive media exposition since 1994 has shown how the post-apartheid state has not been able to meet its promises to deliver water, sanitation, electricity, roads and other services in the most deserving areas. Bearing in mind that it is costly to conduct a study in such remote villages I chose these sites in the hope that the study might attract the attention of policy makers and different government departments to prioritize these communities and deliver such basic services, as water and sanitation.

2.3 BRIEF SITE DESCRIPTION

The research sites consists of three villages namely Cwebe, Mbelu and Ntilini. These villages are approximately 150kms from the major town of Umtata (Eastern Cape) and can be accessed using a gravel road. The demographics of the areas consist of women, young children and older men, since the absence of employment opportunities purged younger economically active men to areas where employment is available. The younger and middle-aged men migrate mainly to the Pretoria-Witwatersrand-Vereeneging (PWV) area in Gauteng Province to work on the mines, where earning capacities are comparatively better. The region became popular since 1886 when gold was first discovered in South Africa. They collectively, together with neighbouring industrial areas generate at least 75 per cent of the country's financial wealth. Most economically active young Black men have endured unskilled and semi-skilled careers in the mines for the remainder of their lives; and their households have become beneficiaries almost exclusively through remittances from these employment hubs.

The households in the three villages are sparse and scattered and the terrain is mountainous which makes it difficult for people to access water or for government to provide proper water reticulation. Ntilini and Mbelu villages for example source water from the Mhashe River which is located in a deep and almost inaccessible gorge. The area also has five dry boreholes which are not maintained. Cwebe residents collect their water from the Nthlonyane River as well as from a number of springs and streams. Tradition is a reinforcing factor in their determination to remain on their land because their ancestors are buried there. Relocation to any other area will only be for the sake of employment.

2.3.1   Village Description

2.3.1.1   Cwebe

Cwebe village is located on both sides of the Nthlonyane River close to the coast near the Dwesa Nature Reserve. It consists of about 466 households and an estimated population of 2 097 based on the record from the traditional leader's registery.

Figure 1 *Google Earth image showing Cwebe Village*

Most of the households rely mainly on springs near their homes and the river as a water source. There are six boreholes in Cwebe, all of which have been installed with pumps around them. The households close to these boreholes have avoided their use for drinking water because of its discolouration and taste. However, they were hardly of significance for the study during fieldwork periods because they were dry.

The springs in Cwebe are located down slope in relation to the dwelling places, with the nearest house located about 100m from a spring. There are no sanitation facilities in the area, households practice open defecation and human waste was visible within 10 meters from water sources. This is indicative of households, human water and animal waste contaminate water. Table 24 in chapter 3 provides the

evident of the Council For Scientific and Industrial Research (CSIR) water quality assessment from Mbashe River.

The main agricultural activities are vegetable gardens and dry land farming of maize with cattle manure used as an organic fertilizer. The households share the same water sources with cattle and other domestic animals since the springs are not fenced or protected. Evidence of cow dung was visible during research in the area. In order to purify the water women use jik (a local bleach) in the process of boiling the water. An added measure through the use of ceramic filters are used to ensure that the remaining debris is removed from the water, before it is made drinkable.

2.3.1.2   Mbelu
Figure 2 Google Earth image showing Mbelu Village

Mbelu village is a small and remote settlement, situated along the Mbashe River, which is used as the main source of drinking water. There are 59 scattered households and an estimated 265 people as the de facto population. There is only one spring within Mbelu that is not in use.

The main agricultural activities are dry land farming of maize with cattle manure used as an organic fertilizer and small vegetable gardens around the homesteads. There are no sanitation facilities in the

area, households practice open defecation and human waste was visible within 5 meters from the water sources.

The spring is located down slope in relation to the dwelling places with the nearest house located about 300m from the spring. Animal prints and animal waste are scattered in and around the spring and on the banks of the river

2.3.1.3 Ntilini

Ntilini village is also located along the Mbashe River approximately 5 kms upstream and consists of about 73 households and an estimated 329 people. The households use the river as a main source of drinking water together with a number of small springs. The households are scattered and situated along the access road on the ridge. The springs are down the slope of the dwellings with the nearest house located about 200m from the springs. Animal prints and animal waste are scattered in and around the springs.

The main agricultural activities are dry land farming of maize with cattle manure used as an organic fertilizer and small vegetable gardens around the homestead. There are only a few sanitation facilities

Figure 3 *Google Earth image of Ntilini village*

in the area, the majority of households practice open defecation and human excreta was visible within metres of the water sources

and springs. All these (human excreta, animal waste and runoff from agricultural land) are potential contamination sources for the spring outlets located down slope and for the river.

2.4 COMMUNITY ENTRY

Key to the success of the Accelerated Sustainable Water Service Delivery (ASWSD) was community mobilization, which I coordinated and conducted before and after the implementation of the project. This meant spending much time interacting with community members and explaining different stages

of the project and how it was going to benefit households. I was responsible for calling and conducting these meetings. The process required me to travel to different villages every week for a period of three years, thus enabling increased access to community members. I had the opportunity to interact with people from different social backgrounds and positions, starting from the Inkosi (chief), business owners, councilors (government representatives), school principals, to ordinary members of the community. Conducting social mobilization for the ASWSD paved the way for easy access into the community when I returned to request permission to conduct a study for my PhD.

When doing research, particularly in rural South Africa, the point of entry usually begins with the Chief *(Inkosi),* and is dictated by several preliminary factors. One of them is the fear of outsiders feeding the community with negative political ideas. Indigent communities in South Africa's rural areas have a reputation of vulnerability to political instigation, often manifesting in violent conflicts between opposing groups. A letter from the local political structure, stating permission to conduct the study, is a necessary accompaniment to the first meeting with the local chief. Political neutrality is always a key factor when conducting research in South Africa, with known party affiliation a likely hindrance to the researcher's acceptance if it is in opposition to the local popular position. As an unknown foreigner employed by a state subsidized agency that is known for its political neutrality and development interests, my entry and acceptance there was relatively clear.

After the initial formalities were a series of community mobilization meetings about the study, facilitated by the Inkosi, the local councilor and two local inhabitants, employed by the HSRC as special assistants on previous occasions, were brought back to assist in data gathering because of their experience in such a project. A week's training and reviewing of ethical issues, household mapping and random selection was made easier because of this. Regular visits to the communities increased the levels of bonding over time and entrenched the trust between researchers and communities. Their gradual acceptance of me as "one of them" made the concept of participant observation more relevant and meaningful. Acquiring information on the dynamics of water collection and responsibilities became a relatively easy and enjoyable task.

2.4.1   *Interaction With Community Members/ Community Reception*
Cordial acquaintance eventually gave way to virtual acceptance as a community member, leading to me being invited to functions that are generally reserved for insiders such as funerals, weddings and the welcoming of initiates returning from initiation schools. Such gatherings served as an important platform to befriend a range of members in the community, affording me the opportunity of introducing the study to them. Their receptiveness to the project manifested the characteristic small town cum rural hospitality to outsiders, leading many of them to offer me guided trips to the local rivers, streams and communal water stations to speak to women as they collected water. Water points are key to understanding dynamics about household water collection, and washing of clothes and utensils in the rural areas. Here participant observation was important. I helped women to collect water, walked long distances with them to water sources and back to their households. It was on these trips to and from households to water points and back that at least two issues were consolidated. The first was that by being allowed to walk alone with the women the communities demonstrated their trust in me; and the second was the confirmation of the almost universal phenomenon that women are the carriers of water in indigent and under-resourced rural areas.

2.4.2 Community Life

Daily life in the target villages begins before dawn, exemplifying a distinct Durkheimian notion of the gendered division of labour. Wives and girl children start to walk to the river to fetch water, to cook or clean, go to fetch fire wood, and boil the morning tea. Towards the latter part of the morning's small groups of older men in the villages congregate around the chief's house or at places where alcohol is sold. It is the task of younger and able-bodied men to graze their livestock of cattle and sheep. The communal water station operator begins his task around 5 am to start the generator, opening a pump, and looking on as women, girl children, and a few boys fill up their families' buckets and gasoline cans with 20 to 40 litres of water. The pump operator continues his rounds, pump and padlocking its door in turn, until 9 am. Between 7 and 8 there is a hive of activities as children walk to school and school buses arrive to collect those students who attend schools outside the communities. In addition, local tuck shops open and people are in a rush to buy bread and any other supply needed for their households in the morning.

After a busy early morning, life in Cwebe, Ntilini and Mbelu drags to a slow pace by mid-morning. Those who have not left the community to work stay close to home, doing morning chores. By 10 am, mothers or older sisters must begin a 2-hour preparation process to make a meal for the day. Laboriously soaking, washing, and rinsing ingredients using just one or two buckets, some women work all morning to ensure that the midday meal is ready. Few people go out, and the streets are usually empty and quiet.

At noon, there is a brief burst of energy when the children return from school, and mothers or older sisters serve lunch for the family. From 3 to 6 pm, some snatch a bit of precious leisure time to rest or nap. Everyone else keeps busy with errands and housework. At 6 pm, there is another rush to the corner stores, this time to buy meat or bread for the evening dinner. From 6 pm, families are busy preparing for the evening meal. At 8 pm people visit houses with generators to watch Generations (a TV show on South African Broadcasting Corporation channel 1 commonly known as SABC 1).

Once a month on social grant pay day, the villages are full of activity, attracting people from surrounding areas. People congregate around the pay point to collect their social grant. Business people from different areas also descend on these villages to market their goods and to collect outstanding debts.

 Social activities such as soccer games and children playing are meagre during the week, as community members focus almost exclusively on families and few go to work or commute to the nearest towns of Umtata, Elliot Dale and Ydutwa to buy groceries and other household related supplies. A few times during the week, people gather to attend meetings called for by the chief or councillor.

2.4.3 Households And The Division Of Labour

The three villages that served as the target areas for this study constitute typical illustrations of South Africa's changing rural household structures and the gendered division of labour since the advent of mining, industrialisation and commercialised farming. They serve as microcosms of the generally impoverished lifestyles that colonialism and apartheid had foisted upon them over the last two centuries. As changes proved to be unstoppable the household remained at the heart of resistance against poverty. In poor communities, households are generally organized to maximize the ratio of production to consumption (Gonzalez de la Rocha and Gantt 1994, Gonzalez de la Rocha 1995). For this reason, a household composition tends to change and adapt when circumstances transform for

the worst. In each of the listed villages households have shown married children join their parents in extended households with multiple adult income earners. Their purpose is to create security nets against their need to migrate, and against unemployment and lowly paid work. Males work in mines, industries and large-scale commercial farms throughout the country. Women and young girls and boys tend to remain in the villages while their husbands, fathers and brothers support their families from afar. But among several of the household's reliability upon remittances from afar has withered away, causing many of the women to break their dependencies upon them.

In households with working mothers (those employed at the Heaven Resort and commuting to and from work in Elliot Dale), the responsibility for housekeeping and childcare normally falls upon the older sister, or occasionally an older brother, who are sometimes still school going. Their multiple duties are to buy food, fetch water or keep a lookout for water delivery trucks, go in search of firewood, cook, clean, and take care of their siblings. Responsibilities and conscious caring remained as the hallmarks among those who acted in lieu of their parents having to migrate to keep their households together. They openly expressed their sense of duty and showed pride in their chores. However, in several instances teenage household heads are known to have either married early or run away to escape their domestic responsibilities. The pressures of being confined to their impoverished homesteads and a lack of opportunities in their rural enclaves forced many to abandon their household duties for opportunities away from their natal areas.

The general patterns of labour division described above hold across most household types, except in households running tuck shops, shebeens (illicit drinking spots), and other businesses. In business-oriented households with home retail shops, and petrol shops, the division of labour tends to be much more flexible. Mothers and fathers rotate household responsibilities, working together in the business, housework, and childrearing. The children are normally less burdened with housework but help in the home-based enterprises and have more time to pursue their studies. These households demonstrated signs of upward class mobility, especially in the educational opportunities that they provided for their children. Entrepreneurial households often send their children to study in Umtata or East London (now Buffalo City) and some to universities. Such couples also tend to have a rapport that is visibly better than that of other working class or underemployed couples in the communities.

Figure 4 Lady walking with a donkey which carried her cans of water

2.5   RESEARCH TRAIL

This section presents the sequence of events taken in order to conduct this study. The diagram below summarizes the process utilized in this research. The research problem started from my own experiences of working in the rural Eastern Cape as mentioned earlier. The problems were formulated through consultations with communities where the study was conducted during the pilot stage. By reviewing other literature and attending various meetings with community leaders and Amatole Water Authorities, I created a pre-conceptual framework and research hypothesis. In addition, this initial background research was based on the experience gained from working on the HSRC's ASWSD and developing its baseline instrument in 2009. From mid-February 2016 to end August 2016 I returned to the Eastern to collect data this study. The literature review process continued throughout the research period until the end of data collection and until the finalization of the report writing. This process was important during the data analysis phase since it helped me to frame this study against a background of other water related studies. I organised findings in the light of some theories and compared them to other research. When a new conceptual framework was constructed it was vital to return to the pre-conceptual framework that was built from the literature review and personal experiences to see if it was still applicable to the actuality of the research field. The data collection was divided into many sub-phases. Data transcribing and coding involved a process that requires the recalling of memories and observational notes, which added more substance and meaning to the data analysis.

Figure 5 Adapted from the Interaction research design idea (Talor, 2004: 81)

Figure 6 Ladies fetching water from Mbashe River

2.6   RESEARCH APPROACH

This section explains the type of research approaches that were used. This research study employed both quantitative and qualitative research approaches. A qualitative method was used because the procedures are formalized and explicated in a not so strict manner. I was guided by the writings of several qualitative researchers, who provided both justification and inspiration to adopt this path. In the broadest possible sense, my approach is covered in Fossey, Harvey and McDermont's (2007: 717)

definition of qualitative research as a broad umbrella term for research methodologies that explore, describe and explain the person's experiences, behaviour, interaction and social context without the use of statistical procedures or quantification. Similarly, Wakefield and Fleming (2009: 64) stress that a qualitative research method attempts to form a comprehensive concept of social conditions. The authors describe qualitative research as an approach and not a certain design or set of techniques. Their humanistic approach (2009:271) argues that qualitative research as information is not based on numerical statistics but narrates stories in words and is both compelling and instructive to anthropological inquiries.

Wakefield and Fleming's position found resonance in Litchman (2010: 5) who stated that qualitative research is a general term that represents the way a researcher collects, organizes and interprets information that has been acquired from humans using their eyes and ears as filters. Litchman adds that qualitative research often involves in-depth interviews or the observation of humans in their natural environment and setting.

A qualitative research is used to help the researchers to understand how people feel and why they feel the way they do. Mouton and Marais (2004: 25) assert that in-depth interviews or group discussions are two common methods used for collecting qualitative information. Hennink, Hutter and Bailey (2011: 8) believe that qualitative research is an approach that allows the researcher to examine people's experiences in detail by using a specific set of research methods such as in-depth interviews, focus group discussions, observation, content analysis, visual methods, and life histories or biographies.

The interpretive philosophical position was adopted for this research as it does not merely describe phenomenon but also attempted to understand its meaning (Mottier, 2005). Mottier (2005) argues that this approach (qualitative) is also sensitive to the context and the phenomena being studied. This research approach has been criticized by some who state that its validity and reliability are questionable as different viewers observing the same phenomena will not always come to the same results (Punch, 2005). A qualitative approach was adopted for this research for its meritslitative research allows the research to elicit an in-depth insight on women and water access as well as water policies in South Africa and their impact on the Eastern Cape since 1994. This also included women's coping mechanisms and adaptations to water scarcity; their neighbourly inter-dependencies and social fabric that serve as support mechanisms in each of the focus areas. In addition it focused on the role that women play in household survival through their responsibilities as "water managers". This approach gives the extent to which the three communities are involved in decision making and the challenges associated with implementation of public water service delivery. I chose the qualitative method, as it is contextual and emphasises different meanings (Punch, 2005). The qualitative approach is deemed appropriate as it enables an in-depth understanding of the relevant stakeholders of the Amatole District Municipality Water Programme at the three target villages. This is essential for the fulfillment of the objectives of this study. In contrast, the use of a quantitative approach is complementary in that it would provide a statistical framework for the data that was collected. Such information is helpful to corroborate what individuals talked about.

2.7 SOURCES OF DATA

2.7.1 Secondary Data

Secondary data was vital for this research for the purpose of depicting the different concepts and current debates in relation to the different experiences of participatory planning. The secondary data was sourced from published literature, websites and government legislation related to public participation and spatial planning. I reviewed water policies and assessed their implications on the three target villages in the context of the broader rural water and sanitation access.

2.7.2 Primary Data

It is important to collect primary data which is not manipulated (Mottier, 2005). The different techniques for the collection of primary data include conversations, recorded notes and visual observations (Ambert, 1995). An array of techniques was used in this study, including observation and structured open-ended interviews, and a survey. Structured open-ended interviews are appropriate for this research as the method allows for more in-depth unanticipated aspects of the topic to be revealed.

2.8 SAMPLING

2.8.1 Sampling Procedure And Sample Size

Sampling is simply a process of selecting a few from the bigger group in order to make predictions and reach conclusions regarding the bigger group (Strydom and Venter, 2002). Seventy-five women were selected from 75 households, 25 from each village. The purposive sampling technique was used in this research. This technique targets certain people chosen by the researcher (Jupp, 2006). Fuller (2009) adds that the researcher makes the judgment on whom to add in the sample and information is gathered from people who in his or her opinion are likely to have the required information. The merit of using this technique is that the researcher is able to identify the people that are likely to provide the relevant data (Jupp, 2006). Purposive sampling was used to select the key informants. In this study women and people involved in household water provision daily were chosen. In addition to the household interviews, I had face-to-face interviews with four district water authorities and the local councilor.

2.9 REASON FOR METHODOLOGICAL APPROACH

In a collation, the given methodological approach of other studies that I reviewed did not focus much on the issues communities face and particularly document the women and water access. Despite the approaches' characteristics, which are followed mainly qualitative and quantitative approaches, it did not manage to depict the entire picture of water. This study explored the issue of water access and supply through people's experiences as a complex matter, which is conditioned by political, social, cultural, structural and economic factors. In order to complement and enrich previous anthropological research on women and water supply and access, this study aspired to capture the interrelated dimensions of basic needs, household and community relations, and coping mechanisms in times of scarcity.

2.9.1 Tools And Techniques

Each of the tools and techniques relevant to this project have specific definitions and were complementary to one another. Tools in this project are reference to light scale technical equipment that was used for the purposes of recording. Two significant tools used were a camera and a

Dictaphone, each with a specific purpose. The camera served to provide visuals through photographs that captured numerous important people and events that were relevant to the research and to local community life in general. They also provided important material for contemporary and future reference about what people do during their normal days, how they do it, and why it will be of significance to researchers over time. Local people's peculiar dressing, morning socialization around drinking spaces, public meetings called by local chiefs, the return of youngsters from initiation ceremonies that take weeks to complete, and the methods of carrying out daily tasks using animals, implements and their physical bodies have been taken with the camera to ensure that they serve as visual records for this particular historical juncture. On the one hand they distinctively depict 'typical' scenes of simple lifestyles, widespread poverty, and general hardships endured by under-resourced rural communities, but with a specific ethnic background. On the other hand they demonstrate either complacency or utter failure by the post-apartheid state to deliver the services that colonialism and apartheid failed to provide to such communities, and from which the ruling political party promised to positively deviate. The conditions that the camera captured amply illustrate conditions that are a continuation of economic and social stagnation since the inauguration of the African National Congress (ANC) in April 1994 into political control of the country. While there is evidence of some measure of state provision to somewhat improve the prevalent conditions in the Amathole District, the photographs are a compelling statement, after more than two decades of post-apartheid governance, that they remain inadequate and unconvincing.

The Dictaphone recorded the voices of the respondents in this research project. It facilitated the manual scripting of interviews that captured the varying tones of their daily routines, as well as their hopes and aspirations against expectations that remain as far away as their horizons. Their voices provide a resonance on at least two levels. Firstly, they resonate with the pictures that were taken about conditions in their quality of life; and secondly, they resonate with the spoken words that were written down either during the course of interviews or during casual conversations. Much of it is about what they wear, eat and do to survive in their meagerly provisioned surroundings. The fetching of water is crucial to their days' activities from the beginning to the end. It remained the basis of our conversations during interviews, casual interactions and my routine observations every hour of the days spent in the Amathole District.

Techniques in this project were the subsets of the broader method of participant observation. They included two regular features of this time honored anthropological practice: observation and open-ended interview schedules. Observation had to follow the established pattern of remaining as the preliminary technique to visually and cognitively survey the area. It took several months from June 2009 to January 2010 before I felt sufficiently ingratiated into the community and to arbitrarily state within myself that I could now feel sufficiently secure to be regarded as a recent but welcome resident. This arbitrary cognitive demarcation permitted a sense of comfort as a now consolidated participant observer, facilitated by the local communities' acceptance of me as one of them, and as one whose information gathering for the HSRC and for my PhD might yield positive results in the longer term. Respondents were satisfied that the benefits of their participation were unlikely to be immediate, as the recent history of state engagement with them over the last two decades had shown. The interview schedules were memorized and used literally in formalized interviews as well as during casual conversations when information gathering was less formal. When information was not immediately written down the relevant material was noted down as soon as circumstances permitted. Much of the observation, mental note taking and immediate writing down of notes occurred at multiple levels:

during walks to water collection points with women of the three villages, in attendance at meetings called by the local chiefs when water issues and policy matters were being discussed, and at homes when people permitted me entry into their private spaces. In each of these levels the dynamics of observation produced both differences in the social atmosphere of homes and public spaces that were dominated by men. It was seen especially in the ways that meetings were conducted and the gendered division of labour within the households. The roles and responsibilities between both sexes were respected and rooted in the social expectations that were entrenched within the villages. While women had to walk long distances to fetch water, men had to walk long distances to graze their livestock. There appeared to be an uncontested balance between the two.

2.10 DATA COLLECTION PROCESS

Data collection for this study started in mid-February 2016 to end-August 2016. Observation was the first step of the data collection process used by the researcher in order to select the right sample for the study. This was the case in the three villages as some households' participants were willing to share information and in some participants were more reserved.

According to Tutty (1996: 52) an interview is a conversation with the purpose of allowing the participants to speak at length and gaining an in-depth understanding of the perspective of the person interviewed. I used semi-structured interviews. A semi-structured interview is flexible and allows new questions to be brought up during the interview.

There were two sets of interview schedules. The first was the face-to-face interviews with the selected female and male participants from 25 households in each village. The second was a questionnaire administered to the 75 selected households in order to draw comparisons between the quantitative and qualitative data. The researcher worked with a local research assistant who helped with the interaction since the researcher had limited knowledge of the isiXhosa language.

2.10.1 Data Collection Technique

2.10.1.1 Face-To-Face Interview

This study used face-to-face interviews as a technique to elicit data. The main flow of the interviews adopted a story-telling approach – letting the participants freely express their feelings over water issues at the household as well as community level.

The study used semi-structured interviews but sometimes an unstructured interview was used to establish an initial relationship between the interviewer and the participants. The research assistant translated the English questionnaire into isiXhosa as all the interviews were conducted in isiXhosa.

Even though the interview was guided, from time to time I asked questions based on issues that arose during the discussion to allow the flow of the participant's account (Bryman, 2001). It was also imperative to cover all the major themes in the interview guide.

2.11 DATA ANALYSIS

This section describes the analysis of the data collected using the methods outlined above. Bless (2004: 63) defines data analysis as a process of inspecting, cleaning, transforming and collecting data with the goal of highlighting useful information, suggesting conclusions and supporting decision making. The author further states that data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names in different business sciences and social

sciences (Bless 2004:63). Bogdin and Bilken (2006: 145) define qualitative data analysis as "working with data (which are textual, non-numerical and unstructured) organising it, breaking it into meaningful units, synthesising it, searching for patterns, discovering what is important and what is to be learned, and deciding what to tell others". Mouton (1996: 161) agrees with Bogdin and Bilken (2006) that data analysis means the degree of a complex whole into parts.

I used the eight characteristics of qualitative data analysis outlined by Creswell (2003:179-183, 2009: 175-176):

- Qualitative research is conducted in a natural rather than a laboratory setting. This means that the qualitative researcher normally goes to the site of the participants to carry out the research.

- In qualitative research, the researcher is the key instrument in the process of data collection. Qualitative researchers collect data themselves through examining documents, observing behavior or interviewing participants.

- Instead of relying on a single data source, qualitative researchers typically gather data from multiple sources. They will, therefore, interview and observe a number of different participants, and study various documents.

- In qualitative research, the data analysis is an inductive process. Qualitative researchers build their patterns, themes and categories from the bottom up, by organizing the data into increasingly more abstract units of information.

- Qualitative research is interpretive – it is a form of interpretive inquiry in which researchers make an interpretation about what they see, hear and understand.

- Qualitative research is holistic in nature. The researcher tries to develop a complex picture of the problem or issue being studied. This involves reporting multiple perspectives, identifying the factors involved in a situation and how they are involved, and generally sketching the broader ideas that emerge.

The above steps were used in order to analyse the data systematically, by segmenting it into words which subsequently emerged as a story on how the communities access water in the rural Eastern Cape.

