A CASE STUDY OF COLLECTIVE ACTION OF WOMEN IN RESPONSE TO WATER AND FOOD INSECURITY IN THE EHLANZENI DISTRICT MUNICIPALITY, MPUMALANGA PROVINCE

GREATER NCUBE

A full thesis submitted in partial fulfilment of the requirements for the Degree of Magister Science in the Department of Earth Sciences, Faculty of Natural Science, in the University of the Western Cape, Bellville

Supervisor: Professor Jacqueline Goldin

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ABSTRACT

The historical patterns of access to water and other areas of public service delivery in South Africa predominantly favoured the white minority. There was inadequate distribution of water where townships and rural areas bore the brunt of the apartheid administration. Women are disadvantaged within the household and carry the burden of providing water for their families. This is particularly true in a water stressed environment, such as the Ehlanzeni District Municipality in Mpumalanga. This study considered the practical application of the Capability Approach and its key idea of human well-being. In particular, the idea of the Capability Approach that social arrangements should aim to expand people's capabilities and their freedom to promote or achieve what they value doing or being was considered. Sen's ideas were assessed and the study considered how these ideas help understand collective action and strategies adopted by women to cope in the face of water stress and poverty. The thesis examined how community involvement, in particular women's involvement in a group called Vukani, impacts on water related issues and helps them to cope with external stressors. The study also considered the links between group belonging and capabilities. The findings suggest that group belonging cultivates a unique set of capabilities such as hope and empowerment. Due to group belonging and the capabilities attained through collective action, Vukani was able to develop adaptive strategies through innovation, partnerships and knowledge sharing.

KEYWORDS

Agency, Capabilities, Empowerment, Freedoms, Functionings, Gender, Innovation, Opportunities, Poverty, Water scarcity, Well-being

DECLARATION

I hereby declare that ***A case study of collective action of women in response to water and food insecurity in the Ehlanzeni District Municipality, Mpumalanga Province*** is my own work, that it has not been submitted, or part of it, for any degree or examination at any other University, and that all sources I have used or quoted have been indicated and acknowledged by means of complete references.

Greater Ncube

Signature……………………………….…

Professor Jacqueline Goldin

Witness…………………………….……

DEDICATION

This thesis is dedicated to my parents for their love, endless support and encouragement. To my father Mr Robert Ncube who knew the value of education and shoved me to a missionary boarding school when I was just 10 and to my mother Mrs Mafalo Ncube for her mysterious ways that always kept me in check. It is your unconditional love that motivates makes me to keep aiming for the stars.
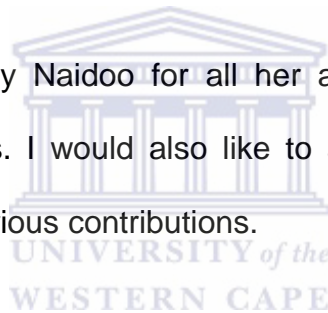
ACKNOWLEDGEMENT

I acknowledge the One that is greater and give glory and praise to the Almighty heavenly Father, for without him I am nothing.

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A special feeling of gratitude to my children Iman (Chuchu) and Anesu (boys) who are my heart, my soul, my courage, thank you for putting it all in perspective. Both of you have been my best cheer-leaders. You give my life meaning and direction.

ACRONYMS AND ABBREVIATIONS

CMA: Catchment Management Agency

DWA: Department of Water Affairs

DWAF: Department of Water Affairs and Forestry

GNI: Gross National Income

GNP: Gross National Product

HDI: Human Development Index

IRWHP: Integrated Rain Water Harvesting Project

MDG: Millennium Development Goals

NGO: Non-Governmental Organisation

SANCIAHS: South African National Hydrology Symposia

UNESCO: United Nations Educational, Scientific, and Cultural Organisation

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CHAPTER ONE

INTRODUCTION

1.1   Introduction

The historical patterns of access to water and other areas of public service delivery in South Africa have been markedly skewed (Goldin 2010). Various transmutations of apartheid, from its inception to the tri-cameral parliamentary and 'own affairs' administrations, served to reinforce and prolong the delivery of water and public services along clearly deferential racial lines (Goldin 2005b). The apartheid-era South African 'two-nation' project of 'separate development,' excluded the majority of the population from opportunities and kept them firmly entrenched in vicious cycles of poverty.

During the apartheid regime, water management was centralised and this involved the construction of huge interbasin transfer infrastructure, dams and reticulation schemes and other provisions of water supplies to serve the interests of the white farmer as well as booster an economy for the mines and industry that benefited a small elite (Goldin 2005b). Water delivery, infrastructure and resource distribution thus benefited the minority of the South African population. The result of these political and administrative realities was, according to Goldin (2010), the inadequate distribution of water with townships and rural areas bearing the brunt of these skews.

Townships and rural areas, where the majority of South Africa's population resided, were left to fend for themselves.

Because of the injustices of apartheid, South Africa as a nation was excluded by the international world. With the collapse of apartheid the country was accepted into the international arena and took on exchanges and global discourses that influenced new policies. These exchanges informed the way in which South Africa's policies and programmes unfolded.

South Africa's new water law cannot divorce itself from being historically embedded in a history of conquest and expansion where colonizers had harnessed the water in the interests of a dominant class which had privileged access to land and economic power (DWAF White Paper 1997). The new government was therefore faced with a situation in which not only the majority of the population had been excluded from land but they had also been denied either direct access to water for positive use or access to the benefits from the uses of water (DWAF White Paper 1997). There was a need for a radical review of water policy and for the democratization of access to and use of, the nation's natural resources. The post-apartheid Constitution instigated a radical review of past practices and a redress of inequities and past skews. The new Constitution[1] provided the basis for a fair and equal society, where values of

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[1] The Constitution of the Republic of South Africa No 108 of 1996 is the supreme law which provides the legal foundation for the existence of the Republic. The current Constitution is the country's fifth and it was drawn up by the Parliament which was elected in 1994 in the first non-racial elections. It came into effect on the 4th of February 1997

equality and justice for all citizens were enshrined as cornerstones of the new democracy.

The National Water Act of 1998 is a codification from the old approach to water resources management, to a reformed and integrated interdisciplinary and multi-stakeholder approach to water resources management. While access to water and sustainability of water resources are the foundations of the National Water Act (1998), principles such as the decentralization of water management and subsidiarity between central and local water governing bodies, through a participatory approach to water management, play a pivotal role in redressing the apartheid skews. In this way, the National Water Act (1998) introduces a modern framework of integrated resource management in a social context still affected by severe gaps and backlogs inherited from the apartheid regime that ended in 1994 (Farolfi et al. 2008).
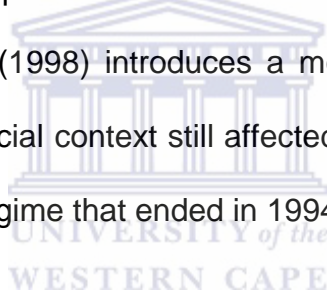
The National Water Act's (1998) main focus is on redressing past injustices and racial and gender skews in the allocation of water. The National Water Act (1998) makes the inclusion of previously disadvantaged groups in decision-making processes explicit. The protection of basic human and ecological needs, economic efficiency and social equity are the most important pillars guiding current water resource allocation and use under the new Water Act (Hassan and Farolfi 2005).

Another driver behind the development of the National Water Act (1998) was the rapidly decreasing gap between available water supply and water demand in South

Africa. A new paradigm for water resources management was required. This would be a paradigm that would promote a move away from the traditional supply side focused approach. Water Demand Management and social adaptation were to become the central focus to the way in which water resources were to be managed. "The purpose of the Act was to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account several listed factors in the Act" (National Water Act 1998).

Despite a progressive new Water Act and concerted efforts of the post-apartheid era to redress inequities of the past, Goldin (2005b) claims that the lines of social division constructed during the apartheid regime continue to amplify the water claims of some at the expense of others. "Issues of inclusion and exclusion persist determined by access (or lack of it) to adequate supplies and to the social resources to manage water" (Goldin 2005b, p.138). Equitable access to water, or the benefits derived from its use are critical in eradicating poverty and creating growth (ibid.) especially in a country like South Africa where poverty has strong racial characteristics. For instance, the unemployment rate of Africans is twice that of Coloureds, three times that of Indians and ten times that of Whites. Africans also comprise nearly 95% of the poor (DWAF White Paper 1997).

Equitable access to water is particularly important in South Africa, and, in 2005, as Goldin (2005b) stated, the country was still facing significant inequalities in access to and use of water. The failure of the apartheid government to ensure the provision of sanitation and water for basic human needs impacted significantly on both the right

to dignity and the right to life amongst the black community (DWAF White Paper 1997). Today, poverty still affects mostly women and children and is concentrated in rural areas where nearly 70% of South Africa's poor live (Department of Human Settlements 2013). In addition to this, there is a strong correlation between levels of education and levels of poverty and South Africa suffers from high levels of unemployment and low levels of education.

The eradication of poverty is one of the most profound challenges facing South Africa today. High levels of poverty are compounded by high levels of inequality and lack of access to resources especially in rural areas. Those facing the highest risk of poverty and marginalization are women and rural people. For instance, African women in rural areas have no choice but to walk long distances to collect water, a heavy burden which also impacts directly on their health (DWAF White Paper 1997). Furthermore, the time spent doing this could be better spent working, studying, growing food or taking part in other activities (ibid.).

Barbara Schreiner, (the then Chief Director: Water Use and Conservation 1999) gave a vivid example of the poverty that besets South Africa, and impacts most severely on women and women-headed households in a speech delivered at the South African National Hydrology Symposia (SANCIAHS) Conference in 1999. She drew on an experience of the then Minister Kasrils's who was travelling to various rural areas in South Africa, where he was looking at water services schemes being implemented by the Department of Water Affairs and Forestry. At one particular village, where there was a water supply scheme already in place, he found a woman

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with a baby tied to her back, near to the river, digging a hole from which to scrape out some water. When he asked her why she was not taking potable water from the standpipe in the village, she replied that she was too poor to pay the ten rand per month required by the village water committee for access to water from the water supply scheme. Experiences of poverty of rural women are intense and Barbara Schreiner gave another example of a woman who she interviewed and who described to her how her mother used to lay them in the sun when they were children in order to warm their bellies to make them feel less hungry.

Because of the obvious links between lack of water and poverty, theoretical frameworks that deal with poverty and development are important for the water sector. Over the last decade the Capability Approach has emerged as the leading alternative to standard economic frameworks for thinking about poverty, inequality and development generally (Clark 2005). Because poverty is the deprivation of basic capabilities (Sen 1999 p.87) this thesis will explore how Sen's Capability Approach might be used to contribute to an understanding of the underpinnings behind collective action that help the poor, and in particular rural women, cope with poverty. The Capability Approach is a useful framework since it enables well-being to be measured by assessing people's freedoms and choices - offering a more complete view of poverty than traditional poverty frameworks. The Capability Approach expands on ideas behind the Human Development Index (HDI), which although proposing an expanded set of human development indicators, still draws on traditional economic measures such as income, education and longevity.

The HDI is a tool for measuring country level inequalities and its focus is on 'tangible' goods. It measures the average achievements in a country in three basic dimensions of human development:

1. A long and healthy life, as measured by life expectancy at birth

2. Knowledge as measured by expected years of schooling for schooling age children and mean years of schooling for adults aged 25 and older. Mean years of schooling is estimated based on educational attainment data from censuses and surveys available in the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Institute for Statistics database. Progress in education is critical for human development in its own right and because of the links to health, equity and empowerment

3. A decent standard of living, as measured by the Gross National Income (GNI) per capita
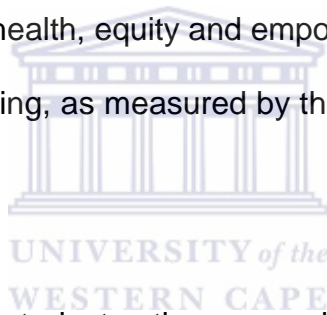
The HDI is then used to facilitate instructive comparisons of the experiences within and between countries. Just to illustrate the bias of using traditional measures as income and other tangible goods, the table below illustrates the Gross National Product (GNP), HDI as well as the life expectancy of five countries.

Table 1.1:   Economic prosperity, HDI, country ranking and life expectancy

Country	GNP per capita	HDI	HDI ranking	Country human development classification	Country classification	Life expectancy at birth
Sri Lanka	380	0,716	84	Medium human development	Developing country	70
Brazil	1 640	0,809	61	High human development	Developed country	65
South Africa	2010	0,717	83	Medium human development	Developing country	55
Mexico	2080	0,855	48	High human development	Developed country	67
Oman	6730	0,771	70	Medium human development	Developing country	54

Source: World Development Report 1987

As the table shows, a country like Oman can be very rich in conventional economic terms (GNP) and still be very poor in the achieved quality of life that reflects actual capabilities of its people. Oman with almost three times the GNP of South Africa has almost the same longevity rate in terms of life expectancy. Despite South Africa having slightly less than double the GNP of Brazil it is considered as a developing country while Brazil is now ranked as a developed country. As Agarwal et al. (2004) note, there are therefore, two distinct issues here; firstly economic prosperity is no more than one of the means to enriching the lives of people, it is a foundational confusion to give it the status of an end. Secondly, economic prosperity even as a means, merely enhancing average economic opulence, can prove to be inefficient in the pursuit of the really valuable ends. The Capability Approach on the other hand, lends itself to evaluating human well-being in terms of actual opportunities available to individuals in different spaces and times and asks if they are living "the good life".

This first section of this introduction has presented a brief history of South Africa's water sector in terms of water allocation policies. The notion of poverty has also been presented and the links between water poverty and development have been made explicit. The next section will look at the background of the study area with particular reference to its water resources availability.