Data was analysed using ATLAS.ti 7 and SPSS software. ATLAS.ti 7 was employed because the study population was too large to be analysed only through themes that emerged from ATLAS.ti 7 hence it incorporated Creswell's data analysis process. The thematic method was used for data analysis, thus the data was categorized into themes and sub-themes (Kitchen and Tate, 2000). This is a common data analysis tool in qualitative research. The purpose of this tool is to recognise identifiable themes that could be found in the data. For the purpose of this research, the research objectives were used as themes. In order to ensure that the research analysis reflected the findings, the results were presented in a systematic manner. The use of this method made the integration of empirical knowledge and theory an effortless exercise, as the themes make the research findings clear (Jupp, 2006).

Descriptive statistics were used to organise, summarise and visualise data. This included tables, graphs and the calculation of a single representative number that makes the data easier to understand and assists with the identification of underlying patterns. These also allow me to interpret statistics and to critically evaluate the claims in the study. Although the data obtained from the sample suggested certain conclusions, the interpretation of the results went beyond the set of numbers collected. Generalisations or inferences about the population under study can be made based on the evidence from the statistics in a sample.

The data analysis phase was followed by a categorizing phase, which drew on common themes and sub-themes of the research. It was important to continue to relate and compare the pre-conceptual framework with theories and concepts from the literature in order to support the process and data analysis. Data analysis was one of the most vital phases which form the construction of a new conceptual framework. This phase, nevertheless, continued to interact with and relate to the preceding processes such as the collation of personal experiences, the literature review, and the phase of data collection.

During the building of a new conceptual framework, I drew concepts from the results of the data analysis, from the initial conceptual framework and from the literature review. New factors emerged in the research findings that were unique and not yet mentioned in previous research. While continuing the literature review, I constructed a new conceptual framework that considered the new concepts derived from the study process. This required a comprehensive examination of the context-based nuances of the whole picture emerging from the three villages. The conceptual framework was built on the contextual base, local knowledge and cultural background, and the realities of water scarcity, access and supply in the areas. This accounted for real life circumstances and considered factors with direct impact on people's lives.

2.12 DELIMITATIONS OF STUDY

This section sets the boundaries and the scope of this study. This study was set in the remote area of Amathole District municipality, which can be challenging to access during the rainy season. However, data collection was done during the dry season, the down side of which was that people were spending more time at the river or stream since most water sources had substantially dried up. People living in South African rural communities are always willing to help. This helped the researchers' task to be easier as every household was willing to participate with community leaders facilitating the recruitment of participants, when I announced that the participants would be purposively selected for the study.

2.13 CONCLUSION

This chapter elaborated on the research design, methodology and the researcher's experience in the field. It is important to note that the study used both a qualitative and quantitative approach. Both approaches were used to make a comparative assessment. The qualitative aspect allowed the study to describe the views and perceptions of communities on water access. The quantitative section, on the other hand, gave an overview of the research from a statistical perspective. It also discussed the delimitations of the study. The following chapter introduces the background of the study area in detail. It will give a detailed overview of the state of water services in these communities and will also identify the main challenges in accessing water and the types of water sources that are used in these villages.

3 CHAPTER THREE: AN OVERVIEW AND INSIGHT INTO (75) SELECTED HOUSEHOLDS

3.1 INTRODUCTION

The key to my entry point in my investigation in the Amathole District Municipality included an analysis of their demographics, the types of water resources available and community access to this water, the distances the women had to go to fetch water, household investment in rainwater harvesting, and the challenges of carrying for people living with HIV/AIDS in water scarce villages. An important issue during the initial engagement with communities has been the defining of the boundaries in each of the beneficiary areas; over time it became clear that there were no clearly distinguishable boundaries of each of the villages that were being researched. The boundary is defined by clan names under a traditional leader. Furthermore, in South Africa, it is important to understand the underlying political logic of the local leadership is when conducting research, as one has to get permission from the chief or ward councilors to be in the area or speak to the community members. This complicated as there is always a possibility of different political affiliation from one village to the other, which influences the political undertone.

3.2 LOCAL GOVERNANCE CONTEXT

The Water Services Act, No. 108 of 1997; defines the municipality as the water service authority and also as the water service provider unless this is otherwise specified. Under the act the "water service authority" means "any municipality, including a district or rural council" and overwhelmingly water service providers are the same municipality. Municipalities thus have full responsibility for water services and are generally also the providers. In South Africa, in addition to the District Municipal Councils, which in rural areas often cover wide-ranging areas, there is the layer of local councils. These generally, however, do not have authority in relation to water services although they generally carry responsibility for sanitation. There is often a wide gap geographically between the district municipal officials and the most remote communities. This is made up, in part, by the political representatives of these communities, the ward councilors, some of whom are representatives of both the local and district councils.

In addition to the political representatives in the former homeland areas, there are traditional leaders. These leaders often have long-standing representatives of leading families in the villages. They are recognized and paid as government officials, and judge local cases in the tribal court. At the local level the traditional leaders are often the most readily accessible as most live within the communities where they exercise authority. Even if they do not have responsibility for service delivery, they have often carried a central role in the public communication of any initiative or study conducted in the area under their jurisdiction.

Figure 7 Cwebe: The steep descent to the Nthlonyane River (which is hidden by river forest and bush) showing the scattered settlement of Xeni visible on the northern side of the river.

3.3   SOCIAL AND ECONOMIC SET UP OF THE THREE SITES

All sites are located in fairly remote rural areas. A rural society is not easily defined except by way of contrast to urban society, and is characterized by less concentrated settlements on open land and the production of foodstuff, fibers and raw materials.

In South Africa there are two dominant and very distinct socio-types of rural society; firstly the traditional or tribal areas which are characterized by African customary relations and communal ownership of the land and are areas of limited production, and secondly the commercial farmlands characterized by white ownership which produce most of South Africa's food.

In South Africa the nature of rural settlement is related to the past political interventions of the apartheid era as much as to African tradition. There are two predominant types of dense rural settlement classified in the White Paper on Local Government 1998. Firstly there are *"betterment" settlements*, which are features of the former homeland areas. These have been described as dense, planned settlements, with populations of over 5,000 people constructed by rural settlement planning which clustered households away from fields and grazing lands with the stated intention of improving livestock management and agriculture. This was a feature of the apartheid state, used a major propaganda tool during the 1980. This "betterment" was often unpopular and enforced against much resistance but subsequently communities have generally not reverted to original traditional layout. Secondly there are *informal settlements*, which are unplanned and largely under-serviced, with populations of over 5,000 people. Some are close to urban areas, or are located in rural areas with a minimal local economic base (WPLG, 1998, 3.2).

The remote rural areas involved in this study encompass two other less dense settlements also mentioned in the White Paper. Firstly there are *villages*, or smaller rural settlements with populations of more than 500, but less than 5,000 people. These are often unplanned traditional settlements or

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resettlement areas. Secondly reference is made to *dispersed or scattered settlements*, which are mostly unplanned homestead settlements with a population of less than 500 people. Extensive settlements in commercial farming areas, some located on communal land and others on privately owned land, also fall within this category (WPLG, 1998: 3.2).

Although these classifications are useful, they do not entirely capture the social setting of the communities selected for this study. While the communities can be viewed as villages, as they are clusters of dwellings in a rural area at a lower level of concentration than a town, they could be more appropriately termed "hamlets". The term "village" evokes a greater sense of social cohesion and planning than is visibly apparent. The schools tend to be a locus of communal activity and the shops the other focus of social activity. The households in each community tend to cluster along the roads and are generally separated from the fields; features characteristic of the "betterment" planning even if these villages were not directly subject to such social reorganization in their history.

The three sites do not have definite well-delineated boundaries; these depend on the existing geographic and socio-political demarcations accepted by the political and traditional leadership.

3.4   DEMOGRAPHICS OF SITES

Table 1 Site demographics

Village	Number of Households	Number of people in households
Cwebe	25	139
Mbelu	25	171
Ntilini	25	133
Grand Total	75	443

Table 1 shows the number of households involved in the study. A total of 75 households was selected for the study, 25 from each village were sampled at Cwebe, Mbelu and Ntilini. The households consist of 443 people in total however the sample size focused on the women and girls who undertook the water collection chores.

3.4.1   *Percentile Range Of Per Capita Income Per Month In The Three Villages*

Table 2 Income dynamics for the three villages

Total income in the last month	Number of Household	%
R0-R399	8	11%
R400-R799	12	16%
R800-R1199	29	39%
R1200-R1799	11	15%
R1800-R2499	6	8%
R2500-4999 or More	5	7%
Don't Know	2	3%
No Response	2	3%
Grand Total	75	100%

The above table shows the total incomes for the three communities of Amatole District. The highest income was more than R4999 at 7 percent and the minimum of R399 among the 11 percent of the

population. Four of the participants either did not know or left the question blank. It is also clear that the incomes are very low averaging between R1200 and R1799 for average households of at least 15 percent of the households.

3.4.2 Per Capita Income Distribution

An analysis of per capita incomes by percentiles shows that about 90% of the households are located below this national income poverty figure. Only the highest 10% of these communities can be regarded as potentially within range of this figure i.e. approximately at or above R333 per capita income per month.

Assessing these figures from the perspective of deep poverty, that of per capita income of $1 per day, the cut- off point is about R200 per month.[1] The table places about 70% of the community in these circumstances. The alternative figure of $2 a day is entered at a cut-off point of R420 a month: only a proportion of the upper 10% could be within this range.

3.4.3 Monthly Per Capita Income And Family Size in Percentage

Figure 8 Per capita income and household size

Per capita income and household size

	R0-R399	R400-R799	R800-R1199	R1200-R1799	R1800-R2499	R2500-4999 or More	Don't Know	No answer
■ 1 to 5	7	5	17	3	1		2	1
■ 6 and above	1	7	12	8	5	5		
■ No answer								1

An examination of per capita income figures indicates that there is an inverse relationship between per capita income and family size. Among the smaller households (sized 1-5 members) there are a rising proportion of households with higher incomes while there are a declining proportion of larger households (sized 6 or more members) in the higher per capita income categories. Take for example the larger sized households, six and above (as indicated in table 3). There are 56.5 % in this group within the lowest category of monthly income (R50 and below), while in the highest category (R401 and above as indicated in table 3) there are only 15 % in that bracket. From the lowest to the highest category there is a steady reduction in the proportion of larger households.

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[1] This is an approximation to the $1 a day index and is not undertaken by calculating the purchasing power parity in 2000 prices. This means that the figures should not be used in comparison with those based on the purchasing power parity. The current exchange rate of R7 to the US dollar has been used.

3.5   TYPE OF WATER SOURCE

3.5.1   *Access And Availability Of Water*

The three sites were deliberately selected as dependent on natural water sources without a previous intervention to improve access to water sources. These communities have village water sources, which are entirely underdeveloped although individual households have made and are making attempts to improve their domestic access and storage. There is evidence of considerable interest in improved water sources and the use of rainwater harvesting.

This section examines the accessibility of household water and includes the hydrological setting in terms of types of sources, the geographical setting including the time and distance from households, and makes some comments on seasonal variance.

The survey instrument has a set of questions, which explore the relationship between households and water sources and the use of rainwater harvesting.

Table 3 Water source

Water source	N	%
River	56	75%
Stream	1	1%
Stream & River	1	1%
Spring	15	20%
No Response	2	3%
Grand Total	**75**	**100%**

Table 3 shows that the majority (75%) of households source their water from the rivers while a smaller percentage 1% percent sourced from the stream and another 1 percent from both the stream and river.

None of the household in the three villages has piped water. In the table the type of water source is affected by the choice of community. The highest proportion of households access water from rivers (75%), the next most used water source is the springs (20%), followed by the combination of stream and rivers and rainwater harvesting which is dealt with separately in the following section. This distribution seems to indicate the kinds of water sources available in areas of high rainfall; with a preponderance of water sources being rivers, which are generally more accessible since they run through these villages and always have enough water throughout the year. Although only a small minority, the households reporting the use of rainwater harvesting are indicating their ability to take advantage of high rainfall in the areas.

The first appearance of each of the communities is of settlements far from a major water source such as a river. The scattered nature of the communities does, however, imply that in an area of high rainfall such as the Eastern Cape there are several water sources available to households but at various distances and with varying volume available.

3.5.2 Water Source And Exact Name Of The Water Source Combined

Table 4 Water Source And Exact Name Of The Water Source Combined

Water source	N	%
River	**56**	**75%**
Entlonyana	10	13%
Mbanyana River	8	11%
Mbashe River	38	51%
Stream	**1**	**1%**
Mbanyana River	1	1%
Stream & River	**1**	**1%**
Mbashe River	1	1%
Spring	**15**	**20%**
Emphilisweni	3	4%
Entlonyana	1	1%
Matshaweni	6	8%
Nokrweqe River	5	7%
No Response	**2**	**3%**
Mbanyana River	1	1%
Mbashe River	1	1%
Grand Total	**75**	**100%**

Table 4 shows the names of the sources, namely rivers, streams and spring. 73 % of the participants indicated where they sourced their water and 2% left the question blank. It appears that 51 % of the households use the Mbashe River as their main source of water.

The survey data has revealed a wide range of water sources accessed by households; in Ntilini 2 sources were identified, in Mbelu 2 sources, while in the much larger area of Cwebe there were 27 sources namely river, stream, and spring. The type of remote villages near major bodies of water explains the difference in the number of water sources. The number of water sources appears to be linked to the extent of the community and to the accessibility to a major water source such as a river. In the traditional areas of the eastern coastline of Southern Africa each water source is named which makes it easier for the community to make reference to and describe them[2]. While these names generally appear unique, some take those of place and clan names.

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[2] This practice appears to be specific to Nguni communities as it is not studied by researchers in the water sector in Lesotho.

Table 5 Names of water sources

Exact name of the Water source	N	%
Emphilisweni	3	4%
Entlonyana	11	15%
Matshaweni	6	8%
Mbanyana River	10	13%
Mbashe River	40	53%
Nokrweqe River	5	7%
Grand Total	**75**	**100%**

While the Mbashe River supplies most of the water (53%), all of the rivers in the three communities are used as a source of water. However Emphilisweni is only used by 3 households in this study which account for 4 percent.

3.5.3 Name Of Water Source And Number Of Accessed Households

Table 6 Name Of Water Source And Number Of Accessed Households

Name of water source	Village			
	Cwebe	Mbelu	Ntilini	Grand Total
Emphilisweni	3			3
Entlonyana	11			11
Matshaweni	6			6
Mbanyana River		10		10
Mbashe River		15	25	40
Nokrweqe River	5			5
Grand Total	**25**	**25**	**25**	**75**

Table 7 Sufficiency of water sources

Is there sufficient water from the water source			
Name of water source	No	Yes	No Response
Emphilisweni		3	
Entlonyana	1	9	1
Matshaweni	5	1	
Mbanyana River	3	6	1
Mbashe River	4	34	2
Nokrweqe River	5		
Grand Total	**18**	**53**	**4**

From the discussion with community member, there are 27 water sources, which provide households with an extraordinarily wide range of sources. The first two sources provide a large proportion of water with 23 households reporting getting water from these sources; thereafter the other 25 water sources show a wide range but rapidly declining numbers of users. There are quite a number of water sources, which provide for the needs of a small number of households.

The considerably greater number of water sources as compared to the other two sites can be explained as the Cwebe site covers a considerably wider area and has a much greater population in

comparison to the two other sites. The general picture is of two types of water communities – the fist type are two "river-dependent" villages (Ntilini and Mbelu) and the second type is a single "multi-source" village (Cwebe). The Matshaweni River was cited to supply less water to the communities with the Mbashe River most prolific in terms of having sufficient water for the households.

3.5.4 Distance To And From Water Source, Categories

The distance to and from water sources is one of the main constraints facing rural households in accessing greater quantities and better quality of water. The human effort taken in collecting and carrying water over considerable distances limits the consumption of water available to the household and the possibility of having adequate supply to sustain health. In addition, distance may also impact on the access to better quality water if sources providing better quality water are only available at greater distances from the household.

The responsibility of water collection is partly indicated by the times and distances and by the number of trips and volume of water collected. This burden largely falls on the shoulders of women and girls who are identified as the primary collectors of water. There is a significant cost to water collectors in the time taken, physical effort, and potential negative health effects. The study found that women's health and productive time was affected by the collection and transportation of water. The findings of this study are similar to those of Coates (1999) who found the impact of collecting and transporting water over long distances impacted on women's time and health. Coates reported that collecting and transporting water over long distances meant lost energy and time to undertake other roles, for example supplementing household nutrition through traditional productive roles such as vegetable growing. Vegetable plots were absent in the three villages under study as there was no time to attend to them.

In this section the focus is on the times and distances. The distance of the households surveyed to and from the water source is shown in the Table below.

Table 8 Distance to water source by households

Water source Distance	No. of household	%
200 - 499m	4	5%
500 - 999m	9	12%
1000 - 1499m	5	7%
1500 - 1999m	9	12%
2km or greater	40	53%
No Response	8	11%
Grand Total	**75**	**100%**

The above table shows the distance the villagers walk in order to source water. 53% travel a distance of more than 2km. This high percentage indicates that most households prefer water from the Mbashe River which is a distance from many households. 5% walk a distance of between 200 and 499 metres.

3.5.5 Water Distance Per Metres From To Water Source By Village

Table 9 Water distance per metre from to water source by village

Water distance & village	Village			
Water Distance per metre	**Cwebe**	**Mbelu**	**Ntilini**	**Grand Total**
200 - 499m	3	1		4
500 - 999m	6	3		9
1000 - 1499m	1	3	1	5
1500 - 1999m	1	1	7	9
2km or greater	14	9	17	40
No Response		8		8
Grand Total	**25**	**25**	**25**	**75**

In the Table above distances are benchmarked to the national standard of 200 metres to source to provide perspective. Since the round trip is measured (to and from the household), this distance to water source is halved to present the data in a manner comparable to the national (or RDP) standard. Distances to water are assessed in categories rising from the 200 metres,[3] which is the minimum standard from the most distant household to standpipes in conventional water studies, to over 1 kilometre – from fairly close to a considerable distance. The distribution of households within the different categories is uneven; rising through each category and declining in the category beyond 1km distance. There are 4 percent in the closest category (less than 200 metres) and 67 % in the furthest category (1000 metres and above). Taking the 200 metre point as representing a standard of access less than 200m; in these undeveloped communities 4 % are able to collect water from within this distance and cumulatively 96 % have to go considerable distances beyond to collect it.

3.5.6 Time To And From Water Source

Table 10 Time to and from water source

Time category	No. of household	%
Less than 20 minutes	12	16%
20 - 29 minutes	8	11%
30 - 49 minutes	18	24%
50 minutes and more	29	39%
No Response	8	11%
Grand Total	**75**	**100%**

The above table shows that only 12 households, (16%) walk less than 20 minutes to fetch water. The minimum time taken to collect water is 30 minutes with the maximum time being 50 minutes or more. This highlights that much of the time which may be used for other chores is spent on fetching   water.

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[3] Often still referred to as the RDP (Reconstruction and Development Programme) standard. These standards are confirmed in the Regulations relating to Compulsory National Standards and Measures to Conserve Water, Water Services Act, 1997, issued on 20 April 2001.

Times and distances in water collection are related but not directly proportional. While distance to and from the water source is closely related to the time taken in collecting water, time and distance are not necessarily fixed in a finite ratio because of a number of additional factors such as queuing, scooping and filling the containers, as well as time to socialise.

Where there is a considerable volume or flow of water available at a source these times can be minimal, but where water is scarce queuing and scooping can take time. Many of the springs examined at the various sites have a fairly slow flow of water into a small collecting pool and at key collecting times, either early or late in the day, queues develop. Often those collecting at such sources make an attempt to avoid the upwelling of muddy particles in the water and scoop very carefully. All this takes time and can make an irregular relationship between distance and time. Queuing for water could be a major factor in the differing times taken to and from water sources. In addition, community members use time for collecting water to socialize. These additional components are not significant where water sources are reliable and water flows strongly. However, the strong flow of water attracts a larger crowd coupled with the additional time people spend socializing.

With reference to the time categories, in the three sites the largest proportion (16%) are found in the lowest time category (less than 19 minutes) to and from the water source with 29 % in the longest time category of 50 minutes and more, as depicted in the table below.

3.5.7 Time To And From Water Source By Village

Table 11 Time to and from water source by village

Time & Village	Village			
Time category	Cwebe	Mbelu	Ntilini	Grand Total
Less than 20 minutes	9	3		12
20 - 29 minutes	1	4	3	8
30 - 49 minutes	7	1	10	18
50 minutes and more	8	9	12	29
No Response		8		8
Grand Total	**25**	**25**	**25**	**75**

Nine households in Qwebe and 3 in Mbelu reported to take less than 20 minutes to get to a water source compared to 8 households in Qwebe, 9 in Mbelu and 12 in Ntilini who take more than 50 minutes to get to water. Ntilini has more households which spend 50 minutes and more to collect water were in Ntilini. 8 households did not respond to the question.

The mean time at the three sites is presented from the least time taken to and from the water source is in Cwebe (30 minutes) and the greatest in Ntilini (88 minutes). There is a vast difference in these mean times by site with households in Ntilini taking about double the time of households in Mbelu and about triple the time of households in Cwebe. It took a long time to collect water for the river communities than those at Cwebe, which has a wide range of water sources. The time taken collecting water was not directly linked to distance as would appear.   The relationship is explored in the Table below.

3.5.8 Time And Distance, Distance By Time Categories

Table 12 Time and distance, distance by time categories

	Distance						
Time category	**200 - 499m**	**500 - 999m**	**1000 - 1499m**	**1500 - 1999m**	**2km or greater**	**No answer**	**Grand Total**
Less than 20 minutes	4	8					12
20 - 29 minutes		1	5	2			8
30 - 49 minutes				7	11		18
50 minutes and more					29		29
No answer						8	8
Grand Total	**4**	**9**	**5**	**9**	**40**	**8**	**75**

The above table shows the distance and amount of time the communities of the three sites travel to access to access water.

3.5.9 Time Taken At Three Sites, Time Categories

Table 13 Time taken at three sites, time categories

Time & Village	Village			
Time category	**Cwebe**	**Mbelu**	**Ntilini**	**Grand Total**
Less than 20 minutes	36%	12%		16%
20 - 29 minutes	4%	16%	12%	11%
30 - 49 minutes	28%	4%	40%	24%
50 minutes and more	32%	36%	48%	39%
No answer		32%		11%
Grand Total	**100%**	**100%**	**100%**	**100%**

The relationship between time and distance in collecting water is illustrated in the table 14 in which the mean distances were generated at each time category. The least distances were registered in the shortest time category (19 minutes or less) and increased step by step through the rising time categories. In the greater time category (50 minutes or more) a considerable distance of 3,4km was walked to and from the water source. The analysis appears to indicate that in these communities the additional factors of queuing and scooping water did not constitute major additional time in collecting water.

3.5.10 Water Source And Time Spent

Table 14 Water source and time spend

Water source	Time spend					
	Less than 20 minutes	20 - 29 minutes	30 - 49 minutes	50 minutes and more	No answer	Grand Total
Emphilisweni			3			3
Entlonyana			3	8		11
Matshaweni	5		1			6
Mbanyana River		1		6	3	10
Mbashe River	3	6	11	15	5	40
Nokrweqe River	4	1				5
Grand Total	**12**	**8**	**18**	**29**	**8**	**75**

The above table shows the amount of time spent at a water source. Evidence shows that less time is spent at Empilisweni River and more time is at Mbashe River. This is due to the fact that it is the largest river and more people have access to it. Another reason is that it has become a metting point for the women to discuss their daily issues.

3.5.11 Amount Of Water Collected Per Day

Table 15 Amount of water collected per day

Amount of water collected per day	Village			
	Cwebe	Mbelu	Ntilini	N
Less than 25 litres (less than one container)	1			1
1 Container, 25 litres		5	4	9
2 Container, 50 litres	3	8	15	26
3 Container, 75 litres	8	1	4	13
4 Container, 100 litres	7	6		13
5 Container, 125 litres	3	1		4
6 Container, 150 litres	3	3		6
More than 6 Containers			1	1
No Response		1	1	2
Grand Total	**25**	**25**	**25**	**75**

The above Table shows the amount of water, which each household collected per day. It also shows that the majority of the households (26) collect 50 litres a day with the highest found in the villages of Cwebe (3) and Mbelu (3) who collect 150 litres a day. Only 1 household in Cwebe collected less than 25 litres. The household size influences the amount of household water collection as shown in the Table below.

3.5.12 Household Daily Collection of Water By Size Of Household

Table 16 Household daily collection of water by size of household

| Amount of water collected per day | Household size | | | |
	1 to 5	6 and above	No answer	N
Less than 25 litres (less than one container)	1			1
1 Container, 25 litres	6	3		9
2 Container, 50 litres	14	12		26
3 Container, 75 litres	8	5		13
4 Container, 100 litres	5	8		13
5 Container, 125 litres		4		4
6 Container, 150 litres	1	5		6
More than 6 Containers		1		1
No Response	1		1	2
Grand Total	**36**	**38**	**1**	**75**

Table 17 shows the amount of water collected per day. It also shows that the maximum water collected avarages 50 litres with the average being 75 and 100 litres respectively.