1.2 Background

South Africa is a water-scarce country. It lacks large, fast flowing rivers and huge underground reservoirs. Its annual rainfall is considerably less than the world average and is a mere 500 mm per annum (Falkenmark and Rockstrom 2004). Rainfall is uneven and its water resources are unevenly distributed across the country. As Goldin (2010) notes, the country suffers from extreme weather conditions and unpredictable rainfall. Its meagre rainfall is exacerbated by high levels of evaporation (Falkenmark and Rockstrom 2004).

Figure 1.1:   Areas of physical and economic water scarcity[2]
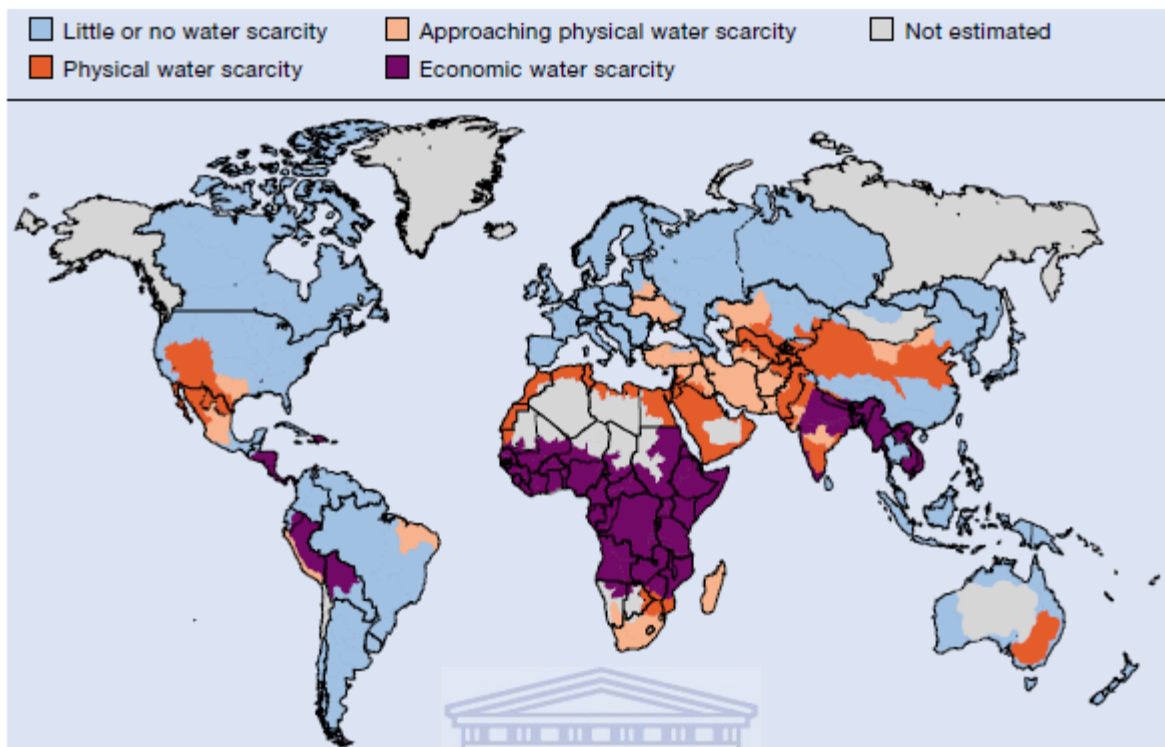
Source: Comprehensive assessment of water management in agriculture 2007

Unlike most African countries (see Figure 1 above), South Africa is fast approaching physical water scarcity. In several catchments the country has already over allocated water, and this has placed and continues to place its natural, finite water resources at considerable risk. The country has already utilised over half its available water resources and the rest are becoming increasingly difficult and expensive to harness.

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[2] Little or no water scarcity means that water resources are abundant relative to use, with less than 25% of water from rivers withdrawn for human purposes. Physical water scarcity means that water resources development is approaching or has exceeded sustainable limits: more than 75% of river flows are withdrawn. Approaching physical water scarcity means that more than 60% of river flows are withdrawn and these basins will experience physical water scarcity in the near future. Economic water scarcity means that water resources are abundant relative to water use, with less than 25% of river flows withdrawn, but lack of human, institutional, and financial capital limits access to water and malnutrition therefore does exist (Comprehensive assessment of water management in agriculture 2007)

Although this indicates water stress, the water landscape in South Africa is by no means unique and neither is it hopeless (IMWI 2007).

Israel is probably one of the best examples from which South Africa has much to learn. Israel has an extensive wastewater reclamation program. Seventy percent of its waste water is treated and used for agricultural irrigation (Pereira et al. 2002). This approach to treating and reclaiming waste water and using it for irrigation reduces the amount of waste water to be disposed of and provides a reliable and regular source of water for agricultural usage. Israel is not the only country that has managed to make do with very limited water resources. A number of countries have made great strides in increasing water efficiency, reuse and reclamation. For instance, Windhoek, in Namibia, started reclaiming waste water for public use in the late 1960s. One major United States city, Florida, completely reuses all of its wastewater and does not discard anything and as such uses a dual water distribution system. One is used for delivering drinking water and one for delivering treated wastewater (Anderson and Atkins 2013).

South Africa is faced with the challenge of putting in place mechanisms that would mitigate for water stress and be propitious to structural and social abundance. Community social adaptive strategies would contribute to making the country more water secure. The creation of an enabling environment, where knowledge is shared amongst water users would go a long way to building and improving social adaptive capacities.

Women in much of the world lack support for fundamental functions of human life (Nussbaum 2011). They are less well-nourished than man, less healthy, more vulnerable to violence and sexual abuse (ibid.). Nussbaum (2011) also asserts that they are much less likely than man to be literate and still less likely to have pre-professional or technical education. Should they enter the work place Nussbaum (2011) posits that they face greater obstacles, including intimidation from family or spouse. In many nations women are not full equals under the law, they do not have the same rights of association. As such women have fewer opportunities than man to live free from fear and to enjoy rewarding types of love especially when, as often happiness, they are married without choice in childhood and have no recourse from bad marriages proclaims Nussbaum (2011).

The thesis will focus on the Capability Approach's ideas of a basic social minimum required to attain well-being by focusing on capabilities. In so doing, it considers how actual opportunities available to communities enable them to attain a state of well-being. The thesis will also argue that the Capability Approach is the best tool in terms of assessing well-being as it allows the people involved to make judgements about their lives. It will further consider if actual opportunities available to a community do in fact enable its members to attain well-being and thus live fuller lives. This thesis will also argue that knowledge sharing and the acquisition of knowledge is important in enabling communities to collectively work together and eventually cope with external stresses. The thesis argues that it is not simply the acquisition of knowledge but also the sharing of this knowledge that is critical for building necessary adaptive capacity that would help overcome physical water scarcity.

1.3   Study area

Ehlanzeni District Municipality is located in Mpumalanga which is in the North East region of South Africa. It has an estimated population of 125 000 (Goldin et al. 2008) with most of this population living in remote villages and scattered settlements. Holden and Mathabatha (2007 in Goldin et al. 2008) describe it as a tiny strip of land sandwiched between South Africa and Swaziland. Nelspruit and White River, as illustrated in Figure 2, are the two biggest urban centres. Ehlanzeni lies close to the Kruger National Park and much of its land is undeveloped grassland (Goldin et al. 2008).

Figure 1.2:   Study area
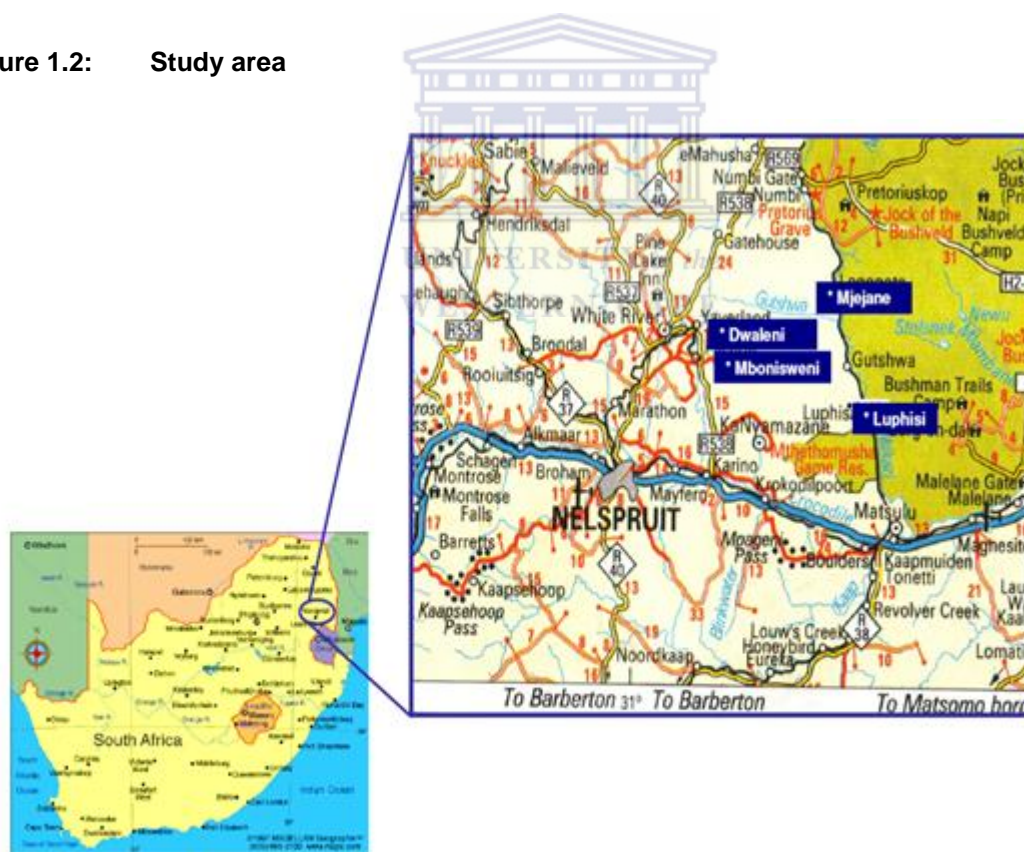
Source: Goldin et al. 2008a

KaNgwane, which was initially intended as a homeland for Swazis outside Swaziland, is the last of the homelands that was granted self-governing status in 1982 (Holden and Mathabatha 2007 in Goldin et al. 2008). Goldin et al. (2008a) note that allegiances with the Swazi culture are apparent in the former homeland of KaNgwane due to the historical ties between the Swazi and Tswati people. Women in the community still partake in customary Swazi practices and promote traditional aspects of Tswati culture, nurturing cultural ties with the Swazi. The former homeland of KaNgwane, now Mpumalanga, which means 'the place where the sun rises' possesses an environment endowed with natural beauty. Its natural beauty and historic values contrast with the extreme poverty and deprivation that is evident in the area (Goldin et al. 2008).
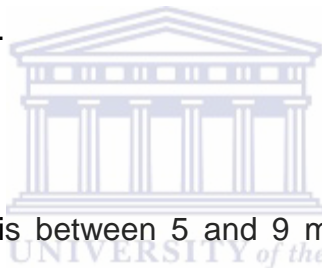
The average household size is between 5 and 9 members. These survive on an average monthly income of USD 100 (Goldin et al. 2008) which is about 910 rand (ABSA 2012). The income is mainly through government grants. The unemployment rate is estimated in some places to be as high as 79% (Goldin et al. 2008a). Ehlanzeni is one of the poorest districts in the country (Goldin et al. 2008) with approximately 76% of the Mpumalanga residents lacking adequate water and sanitation services (Goldin et al. 2008a). Twenty six percent of 199 respondents in a recent study in Luphisi indicated that their households were food insecure and people went to bed hungry because of in sufficient food (Owen and Goldin 2011). In Mpumalanga the majority of the dwellings do not have access to electricity nor do they have running water within 200 metres of their homes (Goldin et al. 2008). Toilets are unventilated pit latrines and many of the villages have no medical care

facilities. Health care concerns are addressed at clinics located in the nearby communities where there are facilities (ibid.).

Nelspruit and the nearby town of White River provide employment for roughly 30% of the Ehlanzeni community (Goldin et al. 2008a). Like many of the former homeland regions, for the unemployed, it is inadequate cash flows from small scale agriculture that provide any form of livelihood (Goldin et al. 2008). There are few people with backyard gardens and most of these do not produce enough to feed the family or allow for any surplus produce to generate an income of any significance. Those whose gardens produce any surplus sell their produce to supplement the meagre government grant income (Goldin et al. 2008a.).

The on-going Integrated Rain Water Harvesting Project (IRWHP) that is being implemented in four villages in the Ehlanzeni District Municipality is facilitating some form of collective action for women, that is, we claim, improving their overall wellbeing. It is within the context of the IRWHP that this study seeks to establish the relationship between collective action of women to water stress. It will use the framework of the Capability Approach and ideas behind social adaptation to examine water, food security, poverty and development.

1.4 Study area water resource profile

The Inkomati Catchment Management Agency (CMA) is the first of 9[3] CMAs to be formed by the Department of Water Affairs and the Forestry.[4] The Agency is responsible for the protection, conservation, development and management of water resources in the Inkomati Water Management Area. One of its objectives is to ensure that water is used to support equitable and sustainable social and economic transformation and development.

The Inkomati Basin stretches over most of the Mpumalanga Province, the southern region of the South Africa's Northern Province and the northern region of Swaziland. The Inkomati Basin consists of three major catchments and two minor catchments. The major catchments are the Komati, Crocodile and Sabie-Sand catchments, and the minor catchments are the Nwaswitsontso and Nwanedzi catchments.[5] The Crocodile sub catchment is the most important sub catchment in the basin from an economic point of view and has the most potential for economic growth (Goldin et al. 2008). The village of Luphisi is in this sub catchment. The rivers in these catchments all flow into the Inkomati River, which cuts across Mozambique and flows into the Indian Ocean. The expanse of the total catchment area of the Inkomati Basin inside South Africa and part of Swaziland is 31 230 sq. km (DWA 2013).

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[3] The Minister of Water and Environmental Affairs decided in March 2012 to reduce the number of CMAs to 9 from the original proposal of 19 (South African government information 2012)

[4] In May 2009 following the election of President Jacob Zuma the Department of Water Affairs and Forestry (DWAF) was divided into two (Water and Forestry). The responsibility of Forestry was transferred to the Ministry of Agriculture, Forestry and Fisheries. DWAF then became the Department of Water Affairs (DWA) and falls under the Ministry of Water and Environmental Affairs

[5] The two minor river catchments fall within conservation areas within the Kruger National Park

The general climate of the Basin varies from a warm to hot and humid climate in the Lowveld, to a cooler and dry climate in the Highveld. The entire Basin falls within the summer rainfall region with a mean annual precipitation of approximately 436mm (DWA 2013). The natural mean annual runoff for the Inkomati Basin inside South Africa (and Swaziland) is estimated at 3 432 million m^3. It is further estimated that 1 940 million m^3 is consumed annually in the Inkomati Basin inside South Africa[6] (ibid.).

The following sections outline and describe the general research problem under consideration. They present the rationale, research objectives, research questions and the research hypothesis. We will then proceed to the study design.

1.5   Problem statement

Goldin (2010) states that despite the reversal of the apartheid regime and the fact that South Africa is a middle-income country; there are a significant number of people who are water poor and poor in governance and institutional capacity to manage water. According to Goldin (2010), in 2003, eight million South African people lacked adequate water supply. These disparities in water delivery affect trust between water users and perpetuate social exclusion and feelings of shame (ibid.). Women tend to bear most of the burden of providing not only food but also water for their families and many are obliged to walk for long distances to fetch water.

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[6] This includes domestic, industrial, irrigation, afforestation, environmental and livestock and game water usage

1.6   Rationale

The Capability Approach, which is a multi-dimensional approach to poverty, is a useful development tool that can be practically applied to help understand social issues and achievements or development gains that are being made in the water sector. As posited by Clark (2005), it is a framework that centres on enhancing choices and human freedom to live "the good life". While the pioneer of this approach, Sen[7], has identified the need to expand the conceptualization of poverty beyond the dimension of income deficiency, there is, according to Sen (1999) no one-for-all list of predetermined capabilities. The strength of the Capability Approach is that it enables capabilities to be identified for specific situations and communities by the public themselves.

1.7   Aim

The main aim of the study is to propose a practical application of the Capability Approach and to consider the usefulness of this framework in advancing our understanding of collective action of a particular group of women in the Ehlanzeni District Municipality.

1.8   Objectives

- To better understand the way in which people in communities organise themselves

- To decipher what the necessary ingredients are in a particular social setting that promote or undermine collective action

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[7] Amartya Sen is an Indian economist and philosopher who was awarded the 1998 Nobel Prize in Economic Science for his contributions to welfare economics

- To understand the relationship between capabilities, such as empowerment, self-esteem, for instance, and group belonging

- To determine the relevance of capabilities like self-respect and empowerment and to consider in what ways these capabilities help in the attainment of well-being

- To establish the underlying linkages between capabilities and collective action in the attainment of fuller lives

1.9   Research questions

- Why do individuals join groups and in what ways do these groups open up opportunities for a better life for these individuals?

- What the necessary ingredients in a particular social setting that promote or undermine collective action?

- What, if any, is the relationship between group belonging and capabilities like empowerment etc.?

- How relevant are these capabilities in the attainment of well-being?

- How does collective action and capabilities enhance food security?

1.10 Hypothesis

Collective action enables women in the Ehlanzeni District Municipality to attain a set of capabilities that enables them to attain well-being, thus living fuller lives.

1.11 Study design

Although the research is mainly qualitative, secondary data from a quantitative survey does also inform this study.

A baseline study of an Integrated Rain Water Harvesting Project (IRWHP) was conducted in the Mpumalanga province, Ehlanzeni District Municipality with the purpose of testing intangibles goods such as empowerment, shame, trust and dignity. Seven hundred and forty questionnaires were administered at the household level. The results from that baseline study informed this study. Although this study will draw on secondary data from this baseline study, the study will draw mainly on primary data collected through face-to-face semi-structured interviews. Convenience sampling was used on the women from the gardening project Vukani. A semi-structured interview guide was used but the interviews were flexible enough to enable the researcher to probe the respondents and to get more detailed narratives that allowed for in-depth understanding of the ideas behind intangible goods such as empowerment, trust and so forth and the collective action of the women. Desktop data was gathered from articles, reports and theoretical renderings of the Capability Approach.
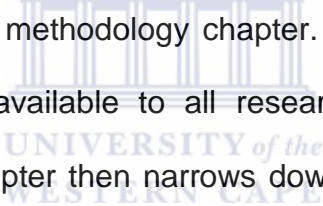
1.12 Outline of Thesis

The thesis is presented in five chapters and these are as follows:

The first chapter introduced the research topic and the research area. The background to the study was profiled. The problem statement leading to this thesis

has been outlined as well as what this thesis aims to achieve. The research objectives are also outlined as well as research questions that address the research objectives. A hypothesis has been proposed.

Chapter two reviews the literature that is applicable to this thesis. It starts by tracing the roots of the framework of analysis which is the Capability Approach and looks at its critiques as well as its advocates. Its core concepts are also examined. Issues of scarcity around water and food are discussed. Drivers of collective action are also considered.

Chapter three is the research methodology chapter. It starts by looking at the two broad methods of research available to all researchers namely qualitative and quantitative research. The chapter then narrows down to the research method and design adopted for this thesis. The goals and aims of choosing the particular method are also outlined. The chapter concludes with the actual data collection process carried out for this thesis.

Chapter four introduces the research area and participants. Narrative texts from interviews with the participants are presented followed by a discussion in relation to empirical studies. Literature is used to make the links between narratives and the theory proposed in the literature review in chapter two.

The concluding chapter five provides the reader with the summary of the research, the main research findings and highlights the links between the Capability Approach, collective action and the data collected. The limitations of the research are also considered. Recommendations and future possible areas of study are also proposed.

1.13 Summary

This introductory chapter has provided the background to the study, highlighted the problem statement as well as outlined the aim and objectives of the study. The research hypothesis has been proposed and presented to the reader. The chapter has also outlined the water resource profile of the study area. The next chapter will present the reader with the theoretical framework and literature review.
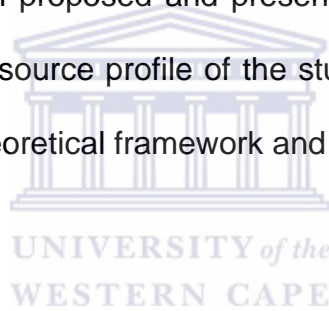
CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1   Introduction

This thesis is grounded in a theoretical framework called the Capability Approach. We have proposed this approach and will try to defend it as an approach that does well in assessing human well-being. The Capability Approach has in the last decade emerged as a leading alternative to standard economic frameworks for thinking about development and assessing well-being. The reader is introduced to the approach by tracing the Capability Approach's roots and its core concepts. Although issues pertaining to food security and the relations to water and poverty will also be discussed very briefly as they form any discussion on water, there will not be much emphasis on them.

2.2   Tracing the roots of the Capability Approach

The conceptual foundations of the Capability Approach as observed by Robeyns (2006) can be found in Sen's critiques of traditional welfare economics. Traditional welfare economics typically associates well-being with opulence (income, commodity command) or utility (happiness, desire, fulfilment) (Nussbaum 2011). In 1979, at Stanford University, Sen gave the Tanner lectures on human values called "Equality of what?" (Alkire and Deneulin 2009). In these lectures, as Alkire (2008) notes, Sen questioned the adequacy of measuring equality in the space of marginal or total

utility or primary goods. Alkire and Deneulin (2009) claim that it was here that Sen outlined for the first time his conception of the Capability Approach. Clark (2005) however states that this alternative approach to welfare economics was conceived in development thinking as far back as the 1980's.

Nussbaum (2011) acknowledges that in pioneering the Capability Approach, Sen brought together a range of ideas that were either excluded from traditional economic approaches, or if they were included, were inadequately formulated. Initially Sen argued for:

- The importance of real freedoms in the assessment of a person's well-being

- Individual differences in the ability to transform resources into valuable activities due to individual heterogeneity

- The multi-variate nature of activities that give rise to well-being

- Against excessive materialism in the evaluation of human welfare

Over the last decade Amartya Sen's Capability Approach has thus emerged as a leading alternative to standard economic frameworks for thinking about poverty, inequality, human development in general (Clark 2005, Robeyns 2011) and justice (Robeyns 2011). The approach has in the past decade also become increasingly prominent in academia and policy making (Robeyns 2006).

2.3   What is the Capability Approach?

The Capability Approach is simply a proposition about the appropriate space in which social arrangements should be evaluated (Alkire 2008). The key idea of the Capability Approach is that social arrangements should aim to expand people's capabilities and their freedom to promote or achieve what they value doing or being (Alkire and Deneulin 2009). The claim of the Capability Approach is that assessments of the well-being or quality of life of a person, and judgements about equality, justice or the level of development of a small community or country, should not primarily focus on resources, or on people's mental states, but on the effective opportunities that people have to lead the lives they have reason to value (Robeyns 2006). As an approach to a comparative quality of life assessment and to theorizing about basic social justice, the Capability Approach holds key questions to ask when comparing societies and assessing them for their basic decency or justice (Nussbaum 2011).
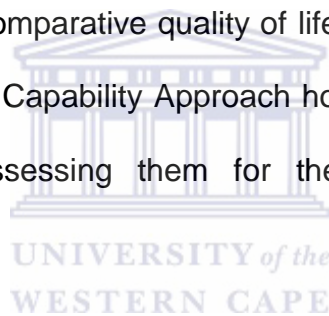
The Capability Approach asks what is each person able to do or to be? (Clark 2005, Robeyns 2006, 2011, Nussbaum 2011). It also asks whether people are able to be healthy, and whether they have the means or resources necessary for this capability or opportunity e.g. clean water, sanitation and health care. It asks whether people are well nourished and whether the means or conditions for the realization of this capability e.g. food entitlements, are being met. It asks whether people have access to a high quality education system, to real political participation, and to community activities that support them, that enable them to cope with struggles in daily life, and that foster caring and warm friendships (Robeyns 2011). This culminates in asking whether people feel good about themselves and establishing what it is that makes

them feel this way. The Capability Approach establishes whether people are happy and if they feel empowered and it is able to examine a wide range of non-material or intangible goods that exist in communities and that make people feel good about themselves.

The Capability Approach advocates that we must take a comprehensive or holistic approach and ask which sets of capabilities (opportunities) are open to an individual (Robeyns 2011). In comparing well-being and judging the quality of life of different people we must consider how well people are able to function with the goods and services at their disposal (Clark 2005). We must also consider what people are able to achieve with these goods and services. Sen (1994) argues that different people and societies typically differ in their capacity to convert income and commodities into valuable achievements e.g. a disabled person may require additional or different resources (wheelchair) to achieve the same things (moving around) as an able bodied person.

The Capability Approach is focused on choice and freedom, holding that it is crucial for good societies to be promoting for their people a set of opportunities, or substantial freedoms, which people then may or may not exercise: the choice is theirs (Nussbaum 2011). The approach also recognises that the goal is not to expand the number of choices (Alkire and Deneulin 2009). The goal is to expand the quality of human life. Indeed, Sen notes that sometimes more freedom of choice can come and befuddle and make one's life more wretched (Sen 1992).

Due to its emphasis on choice, the approach commits itself to respect for people's powers of self-definition (Nussbaum 2011). The key element of the approach is its idea of plurality and non-reducibility through the use of capabilities (ibid.). The approach is resolutely pluralist about value; it holds that the capability achievements that are central for people are different not just in quality, but also in quantity (ibid.). The most important elements of people's quality of life are therefore plural and qualitatively distinct: for instance health, bodily integrity, education and other aspects of individual lives and these cannot be reduced to a single metric without distortion (Robeyns 2011). Furthermore Nussbaum (2011) proclaims that a fundamental part of understanding and producing capability achievements is through understanding the specific nature of each person.
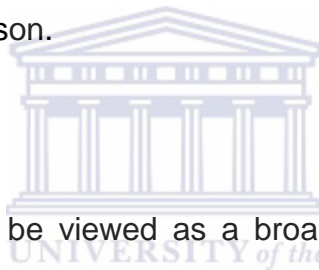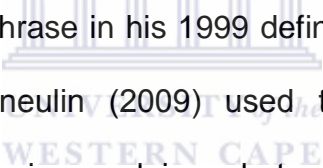
The Capability Approach can be viewed as a broad normative framework for the evaluation and assessment of individual well-being and social arrangements, the design of policies and proposals about social change. It can be used as an alternative to mainstream economics to empirically assess aspects of an individual or group well-being and to examine inequality and poverty. It can also be used as an alternative to mainstream cost-benefit analysis, or as a framework to develop and evaluate policies ranging from welfare state design in relatively affluent societies, to governmental and non-governmental development policies in poor countries (Robeyns 2011). It has been used to evaluate and inform policies that affluent countries and international institutions deploy in their efforts to aid poor countries (Robeyns 2006, 2011). The Capability Approach is multidimensional as several things matter at the same time in the assessment of well-being. Well-being cannot

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be reduced to income, or happiness or any single thing (Alkire and Deneulin 2009, Nussbaum 2011) as traditional economic frameworks suggest.