3.5.13 Amount Of Water Collected And Source Of Water

Table 17 Amount of water collected and source of water

water collected	Emphilis weni	Entlon yana	Matsha weni	Mbanyana River	Mbashe River	Nokrweqe River
Less than 25 litres (less than one container)						1
1 Container, 25 litres				4	5	
2 Container, 50 litres		1	2	1	22	
3 Container, 75 litres	1	7			5	
4 Container, 100 litres		3		2	4	4
5 Container, 125 litres	2		1	1		
6 Container, 150 litres			3	1	2	
More than 6 Containers					1	
No Response				1	1	
Grand Total	**3**	**11**	**6**	**10**	**40**	**5**

The key data in relation to the 9 most important water sources providing water to 75 households visited in the three sites is presented in the Table above. These are ranked according to the volume of water drawn from each source. The "draw-off" (or total volume drawn from a water source) was established by multiplying average water use by the number of households accessing the source. The factors identified as significant included the number of households collecting at this source, the volume collected, the total "draw-off", the minutes to and from the water source, and the per capita water use.

The general picture from the review of the data presented in this Table is of fairly consistent household daily collection from the water source, but a wide range of per capita water use. The per capita water usage of 20.9 litres per person per day was slightly higher than that studied in the rural contexts of other African countries where per capita water use of 18.8 litres is reported in rural communities in East African countries (Thompson et al. 2001, Figure 2.1).

3.5.14 Attitudes To Collecting Water

Figure 9 Attitudes to collecting water

	Not too heavy	Time collecting	Always available
■ Agree	29%	50%	40%
■ Disagree	54%	30%	42%
□ Neither nor	15%	16%	13%

Figure 9 shows that there is generally a negative attitude towards water collection. Fifty four percent of participants felt that it was too heavy to carry water from water sources. Fifty percent showed that they spent 50% of their time collecting water daily. Finally, 42 % of participants reported that water was not always available at the source.

The study requested the designation of water sources by type (as either spring or ground water or wells); but the distinction between springs and streams proved difficult to make. It was difficult for respondents to distinguish between, for instance, a spring and undeveloped natural well or a stream and a river. This often proved to be a challenge for the researcher as it was often not clear whether, for example, a small water source among rocks was a pool in a dried stream (surface water) or water seeping from rocks. The use of classificatory terminology is also often imprecise. Although respondents classified sources of flowing water used the term "river", it may have been more appropriate to use the term "stream" as some of the water sources classified, as rivers were not considerable bodies of flowing water.[4] In all three sites there were, however, major rivers such as the Bhelu and Mbashe.

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[4] The data was checked and advantage taken of the naming of specific water sources to check the classification made of type of water source.

During fieldwork I found that the water sources were not all totally undeveloped. These communities, apparently with the assistance of developmental agencies some time ago, had made some investment in the development of water sources. A number of springs had been improved in the past by agencies, who built structures with brick and concrete around the source or spring to provide protection. Other water sources were covered with stones placed around collection points in order to help provide sure footing to those accessing water or by deepening the pool from which water could be drawn. These simple improvements made access a little easier and helped with a better flow of water which facilitate water collection and ease women's daily chores. However, the construction of concrete structures around some eyes of springs (the point at which water immerges from the ground) impaired flow. Surprisingly, none of the protected springs were found to be functioning as intended; it appears that the eye of the spring had been obstructed with water which was now seeping under and around the structures rather than through the intended pipe. The study found that the greatest investment in improving water sources has, however, not been spring protection but rainwater harvesting which is discussed further below.

3.6   RAINWATER HARVESTING

All three villages are located in the zone of the highest level of rainfall. Although the villages are located in areas which can have rain throughout the year in the well-watered south eastern coastland of Africa, there is an acute shortage of safe drinking water. The Eastern Cape generally has a mean annual rainfall of 552 mm with a maximum value of 1,722mm and a minimum of 96mm. Despite recent experience of drought, the rainfall in the mountains of the Drakensberg and hills of the Transkei feeds a number of major rivers (Kruger; et al, 2017: 6).

Figure 10 Mean annual precipitation

Rainwater harvesting (RWH) is often proposed as providing a water source, which is closely accessible to the household and, in high rainfall areas, providing a reasonable supply of water for domestic purposes. Rainwater harvesting, particularly in poor rural areas, is described as a household response to the lack of water and often undertaken without technical knowledge or external assistance (Houston and Still, 2001). Those advocating rainwater harvesting point to the simplicity in construction and maintenance, a strong sense of ownership, which improves sustainability, and the easing of the burden of water collection on women and children (Houston and Still, 2001: 24). Rainwater harvesting also has the advantage in that water quality can be easily maintained and potential infection is limited because a single water source is used by a limited number of people. In the three target villages people invested in rainwater harvesting with the use of social investment clubs known as stokvels in South Africa. Community members save money to contribute towards the purchase of a water tank. A 1000 litre water tank costs 2500 South African Rands , which, for poor households is a large amount to raise at once but with social club saving, households can afford a rainwater harvesting system.

Household investments in improved water access have been made in RWH thus providing evidence that people prefer to access water, if they can, from the very nearest source. Rainwater harvesting involves a range of investments from that of a simple water barrel to the 2.5 kilolitre green polyethylene tanks using a rotational molding process to provide the robust "Jojo".

The study found that the use of RWH in the Eastern Cape was in a different context to that of domestic water use in rural development. The Department of Agriculture in the Eastern Cape, for instance, utilizes RWH to augment water supply to gardens as a communal water supply for agricultural purposes in the Massive Food Programme.[5] This is due to the fact that RWH for domestic water use is owned by households and not managed through communal ownership and because the basic water service is defined as piped water within 200 metres of the household, it appears difficult for municipalities to include infrastructure in the roll-out of water delivery. Further difficulties were highlighted and shown to be inter-departmental responsibilities. RWH relies on well-constructed roofs and gutters and appears to straddle the responsibilities of departments of housing and water. Whatever the precise reasons, the advantages of RWH have led to considerable household investment not being realized at a municipal level.

The level of the necessary household investment rises from the purchase of some guttering and a water barrel to provide a rudimentary level of RWH to the installation of full guttering around corrugated iron roofs leading to 2.5 kilolitre tanks. A 1 kilolitre Jojo costs in the region of R1,200 plus transport and a 2.5 kilolitre Jojo costs in the region of R2,000 plus transport cost to the place of operation. In addition there is the cost of guttering and attachment to the rainwater tank providing a cost estimate of R2,500 for the 1 kilolitre tank and R3,500 for the 2.5 kilolitre tank.

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[5] Interview in 2007 with Eastern Cape Department of Agriculture in study of Batho Pele principle of value for money.

A set of questions probed the use of rainwater harvesting and a fairly high proportion of the households in the communities- 73 of the 75 households indicated the adoption of some form of RWH. However as indicated above most households cannot afford to buy water tanks hence they use water barrels as shown in the picture below. These can be bought at wholesale markets at R100 for a 200 litre barrel.

Figure 11 Rain harvesting

A water barrel. Rainwater harvesting with water barrels is common.

There is a wide range of investment in rainwater harvesting. The most elementary form of rainwater harvesting involves a barrel being located under the eaves of roof top to channel rain water in to water tank or barrel. Water barrels and the more elaborate containers water tanks which can hold considerable volumes of water, potentially from 1 to 2.5 kilolitres.

Table 18 Rain water harvesting – Jojo and Barrels

Rainwater harvesting	Village			
JoJo 2.5 Kilolitres	Cwebe	Mbelu	Ntilini	Grand Total
No	6	7	11	24
Yes	2		7	9
No Response	17	18	7	42
Grand Total	**25**	**25**	**25**	**75**

Two households in Cwebe reported having 2.5 litres Jojo tanks and Ntilini has 7 tanks.

Table 19 Rainwater harvesting Jojo tank by village

Rainwater harvesting	Village			
JoJo 1 Kilometre	Cwebe	Mbelu	Ntilini	Grand Total
No	7	7	12	26
Yes	1	1	2	4
No Response	17	17	11	45
Grand Total	**25**	**25**	**25**	**75**

Table 20 and 21 shows that very few people tend to harvest water in a Jojo Tank

Table 20 Rainwater harvesting by barrel by village

Rain water harvesting	Village			
Barrel 200L	Cwebe	Mbelu	Ntilini	Grand Total
No	3	1	2	6
Yes	5	6	14	25
No Response	17	18	9	44
Grand Total	**25**	**25**	**25**	**75**

The table 22 shows that more households in all three villages harvest rainwater-using barrels compared to harvesting in a Jojo.

It appears that the number of barrels utilized by households in a community reflects a proportion of the investment in tanks where there are fewer tanks a greater number of barrels are utilized. The barrels appear to be something of a proxy for the more expensive rainwater tanks.

This investment in RWH is said to be made by more prosperous households, although this is not confirmed in statistical analysis. In discussion with communities it has been stated that those migrants retiring to their rural homes tended to invest in water tanks. Households with Jojo tanks also tended to have more than one method of RWH; to combine both the tanks and water barrels to maximize the possibility of water collection. These households are regarded as better-off and, during times of drought, they are approached to assist neighbours by providing drinking water.

Rainwater harvesting is certainly the greatest single investment made by some households in the three villages. The advantages are that during high rainfall water is relatively safe and readily accessible at the household itself; saving time and energy utilized in trips to the water source.

3.7   CONTAMINATION OF WATER SOURCES

In the three villages, human excreta, animal waste and agricultural practices are clearly contaminating water sources. There are found in the spring, river and other water sources.

Organic waste materials deposited in the springs accumulate and they decay, becoming anoxic and give off unpleasant smells. These decaying waste materials release nutrients, such as nitrates, while

providing an ideal environment for pathogenic bacteria (germs) to grow, as well as providing a breeding environment for pests (Xu and Van Tonder, 2002: 100)

Human excreta is characterised by a high, rapidly biodegradable organic content, a high concentration of nutrients, and a large number of potential disease-causing organisms (amoebic dysentery and Giardia), bacteria (typhoid and other salmonellas, Shigella, and Vibriocholerae), viruses (polio, hepatitis A and rota virus) and worms (hook and round). Where animals are gathered in large numbers (such as around a water source), large amounts of liquid (urine and spilled water) and semi-solid faecal matter are concentrated in a small area. Under such conditions, urine and faecal matter may easily access water sources in the vicinity and move through the ground surface to enter the water table. Where manure is applied to soil for crop growth purposes, the risk of pathogen or nitrate contamination of groundwater resources is likely to be small, due to the complete natural degradation (removal) of manure by soil bacteria, and the uptake of nitrates by crops. However, contamination could be significant if manure is applied in excessive amounts to cropland (Xu and Van Tonder, 2002). These pose a risk of contamination to water sources in the three villages.

3.8   QUALITY OF WATER

Perceptions of the quality of water supplies are a guide to the potential reaction of respondents in undertaking to protect their health and that of their household members. If water quality is perceived to be reasonably good and levels of diarrhoea low there is less interest in water treatment and commitment to engage in new activities such as scooping, sieving, sedimentation, filtration and disinfection to achieve safe drinking water. The emphasis may, however, be directed to the accessibility and quantity of water. Where water quality is perceived to be poor, however, rural populations can see there are strong reasons for undertaking water treatment and maintaining container hygiene.

Figure 12 Assessment of quality of water

	Safe	Clear	Taste	Smell
□ Poor	74%	66%	57%	64%
■ Satisfactory	16%	13%	19%	19%
□ Very good	10%	20%	23%	17%

Respondents were asked their assessment of the water quality they access ("very good", "satisfactory" or "poor"); in relation to its safety, clarity, taste and smell. In relation to water quality issues there is a generally critical appraisal; 74% make a "poor" appraisal of its safety, 66% make a "poor" appraisal of its clarity, 57% make a "poor" appraisal of taste and 64% make a make a "poor" appraisal of its

smell. There were low levels of positive appraisal. The greatest critical appraisal was made of water safety with only 26% considering the safety of the water they accessed as satisfactory or very good.

The subjective and objective data were found to be broadly comparable. I collected water sample, which I send to laboratory for testing. The findings provide the results of water quality tests on the Mbashe River at two points, the villages of Ntilini and Mbelu. The result of the water sample is depicted in table 24.

Table 21 Water quality assessment: samples from Mbashe river

Sample Description	Unit	Mbelu	Ntilini	SANS 241 Standard
Turbidity	NTU	126	80	<1
Total Coliform	count/100mℓ	51,000	1,600	100
Faecal Coliform	count/100mℓ	35,000	810	0
E coli	count/100mℓ	0	567	0
Streptococci	count/100mℓ	1000	320	0

Source: CSIR Groundwater Survey Ref 14, 17

In the Table above, the focus is on the Mbashe river water at two sites namely Mbelu and Ntilini, the above table providing the water quality base of line at these sites. The result from the Table is based on tests conducted on current drinking water in both these villages. The counts are shown against categories and the right column shows the specific measure used by South African National Standard (SANS) for drinking water quality.

Turbidity is a measure of the clarity of water and SANS a standard for drinking water is <1: in Mbelu the count is 126 times higher than the standard and in Ntilini it is 80 times higher than the standard. Total Coliform (the total bacterial count in water) in Mbelu is 51,000 and in Ntilini the count is 1,600; both above the standard which is 100. In Mbelu the Faecal Coliform (bacteria found in the intestinal tracts of mammals and an indicator of pollution) count is 35,000 while in Ntilini it is 810; the standard is 0. The count for E coli (a bacillus, Escherichia coli, existing as numerous strains and normally found in the human gastrointestinal tract) in Mbelu is 0 while in Ntilini it is 567; the standard is 0. In Mbelu the Streptococci count is 1000 and in Ntilini it is 320; both are higher than the standard of 0.

Based on the above figures it appears that the Mbashe River is contaminated and well below the national standard on some of the most important microbiological indicators. The presence of streptococci is regarded as particularly dangerous to human health although this bacillus does not have a long life. Mbelu, which is downstream, has water with a higher level of contamination than Ntilini; since there is upstream contamination from other villages and such as activities sand mining.

3.9 WATER TREATMENT

Observation on household water treatment which show various levels of treatment activities needs to be assessed carefully. While there is a reasonably high level of treatment in households visited, this practice covers a wide range of activities ranging from careful scooping of water to lower turbidity to

boiling water. The level of water per treatment defined here as comprehensive treatment including the use of Jik or boiling of water is low. Residents mentioned the difficulty in getting the necessary chemicals (Jik is not visibly evident in local shops) and the time taken in boiling water. Despite this, the practice of boiling water itself is the preferred method of treatment.

3.9.1 Environmental Hygiene

Observation of aspects of hygiene of the household, the yard, the drinking water container, and interior of the houses and associated questions are covered in the survey instrument. The questions of hygiene raise normative questions and the responses can be difficult to assess. Despite this there is valuable material for further assessment and to contrast with the impact survey.

A clean environment, in the rural setting free of human and animal waste, is important particularly for children's health. Keeping the yard swept and clear of faeces indicated a high level of practice which, unfortunately, was not always evident. In particular rural households are tolerant of animal faeces in the yards.

Container hygiene is part of the cycle of hygienic practices necessary to exclude water-related diseases. If the positive responses affirming washing practices were continuously undertaken and uniformly maintained the containers should be clean. The field workers' observation of container hygiene does, however, indicate a variance between claimed practices and an examination of the containers. Research has concluded that dirty containers can lead to the recontamination of water, or in the case of untreated water, degrading further the quality of drinking water.

3.10 WATER AND PEOPLE LIVING WITH HIV/AIDS (PLWHA)

South Africa is in the midst of the pandemic of HIV/AIDS with high levels of infection in the adult population at a country level which has important implications for household water management and the maintenance of hygiene. One of the characteristics of the developed phase of AIDS is that of diarrhoea a symptom and aspect of the disease which can be reduced or better managed with sufficient resources and knowledgeable care. Despite the importance of this issue for improved water and personal hygiene, the implications of water and care issues related to HIV/AIDS was a difficult issue to address. Access to water sources is primarily a household issue and, in a survey, direct questions on the health status of individual members would pose both methodological and ethical constraints.

In early discussions with members of the community the impact of HIV/AIDS was presented as an aspect of the migratory life cycle. Younger work-seekers were portrayed as going to find work in the industrial centres far from the village, setting up another home, becoming infected, and returning to the village when they were very sick. Their death and the emergence of fatherless children or orphans becomes a problem for the village.

The advance of AIDS is associated with diarrhoea which "becomes increasingly severe and persistent". Diarrhoea impedes the absorption of nutrition and antiretroviral medicines and needs to be carefully managed. In this regard, ensuring the use of safe drinking water and hygienic practices is crucial (USAID, 2009: 2). The promotion of these practices prolongs and improves the quality of life for PLWHA and also helps safeguard family members and caregivers.

The special need of those households affected with HIV/AIDS (in particular improved water quality, but also of sufficient quantity for adequate hygiene) was raised in the material used by household members. This was effectively communicated in the health clubs and house visits and although an attempt was made to engage the community in wider discussion of the issues these initiatives did not lead to the anticipated result in open discussion of the issues. Only in the case of a young health auxiliary worker was it found possible to explore these issues. This person confirmed the demanding conditions on women in the household of PLWHA and the need for supportive interventions.

Since the stigma associated with HIV/AIDS is still one of the dominant social aspects of the disease, it was not possible to make a more rounded assessment of social aspects of the disease. Stigma is associated with the emotions of shame and disgrace which make it difficult both for PLWHA and caregivers to discuss questions of need and of care. The results of the survey and observations are thus not as strong on this key issue as they could be, and further research is needed in this field.

3.11 CONCLUSION

This chapter provided useful interpretation of the conditions of communities with undeveloped water resources in South Africa. The relationship between the settlement types represented and water sources in remote rural areas were explored and a preliminary analysis of existing relationships in water use, distance to water, and household water access was undertaken. The study of these communities posed useful questions as to the adaptation of human society to the hilly terrain in a region of relatively high rainfall and with undeveloped water sources. The conditions of water usage appeared fairly stable at some levels. Through their own effort's households were working to provide themselves with access at minimum standards. Despite the lack of a developed water supply, the mean household water and the usage of water at the different sites appeared broadly comparable. The chapter also presented the time spent collecting water at the expense of other household chores. The following chapter will discuss women's coping mechanisms in the provision of household water access.

4 CHAPTER FOUR: STRUCTURAL AND GENDER INEQUITIES: THE NEED FOR GENDER MAINSTREAMING

4.1 INTRODUCTION

This chapter highlights several important theories on structural and gender inequities and their link to gender mainstreaming, with special reference to the provision and access to water. I begin from the position that there is value in linking the theory of gender mainstreaming with the concept of Integrated Water Resource Management (IWRM) – which is discussed in greater detail below. While feminist oriented theories have variations their commitments are common in two respects viz. that they treat women as central subjects and from a vantage point in the investigation process; and conversely, some feminist thoughts examine the role of women by attempting to explain the causes of their marginal status. The major objective of the feminist theories is to broadly explore the structural situations and experiences of women in society. Inspired by these theoretical positions, this study takes a queue from them and focuses upon women in the context of household and water management in South Africa's Eastern Cape. Socio-economic conditions in the Eastern Cape are a semblance of the under-provisioned resource situation in most of South Africa's rural areas. It is an established fact that water in the country's rural areas was and continues to be a source of consternation in the plethora of service delivery failures. The significance of this statement would be better understood and contextualised through a background of the water policy issues over the last two decades in post-apartheid South Africa.

The South African water resource policies were designed to be pro-poor in order to address the inequities of the past. They were therefore overhauled in the White Paper on a National Water Policy for South Africa, 1997 (DWAF, 1997a) and National Water Act, 36 of 1998 (DWAF, 1998). In particular, the National Water Act 36 of 1998 provides for equitable access to and the protection of resources. In the water service sector, the Water Service Act 108 of 1997 (DWAF, 1997b) governs the institutional framework of the sector. Two policies address issues related to the delivery of water services within the broad municipal and inter-governmental policy framework. The first of these is the Free Basic Water Policy, (2000), that was announced as a national policy by the then President Thabo Mbeki (DWAF, 2002a). This policy is linked to provision in the Water Services Act, 108 of 1997 for people who are not able to afford water. The second policy is the White Paper on Basic Household Sanitation, 2001 (DWAF, 2001). Research in Gender Mainstreaming Strategy and Action Plan (DWAF, 2005), however shows that despite the emphasis in South Africa on mainstreaming gender equality in the water services, the lives of poor women are not substantively being transformed (WRC, 2009).

Self-supply builds on the initiatives of private households or communities to improve water supply through user investment in water treatment, supply construction, upgrading and management (Sutton, 2008). This should be based on locally available and easily affordable technologies for the users in the rural communities (Alford, 2007). Self-supply initiatives are spearheaded by people in the respective communities who have the income and are willing to invest in water supply sources (Carter, et al., 2005). However, most of the people in rural areas are poor forcing them into inter-dependent

relationships by mobilizing friends and neighbours to improve traditional water sources, using local labour and materials. It is important to note that, although the self-supply initiatives are private, the use and access to the water source by other households is usually shared at no cost or for a small fee, as a way of promoting social relations (Carter, et al., 2005). This is because, as Shiva (1989) pointed out, water is seen as a natural resource and as a result payment for water in the rural setting is quite unacceptable. However, there are limits to this approach in that the construction and maintenance costs lies in the hands of the households that initiated the construction of the self-supply sources (Carter, 2006). This can compromise sustainable access to water among the disadvantaged groups in society especially the women who do not have the capacity and ability to construct and or maintain the domestic rural water supply sources (Alford, 2007). As a result, self-supply initiatives have evolved as an alternative approach to water supply construction and management (Sutton, 2008).

It has been discovered that in low-income households' women's work includes three areas: reproductive work, productive work and community managing work (D'Haese and Kirsten, 2006). Reproductive work includes childbearing and rearing responsibilities, which are required to guarantee the maintenance and reproduction of the labour force. Productive work is done when women work as secondary income earners, and community-managing work is undertaken at a local community level in both urban and rural contexts. Women are severely constrained by the burden of simultaneously balancing these roles, while only productive work is recognized as work. Reproductive and community management work by women is widely seen as socially expected, and are not as valued. In contrast, most work done by men is valued either directly through paid remuneration or indirectly through status and political power (D'Haese and Kirsten, 2006). Planners of water projects do not realize the triple role of women and the fact that women's needs are not always the same as men's, and this leads to the failure of planners to relate planning to women's specific needs. If development planning is to succeed, it has to be gender related and sensitive. It has to develop in such a way that both men's and women's needs are recognized and fulfilled accordingly. It is estimated that in Africa, women and girls spend 40 billion person-hours annually in collecting water while in the rural areas of South Africa, girls could spend up to 6-7 hours per day in water related activities such as collecting the water, washing, cooking and others (Van Wijk,1998) . In order to understand the energy spent on water collection, one would not only look at time spent and transportation but also the ratio of carriers to consumers in a family (United Nations, 1991). On average, women perform 90% of the domestic work, which includes processing food crops and providing household water and fuel (Cornwell, 2004). The primary focus of this study is to problematize issues around the following in the Eastern Cape:

- water availability and rainfall conditions;

- water policies in South Africa and their impact on the Eastern Cape since 1994;

- women's coping mechanisms and adaptations to water scarcity;

- their neighbourly inter-dependencies and social fabric that serve as support mechanisms in each of the focus areas; and

- the role that women play in household survival through their responsibilities as "water managers".

4.2   TRIANGULATION AND SIGNIFICANCE OF THEORY TO RESEARCH

Despite the longstanding and vigorous women's involvement in domestic responsibilities, patriarchy remains deeply entrenched in rural South Africa. It continues to influence the structure of its political and social institutions and the place of men and women in it, even though, at a national level, the space for women participation in politics is presented as liberal and all embracing. The negotiation and conflict between patriarchy and the women in rural areas however continues to prevail in South Africa. Water provision in the households is one way of authenticating the realities that underlay gender inequities in this part of the world. It is in view of these issues that theories around liberal, radical, human rights and Marxist feminism require some discussion. Some of them have dealt directly with water issues as a way of amplifying the issues around gender inequalities, while others speak of the broader harsher realities of women seemingly trapped in the worlds of patriarchy.

Figure 13 Theory Triangulation in Research

4.2.1   Liberal Feminism

Liberal feminism is well known for its role writing about careers of women, dual careers and gender-free education. MacKay (1994) argues that feminist theory views gender inequalities as maintained and sustained by the sexist attitudes prevalent in society. Liberalism stresses that the solution to gender inequalities lies in changing sexist attitudes. The liberal feminist theory focuses on the sexual division of labour and the separation of the public (economic and political) sphere and the private (domestic) sphere. The theory locates women's oppression in the domestic sphere which is accused of underpaying and undervaluing tasks associated with housework, childcare and with the emotional, practical and serving of men. The liberal feminist theory argues that existing gender arrangements do not benefit anyone. Stolke (1981) for example argues that the domestic confinement of women requires them to accept motherhood as their primary and natural mission and as such the public sphere that women are incapable of anything beyond mothering transmits these definitions of motherhood.

In rural Eastern Cape the domestic division of labour remains profound. The role of women is still that of mothering and taking care of the household daily needs such as water collection, cooking and childcare. Household water collection is solely a task left for women and children while animal herding is specifically for males. However, a distinct bias becomes evident when males can contribute to the collection of water only when it is used for "commercial purposes" such as block construction and vegetable gardening, among other ad hoc activities that require water as an income. During fieldwork it was brought to our attention that the *Induna* (local headman) stopped a water project from being initiated because the project leader did not consult with him first but came to the village through a female water committee. It is also visible in community meetings that male and female do not sit in one area. From the observation, women sit far from men and they are allowed limited voice in meetings.