2.3.1 Beings and doings

Sen's definition of functionings has evolved with time. In 1985 and 1993 he defined a functioning as an achievement of a person or what s/he manages to do or be. It reflects, as it were, a part of the "state" of that person (Clark 2005). In 1999 Sen's definition of functionings was "the various things a person may value doing or being" (Alkire and Deneulin 2009). Both definitions assert that in their most basic sense, functionings consists of two elements, "beings and doings".

Sen introduced an important phrase in his 1999 definition which is the phrase "may value" which Alkire and Deneulin (2009) used to expand their definition of functionings "a functioning is being or doing what people value or have reason to value". The phrase "value or have reason to value" has become vitally important in the definition of functionings. Alkire and Deneulin (2009) posit that although this phrase may sound somewhat abstract, it has practical importance.   Alkire and Deneulin (2009) assert that functionings are things people value. In other words, an activity or situation, "counts" as a functioning for that person only if that person values it. This encourages the participation and engagement of those people whose lives are at stake in order to ascertain whether they will value changes that might ensure.

Functionings are things that people actually value, as well as have reason to value (Alkire and Deneulin 2009). Hence information on people's actual values is given central importance. It is also of practical relevance to understand if people's values and ensuing behaviours are deliberated and informed, or based on inaccurate information, social norms, or manipulation (Alkire 2008).

Functionings are therefore valuable activities that a person can undertake and various states of beings and doing that make up people's wellbeing. Functionings are seen as constitutive elements of living (Sen 2004) and being. They are an achievement of a person: what s/he manages to do and be, and as such functionings reflect, as it were, a part of the state of that person (ibid.). To say functionings are constitutive of a person's being means that one cannot be a human being without having at least a range of functionings (Robeyns 2011). Robeyns (2011) further argues that functionings make the lives of people both lives (in contrast to the existence of innate objects) and also human (in contrast to the lives of trees). Human functionings are those beings and doings that we take to constitute a human life and which are central in our understanding of ourselves as human beings (ibid.). As a result, living may be seen as a set of interrelated functionings.

Sen emphasises that functionings are crucial to an adequate understanding of the Capability Approach. Capability is conceptualized as a reflection of the freedom to achieve valuable functionings. In other words, functionings are subjects of capabilities referred to in this approach: what we are capable, want to be capable, or should be capable to be and to do. A person's chosen combination of functionings,

what they are, and do, is part of their overall capability set, the functioning they were able to do, or be. The combination of a person's functioning at the end of the day represents their actual achievements.

Functionings are also related to goods and income but describe what a person is able to do and be with these (Alkire and Deneulin 2009). For example when people's basic need for food (a commodity) is met, they enjoy the functioning of being in a well-nourished state Alkire and Deneulin (2009). Clark (2005) clarifies that achieving a functioning (e.g. being adequately nourished) with a given bundle of commodities (e.g. bread and rice) depends on a range of personal and social factors (e.g. metabolic rate, age, gender, climate conditions). A functioning will therefore constitute the use a person makes of the commodities at his/her disposal (ibid) and this supports the claim that functionings are the proposed conceptualization for interpersonal comparisons of (achieved) well-being (Robeyns 2011).

One can note that functionings, as observed by Alkire and Deneulin (2009), relate to many different dimensions of life including survival, health, work, education, relationships, empowerment, self-expression and culture. They are also an active realisation of one or more capabilities or opportunities and need not be especially active, or, to use the term of one critique (Nussbaum 2000), "muscular", because enjoying good health and food could count as much as lying peacefully on the grass. They are beings (e.g. well nourished, being housed in a warm home, being educated, being illiterate, being depressed, being calm) and doings (e.g. travelling, voting, taking drugs even) that are the outgrowths or realizations of capabilities
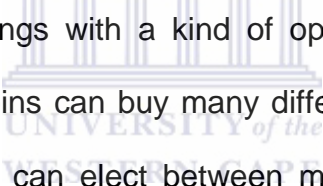
(Nussbaum 2011) and the actual levels of achievements attained will be in various dimensions (Sen 2004). Alkire (2008) affirms that it is important to note that by definition functionings are valuable both objectively and to the person concerned. But the fact that they are valuable does not mean that they can be mechanically reduced to a single common denominator, such as happiness.

2.3.2 Combination of beings and doings

Sen's definition of what capabilities are has also evolved with time. Sen (1992) defined capabilities as the various combinations of functionings (beings and doings) that a person can achieve. He further noted that capabilities are thus a set of vectors of functionings, reflecting a person's freedom to lead one type of life to another, to choose from possible livings. In 1999, Sen (1999) proclaims that capabilities are the substantive freedoms (a person) enjoys to lead a kind of lifestyle s/he has reason to value. Sen simplified his definition in 2004 and postulated that capabilities are choices that one has (Sen 2004) but broadened it the following year by asserting that capabilities can be seen broadly as freedoms of particular kinds (Sen 2005).

The above definitions all suggest that capabilities are a practical choice for one to function in any way they so wish. One can stress therefore that a capability is an opportunity or freedom to be or do what a person would like to be or do (Goldin 2010, 2013). Capabilities are alternative combinations of beings and doings (functionings) that a person can achieve. Saith (2001) adds that a capability reflects a person's ability to achieve a given functioning (since they reflect the alternative combinations of freedoms from which a person can choose one combination).

As Alkire and Deneulin (2009) and Sen (2005) assert, capabilities represent the genuine opportunities or freedoms to realise and achieve valuable combinations of human functionings (i.e. what a person is able to be and do). They concentrate on the opportunity to be able to have combinations of functionings, and a person is free to make use of this opportunity or not[8] (Sen 2005). The capability of a person is therefore a derived notion as it reflects a person's freedom to choose between different ways of living (Sen 2004). To use Sen's example a person who is starving and a person who is fasting have the same type of functioning where nutrition is concerned but they do not have the same capability, because the person who fasts is able not to fast but a starving person has no choice (Nussbaum 2011, Clark 2005).

Capabilities combine functionings with a kind of opportunity freedom. Just like a person with a pocket full of coins can buy many different combinations of things, a person with many capabilities can elect between many different functionings and pursue a variety of different life paths (Alkire and Deneulin 2009). For this reason, the capability set has been compared to a budget set (ibid.) which represents a person's opportunity to freedom and their freedom to choose between alternative functioning combinations (Clark 2005). Each of our capability set represents the real opportunity that we have to accomplish what we value (Sen 1992). Capabilities are thus described as the real and actual possibilities open to a given person (Alkire and Deneulin 2009).

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[8] This has led some to criticize the Capability Approach by stating that it does not encourage people to reach their optimal levels of performance. Criticisms of the framework will be discussed later in the chapter (p 34)

Capabilities represent people's effective opportunities to undertake actions and activities that they have reason to value, and to be what they choose to be (or to do) and these beings and doings constitute what makes a given life valuable (Robeyns 2006). They are the conceptualization for interpersonal comparisons of the freedom to pursue well-being which Sen calls "well-being freedom" (Saith 2001) thus constituting the ultimate ends of interpersonal comparisons. This therefore implies that the Capability Approach evaluates policies and other changes according to their impact on people's capabilities as well as their functioning (Robeyns 2011).

The framework of capabilities helps, in Sen's judgement, to clarify and involve epistemic issues (including claims of objective importance) as well as ethical and political ones (Sen 2005). Importantly, it places emphasis on the need for public reasoning. One of the uses of the capability perspective is to bring out the need for transparent valuational scrutiny of individual advantages and adversities, since the different functionings have to be assessed and weighted in relation to each other, and the opportunities of having different combinations of functionings also have to be evaluated (ibid.).

So what then are capabilities? They are answers to the question, "what is this person able to do and to be?" (Nussbaum 2011). Sen calls them "substantive freedoms", a set of (usually interrelated) opportunities to choose from (Sen 2005) and to act (Nussbaum 2011). Sen (2000) states that a person's capability refers to the alternative combinations of functionings that are feasible for him/her to achieve. They are not just abilities residing inside a person but also the freedoms or opportunities

created by a combination of personal abilities, political, social and economic environments (ibid.). Capability thus captures not only achievements but also unchosen alternatives; it scans the horizon to notice roads not taken (Alkire 2008).

2.3.3   Capability Approach critiqued

Several commentators have criticised Sen for failing to supplement his framework with a coherent list of important capabilities (Clark 2005). In his defence, Sen states that his reluctance to join the search for a canonical list, such as the one that Nussbaum (2000) and Goldin (2013) propose, arises partly from his difficulty in seeing how the exact lists and weights would be chosen without appropriate specification and the context of their use (which would vary), but also from a disinclination to accept any substantive diminution of the domain of public reasoning (Sen 2005). He further asserts that there are many ambiguities in the conceptual framework of the Capability Approach. Indeed, the nature of human life and the content of human freedom are themselves far from unproblematic concepts (Sen 2004). Sen proclaims that it is not his purpose to brush such difficult questions under the carpet. In so far as there are genuine ambiguities in the underlying objects of value, these will be reflected in corresponding ambiguities in the characterisation of capabilities (ibid.). He further points out that in social investigation and measurement, it is undoubtedly more important to be vaguely right rather than to be precisely wrong (ibid.).

Another line of criticism casts doubt on the usefulness of the Capability Approach for making inter-personal comparisons of well-being in the presence of potential

disagreements about the valuation of capabilities including the relative weights to be assigned to these capabilities (Clark 2005). This is because the Capability Approach tells us what to consider salient, but it does not dictate a final assignment of weights nor does it assign a sharp edged decision (Nussbaum 2011).

There is another question that has brought the Capability Approach into question and that is on the practical significance of the Capability Approach to policy-making and empirical assessment (Alkire and Deneulin 2009). Frediani (2007) argued that given the rich array of functionings that Sen takes to be relevant, given the extent of disagreement among reasonable people about the nature of the good life, and given the unresolved problem of how to value sets, it is natural to ask how far Sen's framework is operational.
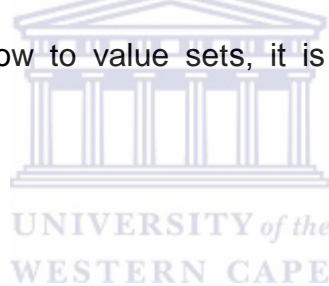
Furthermore while the Capability Approach argues that public debate and critical scrutiny are often helpful in deciding what people have reason to value, it stops well short of proposing one particular process as relevant in contexts, and rather depends on the agency of people acting in those contexts to address these questions themselves and build up and share their repertoire of good practices (Alkire and Deneulin 2009).

Robeyns (2011) argues that the Capability Approach does not focus entirely on ends, but rather on the question whether a person is being put in the condition in which she can pursue her ultimate ends. For example it focuses on capabilities like

being literate. Whether a particular person then decides to translate this general capability into a more specific capability like for example reading street signs or a bible is then up to them (Robeyns 2011). The question in the Capability Approach is rather whether a person has these capabilities in more general terms (ibid.).

Deneulin (2008) criticizes the Capability Approach for focusing too much on evaluative rather than prospective analysis. Robeyns (2011) adds that understood as an evaluative framework, the Capability Approach is a fairly limited structure. Its limitation in particular is that many of its users contend that it will (also) generate a set of alternative activities, policies or institutions that would expand capabilities more than the current set, or a set generated by a traditional or alternative approach (Robeyns 2011). While methodologically individualist, the Capability Approach exudes too little interest in conditions of capability expansion. Robeyns (2011) also argues that without structures of living together or being in social contexts (as she talks about groups and the way that individuals act within groups), the Capability Approach is unable to generate the kind of recommendations needed to promote capabilities, and thus it cannot advance its own objective of expanding capabilities.

2.3.4 Strengths of the Capability Approach

One of the chief strengths of Sen's framework is that it is highly flexible and exhibits a considerable degree of internal pluralism. This allows researchers not only to develop but also apply it in many different ways (Alkire 2002). The approach is also conceived as a flexible and multipurpose framework which explains why the term Capability Approach, with the emphasis on the word approach, was chosen

(Robeyns 2011). This is one of the reasons that this alternative framework to standard economic measures has continued to gain popularity amongst researchers.

There is on-going debate amongst the Capability Approach theorists on the subject of capability lists. The fact that Sen does not subscribe to a fixed or definite list of capabilities creates both advantages and criticisms for the framework. Clark (2005) draws attention to Sen's argument that the selection and weighting of capabilities depends on personal value judgements (which are partly influenced by the nature and purpose of the evaluative exercise). As we have noted above, Sen refuses to endorse a unique list of capabilities[9] as "objectively correct" for practical and strategic reasons (ibid.). Instead, Sen indicates that the Capability Approach can be used to assess individual advantage in a range of different spaces. For example, the assessment of poverty might involve concentrating on a relatively small subset of basic capabilities while evaluating well-being or human development on the other hand seems to require a much longer and diverse list of capabilities (Alkire 2002).

Clark (2005) postulates that Sen's Capability Approach has been praised for broadening the informational base of evaluation, refocusing on people as ends in themselves (rather than treating them merely as means to economic activity for instance). Sen acknowledges that different people, cultures and societies are bound

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[9] Martha Nussbaum has come up with a list. Here is a ten point list of capabilities that she argues is a bare minimum requirement in defining the requirements of a life worthy of human dignity. She calls them central capabilities and they are life, bodily health, bodily integrity, senses, imagination and thought, emotions, practical reason, affiliation, other species, play, control over one's environment: political and material. She also explicitly states that the list is not a conclusive one

to have different values and aspirations (Clark 2005, Sen 2004) and they should participate through public debate in deciding what capabilities matter to them.

The Capability Approach provides an alternative evaluative framework that deals with poverty and development. This is of paramount importance in the water sector due to the links between water and poverty. Lack of water is often an insurmountable obstacle to helping oneself and communities get out of poverty. Without adequate water people and communities cannot grow food to feed their families and generate some income and as such cannot stay healthy. The lack of water may also affect those of school going age as they may not be able to stay at school because they are, for instance, helping collect water. In short, poor health, hunger and lack of education are strongly associated with the lack of adequate water and these can also keep people trapped in poverty. Inadequate water erodes the income earning potential of the poor and affects their overall health and general wellbeing. On the other hand, access to water can provide individuals, households and communities with a foundation for other forms of development.