Women's confinement to domestic work according to Bernard (1982) isolates them in individual households while exempting men from the monotonous house chores. Thus, the author further argues that idealizing marriage and relating it to a fulfilment for women is a myth. Oakley (1978) on the other hand argues that women's confinement to the domestic sphere has contributed to their subordinate condition. Oakley suggests that the only way of eliminating the discrimination ideologies is to challenge sexism and gender roles and reject the political label of 'housewife'. Oakley posits that women should conscientise their daughters about the areas of self-realization that go beyond the kitchen or women's work. Liberal feminists stress the importance of a non-sexist legislation and changing attitudes of both men and women.

Sharpe (1976) advocates for replacing the ingrained beliefs by blurring the sexual division of labour in families where psychosexual identity is internalized (Chodorow 1999). Oakley (1978) and Sharpe (1976) among many other liberal feminists believe that sexism forces both men and women to accept the given cultural definitions of gender, which relegate women to the domestic sphere. However, Warren and Bourque (1991) argue that women have always been integrated into development by being caught up in the currents of change which forge their understandings of change and thereby responding to people with multiple identities, affiliations and concerns. The authors further argue that this transition in development is quite problematic for women. On one hand, development involves shifting from traditional modes of production to industrialization and urbanization and others look at per capita of a country. Many scholars, however, believe that it is both the changing standards of living and grassroots participation that count as development. In this instance, development is not measured by indicators but by structural changes that promote equity that widen women's and other minorities' economic and political participation and recognizes women as agents rather than passive or ends users of change and empowers local groups to engage in development focused on their own perceived needs.

Beneria and Sen (1982) argued that there was a need to be pro-technology as women had lost ground because of restricted access. The authors add that the solution to inequities was to open the restricted channels of education and training. The dependence scholars from South America pointed out that industrialization and modernisation had failed to trickle down to the Third World and that conditions were deteriorating to their dependence on the west particularly for capital, credit, technology, training and markets of the developed countries. This Warren and Boursque (1987) and others argue might not have been the appropriate solution for the developing countries. Modernisation and

particularly technology has been very insensitive (Cornwall,2003) to cultural differences in family and kinship groups, the value of children, class difference and the realities of the poor countries.

The integration of women into the mainstream has always been seen as a liberal reformist analysis. Liberal feminists argue that the integration of women in formal-decision making spheres such as positions in government, business, and the professions is the converse of an appropriate technology model that focuses on involving poor women in grassroots programmes. This they argue would benefit women to participate in all spheres of development particularly those that affect their daily lives while at the same time challenging existing sexual divisions of labour and authority. Jahan (1985) adds that women's participation will not only benefit them but also encourage the feminisation of technology and industry as well as introducing a distinctive range of values and concerns of the world of work. Bergom-Larsson (1982) on the other hand argues that the feminisation of positions should be redirected to serve new values, which include human growth rather than profit, conservation, decentralisation, self-reliance, self-efficiency and caring. Warren and Boursque view Bergom-Larsson's view as one that sees women's culture as a critical tool for transforming the social order toward a humanistic and egalitarian one that is more concerned with relationships and welfare rather than individual success or profit.

4.2.2 The Human Rights Based Approach

The human rights based approach (HRBA) to potable water (drinkable water) has been constantly deliberated on over the past decades since water is the second most immediate element after air which humans need to survive (Gleick, 1998; Folifac, 2007). Hence, the immediate link between water and life has enabled the mainstreaming of the right to potable water to be directly linked to the acceptance of the HRBA (Bakker, 2012). It is however ill-fated that the recognition of the human right to potable water has often been related to anti-privatisation agendas (Tully, 2005; Chatiza, 2016). However, the HRBA clarifies that the right to potable water is built upon the understanding that the government has the duty to provide this basic necessity to all. The HRBA is central to the study because prepaid water meter implementation should not be done in the absence of the public who are the key users of public services. Public service provision should be participatory and consultative of the public and all the relevant and crucial stakeholders in the policy implementation process.

4.2.3 Radical Feminist Theory

Radical feminists take a significant departure from the liberal feminist school of thought by blaming men. Radical feminist school of thought focuses on patriarchy as an institution that has enabled men to dominate and control women. Firestone (1970) argues that the sexual class system has its origins in the sexual/biological differences between men and women. Firestone opines that sexual differences lead to inequalities in all social arrangements even though these may vary according to various cultures. She further argues that patriarchy is the oldest form of domination permeating institutions of most societies. Millet (1971) argues that patriarchy is a universal system of male domination and female subjugation. She adds to the discourse by arguing that men benefit from their power over women in every way, from ego-satisfaction to economic and domestic exploitation, sexual domination and political power. Firestone (1970) posits that women are disabled by their biological makeup such as menstruation, lactation, gestation, menopause and childbirth which can become a burden for all women. She takes a radical stance in her argument by explaining that pregnancy and breastfeeding have decisive social implications as they make women dependent on males for physical survival. Her arguments lends support to the radical feminists view that women's oppression in their

relationships and homes has broader political implications (Maynard 1989). While Firestone views patriarchy as a sexual class system of oppression, Brownmiller (1975) links patriarchy to sexual violence such as rape, sexual abuse, sexual slavery, forced prostitution, wife abuse, incest, sexual molestation of children and sadism in pornography. Similarly, Mitchell also views patriarchy as a violent practice by men in a male-dominated society.

Peacock (1991) argues that the pattern of women as burden carriers is not only marked by a particular group but cuts across cultures. It is clear that the models of sexual division of labour illuminate the role of women as key social actors yet it is hard to see women as negotiating, cooperating or competing with other women or men. Scheffer (1991) adds that kinship, marriage and family are among the major issues that have relegated women too into the private sphere. Male domination (patriarchy) and gender divisions constitute social life, hence (Andersen & Taylor (2002: 424) argue that gender roles are based on traditional stereotypes of men and women's roles. Butler (1999: 270) on the other hand argues that femininity is a "symbolic set of differentiating linguistic rules that effectively create sexual difference". Butler (1999: 270) looks at both masculine and feminine "positions instituted through the prohibitive laws that produce culturally intelligible genders through the production of an unconscious sexuality that re-emerges in the domain of the imaginary".

Unlike the liberal feminist theory that advocates for the elimination of sexism in all spheres; radical feminists like Firestone (1970) suggest that birth control, abortion and test-tube babies among other biological issues would provide a foundation for overcoming the restrictions of the female biological makeup. Firestone further states that female reproduction is the cause of the division of labour between men and women. It is noteworthy to add that radical feminists reject assistance in their struggle for rights as they view men as the problem. Radical feminists criticise the integration of women in development as superficial. Rowbotham (1989) suggests that the only solution to women's struggle is to employ critical collective self-examination in which women in groups can communicate their feelings of oppression and this she argues will conscientise women and make them aware of their own oppression leading to them finding strategies to overcome male-domination. Radical feminists such as Viljoen (1996) and Firestone (1970) in particular advocated for logical solutions to bring about equality.

4.2.4   Marxist Feminist Theory

Marxist theory borrows from Marx and Engels' theory of the exploitation of labour of the poor. In this instance Marxist feminist theory focuses on the exploitation of women. This theory is not completely characterized by women's exploitation and subordination to patriarchy. Rather it blames patriarchy and capitalism as being the source of women's oppression and that capitalism rather than men are the beneficiaries. Reed (1984: 133) for example argues that the oppression of women came about when men took over most of the activities of social production while at the same time relegating women to the home to serve their husbands and families. Butler (1999) argues that the feminine, as the excluded within the economic system, constitutes the possibility of a critique and disruption of the hegemonic conceptual scheme.

There is a view, however, among Marxists that material conditions between women from the ruling classes as opposed to those from the proletariat, tend to serve as a segmenting factor among them. Marxist theory therefore does not treat women as a homogenous mass (McKay 1994). Marx (cited in McKay 1994) argues that class relations of production are the primary source of economic and political

conflict in society. Therefore classes are the main agents of social conflict, class struggle and consequent social change. Similarly, Marxist feminist theory maintains that the sexist ideology is responsible for maintaining the capitalist mode of production and is also a contributing factor in the subjugation of women (McKay 1994). Marxist theorists argue that women are dependent on their husbands for their economic needs; therefore, this dependence makes them possessions of men. In addition, they argue that women's lack of economic positions are crucial to their subordination. Their position in the family renders them as targets of exploitation particularly when they enter the job market where they are underpaid and undervalued. Marxist feminists believe that both men and women can dismantle class oppression and patriarchy (McKay 1994).

Boserup (1970) and Rogers (1980) among many feminists argue that women's economic contributions were undervalued and the destructive effects of imposed change on women's lives were ignored. De Genova and Rice (2005: 31) concur with Boserup and Rogers by adding that women are seen as being unpaid, devalued and exploited. Men were the preferred recipients of training by western technicians (Cornwall 1998) which resulted in the differential access of each gender to novel technologies, particularly in agriculture. This eroded women's powers in community affairs. Boserup (1970: 53) and Etienne and Leacock (1980) posit that local cultural values stemming from male dominance in community politics rather than female centrality in productive activities were often reinforced in the organisation of work around newly introduced agricultural tools and crops.

4.2.5 Masculinity Theory

Connell (2008: 156) argues that gender processes, the everyday conduct of life is organized in relation to a reproductive area defined by the bodily structures and processes of human reproduction. He adds that social practice is creative and inventive, but not inchoate. Connell states that social practice responds to particular situations and is generated within definite structures of social relations. Connell argues that social practices are configured through time, which transforms their starting points in gender structures. Gender is thus configured as the third site in institutions such as the state, workplace and the school. According to Connell the state is a masculine institute with an overwhelming majority of top office-holders as men because there is a gender configuring of recruitment and promotion; a gender configuring in the internal division of labour and systems of control, a gender reconfiguring of policy making; practical routines and ways of mobilizing pleasure and consent (Connell 2008).

Kabaji (2008) argues that gender relations are constructed in terms of relations of power and dominance that determine the opportunities and circumstances of both men and women. Similarly, Connell (2008) states that there is a three-fold model of the structure of gender which has distinguished relations of power, production and cathexis (investing emotional energy in an idea). I will only discuss the first and second models which are relevant to this study. The main thrust of power relations Connell argues is the European /American gender order which is the overall subordination of women through male domination. The second fold in gender divisions of labour are in the allocation of tasks. This is where feminists come in strongly and criticize the unequal division of labour where women get an unequal share of products of social labour (Firestone 1972). Connell argues that a capitalist economy working through a gender division of labour is necessarily a gendered accumulation of process. This is part of social construction of masculinity that shows that men and not women control the major corporations and the great private fortunes.

When we examine African masculinities it is clear that they are society specific. Uchendu (2008) argues that masculinity is what any given society accepts as features associated with the male gender and expressions of maleness. Whitehead (2003) adds that masculinity speaks of practices and ways that serve to validate a masculine subject's sense of itself as male, boy or man. Uchendu further argues that race, culture, religion and belief systems, environmental realities and historical experiences influence notions of masculinities all over the world. African masculinities were different from western masculinities discussed by Connell and others. They have since transformed to incorporate the western hegemonic masculinities from the impact of colonialism.

Zulu masculinity, for example, had a domestic side; young men before the age of 30 were taught domestic chores in order to serve their fathers in the absence of female siblings or mother. This bears resonance with Uchendu's (2008) assertion that masculine domesticity was a personal survival for when there are no female subjects. Notions of masculinity, he adds enhance and accord privileges to one gender group but does the opposite for the other. Nandi, the mother of Shaka, for example, was branded 'a masculine savage woman' and was seen in a negative light which led to her estrangement from Shaka's father (Roberts 1974: 34). Nandi's story shows the lopsided preference in social constructions of masculinity during the pre-colonial era (Uchendu 2008: 9). The above clearly highlights that pre-colonialism was embedded in gender division of sexuality/labour and that women were more constrained than men.

In contemporary Africa, similar to the West, there is evidence of multiple masculinities. Connell argues that these masculinities are hegemonic and relate to cultural dominance in the society as a whole. The overall framework of masculinity is based on specific gender relations of domination and subordination between men and this can also be applied to women. Connell (2001) sums up the construction of sexual division by arguing that gender relations are a major component of social structure as a whole, and that gender politics are among the main determinants of our collective fate.

4.2.6   Conceptualising Gender Mainstreaming

The term gender became popular in the late 1980s and is of Western origins as a second-generation concept for equity. It more easily accommodates race, class, ethnicity and male-female power relations than the term women (Snyder & Tedasse, 1995). Gender is defined as socially constructed power relations between men and women which is characterized by a set of arrangements of culturally variable attributes and roles that men and women play in their daily lives. These sets of arrangements are reflected by the structural relationship of inequalities between men and women, manifested through their roles, responsibilities and values attached to their work. (D'Haese & Kirsten, 2006). Saulnier, et al (1999), define gender as a socio-cultural variable that refers to the comparative, relational or differential roles, responsibilities and activities assigned to males and females. It is rational since it identifies the relationship between men and women. Gender refers to the qualitative and interdependent character of men and women's position in society (Ostergaard, 1992). The conceptual distinction between sex and gender is a useful analytical tool to clarify ideas and it has now been almost universally adopted.

According to this distinction, sex is connected with biology, whereas the gender identity of men and women in any given society is socially, culturally, historically and psychologically determined (Wallace & March, 1991). Gender is learnt through a process of socialisation and through the practice of the particular culture concerned. (Wallace & March, 1991). The mere mention of the word "gender" in

development opens up the opportunity for women's productive potential in development (Ostergaard, 1992).

In this light, beginning with the narrower perspective where the term was seen as more or less the same as women, gender is now perceived as not only a concern for women but also as a concern for men (Singh, 2007). Some of the concerns are that men and women exhibit socially and culturally determined differences. They manifest in behaviour, roles and responsibilities, as well as differences in social, cultural and economic attributes and opportunities (Woroniuk et al., 1997). Gender concerns therefore imply that all decisions regarding planning, design, location, operation and maintenance, management and assessment of projects can be based upon recognition of the differences (van Wijk, 1998). As a result, gender mainstreaming means that differences between women and men may never be used as a ground for discrimination. It creates a partnership between men and women to ensure that both participate equally (European Commission, 2003). The Council of Europe (1998: 15) defines gender mainstreaming as the (re) organisation, improvement, development and evaluation of policy processes so that a gender equality perspective is incorporated in all policies at all levels and at all stages, by the actors normally involved in policy-making.

Gender mainstreaming, according to the definition is about (re)organizing responsibilities and capacities for the incorporation of a gender equality perspective. Additionally, the accent in gender mainstreaming is on gender, not only on women as a target group (Verloo, 2001; Eveline & Bacchi, 2005). Gender mainstreaming usually involves a reorganization of policy processes because existing procedures and routines are all too often gender-blind or gender-biased. In contrast to the standard assumption it has been proven several times that gender differentials are not recognized in regular policies, and unelected assumptions include biases in favour (most often unintentional) of the existing unequal gender relations (Verloo & Roggeband, 1996; Siim, 1988).

According to Mazey (2000:3), gender mainstreaming constitutes a clear example of policy succession or policy adaptation, promoted by the desire to overcome the limitations of existing policies, and the need to respond to a changed policy environment. Gender mainstreaming ensures that initiatives do not only respond to gender differences but also seek to reduce gender inequality (Manase et al., 2003). Saulnier et al. (1999:11) define gender mainstreaming as an approach that considers why gender analysis is integral to the policy and program process and incorporates women's views and priorities into the core of policy decisions, institutional structures and resource allocations.

Gender mainstreaming is a pro-active process designed to tackle inequalities, which can and do discriminate against either men or women. It recognizes that differences exist in men and women's lives and therefore their needs, experiences and priorities are different. It establishes willingness in people, to establish a balanced distribution of responsibilities between men and women (European Commission, 2003; Eveline & Bacchi, 2005). Gender mainstreaming is not a women only issue and is not just about improving access or of balancing the statistics. It is not about only women taking action and benefiting from it (RSA, 2006). Gender mainstreaming covers policy design, decision-making, access to resources, procedures and practices, methodology, implementation and monitoring and evaluation (European Commission, 2003; World Bank, 2004).

Gender mainstreaming addresses the problem of gender inequality at a more structural level, identifying and addressing gender bias in current policies (Siim, 1988). By reorganising policy processes the regular policy makers will be obliged to and capable of incorporating a perspective of gender

equality in their policies (Eveline & Bacchi, 2005). This strategy aims at a fundamental transformation, eliminating gender bias, and redirecting policies so that they can contribute towards the goal of gender equality (Verloo, 2001).

4.2.7   Gender And Development Initiatives

In reviewing various ranges of theories on gender, this study harnessed an anthropological explanation on different genders. Anthropological theories see gender as a socio-cultural construction, not a biological given (Bussey and Bandura, 1999). Social and institutional arrangements and practices perpetuate stereotypic gender differentiation. Labour division between the two sexes continues to perpetuate and deepen the gender status and power gap (Eagly, 1987a, in Bussey and Bandura, 1999). The UNDP (2003) also looks at gender through socially determined roles and responsibilities of men and women.

Since the beginning of the International Drinking Water and Supply Decade (1981 to 1990), gender issues have been placed at the centre of community involvement in water supply projects and programs in South Africa. The lessons learnt from involving communities in water supply projects show that there is still much more to be discovered and done. Before the term gender was used as widely as it is today, a significant historical evolution of this concept took place. During the 1950s and 1960s, the field of development was within the welfare system, anti-poverty goals, and Women In Development (WID) paradigms that also inclined towards this tendency of viewing women as passive recipients. In the sector of Water Supply and Sanitation (WSS), women inevitably are seen as grateful beneficiaries but have no control over it (Wakemen, 1995).

During the 1970s and 1980s, with the success of socialist movements in third world countries, the focus turned to efficiency and equity. Socialist feminists started to challenge the subordinate position of women and attempted to increase women's participation along the development path. They suggested a structural reform, therefore the GAD paradigm appeared to overcome the limits of WID and they complemented each other. In actual development projects, the two approaches were used depending on the local contexts from where the projects were operated. According to Young (1993), the introduction of the Gender and Development (GAD) approach gave new transformation in development projects, as well as in the Water, Sanitation and Supply Program (WSSP). Women were given better opportunities and gender involvement in planning, construction and management. This approach had potential, leading to greater benefits for development projects, households, communities, and for the women themselves.

Forums, such as the International Drinking Water Supplies and Sanitation Decade Review (1990), Dublin Conference (1992), the World Summit on Sustainable Development (1992), the Beijing Conference (1995), the World Water Conference (2000), and Integrated Water Resources Management (UNDP, 2003), had agreed upon a consensus that the equal participation of men and women is very important in development projects, particularly in the WSSP sector. They should remain equal partners of development and not objects of development. Therefore gender-sensitive approaches are necessary (UN-Habitat, 2006, Momsen, 2004).

In rural Eastern Cape, mostly women and young girls are responsible for household water collection and storing water for domestic uses. Women principally are responsible for the well-being of the family as a whole. As Van-Wijk-Sijbesma states:

As domestic manager, women decide where to collect water for various purposes and in various seasons, how much water to collect and how to use it. In their choice of water sources, they make reasoned decisions based on their own criteria of access, time effort, water quantity, quality and reliability. In addition, much of the informal learning about water and sanitation takes place through interpersonal contacts between women (Van-Wijk-Sijbesma, 1985:1 in Baden, 1992:2).

However, most of the time, they are not given an opportunity to become involved in the designing, making or choice of technology they should use or even decide the location of the water services (Musa, 2008). Women and girls spend up to 6-8 hours a day collecting an average of 15-20 litres, which requires 600-800 calories to carry this heavy load. Many infectious diseases are associated with poor water quality (Musa, 2008). Sometimes children are forced to forgo their schooling just to fetch water. Women and girls are most vulnerable to the bad conditions of sanitation. Many girls are absent from school when they menstruate. On average, a girl will have 55 days of menstruation per year, if the school does not provide privacy, a separate latrine and water, then there is a tendency that the girls will not go to school during those days (ibid). Girls usually share a toilet with boys in most rural schools. Due to lack of sanitation facilities people defecate in the open, while women and girls wait until it is dark, often making themselves vulnerable to sexual harassment and rape.

4.2.8 Gendered Division Of Labour

Turning to structural barriers and their histories, which derived from social conflict, this section briefly explores the functional history of gender inequality. Functionalists view gender roles in relation to the origin of sexual division of labour, and its link to household based water management (Parsons and Bales, 1960). It is against the broader structural relations that issues around women and water management needs to be understood. Parsons particularly defended the status quo of this division of labour in which women do their expressive work (taking care of children, doing domestic tasks, confining themselves in private spheres) and men do instrumental work, which is usually allocated outside the home setting or in public spheres (Silva, 2008). Parsons and Bales (1960: 15) report that if a woman was employed then she had to continue to tackle her assigned traditional role: "even if, the average married women had a job, it seems most unlikely that this relative balance would be upset; that either the roles would be reversed, or their qualitative differentiation in this respect is completely erased" From this stand point the functionalists failed to challenge sexual inequality and gender inequality and have a tendency to maintain the status quo of the patriarchal system.

Collins (1971: 195) has a conflicting view in terms of structural inequality with sexual inequality as follows: "sexual inequalities are structured like any other structural inequality, are based on a conflict of interest between dominant and subordinate groups" (Lupri, 1983: 8). Men continue to enjoy a privileged status in political, social, cultural, psychological and economic life as they are in power to maintain that status quo. Other authors stress the idea that gender inequality is persistently reinforced as social and cultural norms (Bourdieu, 1998: 82) and that is also institutionalized and incorporated into political practices, creating the context for its naturalization. This structural barriers framework was studied and profoundly developed to suit the socio-economic context of developing countries. The approach of the triple roles of women; reproductive roles, productive roles, and community management roles (Moser, 1989; Moser, et al, 1999) is very relevant in understanding what the main factors hindering women's participation are in the public sphere and in making them appear invisible.

One of the manifestations of such structural barriers is women's workload. Authors claim that many policy makers in the area of the development policy, especially in the water sector, enthusiastically promote the involvement of women in this area, but fail to pay sufficient attention to the triple roles that women have traditionally been committed to and on how these roles interact in building a complex set of expectations that diminish possibilities of women's emancipation. In fact, rural women's reproductive roles not only refer to child bearing and child caring, but also include the whole domestic drudgery such as cleaning, sweeping, arranging inside and outside the house, cooking, buying food, collecting vegetables and other grains from the gardens, and collecting firewood and water. The reproductive role of women does not prevent them from taking care of their household or children, as well as their in-laws, somewhat typical in the developing world.

In the Eastern Cape most households, as in other parts of the country, have males who have migrated to work in the mines and in other industries where work is available. Women remain behind bearing the brunt of running their rural households since migrant labourers only visit during the holidays – which is usually during the Easter weekend or during Christmas. They also take care of the sick and the aged within the extended family. Tam (2012) argues that women's reproductive duties are huge but they are kept hidden or invisible when naturalized and normalized as feminine attributions.

Reproductive roles are interwoven with the productive roles, which are contrary to what happens to men who normally work in marketable activities. However, women's productive tasks are usually non-marketable activities. They do effectively produce agricultural products for markets and also for family consumption. But this work is not accounted for in terms of their reproductive roles and is therefore considered less socially valuable. Women's management tasks in rural communities are huge and are no less responsible than those of their male counterparts. These tasks are usually considered as an extension of the reproductive roles. They are also part of the same hidden block of activities in which women spend their time and effort but lack economic recognition. Community tasks can be considered as service work involving taking care of the sick or aged and doing household chores. These can be seen under community based activities such as assisting with water management, road construction, or other kinds of involvement such as religious, political and social duties.

Community tasks, most of the time, are voluntary unpaid work which occupy the "free time" of women. However, if women's natural attribution is mired in the stagnancy of caregiving then the situation is radically different for men, when viewed against their multiple privileges of upward mobility (Teshom, 2007).

The challenges in this situation require innovative approaches towards job creation and the restructuring of gender relations and political power at local levels. Education programmes on the value of women's contributions towards domestic work and lineage reproduction are key to the transformation of the male mindset and eventual transformation of the unequal gender relations.

4.3   INTEGRATED WATER RESOURCE MANAGEMENT

Finally, the study drew from the framework of Integrated Water Resource Management (IWRM), defined as "*a process that promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare without compromising the sustainability of vital ecosystems*" (Cardwell, et at, 2006: 9). It derives from institutional frameworks with sufficient capacity to manage water resources and assumes that the institutions will be accountable and transparent. However, there is little attention to gender concerns

in the water governance structures or processes. Poor women and men's practical work is locally important. Knowledge is rarely recognized or tapped, and many lack the skills necessary for participating in committees. For most poor women and men, time is a valuable resource and its use in meetings has to be balanced with their capacity to contribute, as well as their domestic and income generating activities.

While the foundational concepts of IWRM have existed for more than sixty years, the consolidation of these principles began in the 1970s (Biswas, 2004). IWRM, which builds on recent literature about the transcendent nature of water, is based on an understanding of water as inherently complex, and exists in many geographical scales crossing not just political but also social and institutional boundaries (Romano, 2012: 55).

As a result, IWRM incorporates a wide array of academic disciplines in order to create a truly interdisciplinary approach to water management, emphasizing collaboration, innovation, and the balance of water's various uses and users including anthropological and ecological necessities. In this way IWRM can be seen as an attempt to combine previous approaches towards water management together, drawing on the strengths of each one and, hopefully, reducing their weaknesses. IWRM is arguably more of a conceptual framework for dealing with water than an employable model for developing sustainable water services. Biswas (2014), president of the Third World Centre for Water, argues that this amorphous and undefined nature of IWRM has prevented the movement from having clear and tangible effects on global water service. But while IWRM is certainly vague in many respects, individual aspects of the approach have had tangible effects on the water sector.

4.4   COMMUNITY PARTICIPATION

Most notably, community participation, an essential component of IWRM philosophy, has been widely adopted around the globe. Community management has been identified as a mechanism for ensuring effective water governance at the local level, especially for common property resources. It is often assumed that the local institutions are inclusive and take care of fair distribution of resources. However, in reality, communities consist of different categories of men and women in different positions of power or place, aiming to improve their own situations. Effective water governance needs to incorporate a differentiated analysis of community and levels of community management. Considering the development and provision of infrastructure, improving access to drinking water and sanitation can make an enormous difference to the economic well-being of the household, as women gain time and energy to engage in economic and personal activities. Within the households and communities, men, women and children have different tasks related to water and hygiene. Unequal power relations shape the daily practices. At the household level, different categories of women have different responsibilities.

There have been two primary reasons that community participation has become so prevalent. One is the problem of rural water exclusion presented in the Introduction. In addition to the rural water problem, there is a second reason that community participation came to be so widely accepted/implemented during this time: that community participation fits well within the rubric of decentralization, an important and all-encompassing trend evolving at the same time. In the second half of the twentieth century, but especially since the 1980s, fiscal and political decentralization has affected just about every realm of governance in the global South, including natural resources. That decentralization of natural resources or the transfer of management responsibilities and power from

central governments to local institutions, has occurred in a minimum of 60 countries is evidence of the pervasiveness of the decentralization philosophy (Ribot, 2002: 26). While the forces for this trend are manifold, two primary drivers have been democratization pressures and the limited resources of many nation states.

The unique circumstances of isolated communities with difficult access to urban areas, limited resources, and small populations made the old paradigms of top-down water governance impossible in most rural areas. The failure of centralized supply programs to perform on longer time scales was an important factor encouraging the transition towards the community paradigm (Schouten & Moriarty, 2003). Centralized management approaches had to be disposed of and re-imagined if drinking water coverage was to be expanded to rural communities. Whereas in the past, attention had primarily been paid to the technical aspects of water provision such as water quantity and quality within the framework of expert management (by both the state and private market), the emergence of Common Property Resources (CPR) scholarship shifted the focus towards management processes (UNICEF & others, 1999). This new focus emphasized "how decisions about water resources are made, by whom, at what geographical scales, and to whose benefit" and clearly demonstrated the valuable role communities could play in achieving sustainable and effective service (Perrault, 2008: 835). If centralized actors cannot provide the necessary resources for water projects in isolated communities, governance needed the help of local actors who were better able to understand, communicate and serve the unique needs of rural communities.

Following the collapse of colonialism, an increasing emphasis on participation has greatly influenced political structures in new and old states alike (Smith, 2008). Consequently, democratization arose as a priority in many of these newly independent nations. Many local, regional and national governments decentralized their functions to ensure downward accountability and responsive local governance (Romano, 2012). A second driver for decentralization has been the limited resources (including fiscal, technical, managerial and bureaucratic) of central governments in the global South (Madrigal et al., 2011; Romano, 2012). Effective management has been hard to achieve in many countries where "supply sector policies have been poorly defined and public sector implementing agencies historically weak" (Sara and Katz, 1997: 3). Moreover, central governments have been blamed for the mismanagement of natural resources caused by inadequate budgets allocated in the face of more pressing political priorities (Baland and Platteau, 1996). The limited budgets of governmental agencies, while occasionally due to the typical economic constraints of low-income countries, have in some cases also been the direct result of economic restructuring imposed by multinational lending institutions such as the World Bank and International Monetary Fund (Romano, 2012). In part, due to these limitations, recent decades have seen a marked erosion of confidence in the government to supply services, water or otherwise, to their populations.

As a result of both of these factors, community participation became a central component of the broad framework of IWRM. Community participation was quickly embraced as a key to solving our global water woes. As IWRM has continued to evolve and grow in recent decades, so too has the model of community participation. Although the earliest documented experience of community involvement in water supply projects date from the late 1960s [and] the first use of the 'community participation' dates from 1967, it was not until the World Water Conference in Argentina in 1977 that community participation began to be discussed at an international level (Schouten and Moriarty, 2003). It was also at this conference that the 1980s were declared to be the International Drinking Water Supply

and Sanitation Decade (IDWSSD), setting the goal for water and sanitation for all (Schouten & Moriarty, 2003). Recognizing the benefits demonstrated by the Community-based Participatory Research (CPR) literature, it was acknowledged at the conference that this goal would only be achieved by including local communities. Hailed as equitable and sustainable, the 1977 conference set the stage for community participation to play an integral role in the future of water management (Smith, 2008).

United in their endorsement of the community approach, community activists, NGOs, and multilateral institutions joined together at the start of the new decade with a resounding cry that small is beautiful. The International Water and Sanitation Centre is one of the most visible actors in non-governmental drinking water provision, became an outspoken advocate for community participation during the IDWSSD, pioneering projects around the world that emphasized community input in the design stages of project development. In large part because of this enthusiasm and the publicity for the IDWSSD, the decade also saw a massive expansion of donor investments in water supply and sanitation. These investments, primarily channeled through NGOs set off not only an explosion of projects, test pilot programs and experimental models but also greatly heightened the expectations for the new community approach. Donors expected success, and everyone expected that safe drinking water, and the health benefits that it provides, would be truly universal (Schouten & Moriarty, 2003).

Although the IDWSSD was backed by more than $73 million, the lofty goals set for the decade were not met. Despite efforts to increase community participation, drinking water coverage in rural areas in the global South remained extremely limited. In part, this failure can be attributed to the scattered nature of the projects themselves, which were unable to cover extensive ground due to the resource intensive nature of these projects. A second reason was the high rates of failure for the water systems themselves (Schouten & Moriarty, 2003). Although communities were included in the building of these systems, many communities were unable or unwilling to maintain the systems when aid workers left. The failure to increase coverage was particularly poignant in the most isolated rural communities, the very ones for which the community participation approach had been developed. In 1990, more than 113 million rural residents, nearly forty percent of the world's non-urban population, still lacked access to improved water (WHO , 2012).

As the 1980s came to a close it was clear that community participation alone would not be able to achieve the results NGOs had promised. Interestingly, however, the international community did not take this to mean that community participation had failed. Instead, community participation came to be understood as an inadequate but positive first attempt at incorporating communities in water projects. Recognizing the tendency towards tokenism in "community participation" projects, advocates argued for the need to increase the level of community participation in order to fully achieve the benefits demonstrated in the Community Participatory Research literature.

This transition led to the promotion of community management, which emphasized a more equal balance of the top-down and bottom-up approaches. Building off the first scholarly references to community water management in the late 1980s, community management advocates emphasized that communities must not only be involved in the physical construction of a water system but also in the planning and management of each system (Schouten and Moriarty, 2003). Shouten and Moriarty (2003: 54) note that "the growing feeling was that in the end, it is what occurs at the grass roots' level that makes or breaks policies". The international water community embraced community

management as a guiding principle for water provision in the 1990s, just as quickly as it had embraced community participation in the 1980s.

Several key meetings in the early 1990s illustrate the adoption of this new paradigm of community management, marking this important shift towards a more meaningful form of community involvement. First in New Delhi in 1990, and then in Dublin and Rio in 1992, the movement for water management at the "lowest appropriate" level continued to permeate the international water dialogue (Smith, 2008: 355). Unlike previous attempts at community participation, meaningful community participation in management was expected to result in "more locally appropriate, suitable and accepted decisions" (Smith, 2008: 356). At the 1992 International Conference on Water and the Environment in Dublin, the multi-level and multi-sectoral governance of fresh water resources were promoted in a water declaration that has since come to be known as the Dublin Principles. As a continuation of the principles adopted here, which have come to retroactively form the basis of IWRM ideology, the Earth Summit (also known as the United Nations Conference on Environment and Development) in 1992 in Rio de Janeiro, incorporated community management into Agenda 21 (Hassing, 2009). As an action plan for sustainable development resulting from the conference Agenda 21 specifically proposed that local communities be directly involved in all of the stages related to water resource management in order to achieve the desired results. Believing that encouraging communities to take ownership of their systems would help ensure sustainability, Agenda 21 directly promoted community management in order to address the failures of the community participation programs of the 1980s. Thus, community management soon arose as the new, most popular rural water fix (Schouten & Moriarty, 2003).

Based on two decades of experience with participatory approaches to decentralization, cost sharing and technological adaptation, there is a clear international consensus developed that although there remains a place for public and private utilities to deliver rural water supplies in the right circumstances, it is community-managed systems that will best meet the needs of the vast majority (Lockwood, 2004: 5). Building upon this success, community management has continued to take on an important role within IWRM ideology, growing in influence and popularity and rapidly becoming the central focus of water projects across continents and disciplines. The overwhelming consensus about the benefits of community management is in large part due to the fact that it appeals to a wide variety of actors within the water sector. Although this broad appeal has helped further promote the international movement for the inclusion of the community, it has also allowed for community management to become a means to achieve a variety of disparate benefits, incorporating many goals within one framework (Smith, 2008).

An emerging challenge in governance is the issue of the rights of girls and boys. In sub-Saharan Africa, the HIV/AIDS pandemic has created a rise in the number of child-headed households. Decision-making in governance has always assumed that there will be adult men (and sometimes women) as heads of households. Children heading households are under age and unable to express their choices in public because of their young age and low socio-economic status. Water governance needs to take account of the needs and roles of adolescent girls and boys in water services provision. Power relations also influence the way water is allocated and the choice of technology. An irrigation pipeline is generally associated with productive use of water, and men have more influence than women over the utilization of the resources. A hand-dug well on the other hand is generally associated with women's domestic use of water. While this use can be considered productive and provides benefits to women

and men, it may not be given a priority. The decision-making mechanisms and politics associated with water allocations have different implications for men and women. The natural environment shapes the way poor women and men access water and the way they relate to water management structures. Frequent droughts or perennial scarcity of water means that the poor often do not have access to water or have to use poor quality water. Women and men in marginalized areas lacking in infrastructure, and removed from the central government will access water through different local systems, rather than through organized services provided by governments. This further implicates their level of participation in decision-making compared to those who are more centrally located.

4.5 CONCLUSION

This chapter reveals at least two important aspects, on a global level, about women and their access to water; and on the national level in South Africa, it reveals at three significant shortcomings. On the global level, the extent of structural and gender inequalities is firstly revealed by the number of theories and places that abound amidst this world-wide problem. And secondly, despite raising the issues on international platforms the problems of water provision and women's roles in its provision, continue to prevail. They are in numerous instances being exacerbated instead of being obliterated. In South Africa, the first problem is glaringly the ineptitude of going beyond a progressive constitution and equally progressive water policies. The second problem is the antiquated mind-set that continue to prevail among men in the rural areas. And the third problem, though not necessarily the last, is that gender mainstreaming and IWRM are well known theories in the corridors of power at local, regional and national levels. But they continue to exhibit sheer inabilities on the part of the authorities to go beyond promises and commitments to people in remote areas of the country. The chapters that follow attempt to amplify these aspects in water management by women and the realities that prevail in South Africa's rural areas with respect to water availability.

5 CHAPTER FIVE: "WATER SCARCITY AS A FACILITATING AGENT TOWARDS SOCIAL CAPITAL AND RECIPROCITY"

5.1 INTRODUCTION

This chapter will discuss the social fabric of the three target communities under study. I briefly review anthropological studies on sociability, and reciprocity and subsequently explain how the Laughlin-Brady model is being applied in these communities. Finally, it examines how two factors: nested cycle and cultural institutions, complicate and contribute to the analyses. I conclude that, while it is important to examine nested cycles and cultural institutions, it is also appropriate to focus on the effects of rural water scarcity on social relations and economic exchanges in the Ntilini, Mbelu and Cwebe areas. This chapter begins from the position that social capital, through the agencies of kin networks, social networks and neighbourly interdependencies are sustained through localized forms and patterns of social capital and reciprocity respectively. Social capital is about social bonding, bridging and linking. Fukuyama (2000: 3) states that social capital is "an instantiated informal norm that promotes co-operation between individuals. Fukuyama adds that social capital is trust, networks, civil society, and the like which have been associated with capital, are all epiphenomenal, arising because of social capital but not constituting social capital itself". Social capital is non-contractual (Woolcock, 1998). Social capital has significance in the areas under scrutiny. And reciprocity, as outlined in several definitions, is a complimentary factor to the social capital that characterizes the inter-dependencies that arise out of the poverty in the area. Such patterns, as the evidence below will demonstrate, are imbued with a tenacity that permits durability of institutions in ways that reproduce them over numerous generations. They serve as a social security net that compliments their togetherness, in each of the target areas, against the poverty under which they continue to survive. A brief insight into theories of reciprocity and the manner in which they were conceptualized and understood by theorists will assist in appreciating the dynamics that prevail in the research areas and their connection to these theories.

5.2 ANTHROPOLOGICAL RESEARCH ON RECIPROCITY

The reciprocity concept emerged in early anthropological inquiry (Sahlin,1972), and continues to fuel anthropological theory-making up to this day. Anthropologists from two main perspectives have analysed reciprocity. The older approach views reciprocity as the phenomenon underpinning human society, based on exchanges of goods, labour, ideas, and sentiment that form the building blocks of all social systems (Sahlin, 1972). The other approach treats reciprocity more narrowly as a system of economic exchange in which goods and services are given with the expectation that they will be returned later (Sahlin, 1972). The two perspectives are important and help to explain how the ideas of reciprocity influence changes in social interaction and reciprocity between community members in the three communities under investigation. In the sections that follow, I discuss the two anthropological perspectives on reciprocity, and how they relate to this study.

5.2.1 Reciprocity As A Social Foundation

Malinowski's (1992) study of the Trobriand Islanders (one of the earliest anthropological works on reciprocity) influenced many of the subsequent major works in economic anthropology. Malinowski conceived of reciprocity as the principle that organized the entire social, legal, economic, moral, social,

religious, and psychological aspects of life amongst Trobriand Islanders. He explained that reciprocity, or the "principle of give and take", establishes binding obligations which compel honorable citizens to both accept offers and repay them in kind so as to not be excluded from the social order (Malinowski, 1962: 93).

Mauss' The Gift, drew heavily on Malinowski's analysis of reciprocity which also believed that reciprocity was a system of exchange in which everything from people, to items, to labour passes "to and fro" (Mauss, 2000: 48). As he saw it, the system of reciprocity permeated the legal, economic, moral, religious, and aesthetic dimensions of social life. Following Durkheim (1982), he called this a total social fact.

Homans (1958) also believed that exchange permeated social life, and argued that all social interactions should be analysed as exchanges. Blau (1964), in his work on exchange and power, followed Homan's conceptualization of social exchange and expanded it, clarifying how systems of reciprocal exchange can bestow benefits, but also widen gulfs in status, power, and differences .

While the reciprocity concept encompasses both social and economic exchanges, early anthropologists focused primarily on the importance of social exchanges of ideas, power, and prestige. They showed that these reciprocal exchanges form the social foundation of all societies. Early approaches to understanding reciprocity, demonstrate the importance of understanding patterns of social interaction and exchange as part of reciprocity. The study found that social interactions play an important role in the daily fabric of household activities as illustrated in the quote below.

If there is a funeral in the community, every person is expected to help with different chores and activities related to the funeral. Women work together with the family to collect water by carrying it with hands. If there are people with enough water in their tanks, they offer that water instead of people walking long distances to collect water. Those with cars, cows or donkeys also offer them to transport water. The problem we have in the community is dirty water from the river. For cooking we go to the chief to request trucks for the municipality to bring water at funeral or other functions in the village.

Increased familiarity with community members unearthed significant insights into the dynamics of their individual and collective relationships. While members of households made their individualized contributions to the successful functioning of each unit, they came together as "one big family" during times of need. Funerals are one way important way in which solidarity is expressed. Multiple layers of support are offered in every way possible, ensuring a humane burial for the deceased residents of the villages. While compassion and expertise are offered on an individual and familial basis, they serve to galvanise the communities together in times of need. Each one is recognized for the help that he or she can render, and is either called upon or expected to help when it is needed again. It is through expressions such as these that Malinowski's, and similarly minded theorists listed above, multiple factored understanding of community cohesiveness becomes evident in the three target areas. Their offerings of physical labour, water, food and other material help to serve as the binding factors towards community collaboration and inter-dependencies. Much of this is also facilitated by the rotational savings clubs, from where finances are drawn to buy material to build houses. A hypothetical case will help to understand its dynamic. For instance, a group of people may come together as a local savings club. At the end of each month only one person is entitled to the collective sum. This continues on a monthly basis until the point of it reaching a "full circle" – in that every member should have benefitted from the monthly contributions that each one makes. Inter-

dependencies in labour for such purposes manifest in their times of need. Whoever is a recipient of help in one instant reciprocates with similar to those who stood by him/her.

Water is among the most important contributions that are made during social gatherings. Its scarcity, determined by the impurities in most of what is available, is therefore a highly valued commodity. When people are willing to share such a resource during times of need, each of these magnanimous offerings serve as an equivalent of an economic transaction that characterizes their circumstances. In the absence of financial security interdependencies serve as relevant currencies in impoverished social and economic environments. Literature over the last five decades have adequately stressed this point.

5.2.2   Reciprocity As A System Of Social Capital   And Collective Action

In the late 1960s, scholars began to focus more closely on explaining the economic aspects of reciprocity. Polanyi (1968) was one of the first scholars to conceptualize reciprocity as an economic system, that could be analyzed in comparison to other economic systems such as redistribution and markets. Following Polanyi, a number of scholars began to examine when, where, and why systems of reciprocal economic exchange are established.

Sahlins (1972) explained that reciprocal exchanges of goods and services could be less or more self-interested, depending on the social distance of the actors. He defined the most altruistic of exchanges as generalized reciprocity, where there is a prohibition on immediate payback. The midpoint of the continuum is balanced reciprocity, where goods of equal value are exchanged at the same moment or perhaps after a small delay. The far end of the continuum is negative reciprocity, where people attempt to get a thing for less than its value. When anthropologists refer to reciprocity as a kind of exchange that Sahlins called generalized reciprocity.

Later economic theorists showed that reciprocal exchange systems are intended to maximize security, and function in a similar way to informal social insurance systems. In her work on the !Kung, Wiessner (1982: 65) showed that reciprocal exchanges are a "social method of pooling risk through storage of social obligations". When people cannot independently store the goods they need to survive, they create long-standing exchange relationships in which obligations are stored. That way, when one person needs food, water, or help, they can call in a favour (a "stored obligation") from another person.

In her work on Basarwa reciprocity, Cashdan (1985) used the economic theory of risk minimization to explain how reciprocal exchange systems work. Cashdan found that reciprocal systems, like any insurance system, only work when scarcity hits individuals at different times. If everyone in the system is hit by scarcity simultaneously, the system breaks down. She thus suggested that reciprocal insurance systems would exist in rural areas when people have independent economic fortunes, but would be truncated where ruralites' fortunes are all tied to the same risks. These types of reciprocity manifest themselves in the daily fabric of the lives of community members. Unlike their metropolitan counterparts, there is a visible reliance on one another:

We are helping each other to ask men to borrow us their cows to carry water. Household also allow their children to help relatives living in the proximity. As you know that the boys and men do not enjoy to go fetch water but we do ask them to help push the wheel barrows and they carry with their shoulders. We would ask men to help us carry water with their cars but we do have money to paper. We rely on each other's support to have water in our households.

The above describes how economic reciprocity is practiced. It is clear, that people with cars for instance need monetary compensation to help in transporting water for people in the communities. Putting this exchange into perspective one would have to take into consideration fueling a car. There are no fuel stations in these villages and the nearest is approximately 75 kilometers away. Car owners take all this into consideration when making a decision to help. It is important to mention that car owners do offer help for free to community members. For instance in Cwebe, a driver travelling from the northern side of Ntlonyane River gives a lift to those in the south and vise versa. This gesture only occurs when it is possible.

5.2.3 Rural Reciprocity

Anthropological theories of reciprocity were created and tested in societies that were described as primitive, pre-industrial, and rural. Lomnitz (1977) was one of the first anthropologists to examine rural reciprocity as an economic system. The author further defined reciprocity as a form of economic exchange that is social, is recurring, and maximizes security (Lomnitz 1977: 189). Her work on reciprocity in a Mexican shantytown in 1978 showed that systems of reciprocal exchange protect the rural poor against severe scarcity.

Research conducted between the 1960s and 1980s documented how the rural poor used reciprocal exchanges to combat scarcity in the Caribbean. Reciprocal exchange systems dealt with needs as diverse as job assistance, loans, goods, services, and facilities (Lomnitz 1977). It was evident that support was given in childcare in the villages under investigation (Stack 1974, Safa 1974, Scheper-Hughes 1992). Help was also given during crises like accidents, illness, fire (Safa 1974, Lobo 1982), as well as moral and emotional support (Lomnitz 1977), protection against alcoholism and spousal abuse (Lomnitz 1978), and companionship (Safa 1974, Lobo 1982). Most importantly, however, reciprocal social networks were used to supplement people with low incomes (Leeds 1971) and those who experienced frequent joblessness (Lobo 1982, Perlman 1976) with which the rural poor had to contend. These reciprocal exchanges are evident in the quotes below in which participants relate how community members support each other in almost every aspect of :

I have a long distance to go to my water source but sometimes I arrive with a bucket of water. Then I wait for water to rise and it is not fast. I go to the fountain for 45 minutes and 45 to come back to my house. It takes my time because there is not enough water in water source (Participant in Mbhelu).

The community and other women help each other when it comes to making sure their houses have water. We form saving groups of women to help each other with donation to buy Jojo for rain water harvesting. We also send our children particularly girls to fetch water for sick people or elderly people leaving alone or people with disability. We make plans like taking neighbors donkeys to fetch water. A donkey carries two 20 litres container side by side. If there is a funeral women and girls go the river or spring to clean dishes, and help with different chores at bereaved household (participant in Ntilini.

I ask my children to collect water for cooking, bathing and cleaning. And I have to ask my sons to borrow a wheelbarrow to collect water. Sometimes they use their shoulders to carry the buckets of water especially during rainy and winter seasons (Participant in Cwebe).

This account is a synopsis of the daily water struggle in the three communities. It also shows that it is a household collective under the guidance of women that ensures division of labour is fair and that the household has water. Social support was also evidenced in the way people ask their neighbour's

children to collect water for them, and women in the community leave their children in each other's care or in the care of the relatives when they commute to the nearest town or go to collect water or fire wood.

Reciprocity is also accompanied by collective action for the common good of all of the residents. Day-to-day survival is dependent upon co-operative behavior and social expectations. Their daily dependence on the natural sources of water are perennially affected by pollutant wastes that render them dangerous to use unless it is collectively managed.

I have experience because I grew up in this situation, in the area where there is no running water or electricity. I wash dishes together with my buckets at one time. Me and other women have protected our water source with stones and a fence. We remove any rubbish that fall in the stream and animal feces from the water source. I wash my clothes and kids school uniform at the river, I also use water that is left in the bucket when taking a bath to wash cloths. My children bath once a day especially in the morning when they are going to school. (Participant in Ntilini)

5.2.4   Sociability, Reciprocity, And The Laughlin-Brady Model

From the above sections, a picture of a community in which reciprocity is practiced in the form of supporting each other begins to emerge. Reciprocity is a social exchange system of values, information, and social interactions that permeates all societies. The exchange of values, information, and social interactions provides a base on which communities and cultures are built. The emergence of reciprocal exchange systems depends on the kinds of risks and protections found in an economy. When people in a society are threatened by severe scarcity, lack sufficient material means to protect themselves against scarcity, and are not all threatened by scarcity at the same time, reciprocal exchange systems can develop.

When basic necessities are abundant, can be stored, or become scarce for everyone simultaneously, reciprocal exchange systems generally do not thrive. The conditions for reciprocal exchange systems, then, can develop in any economy, although it is most prevalent in societies where consumerism and individualism are not the determining factors in the shaping of social relations.

I need a lot of help from my government especially water. I want the government to deliver tap water to our houses or closer to our homes; we need boreholes, or water treatment. I want the government protect our water source with fencing. Must put the water treatment with my community. Create the rehabilitation like people of government are visiting to talk about water (Participant in Ntilini).

The government must give the student a chance to learn about water in the schools. Must fund the scholars with bursaries. For educate about water. Government open the people eyes about water campaigning at least 2 weeks per year. Must have a fieldworkers, community health care to come with us or visiting door to door for water protected and must teach their lessons at schools about water in their houses, I need electricity for cooking and boiling wate (Participant in Mbhelu).

In the absence of state aided projects and infrastructural development, families intensified strategies that generate income and attempted to minimize income expenditures, consumption, and social investments such as stokfel, family garden (Halebsky, 1995). Reciprocal relationships and participation in community organizations declined because people lacked the time and resources to invest in

maintaining their poor families in rural areas and withdrew from the social, reciprocal, and cooperative relationships that were the symbol of rural communities (Moser, 2012).

5.2.5   Response Cycles to scarcity

In their model Laughlin and Brady (1978) describe that the period of privatization can be short or long. Short-term scarcities can be caused by seasonal drought, crop failure, road blockages, or damage to rural infrastructure. Long-term scarcities can be caused by natural disasters, economic crises, or environmental degradation (Lomnitz in Laughlin, 1978). Gunderson and Holling (2002) use the theory of integrated social-ecological systems to explain that short-term and long-term cycles can be fully contained within each other, causing responses at multiple levels. This is evident in the way the community uses the limited resources at their disposal to live harmoniously. For instance, households contribute money to pay the cost of the tractor to work on the community garden. While man maintain the gravel toward the villages regularly.