2.4 Why the Capability Approach

As our discussion above has shown, the Capability Approach purports that freedom to achieve well-being is a matter of what people are able to do and to be, and thus the kind of life they are effectively able to lead (Robeyns 2011) and have reason to value (Alkire and Deneulin 2009). The Capability Approach holds firm the notion that functionings and capabilities are the best metric for most kinds of interpersonal evaluations and comparisons. In other words, those interpersonal evaluations should

be conceptualized in terms of people's capabilities to function, that is, their effective opportunities to undertake actions and activities that they have reason to value, and be the person that they have reason to want to be (Robeyns 2011). These beings and doings together are held to constitute what makes a life valuable.

The Capability Approach is generally conceived as a flexible and multi-purpose framework, rather than a precise theory of well-being (Sen 1992). It is, as Goldin (2010) has said, unabashedly normative. It is not an explanatory theory: in other words, it is not a theory that will explain poverty, inequality, or well-being, but rather a theory that helps us to conceptualize these notions (Robeyns 2011). Nevertheless, the notions of functionings and capabilities in themselves can be employed as elements in explanations of social phenomena, or one can use these notions in descriptions of poverty, inequality, quality of life, and social change (ibid.).
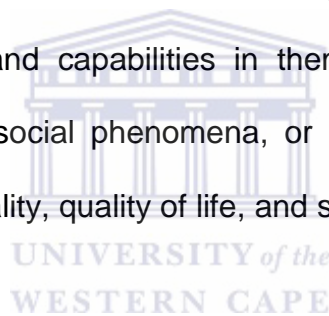
2.4.1 Allows for individualisation
The Capability Approach views human beings as active agents, directing their own lives and acting as agents that further larger social goals and objectives. Thus freedom and practical reason are central concepts (Alkire 2008). The Capability Approach yields a form of universalism that is sensitive to pluralism and cultural differences (Nussbaum 2000). In this way it enables researchers to answer the most powerful objections to cross cultural universals. It is superior to approaches based on subjective welfarism (ibid.). Sen asserts that the capabilities one strives for should be understood to be valuable for each and every person, and that it is the capability of each that should be considered, when asking how nations are doing.

A strong acknowledgment of human diversity is one of the key theoretical driving forces of the Capability Approach. Its criticism of other normative approaches is often fuelled by, and based on, the claim that the full human diversity among people is insufficiently acknowledged in many normative theories (Robeyns 2011). The Capability Approach thus takes account of human diversity in at least two ways:

- First, by its focus on the plurality of functionings and capabilities as important evaluative spaces. By including a wide range of dimensions in the conceptualization of well-being and well-being outcomes, the approach broadens the so-called 'informational basis' of assessments, and thereby includes some dimensions that may be particularly important for some groups but less so for others. For example, in standard outcome assessments, women as a group virtually always end up being worse off than men (Nussbaum 2011). But if the selection of outcome dimensions is shifted to also include the quality and quantity of social relations and support, and being able to engage in hands-on care, then the normative assessment of gender inequality becomes less univocal and requires much further argument and normative defence, including being explicit about how to aggregate different dimensions (Robeyns 2003)

- Secondly, human diversity is stressed in the Capability Approach by the explicit focus on personal and socio-environmental conversion factors that make possible the conversion of commodities and other resources into functionings, and on the social, institutional, and environmental context that affects the conversion factors and the capability set directly (Robeyns 2011). Each individual has a unique profile of conversion factors, some of which are

body-related, others of which are shared with all people from a community, and still others of which are shared with people with the same social characteristics (e.g., same gender or class or race characteristics). In short an assessment of the quality of life without individual level analysis is incomplete (Alkire 2008)

The Capability Approach recognises genuinely distinct, plural and incommensurable kinds of human achievements. They are incommensurable in the sense that no permanent priority or relative weight can be associated with them (Alkire 2008).

2.4.2 Measure of well-being

While resources are clearly vital and essential instruments to achieving a high quality of life, there are several reasons why quality of life measures based on resources alone could be insufficient (Sen 1985). First, many resources are not intrinsically valuable, they are instrumental to other objectives, yet the quality of life arguably depends not on the mere existence of resources but on what they enable people to do and be (ibid.). The value of the living standard lies in the living, and not in the possessing of commodities, which has derivative and varying relevance (Sen 1999). This would not be problematic if resources were a perfect proxy for intrinsically valuable activities. But instead people's ability to convert resources into a valuable functioning varies in important ways. Having a flat screen plasma television might be a delightful source of recreation, pleasure and status to one particular family. But if a family does not have electricity or any source of energy like solar or a generator, its presence in their household would not automatically augment their quality of life to the same degree.

The Capability Approach to measuring the quality of life conceives of a high living standard in terms of the freedom people have to enjoy valuable activities and states (Alkire 2008). Sen (2008) argues that unless we can justify our goals by how people feel, there is a real danger of paternalism. We ought never to say: this is good for you, even though it might make you or others feel better. On the contrary, if we want to measure the quality of life, it must be based on how people feel (ibid.). Unlike resources, evaluated life satisfaction is arguably of intrinsic value and being happy seems to be a momentous achievement in itself (Robeyns 2011).

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The Capability Approach emphasises that quality of life should be conceived and measured directly in terms of functionings and capabilities instead of resources or utility. The central feature of well-being is the ability to achieve valuable functionings. The need for identification and valuation of the important functionings cannot be avoided by looking at something else, such as happiness, desire fulfilment, opulence, or command over primary goods (Sen 1985).

2.4.3 Very specific

The Capability Approach specifies a space within which comparisons of life quality (how well people are doing) are most revealingly made among nations. Used in this way, it is a rival to other standard measures such as GNP. Sen's primary use of the notion of capability is to indicate a space within which comparisons of quality of life (sometimes referred to as standard of living) are most fruitfully made (Sen 2008). Instead of asking about people's satisfactions, or how much in the way of resources they are able to command, the Capability Approach asks, instead, about what they

are actually able to do or be. Sen has insisted that it is in the space of capabilities that questions about social equity and inequality are best raised.

The Capability Approach seems appropriate for the assessment of well-being, firstly, because it has the motivation and relevance that encourages researchers to be interested in the concept of well-being and the standard of living and so by doing gives justice to the richness of the idea. Secondly, the Capability Approach is practical in the sense of being usable for an actual assessment of well-being.

2.5 Uses of the Capability approach

The Capability Approach is generally understood as a conceptual framework for a range of normative exercises:

- The assessment of individual well-being

- The evaluation and assessment of social arrangements, and

- The design of policies and proposals about social change in society

As we have pointed out above, in all these normative exercises, the Capability Approach places importance on peoples' beings and doings and their opportunities to realize those beings and doings. This stands in contrast to other accounts of well-being, which focus exclusively on subjective categories (such as happiness) or on the material means to well-being (such as resources like income or wealth) proclaims Nussbaum (2011).

We have suggested that scholars and policy makers use the Capability Approach in a wide range of fields, most prominently in development studies and policymaking, welfare economics, social policy, and social and political philosophy. Yet across these areas, the Capability Approach can be employed in both narrower and broader ways (Alkire 2008, Robeyns 2011). In the more narrow way, the Capability Approach tells us what information we should look at if we are to judge how well someone's life is going or has gone; this kind of information is needed in any account of well-being or human development (Alkire 2008). Since the Capability Approach contends that the relevant kind of information concerns human functionings and capabilities, the approach provides part of what is needed for interpersonal comparisons of well-being. This makes the approach attractive to a variety of theorists and scholars since interpersonal comparisons are needed for a range of different exercises, such as comparing how well two persons (or groups or societies) are doing at the same time or comparing one person (or groups or society) at two different moments in time (ibid.).

In the narrower use of the Capability Approach, the focus is often strictly on the evaluation of individual functioning levels or on both functionings and capabilities. However, to apply this approach, one also needs to decide which are the beings and doings that matter for the various normative usages of the approach (the selection of functionings and capabilities). One should also consider how each person's various functionings or capabilities are to be aggregated into one overall assessment of well-being, or of freedom to achieve well-being (Robeyns 2011). These are crucial challenges for the Capability Approach as, we know now, that Sen does not endorse

any one particular list of capabilities. It is therefore crucial that people decide for themselves what it is that matters and what is important to them. Robeyns (2011) argues that Sen draws on his idea of agency to argue that each group should itself select and weigh the aggregate capabilities that enable then to attain well-being.

In its broader uses, the Capability Approach not only evaluates the lives of individuals (as in the more narrow use), but also includes other considerations in its evaluations. For example, the broader use of the capability approach often pays attention to other normative considerations and other values other than only well-being, such as efficiency, agency, or procedural fairness (Robeyns 2011).
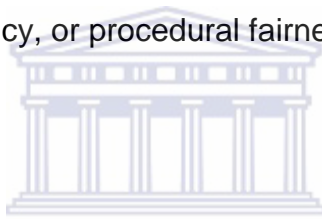
2.6 Capability Approach and collective action
Ethical individualism postulates that individuals, and only individuals, are the ultimate units of moral concern. This, of course, does not imply that one should not evaluate social structures and societal properties, but ethical individualism implies that these structures and institutions will be evaluated in virtue of the causal importance that they have for individuals' well-being (Alkire 2008). In essence, ethical individualism is appealing because it does not allow the achievements of a group to be celebrated without taking note of deprivations and 'unfreedoms' that certain members of the group may quietly suffer (ibid.). Of course in many groups advances may be shared equally. But if a society systematically chooses a collective unit of analysis such a social group, or a community, then assessments of the quality of life will be systematically blind to any existing or potential inequalities within these units (ibid.).

Alkire (2008) postulates that the Capability Approach does hold the quality of life of each person to be of direct moral interest. However it does not support one other kind of individualism. It does not support ontological individualism, which would hold that society is built up from only individuals and nothing other than individuals, and hence is nothing more than the sum of individuals and their properties. In contrast, the Capability Approach advocates for participation, democratic deliberation, and collective action (Alkire 2008).

The process of improving quality of life often requires the sustained collective action of people, and indeed of generations. At an individual level people usually consult, discuss, and negotiate their goals with family and friends, so their very own goals are socially influenced. Beyond this, many capabilities cannot be produced or enjoyed individually, but require cooperation and public action. Furthermore, institutions and political and public action are vital to create and sustain capabilities over time (ibid.) Collective action can however come about as a result of many occurrences.

2.7   Shared dissatisfaction as a driver for collective action

A project that chronicles a case study of community engagement was done in the Pelindaba informal settlement near Sannieshof (Gouws et al. 2009). The Sannieshof community declared a dispute with the Tswaing local Municipality with regards to its service delivery. By coming together to lodge grievances with the local authority the community was proactive in their approach to this problem. Lessons learnt from this case are that a sense of local patriotism took over and bridged the racial divide within the community. What seemed to mobilise this high level of engagement was the shared dissatisfaction with the lack of consultation by local government (Blignaut and Choles 2011).

One of the benefits of effective cooperation and taking an active role in community issues is the public ownership of a project. Stakeholder ownership is important for the long-term success and upkeep of any project and must be seen as one of the criteria for its success (Clark 2005). This is especially important in water research and intervention projects, where the building of sustainable environments leads to the highest gains, creating environments to facilitate social learning and leading to long term sustainability as the local communities take responsibility for the upkeep of the project (Blignaut and Choles 2011).

The next section of this chapter will look at the dimensions of water and poverty relations.

2.8   Water for food security

Water is a scarce resource. It is critical for social and economic development, and directly affects the lives of communities (Appelgren and Klohn 1999). Food security requires sufficient amounts of water as water is a prerequisite for plant growth.

Water resources are distributed unevenly on the earth's surface. While the world as a whole may arguably have sufficient water to support its inhabitants (Yang and Zehnder 2002), it is not equally distributed both in time and space. Lack of water resources is a common predicament in many countries in Southern Africa. Water scarcity has become an increasingly real constraint to economic development, particularly food production (Appelgren and Klohn 1999), the biggest water user. Over the years, much of the effort in combatting water scarcity and increasing food supply has focused on expanding irrigation (Yang and Zehnder 2002). The bulk of

agricultural investment of both water scarce countries and international financial institutions and donors has been devoted to such activity (Gerbens-Leenes and Nonhebel 2004). Despite tremendous effort, the coverage of irrigation in most countries remains low simply because of scarce water resources and because of the limited potential for the expansion of irrigation (Yang and Zehnder 2002).

The expected increase of global food demand requires a great deal of effort to supply sufficient fresh water. Food security for a growing world population requires the availability of water of adequate quality and quantity. Crop growth requires water at the root zone of plants. The hydrological system of a crop comprises different main water flows that include precipitation, drainage, run-off, evaporation from the soil, and transpiration from the crop leaves. These flows interact and can therefore not be assessed independently. Moreover, local hydrological systems are highly variable in space and time, and sensitive to land use and its change (Appelgren and Klohn 1999). In South Africa, for example, rainfall varies between 400 and 500 mm per year which is a far cry from the world average of 800mm (Rockstrom 2003). Because the availability of water is a limiting factor for crop growth, communities have to find innovative ways of irrigating their crops (Gerbens-Leenes and Nonhebel 2004).

Thus, water is one of the main factors limiting future food production, particularly in the poorest areas of the world where access to water and its timely availability is a problem (IMWI 2007). Over 1.6 billion people live in areas of physical water scarcity

and, as research from IWMI (2007) warns, without changes in management this figure could soon grow to 2 billion.

2.8.1 Moving forward despite scarcity

In contrast to the disappointing food production, there is increased growth of population and hence food demand has been rapid in most water scarce countries (Yang and Zehnder 2002). With the intensification of water stress and the limited potential for additional water supply, increasing emphasis has been given to the improvement of water use efficiency in recent years (Gerbens-Leenes and Nonhebel 2004). In the agricultural sector, this has been concretized as ''more crop and higher value per drop'' (IMWI 2007). A classical pursuit of this goal has been to shift to higher-value cash crops, typically vegetables and fruits. It has been widely accepted that this shift is conducive to raising rural incomes while providing them with nutritional diets and Israel has often been referred to as a successful case in this regard (Yang and Zehnder 2002). Many developing countries are encouraged to follow this path. However, despite the seemingly apparent rationale involved in the shift, its pace in most water scarce countries has been slow.

2.9   Food security

Food security, meaning access to adequate food for all, at all times, requires sustainable and increased production and productivity in the agricultural sectors as well as more equitable distribution of food produced (IMWI 2007). Hence Rockstrom (2003) proclaims that food security is the product of many variables including physical factors such as climate, soil type and water availability; management of these and other natural resources (water, land, aquatic resources, trees and

livestock), and that this management is at the level of fields, landscapes and river basins. Wenhold et al. (2007) affirm that for food security to be achieved, adequate policies and institutions in the many sectors that influence the ability of men and women to produce and purchase food and the ability of their families to derive adequate nutrition from it, are required.

Also, as the discussion in this chapter has already showed, demand for the world's increasingly scarce water supply is rising rapidly, affecting its availability for food production and putting global food security at risk. The average availability of land, forest resources and water per person will continue to decline, especially for the poor women and men, compelling us to increase equitably the efficient use of natural resources (Wenhold et al. 2007). With a growing global population expected to reach 9.1 billion in 2050 and the increasing impacts of climate change, sustainable use of water and ecosystems for food security is a great challenge (IMWI 2007). Ecosystems have to be safeguarded and used wisely as they provide the backbone of all environmental services needed in achieving food security and are particularly important for the poor, women, and marginal groups (ibid.).

Wenhold et al. (2007) state that food security is the outcome of many interrelated factors, one of which is water as it is an essential resource for food production. People's access to water in rural areas, and the price of water, affects their food security for the following reasons:

- Rural water costs tend to be high and unstable, whether in monetary terms or in the time and effort required by households to fetch water, thus influencing their real incomes. For example, Khosa (2003 in Wenhold et al. 2007) reports that households in Sekuruwe and Molekane (Limpopo Province) paid 0.50 Rand for 20 litres of potable water obtained from private boreholes and travelled long distances to collect water from rivers or springs for purposes other than drinking and cooking

- Rural clean water sources are often vulnerable to droughts and floods, leading to increased costs of obtaining clean water at times when food prices typically are also likely to be high

- Water related local diarrhoeal diseases reduce food absorption. Nearly 50% of South African children do not have access to clean safe water and large numbers of children are hospitalised annually for complications as a result of diarrhoeal disease (King et al. 2006 in Wenhold et al. 2007). In South Africa diarrhoeal diseases are the third leading cause of death for South African children younger than five years (Wenhold et al. 2007)

- Access to water for livestock and particularly for the irrigation of crops, including food crops, is one of the ways poverty and food insecurity can be reduced in rural areas. This has resulted in water being called the dividing line between poverty and prosperity, as it is a cross cutting tool for the achievement of the Millennium Development Goals (MDG) and the improvement of the lives of the poor

Food production is the most water intensive activity in society and water is the number one food limiting factor in many parts of sub-Saharan Africa. Agriculture

accounts for 70% of the worldwide human fresh water use (Gerbens-Leenes and Nonhebel 2004) and this figure can be as high as 90% in developing countries (IWMI 2007). Whilst about 50 litres water per person is the recommended minimum for household use, 70 times as much (3 500litres per day) is needed to meet the consumptive water use for producing a projected human diet per day for one person (Wenhold et al. 2007). South Africa only has a provision of 25 litres per person per day in its 1998 National Water Act.

Water, is the main limiting resource in the dry rural regions where the prevalence of under-nutrition is high (Wenhold et al. 2007). At the global level, Rockstrom (2003) predicted that, if current water policies continue, farmers will find it difficult to meet the world's food demands and he projected that the global yield growth rate for all cereals will decline from 1.5% achieved between 1982 and 1995 to 1.0% per year during the period 1995 to 2025.
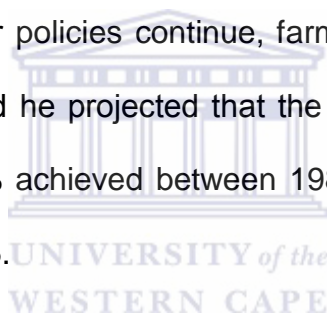
Methods of increasing production without using more water include promoting crops that are well adapted to harsh climatic and growth conditions, breeding drought-tolerant crops, applying low cost supplementary irrigation technologies for rain-fed areas, reutilising water, rainwater harvesting and using labour and/or water efficient irrigation technologies (IMWI 2007, Pereira et al. 2002, Wenhold et al. 2007,Yang and Zehnder 2002).

2.10 Water vulnerability, food security, and poverty relations

In order to reach the MDG[10] of eradicating poverty and hunger, water management in agriculture would need to be geared up to increase agricultural production and to meet increasing demands while maintaining affordable prices for the poor and sustaining essential ecosystem services (Rockstrom 2003). With continued population growth and the uncertainty that issues like global climate change bring, food and water security will continue to grow in importance (IMWI 2007).

The clear need for adequate water for the poor assumes greater significance when the linkages with other dimensions of poverty are considered. As already indicated above, water related diseases put severe burdens on communities and health services and this also keeps children out of school. Women in turn spend a lot of time in search of water instead of using that time for more productive opportunities. Figure 2.1 shows the linkages between lack of water and poverty as well as the impact to communities.

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[10] The Millennium Development Goals were a development in the international arena of 2000. These goals, consist of 18 targets measured by 48 specific indicators, and have now become the benchmarks by which all signatory countries assess their own progress in the global effort to reduce poverty

Figure 2.1:   Linkages between lack of water and poverty

Poverty dimensions	Effect on community
Lack of water	
Health	• Water borne diseases • Malnutrition which may result in diarrhoea which may in turn reduce level of life expectancy especially in infants • Stunted growth
Education	• Lack of water affects sanitation. If there is no proper sanitation at schools attendance may reduce • Schools may be forced to close due to lack of water and proper sanitation • Girls might be forced to drop out of school to help their mothers in fetching water for the family
Gender	• Women bear the burden of having to walk for long distances in search of water for their families, and this impacts on their health • Time consumed in water provision can be used for valuable activities which could improve their lives like bettering their education or caring for their families • Lack of water limits and prohibits women's ability to be economically productive • Women have different privacy requirements from men and use of public spaces for sanitation could mean they are forced to use bushes at night as well as hold their urine longer before passing it out which in turn negatively impacts their health • The girl child is especially affected during periods of menstruation

Water contributes to poverty alleviation in a variety of ways, these include; improving water supply and sanitation; enhanced health and resilience to disease; improving productivity and output; helping to provide more affordable food and working against the impacts of climate change and environmental degradation (IMWI 2007). Generally, the poorest populations in the world have the poorest access to water supplies and sanitation, and they are the most dependent on water resources for their daily livelihoods (Comprehensive assessment of water management in agriculture 2007).

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Increased agricultural production is one way that people are able to escape the condition of poverty. It allows more people to get an income from farming. It also increases food production, decreases the overall price of food, and allows the poor to consume a more nutritional diet and spend their income on other necessities (IMWI 2007).

With close links between society and water management, the importance of social and economic approaches to management of water scarcity is increasingly being recognised (Appelgren and Klohn 1999). The focus here is on the adaptive capacity of a given social group to address water scarcity, recognising also the limitations of these capacities. Social resource scarcity could limit not only the capacity to address water scarcity but could also have wider social security implications for adaptive processes and for the ability of communities to cope with outside stress factors. Societies have to find strategies and capacities to enable them to withstand and cope with any levels of water scarcity.

2.11 Summary

This chapter has traced the study framework, the Capability Approach, from its roots, considered its development, merits and criticisms. Based on this background the chapter proposed that the Capability Approach is ideal for measuring human well-being. We have shown that it is the best approach of a basic social minimum as it focuses on human capabilities (*i.e.* what people are actually able to do and be) in a way informed by an intuitive idea of a life that is worthy of the dignity of the human being. Issues around water vulnerability, food insecurity and poverty relations have

also been discussed as well as drivers of collective action. The next chapter will give attention to research methods in general and will focus on this study's research method and design used. Justification for the choice will be outlined.
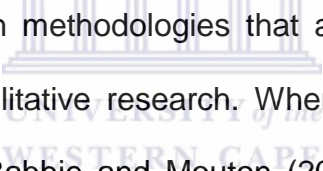
CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This chapter looks at the different research methodologies that are at the disposal of social scientists. We also provide an in-depth discussion on the research methodology and design that was adopted for this particular thesis. Reasons for the chosen design will also be highlighted as well as its limitations. The reader will also be informed of the data collection process.

There are two broad research methodologies that are used to conduct research: quantitative research and qualitative research. When one talks about quantitative research in social sciences, Babbie and Mouton (2009) proclaim that there are a number of related themes unique to it:

- There is emphasis on the quantification of constructs. Properties of phenomenon are believed to be best measured through quantitative measurement. This is done by assigning numbers to the perceived qualities of things. Attitudes towards certain things and behaviours are also measured through the assignment of numbers

- There is also an "obsession" for control which has earned this research methodology many criticisms. The nature of control is either through experimental or statistical control

The other research method is qualitative research and it is the main one adopted for this thesis. Qualitative researchers attempt to always give an insider perspective to human action and behaviour. The main emphasis here for the researcher is to give a detailed description of human action and behaviour in an effort to understand it. Qualitative researchers attempt to always study human action from the perspective of the participants themselves. The researcher's lens is on grounded theory and other more inductive analytical strategies

Qualitative research methods include detailed observations that enable the researcher to be in the front row seat of the research participants' life experiences. Semi-structured and unstructured interviews, typical tools of qualitative research methodology are more attractive to qualitative researchers because they enable them to probe the participants so as to get detailed insights that will help in giving the researcher a deep understanding of actions, perceptions and behaviours. Qualitative research is thus an ideal choice for this thesis as it provides an opportunity to gain insights into how the group of women in Luphisi got together to start the group Vukani and it then helps us unravel how their working together has boosted the group in the face of external stress. The following section of this chapter considers in more detail aspects of qualitative research.

3.2   Qualitative research

Qualitative research is a broad methodological approach to study social action. It is a general approach in social research seen as departure point for an insider's perception on social research (Babbie and Mouton 2009). Royce et al. (1993) add

that it is a form of systematic empirical inquiry into meaning.   Royce et al. (1993) further point out that by systematic they mean planned, ordered and public, and that this means that there are rules that are followed and agreed upon by members of the qualitative research community. By empirical, they mean that this type of inquiry is grounded in the world of experience. Inquiry into meaning means researchers try to understand how others make sense of their experience.

Qualitative research is interpretive and naturalistic. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Babbie and Mouton 2009, May 2002, Royce et al. 1993). Qualitative research is routinely concerned with ways that people construct, interpret, and give meaning to these experiences. One of its distinctive features is this attempt to view the world through the eyes (perspective) of the participants (Babbie and Mouton 2009, May 2002, Royce et al. 1993).

Qualitative research is appropriate to research topics and social studies that appear to defy simple quantification (Babbie and Mouton 2009). The reality that qualitative researchers address is often contradictory, illogical and incoherent. The case of the Luphisi women of Vukani meets such characteristics. Qualitative methods irons out contradictions and in themselves contain a mysterious combination of strategies for collecting images of reality (May 2002). The laboratory of a qualitative researcher is everyday life and it can therefore not be contained in a test tube, started, stopped, manipulated or washed down the sink (Morse 1994). The emphasis on the natural setting means the researcher is well suited to the study of social processes in

particular spaces over time. For this study this meant that the researcher had to pack her bags and make her way to Luphisi, where she immersed herself in the field, staying in the village of Luphisi during the data collection phase of the research.

3.2.1 Describing and understanding

The goal of qualitative research as defined by Patton (1987) is descriptive and is about understanding rather than explanation and prediction of human behaviour. Its focus is on what the anthropologist Clifford Geertz in 1973 called 'thick description.' Qualitative data is able to provide this depth and detail through direct quotations and by careful description of a situation (May 2002). Direct quotation and case documentation of qualitative methods are collected as open-ended narratives without attempting to fit activities or people's experiences into predetermined, standardized categories (Patton 1987).
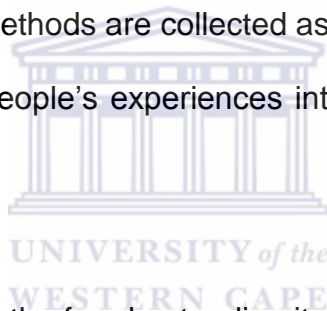
Its chief strength lies in the depth of understanding it may permit. Patton (1987) adds that qualitative methods permit the researcher to study selected issues, cases, or events in depth and in detail. Qualitative methods produce a wealth of detailed and nuanced data about a small number of people or cases.

3.2.2 The case study approach

As has been stated above, the depth and detail of qualitative methods is typically derived from a small number of case studies (Patton 1987). This is because a case study allows for an in-depth understanding where the researcher is able to participate in the everyday experiences of people living in a particular place. In this thesis, one village has been chosen. This is the village of Luphisi and it is the site of

investigation where the case study is framed. Honing in to an even smaller unit of analysis allows the researcher to understand in the greatest possible depth the nuances, meanings, experiences and interpretations of the lived reality of people in particular settings.