5.3   SCARCITY OF WATER AND ITS IMPACT ON SOUTH AFRICAN RURAL COMMUNITIES

The UN World Water Day (2007) reported that there was a vicious cycle of water and poverty. The organisation adds that for poor people water scarcity is not only about droughts or rivers running dry, but it is about ensuring the fair and safe access they need to sustain their lives and secure their livelihoods. In his study   on water availability in Molepolole in Botswana Raditloaneng (2012) found that concerns about water availability in Africa is the business of women and their girl children than men and boys especially at household level. Economic circumstances were also found to impact experiences of water scarcity as the rich were able to sell water to those poorer than them, demonstrating a near class divide in an area that is better known for its impoverishment.

During the 2008 economic recession the rural settlements were hit harder than towns and cities as their residents lacked physical and social access to the diminishing job opportunities (Eckstein, 2009). The economic crisis and particularly the decline in the poor's opportunities to earn regular wages, intensified and diversified labour, and self-employment which disrupted their ability to invest in and redeem social obligations (González de la Rocha, 2010). In the area under investigation at least every family was affected by the retrenchment during the 2008 recession in the mining sector and other industries. The major contributors to household survival in the Eastern Cape are known to be employed in three of South Africa's most economically successful provinces viz. Gauteng, Western Cape and KwaZulu-Natal, which were severely affected as well. While their incomes were affected, conditions in their villages remained the same. Water, their most basic requirement, remained a scarce resource.

It is a long story when it comes to water my brother. We are struggling, the government does not care at all. I vote only but it fail to answer to our needs and demand for help. Water is very scarce in our area. I don't know may be it is because we are in the rural area. Water is not safe in this area. Water is far from my house. Even municipality have empty promises (participant in Cwebe).

Water for doing serious things like bathing, cooking, washing but we are struggling with my family especially me because it is hard to wake up early in the morning to go fetch water. I don't go to the water source alone because it is far and it is not safe to be alone at the water source. Boy who are

herding animals are in the bushes around water sources. We share these water sources with animal and also wash our clothes in the same places. So you find many dirty water sources (participant in Ntilini).

5.3.1 Observation Of Public Social Interactions

Public social interaction was highest around the taxi-rank stand where vendors and drivers congregate, around the South African Social Security Agency (SASSA) pay point on payday, and in front of the clinic. Social interactions, then, tend to develop around economic and religious centers. Public social interaction was lowest at the edges of villages and particularly near the rivers. It is extremely significant that Amathole's waterways are the settlement's social black holes, since water collection points are generally known as places of social interaction. It was evident from this observation that water sources close to the places where men congregate such as the chief's house or bars represent places of lower interaction since these sources are not frequented very often by women. These villages are very traditional which explains why they do not act as social hubs. Water collection spots at the rivers are a main point of female meeting. Most community members wash their clothes at the river some of which can take almost half a day at the river depending on the amount that needs to be washed.

5.3.2 Social Capital In The Three Villages

Since the household is the basic unit of resource acquisition and distribution in poor rural communities (González de la Rocha, 1994, González de la Rocha and Gantt, 1995), I chose it as a unit of analysis for the semi-structured interviews. I interviewed many women because it helped me to understand household decision-making, power dynamics, and division of labour.

From the discussion with women in the community it was clear that there is a tight social capital in the three villages. For instance material goods such as food, water, and money, tend to flow through women's networks in Amathole, while intangible exchanges like visiting each other, and helping each other in time of need was a social capital that was , equally distributed between men and women.

Social interactions, such as visiting or sharing food, generally require a relatively small capital investment. While the expected payoff is also quite small, social interactions provide people with a low-risk way to build social relationships and store small social obligations. In contrast, stored obligations to give a loan or help can be quite difficult. This explains why people tend to participate more actively in social exchanges than economic ones. Community participation carries with it an even heavier burden of time, financial, and social obligation, and the investments do not necessarily result in the storage of explicit social or economic obligations. For this reason, people prefer making investments in interpersonal relationships, rather than in organizational ones.

5.3.3 Measures Of Social Capital

Two excellent studies, one longitudinal (Gonzales de la Rocha, 1994, 2001) and one cross-cultural (Moser, 1996), indicate that rural reciprocal exchange systems are in decline. While those studies' findings cannot be generalized to the rural Eastern Cape, the authors make strong arguments that the trends they found in Mexico, Ecuador, Hungary, the Philippines, and Zambia are global. The findings of this study show that households participate actively in social capital.

The study also found that people invest more heavily in social and intangible economic capital. For instance the women helped each other in their community gardens. The elderly women remained at

home and took care of the young ones. Some younger women collected water for the women working in the gardens and at certain times brought cooked lunch. The study also found that there was trust among the villagers as they could eat in each other's houses without fear of being bewitched. The villagers believe in sorcery and witchcraft so much that they would not partake in another person's house if they didn't trust them. In this instance most villagers tend to have the same surname and tend to be related hence they have a narrow radius of trust. In his study on Chinese in East Asia and Latin America Fukuyama (1999 cited in Fukuyama, 2000: 5) also found that their social capital was narrowed down to families and a circle of personal friends. The study also revealed that thee participants in the three villages used social capital obligations and norms as well as social values especially trust and social networks to get by in their daily struggles. The findings of this study are in line with Putnma's (1995) identification of social capital.

The participants in the study used social capital in activities such as participation which was described by Woolcock (1998:156) as a form trust which is a by-product of other collective endevours such as participation in civic associations. The author adds that the activities involved are public goods identified as social capital. The participants borrowed each goods such as water cans and drums and even alternated the collection of water using each other's wheelbarrows. The participants reported to benefit from their social networks which improved their bonding as well linked them to other members who they could network with for mutual benefits.

5.4 CULTURAL SYSTEMS AND VALUES ARE UNIQUE

This study analyzes the relationship between resources and social capital. The theory underlying it is a materialist one; it posits that changes in the environmental base lead to changes in the way people interact with each other (reference). Materialist theories in ecological anthropology have historically been vulnerable to accusations that they are crass and environmentally deterministic (Harris, 1979). However, I do not believe these to be valid criticisms of this study for two reasons.

Firstly, it is not ridiculous to make the obvious observation that the presence or absence of some environmental resources determines how people interact. For instance, if there is water in the Mbashe River, people meet there to wash laundry, talk to friends, and argue over who gets the best water. If there is no water in the river, no one goes there. The observation is simple, but, as mentioned earlier, it has enormous implications for how, when, and where people interact in the villages.

The second reason that the criticism is not valid is that ecological anthropologists do not contend that simply being able to predict changes in the resource base allows us to predict how, when, and where people will interact in any society. Laughlin and Brady (1978), in their discussion of the scarcity response model, emphasized that reactions to scarcity are culturally distinct, and depend on the social and economic norms of each society. Messer, in Laughlin and Bradly (1978:133) too, explained in her review of the literature on seasonal scarcity that "the environment, while it explains the periodicity and duration of social cycles, does not adequately explain the form of sociality which prevails in each phase or the institutional forms which express it". These scholars underscore that while environment and economy are the most important drivers of scarcity response, they do not act alone. Local cultures, embedded in history, place, and belief, must also be examined if we are to predict changes in social and economic interactions in specific societies (Laughlin and Brady, 1978).

In Amatole, social icapital and reciprocal exchanges are expressed through four cultural institutions viz. family, neighborhood, religion, and community savings. In the literature on rural poor, scholars have shown how each cultural institution shapes reciprocal exchanges. However, these institutions are not the same in every society, and it is important to acknowledge when and how they vary across and within cultures. I asked household heads where they would seek help when they run out of basic necessities during the height of the dry season. They reported that:

I like this place and live here despite the difficult circumstances with water and lack on service delivery because my family is here and we give each other support. I can't move to another area. I have experience in saving water which I share with my family. I bath once a day in the evening only, my children take a full body bath once a week or go to the river to wash (Participant in Ntilini).

It is not easy to help each other at the moment because we all need water. So we struggle with transportation. So we just borrow donkeys to fetch water, we're the cars but it is difficult because we have financial problems. But if it is a funeral ceremony, we help each other with the car or tractor, donkey, cows and a lot of people go to collect water for the household which lost the loved one. Man in the community will help with the digging of the grave while women collect water, cook and do other activities. Those with tanks will sacrifice their water from the tank to donate to those without sometimes (Participant in Mbelu).

We suffer because we do not have money. We rely on social grants so it is difficult to hire a car to go collect water for my household (Participant in Mbelu).

Government must not give us empty promises. Leaders in the municipality must be pushed to deliver water to us in the rural area. This is a serious story, I hope something can be done in our area. We are crying, the situation of not having water in this area is hurting the community. We share water with animal, and source I use to collect water does not look good (Participant in Cwebe).

I drink water with animal, like pigs, horses, and cows. Water is not safe to drink but we do have a choice how water looks we drink it. If do have time to fetch water, I ask children who are playing nearby and send them to collect water for me. I wish I could get a job in the city because I do not like to live in this situation (Participant in Cwebe).

I am struggling to get water and I get dirty water from the fountain that is unprotected. This water is bad and smelling. The fountain has plastic, feces. My water source is close to where people cross (Participant in Ntilini).

5.5 CONCLUSION

This chapter highlighted the social networks that the participants depended on. The participants' day to day lives depended on reciprocity where goods and services were exchanged between families. It revealed that the participants had strong bonds and links. Social capital was their lifeline. The women participants used social capital in taking care of the children, collecting water and maintaining their gardens. The chapter revealed that the participants did not only participate in reciprocity but also utilized the ethos of social capital which rely on obligations and norms as well as social values especially trust and social networks to get by in their daily struggles as defined by Putnam. The

networks found in the three villages gave the villages a lifeline. Participants were able to manage and maintain their difficult lives through sharing tangible and intangible goods.

6 CHAPTER SIX: DAILY REQUIREMENTS AND RESPONSIBILITIES: WOMEN'S COPING MECHANISMS AND ADAPTATIONS TO WATER SCARCITY AND IMPLEMENTATION OF GENDER MAINSTREAMING IN WATER MANAGEMENT

6.1 INTRODUCTION

The interviews conducted in the three villages showed three disconcerting patterns about issues of women and children regarding water access, challenges, and outcomes in the water management sector. The respondents highlighted that the Gender Mainstreaming Initiatives in the village were not effectively considered, there is poor implementation and it remains as the domain of the councilor who does not consult the villagers. As a result, the villagers indicated the challenges they face at the implementation phase which seems to be caused by poor understanding of the Gender Mainstreaming Initiatives. The women had also developed mechanisms to cope with water access and the lack of their involvement in decisions regarding water access and supply in all three villages. This chapter discusses the culture, geography and the development of infrastructure of the three villages to provide the context within which women access water.

6.2   CULTURE AND TRADITION IN THE VILLAGES

The culture and tradition of the communities are manifested in a physical form, which includes, among others: houses, kraals, and farms. The spatial layout of the dwellings is also very much a manifestation of culture and tradition. Most of the villagers have traditional houses known as huts or rounds. The materials used to build the dwellings include, mud, stones or bricks, cow dung (also used for flooring and plastering walls), wood, and grass. In some households, they use corrugated iron for roofing. The building of traditionally styled houses is both indicative of people's closeness to their culture and tradition and high levels of poverty.

 More than three-quarters of the households in the three villages under study have built their houses in a modern way. The houses are built using materials such as bricks, cement, wood, tiles or corrugated iron. In some instances, there is a combination of both mud huts and modern houses. Very few households use modern materials such as face-bricks and the vast majority of the modern structures were more revealing of household poverty than otherwise.

The *hut (main kitchen) structure* serves a significant cultural and traditional role such as a place of receiving visitors a meeting place for members of the households every evening. The main kitchen structure has to be taken good care of and to be renewed seasonally through special mud and cow dung glazing. Culturally only women are responsible for these activities that are time and energy consuming. That is, the empowerment of women and their chances to participate in community activities are in such cases sacrificed for the sake of household cohesion.

As the festive season approaches, women in the Eastern Cape, carry the responsibility to clean their households. These activities are significant for the household cohesion. The festive season involves the trekking back of male migrant workers from their places of work. The intensiveness on household chores take women's time and energy, making it virtually impossible for women to find space for

participation in other community-wide activities such as water resources management. Also, a note has to be taken that most of these activities are heavily dependent on the availability of water.

Most households practice livestock rearing. Livestock such as cattle and sheep are kept in the kraals at night and released during the day for grazing. Cattle and sheep herding is a male job which is an indication of both wealth and patriarchal tradition. Traditionally women are designated roles such as being caregivers, whereas men are principally assigned the role of fending for their families and also take a leading role in community activities. As they are always busy with the household chores, women do not have extra time to participate in the water resources management sector even though it is their responsibility to ensure that their households have sufficient water.

Patriarchal tradition also determines roles allocated for men and women within the water committee; and in most cases, leadership and administrative roles are allocated to men. This means that women's oppression in their relationships and homes has political implications (Maynard 1989). Firestone (1972) views the situation these women find themselves in as a sexual class system of oppression.

The spatial layout of the three villages and their dwellings is influenced by local culture and tradition. The stands or yards in the village are very significant, allowing the people an extra space where they can also practice subsistence farming. The majority of households have vegetable crops, maize, potatoes, bananas and maize in their yards. The villagers are also given land for agriculture, which is ± 1km away from the settlement area, and most households are involved in farming activities. Subsistence farming is prevalent in the villages, and forms the mainstay of survival for most villagers. Children are used as a source of labour for agricultural activities, hence the majority of couples tend to have many children. Culturally women are responsible for raising children and this is time consuming and prevents them from participating in other community activities. . Therefore, the spatial layout and farming within the village is gender biased and puts barriers on equality within the water resources management sector.

6.3 DEVELOPMENTAL STRUCTURE IN THE VILLAGE

In addition to the geographic and cultural background of the villages, the developmental infrastructure also has an impact on the application of the Gender Mainstreaming Initiatives. Households from the three villages collect water from different sources such as streams and rivers as indicated in chapter 3.

However, water from the communal water station runs only occasionally, once or twice per week. As women are usually the ones who collect water for their households, their time is reduced as they stand in long queues to collect water from communal water stations where it is delivered and also transported to their households. As a result, women have to walk long distances to collect water. Again, women always have to be ready for the water as there are no specific days when the communal water station functions. This implies that even if women might have extra time, the possibility is that some spend most of their time fetching water to ensure the household has enough supply.

It is important to note that only a few households in the village are close to the communal water station and boreholes some of which are no longer functioning. Those households which use the borehole as their water source implemented the water system at their own expense.

6.4 BASIC SERVICES

Sanitation services in the community are marked by the use of pit latrines due to lack of running water in the households. All ventilated pit latrines in the community were provided by the government. Women also play a critical role in sanitation as they are regarded as caregivers. Sometimes women have to assist children, the old and sick people to use the toilet as they are located far from the houses. The safety of young children is a concern and women have to ensure that they are always safe when using the latrines. There are no refuse removal services in the community and all households are responsible for the disposal of their waste. In most cases, women have to dig holes for household waste disposal.

There is no electricity in the three villages. However, there is a current hot line traversing the village to provide power to the holiday resort, Transnet lighthouse and holiday home on the coastline. Community members cannot afford the lay out of the cost to have electricity in their households. Eskom the power provider requires R15000 for the power cable from the electricity pole to their households; an amount that people cannot afford. Households still depend on firewood for cooking. Households need firewood for cooking and heating and women and girls are mostly responsible for the collection of the firewood since men and boys are involved in masculine jobs such as herding the domestic animals. As part of their traditional roles, women have to walk to the nearest forests to collect firewood.

6.4.1 Transportation

There are morning buses, which transport the working community members to and from Bhelu, Ntilini and Cwebe and Umtata or Elliot Dale on a daily basis. The buses pass through the village before six o'clock in the morning and return between six and seven o'clock in the evening. Some of the community members who are not employed also use the buses to travel to and from the city to access health facilities, government departments, and shops. This is due to their reliability, less cost and mostly because they get into some streets of the village. Alternatively, community members use taxis (mostly the 1.2-ton Kia and old Toyota Hilux with canopy called Gulu Gulu) to go to their desired destinations. The taxis are always available even though they do not get into the village and are expensive compared to the buses. People who use taxis have to walk long distances to catch them as the taxis cannot take and collect people next to their homes due to the poor road infrastructure in the village. For instance, in Cwebe the north side of the Ntlonyane River is inaccessible since there is no bridge to cross and community members have to cross the river by foot.

Women accompanying the sick and children to the hospital or clinic have to either wake up early to catch the buses or walk long distances if they want to use the taxis. As a result, this affects the time they could spend doing other economic activities in order to generate an income. It also has an impact on their participation in the water resources management within the communities.

Other institutions such as local government departments, municipal offices, and the shopping complex are all located in Elliot Dale. People from the three villages have to travel to Elliot Dale to access government departments such as the Departments of Home Affairs, Education, Health and Social Development, Roads and Transport and the municipal offices. All households do their major shopping in the Elliot Dale shopping complex while others do it in Umtata. There is one mini supermarket and several tuck shops in the village, but they only sell basic things like bread, milk and other regularly used groceries. For additional or special groceries, the majority of women have to

travel to the Elliot Dale shopping complex to buy them. They often do this once a month after receiving remittances from their husbands and other family members working in the cities. Due to the poor road infrastructure in villages, the movement from the village to business centres such as Elliot Dale and Umtata seem to be very difficult. The roads are gravel, with bumps and potholes. As a result, there is a shortage of public transport in the area, especially taxis during the rainy season.

The geographic, cultural and developmental infrastructure of the three villages collectively militates against the smooth application of the Gender Mainstreaming and Integrated Water Resource Management (IWRM) initiatives in the villages. Women are allocated traditional household roles as caregivers where they are expected to clean the houses, cook and take care of children, the elderly and the sick people. They are also involved in farming activities, collection and transportation of water and firewood for their households. The specific measures designed for women's consultation, participation, empowerment and capacity building, are to ensure that their concerns are taken into consideration as the water resources management, tends to be difficult to apply, as women are always busy with the traditional roles assigned to them.

6.5 THE CHARACTERISTICS OF THE GENDER MAINSTREAMING INITIATIVES IN THE THREE VILLAGES

This section specifically analyses the character of the Gender Mainstreaming Initiatives in these villages. The objective is to provide a foundation upon which discussions of the application and challenges evolve in successive sections of this chapter. The Gender Mainstreaming Initiatives in the three villages will be viewed using the following lens: the mechanisms used to release women from their traditional roles as household caregivers, the measures that are designed to help women to feel able to do things that they could not do before and actions designed to ensure that opportunities that were previously inaccessible to women are made accessible. These initiatives will be discussed by looking at the approaches designed to ensure that women can hold different positions in the community and water resources management. Traditionally, there are measures taken for consulting, raising awareness, promoting and upholding respect for human rights for men and women in the village and the measures put in place to ensure that men and women can perform 'feminine' and 'masculine' roles respectively. In order for women to be actively involved in community development programs and projects, they have to be released from their traditional roles as household caregivers. Some of the mechanisms used to release women are better medical facilities, crèches, and attendance at community meetings, women savings group association meetings and water within reach of their homes.

6.5.1 Medical Facilities

As the principal caregivers, women are more involved taking care of children and the elderly, better medical facilities within the villages will result in better health outcomes thereby releasing women to be involved in other community activities. There are no hospitals or clinics in two villages. Those who need serious medical attention are taken to the Hobeni clinic or Madwaleni hospital situated at 55 kilometres from Cwebe which is the furthest of the three villages. Some of the villagers cannot afford to take sick people to the hospital, so they keep them in their households. This consumes their time and prevents their participation in community projects, especially in the water resources management sector. One of the respondents even said:

"*There is no need to take our sick family members to the hospital which is also far because women can take good care of them. Again, we cannot afford to pay for transport costs to take them to Umtata hospital.*" (Participant in Mbelu)

In most cases, the community members prefer to take care of the sick people on their own rather than taking them to the hospital or clinic. There are also no old age homes where community members can take their old people to be taken care of. Women still have to take care of the old people while simultaneously doing other household chores. Another woman from the village said:

"*Even if there was an old age home in the village, we would not use it. It is not part of our tradition and culture to abandon and dump our parents and grandparents in other people's care especially if there are women in the households who can look after them. It is our duty as women to make sure that we take good care of them.*" (Participant in Cwebe)

As part of their traditional role, women are supposed to take care of the old people. Traditionally, they do not believe in nursing homes. In addition to the aged, women also have to look after returning migrants and other family members infected with HIV/AIDS and other illnesses.

6.5.2   Crèches In The Village

The other mechanism, which can be used to release women from their traditional roles, as caregivers is the provision of centre based Early Childhood Deelopment (ECD) facilities. There are ECD facilities in the villages, where all mothers can take their children to be cared for during the day. Most of the mothers who take their children to the crèche are working women who do not have people to take care of their children when they are on duty. Those who have family members to help them to take care of their children do not take them to these facilities. However, one respondent who is a nurse in Madwaleni hospital said:

"*I leave my children with their grandmother when I go to work and collect them when I knock off. Maybe if they did not have a grandmother, I would be taking them to the crèche.*"(Participant in Cwebe)

The expectation is that a working mother would use the available ECD facilities for their children, but this is not the case. She prefers to leave her children with her mother. Another woman who works as a domestic worker in town said:

"*I leave my child with my neighbour in the morning then his sister collects him after school every day. The reason for not taking my child to the crèche is that I cannot afford to pay for the fees every month. So my neighbour is helping me a lot as she is not working and also has her two grandchildren to take care of*". (Participant in Ntilini)

Some of the working women cannot afford to pay fees for their children, and that is one of the reasons why they do not take them to the crèche. The unemployed women take care of their children.

6.5.3   Water In The Yards

Another mechanism, which can be used, is the availability of water within close proximity to dwellings. Many women spend their time walking to fetch water for their households. They travel long distances, stand in long queues and carry heavy containers of water almost every day. These findings are similar to those of Coates (1999) who observed the length of time and distance women travel to collect water,

a chore that puts a risk on their safety and health. However, if women can easily access water closer to their dwellings they will reduce the time they spend looking for water. It also releases time for them to perform other duties such as farming and small businesses which require water within the village as well as protecting them from being attacked or sexually abused as is the case nationwide. Unfortunately, the municipality has been promising for a while to have water reticulation in the villages. There are only a few households, which have access to water within their yards in the village, and they are mostly those close to streams or on the riverbank. As mentioned earlier the communal water station is not functional on a daily basis. This also has an impact on how women use their time in the village. One unemployed woman said:

"*Lack of everyday running water is one of the reasons why I am not working. Who will go and fetch water during the day when I am at work? I always have to be prepared to go and collect water whenever it starts running. We should all have access to water within our yards on a daily basis*." (Participant in Cwebe)

In villages, there are no specific measures put in place to release women from their traditional roles as household caregivers. There are no nursing homes, clinics or a hospital in the village. Women still take care of the sick and elderly people within their households. The position of women in the three villages is in line with MacKay (1994) who argues that gender inequalities are maintained and sustained by the sexist attitudes prevalent in society. The author further argues that the sexual division of labour and the separation of the public (economic and political) sphere and the private (domestic) sphere determine women's roles in traditional societies. The author uses the liberal feminist theory which locates women's oppression in the domestic sphere which is accused of underpaying and undervaluing tasks associated with housework, childcare and with the emotional, practical and serving of men. Due to these traditional roles, women tend to spend most of their time doing 'feminine work' which tends to consume most of their time, which could be used in community development. There is a crèche in each village, which most women do not even use. Most women still take care of their children or even leave them with their grandparents and neighbours. This finding is in line with Chodorow (1999) who argues that women are seen as the nurturers and care givers incapable of doing other work outside the private sphere. As indicated above, even a nurse who is expected to take her children to the crèche prefers leaving them with their grandmother. Furthermore, even if some households have invested in rainwater harvesting to access water within their yards, the water does not flow during the dry season and water tanks run out. As indicated, this also creates problems for women when they want to engage in community development initiatives and household responsibilities.

6.5.4 Encouraging Women

There are no specific measures designed to help women to feel more involved in community activities particularly related to water provision in the village. Most community members still practice their tradition and culture in almost everything that they do. Most men and women are still assigned the traditionally acceptable roles like men having to work and support their families, whereas women remain at home taking care of the households. They still believe that men are the providers and women are the caregivers and they do not see anything wrong with that. McKay (1994) observes that women are dependent on their husbands for their economic needs; therefore, this dependence makes them possessions of men. She adds that women's lack of economic positions is crucial to their subordination.