In the thesis, this scale of analysis is even smaller than the village because the study engages with the lived experiences of particular people within this site, namely the women's group, called Vukani. This is a group of women who are participating in a rainwater harvesting project that has been implemented in the village to improve food security. Vukani has 21 members. The purpose of choosing one group of women is to gain as deep an understanding as is possible, in the time of the research, about how women work together and how collective action is increasing their capabilities (opportunities) so that they become more resilient to external stress and manage get out of their poverty trap.

Let us consider in more detail what a typical case study involves. Punch (2000) proposes that a given case will be studied in detail and that this will be done using whatever methods seem appropriate. The general objective is then to develop as full an understanding of that case as possible. The case study aims to understand the case in depth, and in its natural setting, recognizing its complexity and its context (Patton 1987). A case study approach adopts a holistic focus, aiming to preserve and understand the wholeness and unity of the case.

Punch (2000) identifies four characteristics of a case study:
1. The case is a bounded system - it has boundaries

2. The case is a case of something

3. There is an explicit attempt to preserve the wholeness unity and integrity of the case

4. Multiple sources of data and multiple data collection methods are likely to be used, typically in a naturalistic setting

The case study approach that is adopted in this thesis adheres to the four principles identified above. The bounded system is the women's group in Luphisi. There are boundaries, therefore, around Luphisi as a village and around a group of women in particular who live in this village. Final boundaries are in the form of their gardening project which forms the study focus for this thesis. The case is a case of something – it is the case of women who are working together in a food garden and who are concerned with food and water security. Thirdly, there is an explicit attempt to approach the topic in a holistic manner. The women's everyday living experiences will be traced and the women will not be treated as 'floating' objects, but as people embedded in a reality that has many dimensions to it. These women are mothers, sisters, daughters, friends, relatives and so forth and they have multiple roles within the village setting. They are not 'just' women in a food garden. And finally, point four that is made by Punch (2000) above is about multiple data collection methods. The methods used will include, participatory mapping, participant observations and face – to-face interviews as well as meetings with key stakeholders in the community who stand outside the women's group.

3.2.3 Participant observation

To understand fully the complexities of a given situation, direct participation in, and observation of the phenomenon of interest may be the best research method. Because of the limitations of how much can be learned from what people say, to understand fully the complexities of a phenomenon, observation may be the best solution (Patton 1987). The participant observation method assisted the researcher in understanding how collective action by these women has enabled them to cope with external water stress and these insights were gained not only through the verbal protocol that took place between the researcher and the women, but also the gestures, expressions and body language that the women show.

By spending time with the women while working with them in their garden, the student researcher, was able to observe how they interact with one another. She was also able to note who interacted with whom and in what ways these interactions could be interpreted so that they contributed to a better understanding of the strengths and opportunities as well as possible obstacles, that are part of collective action.

Participant observation refers to a form of sociological research methodology in which the researcher takes on a role in the social situation under observation. The researcher immerses herself in the social setting under study, getting to know key participants in that location (Kawulich 2005). The researcher, as an observer, is said to therefore participate actively in the daily lives of the people or the situations under study and thus becomes completely absorbed, at least for a short while, in the group under observation.

This study used overt observation. This meant that the researcher was open about the reason for her presence in the field of study. The researcher obtained permission from Vukani and other stakeholders who engage with this group to conduct the research. In this case the women were aware of the researcher's role. Another ethical responsibility is to preserve the anonymity of the participants in the final write-up and in field notes to prevent their identification.

The women were observed in their natural setting which was mostly in their garden and the researcher openly collected data and in so doing, avoided the trap, or at least reduced the temptation, of "going native".

Problems associated with overt observation include the observer effect, where the behaviour of those under study may alter due to the presence of the researcher. Of course too, the observations and filter of the researcher might also distort not only what the researcher observes, but also the subjective interpretation of what gestures, words or actions actually mean.

3.2.4 Why participant observation

Observation methods are useful to researchers in a variety of ways. They provide researchers with ways to check for non-verbal expression of feelings, determine who interacts with whom, grasp how participants communicate with each other, and check for how much time is spent on various activities (Smith 1997). Participant observation allows researchers to check definitions of terms that participants use in interviews, observe events that informants may be unable or unwilling to share when doing so would be impolite, or insensitive, and observe situations informants have

described in interviews, thereby making them aware of distortions or inaccuracies in descriptions provided by the participants (Kawulich 2005).

3.2.5 Goals and aims of participant observation
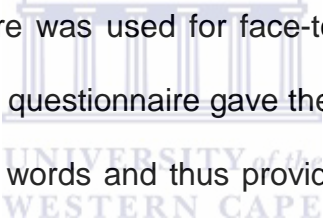
Punch (2000) suggests that participant observation be used as a way to increase the validity of the study, as observations may help the researcher have a better understanding of the context and phenomenon under study. Validity is stronger with the use of additional strategies used alongside observation, such as interviewing and questionnaires. Participant observation in this study will be used to help answer descriptive research questions, to build theory, and to test hypotheses.

As is clear from the above discussion, the aim of participant observation is to produce a thick description of social interaction within natural settings. Participants are encouraged to use their own language[11] and everyday concepts to describe what is going on in their lives. Hopefully, in the process a more adequate picture emerges of the research setting as a social system described from a number of participants' perspectives (Patton 1987, Smith 1997). In other words this study sought to find meaning in the encounters and situations that women find themselves and to watch, observe, synthesise, analyse and participate in everyday situations that tell the story of who these women are and what brings meaning and purpose to their lives.

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[11] Most of the Vukani members speak SiSwati and the researcher is a Ndebele speaker (which is more like Zulu). Although the researcher could hear and understand a few of the common words it was not enough to talk to the women to a level of common understanding so the researcher had a SiSwati interpreter from Luphisi

3.3   Individual interviews: semi-structured in-depth interviews

We cannot observe behaviours that took place at some previous point in time or situations that preclude the presence of an observer. We cannot observe how people have organised the world and the meanings they attach to what goes on in the world. We have to ask people questions about such things. The purpose of interviewing, then, is to allow us to enter the person's world and gain insights into that person's view on everyday reality in which that person finds herself at a given point in time. Interviews therefore allow researchers to learn about those things that cannot simply be observed and grasped in the moment but that need some reflection and narrating to the researcher.

A semi structured questionnaire was used for face-to-face interviews. Open-ended questions that were part of this questionnaire gave the participants the opportunity to answer questions in their own words and thus provided a subjective perspective to outward behaviours. The questions were about people's experiences, perceptions, opinions, feelings, fears, hopes and knowledge in relation to food and water in particular, but also to their everyday lives in general. Because of the freedom the participants had in answering, the data received was rich. It revealed participant's logic, thought processes, and the strength of their opinions, feelings as well as the way in which they experience their everyday lives alone, and with other women in their village.

The data that was collected provided verbatim quotations with sufficient context and texture to be interpretable. This data helped the researchers understand the world as seen by the participants. The researcher also had the opportunity to elicit fuller,

more complete responses through probing. The data was recorded as direct quotations with the hope that it would bring the necessary nuances and texture for the reader.

3.3.1 Disadvantages

The disadvantage of qualitative face-to-face interviews is that the responses are usually long, detailed and quite disparate in their content. This presents a problem in coding and analysis as the responses are neither systematic nor standardised. Another pitfall of this mode of data collection is that participants may be reluctant to reveal detailed information of what they consider to be socially unacceptable opinion or behaviour.

3.4 The particular: actual data collection process

As already stated earlier in this chapter there are rules that are followed and agreed upon by members of the qualitative research community. As a novice researcher, it was important to learn and adhere to these rules. Before setting feet in the field, the researchers had to comply with the University ethics research requirements. This meant applying for an ethics approval to do this research. This application is made up of the ethics application SR 1 form (See appendix A), translator statement (see appendix B), the information sheet (see appendix C), the consent form for the participants (see appendix D) and the questionnaire (see appendix E).

The SR1 form is an application by the researcher to conduct field work; it gives a brief discussion of the research, its background, rationale, objectives, the research

methodology and importantly it contains an ethics statement. Because there is a need to use different languages spoken between the researchers and the participants there was a need to seek the services of a translator. The information sheet[12] clearly outlines the purpose of the study, the rights of the participants during the study, risks, benefits if any that the participants will incur, contact details of the research team and the ethics statement that promises to guard the identity of the participants and to restrict the use of data collected for the research goal. And finally, though importantly, through the consent form, the researcher asks for permission and consent from the participants to participate in the research.

The initial ethics application was submitted for consideration to the Ethics Review Board of the University of the Western Cape on the 2nd of October 2012 and feedback was given on the 5th. There were corrections that were done in order to comply with the Ethics sub-committee Review Board's requirements before the application could be tabled to the Ethics committee on the 12th. Final approval was granted on the 19th of October 2012.

While processing the ethics application there was also engagement with the traditional local and political leaders of Luphisi, informing them about the researcher's intentions to conduct research in their village. Various stakeholders

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[12] The information sheet is given to each participant before any data can be collected or any engagement with the participants can take place. The contents of the sheet are thoroughly read to make sure that the participant is fully aware of the study purpose and his or her role in providing data for the study

connected to Vukani were also contacted and informed about our research intentions.

The first six days (23 to 28 October 2012) in Luphisi were spent in the garden working with and talking to the women about the garden and about everyday life in the village of Luphisi.. During this time the researcher was able to participate in the everyday activities of the women although most of this time the researcher was in the garden with the women. The next three days were spent in the Vukani office conducting semi-structured interviews with key stakeholders. On the first day only three women were interviewed. Interviews took between an hour to an hour and a half with each participant. These were face-to-face interviews. The researcher also had the opportunity to talk to the traditional leader as well as a representative from the Ministry of Agriculture. Staff from one of the Non-Governmental Organisation (NGO's)[13] which has become an important part of garden project, were also interviewed. The researcher spent a total of ten days in the field collecting data. A total of 16 out of the 21 members of Vukani were interviewed during this time.

3.5   Summary

This chapter has described the qualitative research methodology adopted for this study. Its main goal is to describe human phenomena and to provide a thick description of participant's experiences. The chapter has also informed the reader that a case study of Vukani was used for this thesis. Overt participation and face-to -face interviews using a semi-structured questionnaire were the instruments that

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[13]   The NGO is an environmental education and training centre called Ecolink

enabled the researcher to collect data from Vukani. The chapter also presented the reader with the institutional administrative requirements for data collection. The next chapter will present the reader with empirical work, research findings and the discussion of the finding.

CHAPTER FOUR

EMPIRICAL WORK: FINDINGS AND DISCUSSION

4.1   Introduction

After all the administration work was done and approved and I was given the consent

to go to collect data in the field, it took me about 72 hours to get my bags all packed.

Armed with my questionnaires, a voice recorder, some stationery and a few personal

items, I set off for Mpumalanga's Luphisi village. This was to become my temporary

home for the duration of my data collection.

I was happy to find myself in Luphisi village in Vukani's garden on the 23rd of

October 2012 morning. I was formally introduced to the women by a member of the

NGO, Ecolink, who facilitated my access to the village and to the women in the

group. The reason for my presence was clearly explained and I then shared my

expectations of the Vukani women's group and also made clear to the group the

rights that they could expect from me as a researcher in their village.

As one enters the fenced and gated garden of the Vukani women's group it is

striking to see a brand new earth dam that was recently built for the women by

Ecolink. This 1000 cubic metre earth dam was full to capacity. The dam wall and the

area around it had Vetiver grass growing to stop any soil erosion and in line with

'best practice' there was no gardening activity within 4 metres of the dam. As one

moves towards the centre of the vegetable garden there are several garden beds

with vegetables and maize growing and because the maize was just germinating it was difficult to tell with a layman's eye what was weed and what was crop, some of the maize plants looked like weeds to me. Of course, the women on the other hand had no difficult in recognising their plants. The garden was bursting with potential as the women were preparing more beds to sow their vegetables, maize and peanuts.

Gogo MaNkosi[14] is the founder of Vukani. She is an old woman and is somewhat frail but nonetheless Gogo MaNkosi was there to welcome me and to explain to me the basics of gardening. Once she felt I was settled in, she made her exit and explained that any physical work was very taxing on her frail body. I spent the next few days working alongside different women in the garden on their individual garden beds. This gave me an opportunity to get to know the women and talk to them about their garden activities, their dreams, their families and their lives in general. During the time that I spent with the women we were able to get to know each other. Although I got a good feeling of what was happening in the garden I was relieved to find myself a few days later in Vukani's offices. Manual work was taxing but I gained from the experience and thought of it as a good day's work out – albeit one that I would not want to repeat anytime in the near future. Gogo MaNkosi is in charge of the office as she can no longer do physical labour in the garden. The Vukani office took my breath away as it is full of African artefacts handmade by the women. Even the desk and the two benches at the centre of the room were handmade by women in the group.

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[14] All names used are pseudonym names

As the founder of Vukani, Gogo MaNkosi was my obvious choice for my first interview. Seated on one side of the bench with my interpreter, after a few laughs with Gogo MaNkosi, who is a wonderful storyteller, I began my first interview on the 29th of October 2012. A total of 16 women were interviewed between the 29th and the 31st of October in the Vukani offices. Interviews lasted for approximately an hour to an hour and a half per respondent. Two of the women, although available, could not be interviewed as one was Zulu and the other Sotho speaking and the interpreter could only speak Swati. Three members declined to participate in the interviews.