However some of the women in the study dispute the above because they are capable of doing things that they could not do before, because of the education they have attained:

"*These days, most women are educated, and they can even do other roles that are considered as 'masculine' better than men themselves,*"(Participant in Ntilini)

The above was said by one old lady from the village. Education is seen as the mechanism that can empower women in the village. The chief of the village said:

"*Democracy helped a lot of women in South Africa who were oppressed by their tradition. Since 1994, women can do whatever they feel they can do and what they can do. Democracy is the best measure ever in the village and South Africa as a whole*". (Participant in Ntilini)

Adding to what the chief said, one woman in her early 30s insisted that:

"*South African women are now privileged and free to do everything they want. There is no challenge for women to do other roles and duties as long as they are willing and ready to learn and participate in community development programs and projects. Therefore, there is no need to have those measures as women are not stopped from taking part in anything in the village*". (Participant in Cwebe)

Some of the respondents indicated that women must provide themselves with action on a personal level before they can be given other measures. In addition to that, one respondent said that:

"*Personal motivation and encouragement is what will make women participate fully in community development programs and projects. Then the measures that are designed within the village can then help to support them further.*" (Participant in Mbelu)

Thus, encouragement from other community members, especially men is one of the things that might help women in villages. One man responded and said:

"*If we men support our wives, mothers, and daughters in what they want to do within the households and in the village, things will be easy for them. Knowing that they get full support from their men, women will have self-confidence at all the times.*" (Participant in Ntilini)

Training was also identified as a measure that will help women contribute to change in the villages. One woman who is involved in a vegetable garden project in the village emphasised training and said:

"*When the project started four years back, men were part of it, and its management consisted only of men. As time goes on, they all decided to leave the project due to some personal reasons. Presently, there are only women who are participating in the project. Because we were not trained when joining the project, we find it difficult to run the project better on our own as women. Sometimes we go for months without producing anything from the garden*." (Participant in Cwebe)

The village leaders have not settled on a clear approach to involve women more in finding a solution to access water in the villages. Even when women attend meetings called by the municipal water authorities they had little to say about the design and planning the water reticulation project. Some of the respondents did not have any idea of the measures that the village has to help women feel able to do what they could not do before. Although training women is on development agendas Cornwall (1998) argues that often times women are not involved in design and planning. Men are the

preferred recipients of training by western technicians (Cornwall, 1998) which results in the differential access of each gender to novel technologies, particularly in agriculture and in this instance water reticulation projects. This erodes women's powers in community affairs because they feel they cannot run projects on their own.

6.5.5   Measures Ensuring Women's Opportunities

Women were not able to take advantage of some of the opportunities to which men had access to. Tradition, in most cases, was preventing women from accessing other opportunities because of the role that was traditionally assigned to them. To solve the problem, the Gender Mainstreaming Initiatives were introduced in all government departments, communities and within all community projects and programs. One essential element of the Gender Mainstreaming Initiatives program is that women should be able to access all the opportunities that are entitled to them.

As with other measures discussed before, there are also no specific steps in the three villages which are designed to ensure that opportunities that were previously inaccessible to women are currently made accessible. Women who can access those opportunities do so out of their own will and self-determination. Democracy has given them the chance to access the opportunities, which were in the past only accessible to men. One respondent said:

"*There is no need for those measures as women have the right to access everything in the village*."(Participant in Mbelu)

Women in the village can access previously inaccessible opportunities in the village when they want to, even without having the measures, which can assist them in accessing the opportunities.

6.5.6   Mechanisms Ensuring That Women Hold Position In Water Committee

The three villages have no selection criteria that ensures that women can hold leadership positions in the water committees. The community members elected the women who are involved in the water resources management within the village without using any mechanism that would measure if they were suitable for holding such a position. Most respondents indicated that there had never been a woman in the village who held the position of a chairperson and community members still considered men and elected them for the position. Women were also not given the opportunity to be treasurers in the water committee, as similarly such a position is always associated with men. This standpoint is similar to Cornwall's (1998) findings that leadership and management positions are a prerogative of men. One woman said:

"*We cannot have a woman leading us, the position suitable for men. Besides men are more educated than women so they can do the job better*."(Participant in Ntilini)

One man added and said,

"*women will not be able to cope if given the chairperson position as it requires more time which I think they do not have due to household chores*." (Participant in Cwebe)

Evidence from the quote above shows that women still accept their gendered position in society and are convinced that certain roles are meant for men only. A certain man indicated that:

"*For a person to be a treasurer, he /she must be having financial management skills. Naturally, even if they did not study financial management, men are born with the skills; that is why they are always the ones holding the position.*" (Participant in Mbelu)

The most common positions that women hold within the water committee are those of the secretary and being an additional member. Even for these positions, there are no mechanisms designed to ensure that women can hold them. Women were allocated secretarial position hence one respondent commented that:

"*In most cases, women are not educated and skilled to hold other positions in the water committee. So when involving them in the Water resources management, we give them tasks that are easy to execute. We assume that they can all write that is why in almost all the cases they are given such positions.*" (Participant in Cwebe)

Although there are some girls who have matriculated in the three villages and have a better understanding of written reports; men still feel women cannot execute managerial duties. If they are involved at all they are given secretarial jobs which are seen as "feminine jobs". Both women and men's attitudes in this respect are bound by patriarchal norms which position men as the rightful dominant character who controls the public sphere.

6.5.7 Consulting, Raising Awareness

In South Africa, every person is given the opportunity to enjoy his/her human rights no matter what the circumstances might be. Most community members do not know their human rights as illustrated when one respondent raised the question and asked what human rights were. There has never been any awareness in the villages concerning people's human rights. One female pensioner said:

"*Human rights are the ones who spoil our tradition. People nowadays just do as they please because they have rights. Before these rights, we used to live in peace and harmony. We do not need them in our lives.*" (Participant in Mbelu)

The female pensioner may be lamenting over the 'good old days' because she was socialized to believe in male dominance. Hence the human rights phenomenon could be confusing. The elderly prefers the status quo.

The other respondent who is a student said:

"*Human rights are not helping much in the village because most people still live traditionally. They prefer to follow their tradition and go to the extent of ignoring their human rights.*" (Participant in Ntilini)

Women, who know about their human rights and exercise them, are not protected when doing so. There are no specific measures, which are designed to protect women who exercise their human rights. One woman said:

"*We are afraid to exercise some of our rights which are against the tradition and culture of this village. We do not want to be seen as the ones who are destroying the community, so we just ignore them.*"(Participant in Mbelu)

It is clear that women are scared to practice their human rights. This is because they fear repercussions from the village men. This is what Firestone (1970) views as ingrained patriarchy sexual class system of oppression. The women are socialized to 'respect' men, which in this instance, reads like fear. Brownmiller (1975) links patriarchy to violence such as rape, sexual abuse, sexual slavery, forced prostitution, wife abuse, incest, sexual molestation of children and sadism in pornography. Similarly, Mitchell (1980) also accuses patriarchy as a violent practice by men in a male-dominated society. Hence the women reject human rights as they have brought so much pain in their lives.

Again, there are no specific consultation mechanisms designed to listen to the voices of women in the village. The only way that women can raise their concerns is through community meetings however, most women do not have time to attend community meetings as they are busy with their household chores and activities.

6.5.8   Ensuring That Men And Women Can Perform 'Feminine' And 'Masculine' Roles

Traditionally, men and women are allocated different roles within their households and in their community. Women are assigned roles of caregivers, whereas men are providers for their families. When men go to work, women remain at home taking care of the children, the elderly and the sick people. Women are also responsible for other household chores such as cleaning the houses, washing, collecting water and fire wood and cooking. Stolke (1981) for example argues that the domestic confinement of women requires them to accept motherhood as their primary and natural mission and as such the public sphere reinforces that women are incapable of anything beyond mothering and transmits these definitions of motherhood. Hence roles such as leadership and management within the community are usually allocated to men and women are their supporters. Traditionally women believe that men are the leaders and they cannot be ruled by women, both in the households and at the community levels.

As with almost all the discussed measures, there is no action in the three villages which are put in place to ensure that men and women can perform 'feminine' and 'masculine' roles respectively that are traditionally assumed to be female and male preserves. People still traditionally perform most functions. In terms of women performing 'masculine' roles, most women indicated that they are already doing the roles. A woman who is a teacher said:

"*Education and self-confidence helped us as women to be able to do what men thought and believed we could not do. This can be observed by comparing the number of women who are currently working with that of those who were working in the past. Most women were not working in the past because they thought and believed that it was the men's duty to work for the family. Today, because of the education and self-confidence we have, we can do the roles.*"(Participant in Ntilini)

For men to perform the roles that are traditionally feminine is a problem in the village. Most respondents confirmed that men would never perform 'feminine' roles especially the ones within the households. One man further commented:

"*I cannot be seen by people cooking, washing and cleaning the house. People will think that my wife bewitched me.*"(Participant in Ntilini)

Even some of the women did not agree with the idea of men performing feminine roles. One lady said that:

"It is a taboo for men to carry out feminine roles in the households especially if there is a woman in the household." (Participant in Mbelu)

Some of the respondents indicated that they do not mind helping with what are considered to be 'feminine' roles. Another man went further and said:

"I always cook and take care of my two children when my wife is not in the house. There is nothing wrong with performing the roles as long as you are comfortable with it." (Participant in Mbelu)

This shows a different perspective of some men who have high self-esteem and do not feel threatened or undermined by doing female work.

6.5.9 The Practical Application Of The Gender Mainstreaming Initiatives In Mbhelu, Ntilini And Cwebe Village

This section is divided into four subsections. The *first* section will focus on women's participation in the processes of the water resources management in the villages. The *second* subsection discusses women's empowerment and whether they felt able to hold positions in the water committee to which they did not have access. The *third* subsection focuses on the capacity of women holding positions in the water committee. The *last* subsection looks at women's access to the positions in the water committee.

6.6 WOMEN'S PARTICIPATION IN THE PROCESSES OF THE WATER RESOURCES MANAGEMENT

When applying the Gender Mainstreaming Initiatives, the involvement of women in community development programs and projects is crucial. Women's participation is essential to achieving gender equality. In the water resources management of villages under study, women participate in electing and also standing for elections of the water committee officials. They also participate in raising concerns in meetings with the officials and in suggesting changes and modifications in the management of the water resources. In the election of the water committee officials, the majority of the respondents indicated that women are sometimes allowed to participate.

Women in the three villages stand for elections of the water committee officials. Most respondents stated that women were sometimes allowed to take part in the elections. Close to 50% of the interviewees said that women were sometimes given the opportunity to stand for elections as water committee officials. About 25% of the respondents were certain that women were always given a chance to stand for the elections, which was close to the percentage of those who said women were never allowed to stand for the elections.

The majority of the respondents said that women in the villages were always allowed to raise concerns in meetings with the water committee officials. When it came to suggesting changes and modifications in the management of the water resources, about 65% of the respondents indicated that women were sometimes allowed to participate. This is because women are now on the water committee as members and the only way for them to be involved is by standing for elections. Only 11% said that women were not allowed to participate in this regard.

Looking at all the four areas namely, the election of water committee officials, standing for elections, raising concerns in meetings with the officials and suggesting changes and modifications in the water resources management women were sometimes allowed to participate. This is, however, different

from raising concerns in meetings with the officials, even though most respondents indicated that women were always allowed to participate. The participation of women in the water committee processes has improved and seems to be still improving, as they tend to be more involved.

Most respondents said that women were sometimes allowed to participate in the other three areas. Women were sometimes allowed to participate when there were suggested changes and modifications in the management of the water resources with the highest proportion being about 65%. Women were mostly never allowed to participate in standing for elections as water committee officials. This is indicated by the percentage of about 25% of the respondents who spoke of women who stood for elections. This is due to the patriarchal tradition practiced in the area. However, there is positive progress in the participation of women in all the four areas.

6.6.1   The Capacity Provided To Women For Participation
For women's equitable participation in the water committee, their capacity must be proved through skills transfer, information, knowledge, and networks. Building the capacity of women is essential because it determines if they ever will be capable of holding different positions in the water committee. Based on the findings from the interviews, the majority of women were half-heartedly capacitated with skills, information, knowledge, and networks. This means that most women have limited skills, information, knowledge, and networks. According to Jahan (1985) women's participation will not only benefit them but also encourage the feminisation of technology and industry as well as introducing a distinctive range of values and concerns of the work world. This will not only empower them but also enhance their position in society as they become capable of using different types of knowledge.

6.6.2   Women's Access To The Positions In The Water Committee
However, women have to be released temporarily from their household roles, for them to have time to participate in the water resources management. Therefore, if women have access to the positions in the water committee, are complemented by the capacity to hold the positions and are also available to execute the duties, they could participate in the water committee.

It is then clear that in the water committee of the three villages women are neither treated nor given the same opportunities as men. The patriarchal tradition still affects how the water resources management operates, in the sense that men are the people most likely to have access to the chairperson and treasurer positions. Therefore, this militates against gender equality in the water resources management sector.

6.6.3   Management In The Village
Additionally, women attend community meetings as passive member, in the Eastern Cape women sit on one side and their contribution is minimal. This is one mechanism in women's voice could be heard. The fact that women have minimal contribution in water committee has an adverse impact on gender equality in the water resources management of the villages. Thus, women's concerns in the water resources management were not always taken into consideration despite the fact that they are at the core of activities that are heavily dependent on water supplies.

6.6.4   Challenges Faced In The Application Of The Gender Mainstreaming Initiatives
When one applies the Gender Mainstreaming Initiatives to the women in the three villages, there are some distinct challenges which they face. The Gender Mainstreaming Initiatives are mostly divorced

from the traditions and cultures of the rural people. The challenges are divided into subsections as follows:

- the *first* subsection addresses the challenges faced when releasing women from their traditional roles as household caregivers for them to participate in the water resources management.

- The *second* subsection addresses the challenges faced by capacitating and empowering women for involvement in the water resources management.

- In the *third* subsection, looks at the challenges encountered in promoting and protecting women's human rights about their participation in the water resources management.

- The *fourth* challenge discusses the processes of consultation and consideration of women's concerns in the water resources management and *lastly,* the challenges faced in the determination and allocation of roles for men and women.

6.6.5   Challenges Faced When Releasing Women

The respondents indicated that if women were released then who would do their household duties? Some of the interviewees said:

"*What women are doing in the households will not be done by men*." (Participant in Cwebe)

The traditional roles assigned to women can never be performed by men in the village, not because they cannot, but because they do not want to. Their tradition does not allow them to take over the roles. Some women in the village still believe that it is their duty to take care of their families and also do the household chores. Chodorow (1999: 262) argues that women's mothering reproduces the family, which is constituted in a male dominant society. She adds that sexual and family division of labour in which women create a sexual division of psychic organisation and orientation which produces socially gendered women, and men who enter into asymmetrical heterosexual relationships. Hence the women under this study are more accepting of their gendered roles. One woman who was part of the participant said:

"*Women are there to ensure that their households are well organised. They have to clean, wash, cook and take care of the sick and old people at all times. Men will not be able to do the roles if we do not do them*." (Participant in Ntilini)

Another man further emphasised this by saying:

"*Even if women are released by taking children to the crèche and the sick to the hospital, who will do other household roles? Women are traditionally assigned to the household roles, and that will never change.*" (Participant in Mbelu)

Another challenge is that most women are not interested in the water resources management of the villages. The majority of women do not even know what is happening in the water committee, as long as they get water then they are fine. The fact that there are no measures designed to release women from their household traditional roles is not a challenge to them. *Firstly*, the participants indicated that women in the village did not have the management skills needed in the water committee. *Secondly*, there was no training provided for those women who are interested in forming part of the

water committee. *Lastly*, the fact that they did not have people who would take over their households roles on their behalf when they are attending to water management issues makes it difficult for them to participate. Additionally, they tended to think that those involved in the water resources management were educated. All this makes it difficult to release women to become involved in the water resources management. One respondent said that:

"*When we elect the water committee members, we make sure that the members are educated especially for the chairperson and treasurer positions.*"

 Another woman said:

"*We do not have interest because we are not encouraged to form part of the water committee and other development projects and programs in the village. They just conclude that we are busy with the household chores.*"

The problem is that most women in the villages cannot afford to pay for domestic workers, even if there were measures designed to release them. For women to participate in the management of the water resources they need domestic workers to do their household's chores. One respondent who is a woman said:

"*With the money to pay domestic workers we pay for our basic needs. That is why we do not even take our children to the crèche in most cases. It is not because we want to do all the chores, but we cannot afford to pay people who can do that on our behalf.*" (Participant in Ntilini)

It becomes tough to convince women to be part of the water committee and other community activities. However, another woman was against the idea that women were difficult to release from their traditional roles. She said:

"*It should not be difficult for women to participate in the water resources management because they will not be doing the water committee duties daily. They only attend to the water committee issues once in a while, maybe once in two weeks and that is not something they should worry about. Women are just not interested in community development issues in this village.*" (Participant in Mbelu)

In addition to that, women felt that their views were not valued in the water committee. This hampered their participation in the water resources management. One respondent further emphasised this and said:

"*There is no point leaving our household duties and getting involved in the water resources management if we are not taken seriously. Our concerns which are raised in meetings are not taken into consideration, and we are not given a chance to hold chairperson and treasurer positions.*" (Participant in Cwebe)

The women wanted to be guaranteed access to all the positions in the water committee before they release themselves from their traditional household roles. The major challenge underlying the releasing of women from their household roles were the cultural/traditional issues as discussed earlier.

6.6.6 Challenges Faced In Capacitating And Empowering Women

Previously, women were not involved in community development management, especially in rural areas. Now that they want to involve themselves, they have to be capacitated and empowered. Of late the women form part of community development, especially in the water resources management. There is, however, a major challenge in capacitating and empowering women in that field in that most women are not interested in the water resources management. This also has a huge impact on their participation as a whole. Only a few women who were interested in the water resources management were those who participated in water committee related issues. One respondant said:

"I do not care about what they are doing in the water committee; all that I want is running water." (Participant in Ntilini)

In order to capacitate and empower women, they first have to be interested in the water resources management in their areas.

Another challenge faced in this regard is the lack of information about issues related to capacity building and empowerment of women in the village. As discussed earlier women were previously not involved in the water resources management, and now that they can participate, they still do not have access to information regarding most community development projects and programs in their areas. In this context, women tend to be poorly informed about the water resources management in their villages. One woman said:

"We do not know what is happening in the water resources management and this is also the case when also coming to other development projects and programs. As women, we are not informed of developments taking place in the village; we just get some of the information from our husbands." (Participant Mbelu)

In order to capacitate and empower women successfully, information should be distributed in such a way that it will reach everyone. Again, information has to be accessible at all times when people need it.

Another challenge is that most women did not attend community meetings at all times. This is a challenge because that is where community members get information regarding their village and its activities. If there were to be capacity building workshops in the village, people would be informed through community meetings. Since most women did not attend meetings, they ended up having less information concerning capacity building and empowerment on the water resources management. This results in fewer women being involved in the water resources management. In addition to that, respondents indicated that many women were reluctant, while others did not want to learn new things. One male respondent further said:

"How are you going to capacitate a person who is not willing to learn? Moreover, the fact that that they are not attending meetings makes it difficult for everything." (Participant in Mbelu)

As part of the challenges faced by capacitating and empowering women, the other challenge is that some women were too busy to be involved in the water resources management. They had daily heavy household workloads. This prevented them from attending capacity building and empowerment workshops and meetings in the village. Another male respondent said:

"*There are no challenges in capacitating and empowering women. They are just lazy to leave their households and be involved in the water resources management.*" (Participant in Ntilini)

The final identified challenge was that some women did not get permission and support from their husbands in the households. Due to their tradition, men are the heads of the households and the final decisions are made by them. If men do not permit women to be involved in the water resources management, then women will not participate.

Even though there are no mechanisms designed to capacitate and empower women for their involvement in the water resources management, women are hardly given such opportunities in the three villages, especially concerning management. This was proved by some respondents who said that:

"T*here was once training provided by the Department of Agriculture for subsistence farmers in the village. This was to help them manage their agricultural products to assist them to become commercial farmers. The majority of people who attended the workshop were men, and, women who attended were either widows or their husbands worked away from home.*" (Participant in Mbelu).

This was clear that men were more interested in issues that benefitted them and also in management related issues. The respondent explained further:

"*Then there was a feeding scheme project where a certain company provided primary school children with food. Women were the only people engaged in that project because all that they had to do was to cook for the school children. However, surprisingly, their manager was a man. So one can understand that men did not get involved because cooking was seen as women's duty and again their interest lies in management issues.*"(Participant in Cwebe).

Women in the villages were sometimes denied opportunities to attend management workshops because of their gender.

From the literature discussed and different theories used for this study, attitudinal change and epistemological issues are the main challenges that residents are facing in this regard. Some people have not individually realised the importance of gender equality in the water resources management. They are not committed to the processes of the Gender Mainstreaming Initiatives because they tend to think that gender mainstreaming is a women's issue and believe that they should be the people driving it.

6.6.7 *Challenges Faced In Processes Of Consultation And Consideration Of Women's Concerns In The Water Resources Management*

One of the measures of gender mainstreaming is the consultation of women in all the issues that affect them. After being consulted, their concerns have to be taken into consideration. There were no specific measures designed to consult women in the villages. As already indicated, women were more likely not to attend community meetings which are used as consultation mechanisms. Community meetings are where they are expected to raise their concerns. This creates a serious challenge in consulting women and considering their concerns as they seldom raise them.

Some women attended community meetings but still did not raise their concerns. One woman said that the reason was:

"We are not yet comfortable and familiar with the community development issues because we were previously not involved. By attending meetings we are still trying to learn the management techniques applied in different development projects, and so we are not yet comfortable in raising our concerns." (Participant in Cwebe)

Some respondents indicated that there are also women who knew and had management skills and attended community meetings, but did not raise their concerns. One respondent clarified this by saying:

"Most women in the village still lack the confidence to stand in front of men and raise their concerns in meetings. They go there and listen to what men are saying and in most cases just support them." (Participant in Mbelu)

The fact that women do not raise their concerns in meetings does not mean that they have nothing to say, they merely respect their traditions and still treat men as their leaders.

Respondents identified a lack of women representatives in meetings as a challenge to consulting and considering women's concerns. They supported this by saying:

"Women are always busy in their households and cannot attend community meetings. Then they need to have representatives who should be women to participate in the meetings and raise concerns on their behalf." (Participant in Ntilini)

Most respondents indicated that as long as women did not go to community meetings, they would never be consulted and their concerns would never be heard. Some women said that the reasons why they did not attend the meetings were that their husbands did not allow them to attend them; they were not always invited to meetings, and even if they attended, their concerns were never taken into consideration. It was within this context that attending community meetings was no longer important to them.

Gender mainstreaming in the villages is faced with the actors/change agents' challenge. Most women were not interested and committed to the application of the Gender Mainstreaming Initiatives in the water resources management sector. They viewed the strategy as belonging to activists, and this presents a challenge to ownership of the strategy.

6.6.8 Challenges Faced In The Determination And Allocation Of Roles For Males And Females

In most rural areas, tradition and culture determine and allocate roles for men and women. There are certain roles, which are traditionally performed by women no matter what the circumstances might be, and the same applies to men. Regarding gender mainstreaming, males and females must be allocated roles fairly, and women should be given the opportunity to perform roles, from which they were excluded in the past. There is a challenge in the application of the Gender Mainstreaming Strategy, especially in the determination and allocation of roles for males and females.

As in most other rural areas, tradition still determines and allocates different roles to men and women. The community still values their traditional practices and beliefs. In most cases, men are assigned community development roles whereas women are always given household roles. From the survey results, most respondents did not see anything wrong with the traditional determination and

allocation of functions to men and women. They indicated that men and women were treated fairly, especially in the water committees. One respondent said:

"There is no problem with our traditional allocation of roles in the village. Roles are allocated according to the gender abilities we have. Men are born to be leaders and financially support their families while women are created to be their husbands' supporters by doing household chores." (Participant in Cwebe)

"Even during elections of water committee officials, men and women know which positions are suitable for them. Women do not even try to stand for the chairperson and treasurer positions." (Participant in Mbelu)

Some of the reasons why men were always given leadership positions, besides tradition, were that women are considered not to have management and leadership skills. The fact that a person is a man automatically makes him a good leader in the village. The other reason is that women just do not even have time to participate in community development activities. They are always busy in their households, and the fact that they do not attend community meetings also affects the allocation of duties. One male respondent emphasised this more:

"We cannot allocate women chairperson role because they will sometimes not be available to attend to important issues due to their household caregivers' roles. We need men because they have too much time for themselves as compared to women. This will allow them to attend to important issues in the village which most women might fail to do due to lack of time." (Participant in Cwebe)

However, some respondents assured the researcher that there were no challenges in the determination and allocation of roles for men and women in the village. They said that people should just be willing and available to perform the roles regardless of their gender. If they are willing and available, they also have an opportunity to learn many things, which they did not previously know. Self-confidence and determination also contributed to the allocation of roles along gender lines. One of the male respondents said:

"If women are self-confident and are determined to work hard, they can hold all the positions in the water committee. This will prevent women from being given the secretarial and additional member positions only," (Participant in Ntilini)

Many men were not willing to perform female roles especially traditional households' roles.

The challenge faced in this regard is the attitudinal change. Traditionally, women and men are allocated certain functions in the villages. The challenge is that there are roles that are considered to be male preserves that according to the community women cannot do and vice- versa and that is hard to change in the village. For example, the people continue to believe that the chairperson and treasurer positions are male preserves and the secretary and additional member are female preserves.

It is worthy to note that the overall challenges that the respondents identified are evident of some of the theoretical challenges are indeed experienced in the village. This study shows that challenges such as structural changes, creating awareness and understanding, epistemological issues, the presence of actors/change agents, implementation of the strategy, cultural/traditional problems and attitudinal change which are described and explained in theory were experienced in the three villages. There is a

lack of gender policy guidelines and lack of integration of the needs of both men and women. As already indicated, women's concerns regarding the issues of water resources management were not always taken into consideration. There was an awareness campaign on human rights in the three villages one of the measures of gender mainstreaming. This results in most community members not knowing and, some not understanding, their human rights. As already discussed, the majority of the women were not interested and committed to the application of the strategy in the village. The respondents indicated that most women did not attend the community meetings, which serve as consultation mechanisms. Additionally, there were problems with the application of the strategy due to lack of staff capacity as well as attitudes which often included resistance to gender equality. The people's traditions in most cases influence their attitudes.

6.7 CONCLUSION

There were no specific measures designed and mechanisms put in place for releasing women from their traditional roles; helping women to feel able to do things they could not previously do; to ensure that opportunities that were previously denied to women are made accessible. It is to ensure that women can hold any of the positions in the water committee; to raise awareness about human rights among men and women; to protect women, who exercise their human rights, to listen to the voices of women and to ensure that women can perform masculine roles and vice-versa.

The respondents assisted in identifying the challenges faced, among others, in capacitating and empowering women in the processes of consultation and consideration of women's concerns in the water resources management and determination and allocation of roles for men and women. The community still believes strongly in their traditions regarding who holds which position in the water committee. Men are still treated as leaders and women as their supporters and followers. Women are not always allowed to participate on an equal footing with men in the processes of the water committee. In addition, the majority of women felt incapable of holding higher positions such as chairperson and treasurer in the water committee. Women's concerns were not always taken into consideration. All this contributed to the challenges in the application of the Gender Mainstreaming Strategy.

7 CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATIONS

7.1 SUMMARY OF QUANTITATIVE AND QUALITATIVE FINDINGS

This study provides useful interpretation of the conditions of communities with undeveloped water resources in South Africa. The relationship between the settlement types represented and water sources in remote rural areas are explored and preliminary analysis undertaken of existing relationships in water use, distance to water, household hygiene and access to health services. The study of these communities poses useful questions as to the adaptation of human society to the hilly terrain in a region of relatively high rainfall and with significant water sources but without any investment from government for water provision and access.

The conditions of water usage appear fairly stable at some levels. Through their own effort's households were working to provide themselves with access at minimum standards. Despite the lack of a developed water supply, the mean household water usage at the different sites appears broadly comparable. About half the households collect 20 litres per person per day although only about 10% are within the range of 200 metres from a water source; both of these are reference points to the standards in water regulations. There was a consistent pattern of per capita water usage declining with increased time to water source in all the three villages. In this case data does not follow the outline of the logical model set out by Cairncross and Feachem (1993: 63) in which the very shortest trips have the highest usage, which then drops off to a long plateau, and then falls sharply for trips, which take more than 30 minutes. Despite much greater energy being required to access more distant sources, time taken to source is not the deciding factor in per capita usage.

The pattern of norms and practices does not work in favour of larger households. This stratum has considerably lower per capita levels of water use because it appears that a similar number of trips are made daily as smaller sized households. The lower per capita water use in large households has also been found in other studies (for example, Thompson et al., 2001: 27). It could have been imagined that larger households would have more individuals to call on for collection, but this does not appear to be the case.

The improvement of the health of rural communities depends both on an increase in the quantity and quality of water. Without sufficient quantity of water hygienic practices cannot readily be maintained and the very poor quality of water leaves communities vulnerable to epidemics such as that of cholera.

One of the issues, which could have been more deeply explored, is that of households' alternating water sources between summer (wet) and winter (dry) seasons. This issue was discussed with the community and generally the response was that water sources flowed throughout the year. This did not alert the researcher sufficiently to the shifts, which actually took place. During the dry season it became clear that the volume of water available at virtually all sources declined and that in some area's households shifted from existing sources to other water sources to access sufficient water. This was noticed and recorded during observation at different water sources and at the household level.

Another aspect potentially impinging on the objective of the study was that of the durable interest of households in RWH. This is the largest investment in water facilities households made independently

of state provision and showed a high preference among residents of remote rural communities for rainwater harvesting. In seeking an all-round resolution of the problems of safe drinking water the interest in RWH needs to be taken into consideration. There are challenges in relation to the provision of RWH which a household investment is and not managed at a village or municipal level. Despite these and other difficulties, in areas of high rainfall RWH has to receive attention and be integrated into a broad approach to achieve all-round sufficiency in safe drinking water in remote rural areas. The municipality should use this approach to subsidise RWH initiatives while planning reticulation since it is not easy to reach every single household or reduce the distance to water pipes due to scattered settlements and mountainous topography.

7.2   WATER SOURCES

There is a contrast between the "river-dependent" Mbelu and Ntilini, which have two sources each, and the "multi-source" Cwebe that has 27. The abundance of sources at Cwebe is related to the high rainfall area and the hilly nature of the terrain, which results in a number of rocky outcrops from which underground water flows. The rainfall also feeds wetlands and water holes at which the water wells.

During fieldwork, I found it difficult to distinguish between groundwater and surface water sources. These water sources were undeveloped and no sources, which could be considered as a functioning "rudimentary" source i.e. such as a well or a flowing, protected springs. A rudimentary source indicates the first step in a water ladder progressing from natural water sources to sufficient volumes of safe drinking water.

The water sources are natural and undeveloped sources although there have been some minimal community improvements such as placing stepping stones around existing springs. Virtually all villages in South Africa show evidence of some attempt by government or NGOs historically to improve water sources. Spring protection has been the main intervention to ensure no disturbance and pollution from animals and to direct the flow into a storage tank with a protruding pipe to make the water more directly accessible.

In the examples of spring protection encountered at the three sites there appear to have been design or construction faults as the water is not flowing from the storage area through the pipes as intended and instead is seeping out from around the built structure. Unfortunately, at the three sites the previous improvements to water sources appear to have hindered rather than helped as all spring protection measures inspected were currently not operating as intended and presented a disappointing record of intervention. There was no evidence of wells having been constructed at these sites or other rudimentary measures.

It appears that instead of assisting by providing a chamber to accumulate water, the spring protection structures obstructed the flow from the eye of the spring. Unfortunately, the protective fences, which were once erected, have now disappeared. The access of livestock, cattle, goats and sheep, has led to the degradation of the water source and polluting of the water. This situation adds a burden to the already water scarce communities.

7.3   RAINWATER HARVESTING

The biggest single investment by households is undoubtedly in rainwater harvesting. This ranges from the fairly rudimentary use of gutters to direct water from the roof to rainwater barrels to more effective use of guttering leading into 2.5 kilolitre polyethylene tanks. The Eastern Cape is a high

rainfall area; households in the study have invested in one or another form of rainwater harvesting. The investment in RWH tanks can be something of a community investment as owners are approached in the dry season to provide some drinking water to their neighbours.

The commitment to rainwater harvesting can be explained through its advantages in reliability and access. With sparing use at times, the 2.5 kilolitre tanks can provide drinking water for a considerable period of time from a source which is at the household itself. The quote below is from an informant with the most developed system the large tanks supply sufficient drinking water to last through the dry season.[6] *The water barrels do not provide storage over time but help provide ready access to water in the household during the wet season.*

7.4   TIME AND DISTANCE TO AND FROM WATER SOURCES

From the analysis there is a more even relationship between time and distance found than anticipated which points to the possibility of less time taken in queuing at water sources and drawing water from springs with a weak flow. This time would be substantially reduced if the communities had readily available tap water in their yards or communal stand pipes closer to households.

The times and distances to and from the water source were somewhat greater, however, there were fewer households close to a water source and 90.9% of households have to collect from a distance of 200 metres or beyond, a benchmark established in South Africa in access to a water source. They are greatest in the "river-dependent" villages of Mbelu and Ntilini and less within Cwebe, which has multiple sources of water. The availability of a variety of water sources at Cwebe reduces the distances and times otherwise needed to reach a considerable body of water such as a river.

In those communities, in accessing the river as a water source, the round trip is considerably greater; on average in Ntilini it is 45 minutes and in Mbelu it is 88 minutes. Although these times are not short, by comparison with other studies of communities with undeveloped water sources (Thompson et al, 2001), they do not appear as great as could have been expected. A somewhat similar situation is reported in a study of Lesotho community water sources in the 1970s (Feachem et al., 1978: 111) where a contrast is made between the relatively short distances to sources in well-watered Lesotho (with many water sources) and much longer distances in arid regions (where only a single source is available).

The time taken in collecting water may involve considerably more than the walk to and from the water source. The slow flow of water at springs, water holes in river beds and natural wells can involve women and girls queuing and filling containers by scooping from water sources which can take considerable time. Those accessing river water have longer distances to walk but have large volumes of water available at the collection point, which should make collection easier and quicker.

7.5   WATER QUANTITY AND PER CAPITA WATER USE

The data on household water use indicates that households collect a fairly consistent volume of water daily at the different sites. Approximately 100 litres are collected daily by the households with the smaller households of 5 and less members collecting slightly less and the large of 6 or more members collecting slightly more than this mean. Given the considerable range in size of household this is a

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[6] Discussion with community member who has more than one 2.5kl tank in Ntilini.

surprising consistency and has the result of leading to considerably lower per capita water use among members of the larger households.

The households in the survey show a considerable range of *per capita* water use, but almost half of those surveyed have a volume of water use which is equal or greater than 20 litres per capita per day – the equivalent of a bucket of water for each person and a little less than the national standard of 25 litres per capita per day.

Water use is somewhat related to time taken with the per capita water use falling with greater time taken. The explanation for the lack of a more definite and distinctive relationship may be that water sources generally closer to households may not have the necessary flow to provide for a large number of households drawing on its resources. Greater volumes of water for household consumption may be available further from the homesteads. The relationship between volume and time to water source needs to be further examined.

7.6 HOUSEHOLD SIZE AND WATER USE

These findings imply that those households more distant from significant water sources have to spend considerably more time and effort in water collection but the household collection norm (that households collect about the same volume of water) appears to be stable. Although there were some differences in water use by time and distance, the biggest difference in per capita daily water use is indicated by family size. A significant difference has been found in water use between households of different sizes. The differences are astonishing – individuals in large households of 6 members or more have a per capita water use which is just over half that of smaller households. In part, this is an arithmetic differentiation since larger and smaller households collect about the same volume of water daily the per capita distribution within larger families is proportionally reduced.

It would have been anticipated that larger households would have more potential drawers of water to collect a greater volume and would have made up the difference in per capita water use, but this is not the case.

From responses to questions relating to water collection it is clear that attitudes to sufficiency dominate community perceptions of water. The broad responses indicated an attitude that household supply was sufficient for body washing and handwashing but insufficient for many household needs. These attitudes to sufficiency seem to have affected the norm of about 100 litres collected by each household.

7.7 WATER QUALITY

The critical assessment of water quality in terms of safety, taste, colour and smell are what is often visually evident during observations. Springs are associated with mental images of pristine and undisturbed water; but the springs (widely defined) in the Eastern Cape villages are often turbid and muddy after cattle or goats have trampled through the water collection points.

While some water sources have clear water, at most sources the water is turbid, and the surroundings contaminated with animal faeces and rubbish such as discarded soap powder containers and sand mining. Soapy water may seep into the area around the source used for drinking water. Since the water sources are not fenced off animals and people use them mutually; the animals often wading into the water source itself, stirring up the sediment and defecating nearby, or even in the water itself.

The low coverage of toilets and the regular use of "the bush" also imply that the runoff towards the surface water sources is highly contaminated.

This visual appraisal of the water sources is confirmed in the groundwater survey of the water sources in the villages included in the survey. The survey of ground and surface water sources was conducted by the Council for Science and Industrial Research (CSIR) in 2009 and samples were taken from each of the significant groundwater water sources and tested. The conclusions were that the water quality in virtually all the water sources was "unsafe" as it did not meet the national standard for water quality. In most cases the water quality was well below the minimum levels set by the South African water quality standard SANS 241.

7.8   CONCLUSION AND RECOMMENDATIONS.

The implications of rural water scarcity in this study show the challenges that women face. Adequate provision of water in rural Amatole has been erratic due to the persistent low rains and drought. The findings of this study highlight that adequate provision of water in the three villages could help bridge gender gaps by reducing the burden of domestic water for women in order to divert their time and energy on other unmet needs such as gardening or other enterprises for gainful employment and income generation. This study highlighted the challenges faced by women who reside in the three villages under the Amatole Municipality. The study found that these challenges are gender based. The women have a triple burden as mothers, nurturers and care givers. They are thus burdened with traditional chores which are gender based as they are the sole providers of water for cooking, bathing, laundry and many other uses. The women participants in this study reported that they spent most of their time fetching water from streams and rivers which have a potential risk to their safety and health. The villagers also harvest water from gutters during the rainy season. Although the supply of water from the rivers and streams is fairly stable throughout the year, the distance is still an issue as women have to travel great distances to access water.

It was clear that the municipality did not put women's issues into its development plans. Water decision making is mainly the duty of the municipality. Although South Africa has a progressive legislature and also follows international frameworks on access to water, much of this has not been realized. The law and policy framework for water was part of a reform policy under the constitutional rights. The recognition that water is a basic right to all has not been realized in rural areas which includes the villages under study. While the Amatole municipality has made efforts in providing water in these three villages; there is no maintenance hence the efforts have not made changes. Some of the changes that were put in place such as construction particularly on the eye of the stream have not been followed up. It is clear that the women at these three villages are the managers of water yet they are not trained to maintain and manage their water sources hence they resort to stream and river water supply which was frequently not fit for drinking.

7.9   RECOMMENDATIONS

1. It is vital for Amatole Municipality to be gender sensitive. The municipality has to move gender from the periphery to the heart of its development plans and processes. Hence mainstreaming gender in terms of water access and hygiene should be promoted as a first step.

2. The maintenance of water sources is both technical and political hence it is recommended that the political principals and municipal officials should find ways of incorporating women in decision making processes on water after all they are the managers of the resource

3. Both women and men should be trained to maintain water sources

4. The streams and rivers should be protected, and barriers should be erected to avoid pollution and contamination to the bodies of water

5. Safe pathways to the rivers and streams need to be developed for the women who access water from them

6. A gender informed strategy that takes into account women's needs to be devised so as to ensure that they receive a fair share of water and its benefits in terms of development

7. Disaster management and mitigation programmes need to be developed which involve women not as victims but as individuals who can actively participate in response to strategies

8. Women need to be educated about balancing the eco-system and not cause siltation along the river beds through bad management

9. Water costs money hence it is recommended that the municipality should mobilise financial resources in order to build standpipes in the villages. The poor, women, children, orphans and widows are the most vulnerable groups and cannot afford to pay tariffs hence it is recommended that they access free basic water as stipulated by the legislative framework on water.

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9 APPENDICE 1

Informed Consent Document

Dear Participant,

My name is Kombi Sausi. (student nr: 203503580). I am a PhD candidate studying at the University of KwaZulu-Natal, Howard College Campus. The title of my research is: **Women and water access in the Eastern Cape: an anthropological investigation into supply and sustainability in water scarce Rural Amatole Districts: with special reference to: Mbelu, Ntilini and Cwebe**

The aim of the study is to increase the understanding of how the disadvantaged members of the society, especially women and children, can be empowered throughout the domestic water access and supply chain. This study will achieve this by incorporating the knowledge, wisdom, input and needs of both men and women who influence the decision-making process in relation to domestic access in Cwebe, Ntilini and Mbelu villages in the Eastern Cape.

I am interested in interviewing you so as to share your experiences and observations on the subject matter.

Please note that:

- The information that you provide will be used for scholarly research only.

- Your participation is entirely voluntary. You have a choice to participate, not to participate or stop participating in the research. You will not be penalized for taking such an action.

- Your views in this interview will be presented anonymously. Neither your name nor identity will be disclosed in any form in the study.

- The interview will take about 45 minutes.

- The record as well as other items associated with the interview will be held in a password-protected file accessible only to myself and my supervisors. After a period of 5 years, in line with the rules of the university, it will be disposed by shredding and burning.

- If you agree to participate please sign the declaration attached to this statement (a separate sheet will be provided for signatures)

I can be contacted at: School of Social Sciences, University of KwaZulu-Natal, / Howard College Campus, Durban. Email: 203503580@stu.ukzn.ac.za;

Cell:0836604635;

My supervisor is Prof Anand Singh who is located at the School of Social Sciences Howard College Campus, Durban of the University of KwaZulu-Natal. Contact details: email singhan@ukzn.ac.za Phone number: 072 5688811

The Humanities and Social Sciences Research Ethics Committee contact details are as follows: Ms Phumelele Ximba, University of KwaZulu-Natal, Research Office, Email: ximbap@ukzn.ac.za, Phone number +27312603587.

Thank you for your contribution to this research.

Lababambiqhaza Dear,

Igama lami ngingu Kombi Sausi. (Umfundi NR: 203503580). I am umhlolwa PhD ukutadisha at the University of KwaZulu-Natal, eHoward College Campus. Isihloko ucwaningo yami: Abesifazane kanye nokufinyelela emanzini e-Eastern Cape: i uphenyo anthropological ku supply and ukusimama amanzi amancane Kwezindawo Zasemakhaya Amatole Districts: nge ngendlela ekhethekile okubhekiselwa ngayo: Mbelu, Ntilini futhi Cwebe

Inhloso cwaningo iwukuba ukwandisa ukuqonda indlela amalungu labo ababencishwe amathuba ngaphambilini umphakathi, ikakhulukazi abesifazane nezingane, kungaba namandla kuyo yonke ezifuywayo ukufinyelela kwamanzi kanye supply chain. Lesi sihloko sizoqinisa kuzuzwe lokhu by ufake ulwazi, ukuhlakanipha, input bese nezidingo kokubili amadoda nabesifazane abakhuthazelela ukucutshungulwa ekuthathweni kwezinqumo maqondana nokufinyelela basekhaya Cwebe, Ntilini futhi Mbelu nemizana e-Eastern Cape.

I am nesithakazelo kokuxoxa kuwe ukuze wabelane ngolwazi lwakho okubonwa lodaba.

Sicela uqaphele ukuthi:

• Ulwazi lokuthi wena ahlinzeke izosetshenziswa ucwaningo yezazi kuphela.

• Ukubamba kwakho iqhaza yokuzithandela ngokuphelele. Unayo bakhethe iqhaza, ukungahlanganyeli ekugubheni noma ukumisa iqhaza kule ucwaningo. Ngeke baze ngokuthatha lesi senzo.

• Imibono yakho kule interview okuzoshiwo ngokungaziwa. Ngiphakathi igama lakho noma ungubani buzakuvezwa kunoma yiluphi uhlobo kulolu cwaningo.

• I interview kuzothatha imizuzu engaba ngu-45.

• Irekhodi kanye nezinye izinto ezihlobene ne interview izobanjelwa ifayela iphasiwedi avikelwe kufinyeleleke kuphela ukuze zisebenze kimi naku indvuna yami. Ngemva esiyiminyaka engu-5, kuhambisana nemithetho nyuvesi, kuyothiwa ngokufanele by shredding futhi luvutha.

• Uma uvuma iqhaza sicela ungene ngemvume simemezelo linamathele kulesi sitatimende (a sheet ehlukile kuyakwenezelwa nesignesha)

I kungenziwa naye ngalezi zindlela: School of Social Sciences, University of KwaZulu-Natal, / Howard College Campus, eThekwini. Email: 203503580@stu.ukzn.ac.za;

Cell: 0836604635;

Umphathi wami kuyinto Prof Anand Singh ngubani sise School of Social Sciences Howard College Campus, eThekwini University of KwaZulu-Natal. Imininingwane yokuxhumana: imeyili Inombolo singhan@ukzn.ac.za Hambayo: 072 5688811

I Humanities and Social Sciences Research eKomiti Lezimilo imininingwane yokuxhumana yilena elandelayo: Nks Phumelele Ximba, University of KwaZulu-Natal, Office Research, Email: ximbap @ ukzn.ac.za, inombolo yefoni +27312603587.

Siyabonga ngomnikelo wakho ukuze lolu cwaningo kuwe.

DECLARATION

I……………………………………………………………………… (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire. I understand the intention of the research. I hereby agree to participate.

I consent / do not consent to have this interview recorded (if applicable)

SIGNATURE OF PARTICIPANT   DATE

………………………………………………………………………………………………

10 APPENDICE 2

Interview guiding questions

1. How many buckets do you fetch per day?

2. Where do you draw water from? Why?

3. What have you used water for today?

4. What are your daily concerns regarding drawing water? Why?

5. Please draw each of the steps you take when fetching getting water.

6. How many are in your family?

7. Whose responsibility is it for fetch water in your family?

8. Who draws water in your family? Whose responsibility is it to collect water for household usage (drinking, cooking and bathing)?

9. How far is it and how much time do you spend in order to access water?

10. What type of containers do you use? If bigger than 10 litres how do you carry them? Who is expected in your household to collect water? How is the responsibility shared? h

11. How often do you fetch water?

12. Do men ever help in carrying or fetching water?

13. Have you experience any health or safety problems in going to fetch water?

14. What changes would you like to see in order to improve water provision in the villages?

15. What are the household and community dynamic with regards to domestic water access and supply?

16. How has not having water source close to your house affect the way you relate with members of your family and neighbor.

17. How do people in the village cope with water scarcity? Please tell stories on how you cope with not having running water in the house, story about water collection, about people helping each other with water

18. What is your understanding of your right in term of government providing you with water?

1) Number of people in your household, including children?

2) How often do you go to collect water?

3) How far do you go to collect water?

4) How many days have you gone without water in the nearest water source?

5) What are your household uses for water?

6) How are your cleaning/treating water?

7) Would you be willing to pay for closer access to water?

1. General household information

    a. Gender of the respondent. Male/ female

    b. Age of the respondent ……….

    c. Village name…………

    d. Type of family

        i. Nuclear

        ii. Extended

    e. Number of adult males in the household…………………

    f. Number of female adults in the household…………….

    g. Number of male children in the household……………

    h. Number of female children in the household…………

2. Where does your household usually get water for drinking?

Niqhele ukuwafumanaphi amanzi ukuela?

1	Spring/ fountain
2	Flowing water/stream
3	Flowing water/ river
4	Well/borehole
5	Rainwater tank/harvesting
6	Communal water station

7	Dam/pool/stagnant water
8	Water carrier/tanker
9	Public tap

Write on the line below the exact name of water source and how far is it from your household (estimate the distance in meters (bhala elona gama lililo lendawo yokukha amanzi, ukuthe kangaka nani)

………………………………

3. If rainwater harvesting, please describe:

Ukuba ngaba ngamanz'emvula, nceda uchaze:

1	Full Jojo/ferrocement 2.5 kiloliters
2.	Jojo/ ferro-cement 1kilolitre
3	Barrel 200 litres
4	Two barrels 200 litres
5	No rainwater harvesting

4. Does your water source have sufficient water all the time? (kulendawo kukhiwa kuyo amanzi, ingaba akhona ngokweneleyo nangalo lonke ixisha amanzi na? Yes/ No

5. How low does it take to collect water?

6. Who fetch water often in your household?

	Yes	No
Adult male		
Adult female		
Male child		
Female child		

7. How much water does your household collect each day for all purpose? Ngamanzi angakanani akhiwa lusapho ngemini futhi astyenzisw ezintweni zonke?

Less than 25 litres	1
1 container, 25 litres	2
2 containers, 50 litres	3
3 containers, 75 litres	4
4 containers, 100 litres	5
5 containers, 125 litres	6
6 containers, 150 litres	7
More than 6 containers	8

8. Please respond to the following

	Our family	Strongly agree	Agree	Neither	Disagree	Strongly agree
	Drink, prepare food and cook with safe water	1	2	3	4	5
	Can wash our hands as we wish	1	2	3	4	5
	Can wash our bodies as we wish	1	2	3	4	5
	Do not carry heavy containers over long distances	1	2	3	4	5
	Feel our water keeps us healthy	1	2	3	4	5
	Can grow a food garden for extra nutrition	1	2	3	4	5
	Have sufficient water to clean house	1	2	3	4	5
	Spend much time collecting water	1	2	3	4	5

		1	2	3	4	5
	Has sufficient water to treat and clean sick family members	1	2	3	4	5
	Has sufficient water to wash clothes	1	2	3	4	5
	Our children:	1	2	3	4	5
	Attend school as water is readily available	1	2	3	4	5
	Bath eat before school	1	2	3	4	5
	Learn hygiene practices at school	1	2	3	4	5
	Attend school regularly because they have water to keep healthy	1	2	3	4	5

9. Please respond to these questions about your drinking water (Nceda uphendule lemibuzo mayelana namanzi owaseleyo):

		Yes	No
	Is it safe to drink?	1	2
	Is it clear?	1	2
	Does it taste good?	1	2
	Is its free form odour/smell	1	2

10. Please could you show me how you treat drinking water to make it safe. Please observe and the fill in the observation points below. Ungandinceda undibonise indlela ococa ngayo amanzi ukuze akhuseleka?

	Water treatment	Yes	No
1	No water treatment	1	2
2	Scoop carefully with scoop with handle	1	2

3	Sieve it through cloth	1	2
4	Let it stand for some time/ sedimentation	1	2
5	Filtering through cloth	1	2
6	Disinfect: add jik	1	2
7	Disinfect: boil	1	2

11. How do you store drinking water?

	Type of container	Inside the house Y/N		Off the ground Y/N		Size and number of containers of this type	
	Narrow mouthed, screw on top	1	2	1	2		
	Narrow mouthed no top	1	2	1	2		
	Wide mouth, no lid/ cover	1	2	1	2		
	Wide moth with lid/cover	1	2	1	2		
	Drum, lid/cover provided	1	2	1	2		
	Drum, not coverd	1	2	1	2		

12. do you think your household is a?

High water user	1
Medium water user	2
Low water user	3
Don't know	4

13. how important is to you to be a member of a local water committee?

Very important	1
Moderately important	2
Not important	3

13. have you made complain to Amathole water services? Yes/ No