Most conceptions of quality of life measurement in development economics are implicitly harnessed to normative theory of the proper social goal i.e. wealth maximization, utility maximization etc. (Nussbaum 2000). The Capability Approach, on the other hand, is grounded on the idea of involving the individuals concerned in defining what it is that matters to them and what it is that they value. Our primary task in this chapter is to identify what capabilities have been attained by the participants and how these capabilities contribute to well-being.
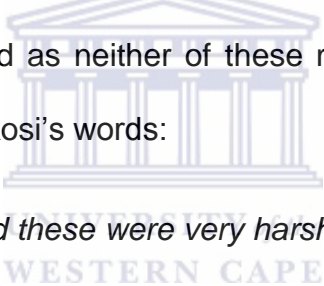
4.2   Boxed in by gender bias

As a reminder to the reader of the socio-economic background to Luphisi, Ehlanzeni is one of the poorest districts in the country (Goldin et al 2008) with a very high unemployment rate. Rockstrom (2003) states that 800 million people at present suffer from under nourishment and these mainly live in developing countries. The vast majority of these countries are hosted in tropical environments characterised by unreliable and highly fluctuating rainfall (IMWI 2007), typical of the Ehlanzeni District Municipality.

Gogo MaNkosi's son and her husband are both unemployed. Despite the fact that there was no member of the household employed, the family was growing. Gogo MaNkosi says:

"I have twelve children of my own that are still alive and living with me, one passed away and three of my sons are now married and still live with me with their wives and children" (interview: Vukani women's group, Luphisi, October 2012)

For Gogo MaNkosi, a married son means an additional mouth to feed. There are no jobs for her husband and her sons and it is unlikely that they would be able to find work because they are not educated and they do not have any specialised skills. The gender prejudice is entrenched as neither of these men would tolerate their wives looking for jobs. In Gogo MaNkosi's words:

"Life was very tough and these were very harsh times. We had no way to feed our children, it was very difficult to watch your children going to bed hungry and the smaller ones crying for something to wet their mouths with… every morning when you wake up, you pray to God and the ancestors to provide just a single meal just for the children… the smaller ones… " (interview: Vukani women's group, Luphisi, October 2012)

Gogo MaNkosi adds that this situation was not unique to her family but was the plight of most families in Luphisi. Gender bias sometimes works in favour of women in Luphisi. For instance, it seems easier for an unemployed and unskilled woman to find employment than a man. Opportunities for domestic workers, cleaners, and

even occasional laundry and ironing ladies are available for unskilled woman. Women are able to take on these tasks as they do them at their own homes and they do not require any special training. Despite these opportunities for employment, Luphisi men are reluctant to have their wives work and as Gogo MaNkosi narrates:

"Men find it almost impossible to get jobs but as for us, when you open the newspaper or walk into a supermarket where there is a community notice board there are always several advertisements of people looking for female domestic workers. However the men in this area would not hear of it! Some women (and she lowers her voice to almost a whisper even though we were the only ones in the office) in Vukani have been beaten by their husbands for just talking about looking for jobs…" (interview: Vukani women's group, Luphisi, October 2012)

The men consider it a threat to their manhood and their role in the family for the women to be employed and become breadwinners. Women earning an income for the family would automatically assume the position of head of the household. This would pose a threat to the men. In the words of Gogo MaNkosi:

"What would the neighbours and the community at large think of them being provided for by a woman? They would become the laughing stock of the community and would lose their manhood and the role as the head of the family… no man wants to endure this..." (interview: Vukani women's group, Luphisi, October 2012)

If women were to be employed this would likely arouse feelings of shame in the man. They may feel it is dishonourable and improper for them to be provided for by their women and would rather live under extreme conditions of poverty than tolerate the idea of having their wives seek employment. Gogo MaNkosi's words give an indication that she also thinks it not proper and that employment for a woman is not an option to be considered despite the many work opportunities available to the women.

4.3   Formation of Vukani

Although Rockstrom (2003) claims that in tropical savanna conditions the majority of poor people make their living from small holder farming under rain-fed conditions, this is not the case in Luphisi. Although farming is under rain-fed conditions, the majority do not have backyard gardens and most of their fields are far away from their homes. Gogo MaNkosi and her daughter-in-law, Phethile, realised that the only possible way for them to provide for their families would be to remain within the community and to use their hands to bring in money. Gogo MaNkosi and Phethile both wanted to use their hands and embark on small holder farming activities and Gogo MaNkosi wished for a backyard garden but her family did not have one:

> *"God gave me hands, how can I continue to go hungry if I have hands... How can I complain of hunger when I have hands… (stretching out her hand and looking at them while moving them up and down). What are these hands for … what are they doing on my body if they cannot make something I can put in my mouth? You eat because you would have worked for the food. We do not eat like cattle that find grass already grown and ready for eating and they just eat like this"… (with her hands folded behind her back, she demonstrates*

*using vigorous mouth movements on how cattle feed) (*interview: Vukani women's group, Luphisi, October 2012)

Gogo MaNkosi discussed the situation with her daughter-in-law and the two women approached their husbands and asked for permission to talk to other women about starting a community garden. As the request involved other households, their husbands were not able to grant permission but instead they approached the Chief of the village. After consulting the Chief about their wives intentions their husbands reluctantly agreed and as Gogo MaNkosi tells me:

"We would go around preaching, as if we were preaching the gospel…

house to house. We were appealing to all the women in the village to

come for a meeting where we would discuss our living conditions. We

even invited men so that they did not feel excluded and women would not

come unless their husbands permitted them to. Every woman we told, told

others and we also continued to knock from door to door and within no time

*everyone knew about the meeting." (*interview: Vukani women's group, Luphisi, October 2012)

The above extract reflects the passion and drive of the founder member and her daughter-in-law. This self-initiative had an overwhelming response from the other women in the village. Within the Capability Approach framework, this is a reflection of what Sen calls agency. Agency is best understood through Sen's description of an
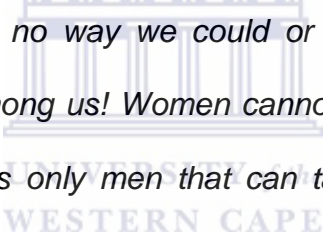
agent, defining an agent as someone who acts and brings about change, whose achievement can be evaluated in terms of her own values and objectives (Alkire and Deneulin 2009). Gogo MaNkosi shows agency as she was able to set her own goals and act upon them. The process involved active engagement with others through bargaining, negotiating - and some manipulation - as well as some resistance to opposition, but, through her self-determination she overcame all the obstacles. As an agent, Gogo MaNkosi was determined to bring about change for herself and for her fellow villagers despite external constraints that meant that this change was not easy. In the initial phases Gogo MaNkosi called together women urging them to be courageous enough to bring about change. The meeting that was initiated by Gogo MaNkosi and her daughter-in-law Phethile was to bring about remarkable change that had an influence on the village as a whole.
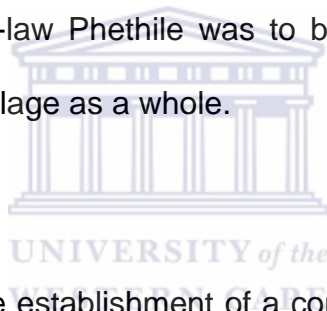
 Gogo MaNkosi lobbied for the establishment of a community garden. The idea was not one that challenged the essential role of women in the community because the women were not asking to be employed - which their husbands did not want - but were creating jobs for themselves. The initial meeting constituted the very first step that would enable the women to participate actively in gaining an income, however meagre, for their households whilst at the same time improving the well-being of their families by putting wholesome food on the table and, hopefully, being able to see their children go to bed without the pangs of hunger. Within the context of the Capability Approach, agency primarily refers to an individual's role as a member of society, and that individual's ability to participate in economic, social and political actions (Ibrahim and Alkire 2007).

The point about the Capability Approach is precisely that we must take a comprehensive or holistic approach, and ask which set of capabilities are open to an individual, that is: can these women simultaneously take advantage of the opportunities (jobs in town) available to them which would disrupt the equilibrium of the family, or would it make more sense to start a vegetable garden?

At the first meeting in the community Gogo MaNkosi shared her vision with the men and women whom she had called together. Over time, during follow up meetings, they agreed that the Chief should be approached with a request for land. The women say:

> "*There was and still is no way we could or can approach the Chief even though his wife was among us! Women cannot approach or talk to the Chief for whatever reason. Its only men that can talk directly to the Chief… this presented a very big challenge to us as this was predominantly a female group; the men that were among us were there purely out of curiosity… Gogo MaNkosi had to talk to her husband and her son to represent the group to the Chief since at least they had already spoken to the Chief about their wives request for a meeting and their intention to start a community garden.*"
> (interview: Vukani women's group, Luphisi, October 2012)

This extract reflects the gender skews that are part of customary practice as women are not allowed to speak to their traditional leaders. This extract also confirms

Nussbaum's (2000) argument that in many countries women are not full equals under the law and they do not have the same rights of association as man.

The Chief granted their request and allocated them a piece of land that was initially 160 by 140 metres. The group had 42 women and 3 men when it started in October 1992. Its objective was to grow vegetables for family consumption on the allocated land using water from the river.

The story of women who come together to address the issues of scarcity defies the Malthusian belief that scarcity of resources may lead to social breakdown and even wars. Allouche's (2011) suggestion, that when finite natural resources are stretched to a certain limit where the population does not have enough for everyone there is a high possibility that there will be social breakdown conflict and wars, is also flouted. These women have chosen to co-operate and work together to address poverty and hunger in their village. Blignaut and Choles' (2011) argument that scarcity and dissatisfaction often leads to collective action is evident in Luphisi where Gogo MaNkosi and her daughter-in-law have addressed head-on the issue of scarcity and deprivation.

The experience of collective action in the face of deprivation can be contextualised within the Capability Approach where the idea is that social arrangements should aim to expand people's capabilities and their freedom to promote or achieve what individuals value doing or being (Alkire and Deneulin 2009). The Capability Approach

considers well-being and the quality of life of a person as an enhancement of opportunities that people have, to lead the lives they have reason to value (Robeyns 2006).

4.3.1 Teething problems

Once the Chief allocated the newly formed group land, the women set about clearing bushes and making a fence from wooden posts. They then divided the land into plots and allocated vegetable beds. Some women withdrew from the group because they felt that the plots were too small. The remaining members planted their first vegetables and walked to the river to fetch water for the seedlings. This was not sustainable as the river was too far off and because there was not enough water. Within a few months the seedlings died and, disillusioned, more women withdrew from the group.
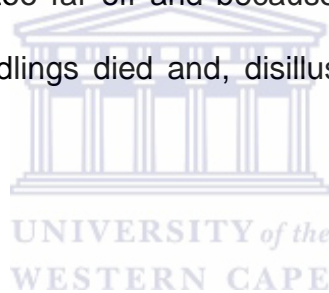
Water is critical for both social and economic development. Food security requires sufficient amounts of water at the right time and in the right place. The lack of sufficient water became a real constraint to food production for these women. Gerbens-Leened and Nohebel (2004) note that because the availability of water is a limiting factor for crop growth, communities have to find innovative ways of irrigating their crops. The women needed to find a solution to their water problem.

Food security is a product of many variables that include physical factors such as climate, soil type, water availability and many more (Rockstrom 2003). The women thought that once they had access to land and a water source they would achieve

some form of food security but this was not the case as they soon learnt that there were other limiting factors that made it difficult to produce crops.

As some women dropped out of the group, the survival of the newly formed group was threatened. The reorganisation of the group, at its early stages of existence, speaks to the dynamics that are part of the Capability Approach. The Capability Approach is focused on choice and freedom, holding that it is crucial for good societies to be promoting for their people a set of opportunities (Alkire and Deneulin 2009), or substantial freedoms, which people then may or may not exercise: the choice is theirs (Nussbaum 2011). Clark (2005) postulates that in comparing well-being and judging the quality of life of different people we must consider how well people are able to function with the goods and services at their disposal. It is pertinent therefore, to ask the question, how well are the women able to function with the goods and services at their disposal.

Another important idea in the Capability Approach is the notion of conversion factors. Resources such as the piece of land that the group had have certain characteristics that make them of interest to the community. For some, the interest in the piece of land may be because they thought it would enable them to provide for their families but perhaps too, it provided them with an opportunity to be away from their homes and to relate to each other as women. These characteristics of a commodity enable or contribute to a functioning. The piece of land could enable food security. The relation between the piece of land and the achievement of certain "beings and doings" is captured with the term conversion factor. This is the degree to which a person can transform a resource into a functioning (Robeyns 2011).

Sen (1994) argues that different people and societies typically differ in their capacity to convert commodities into valuable achievements. This was exhibited in the very early stages of Vukani where all the women had the same opportunity (being part of Vukani) but some, despite seizing the opportunity later decided that this was no longer an opportunity that they valued and they dropped out of the group. The conversion factors here thus represented how much functionings one could get out of the piece of land. The notion of capabilities within the Capability Approach captures not only achievements but also unchosen alternatives; it scans the horizon to notice the roads not taken (Alkire 2008). It checks whether one person did have the opportunity of achieving a functioning that another actually achieved (Sen 1985).

4.3.2 "Vukani"

There was talk about this new group in the village and representatives from the Ministry of Agriculture came along to see what all the talk was about. They suggested to the women that they find a name instead of simply being known as 'the women of Luphisi'. The women agreed on Vukani:

"*Besihamba sishumayela njengelivangeli sitsi asivukeni bomake, asivukeni*

ekulaleni sente imisebenti yetandla"[15]

"*When we started we were going around preaching the gospel saying,*

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[15] In some instances we will use the original Swati quotations as well as the English translation. We found it difficult to translate some of the phrases as there are no English words to express exactly what the Swati phrase represents. When translating it into another language, the words that are used are sometimes inaccurate and at times the language does not have the words in its vocabulary. A certain degree of meaning is lost in translation

*'let's wake up, lets arise women and use our hands to earn a living" (*interview:

Vukani women's group, Luphisi, October 2012

Vukani means 'arise' or 'awake. The women explained that the word had meaning

for them because they felt as though they had been sleeping, or were idle, for all

their lives and had now awoken from that sleep.

4.3.3 Vukani, "a crawling baby"

After a disastrous first attempt at setting up the vegetable garden there was marked

attrition and in the end those who remained in the group were only women. They

agreed to wait for the next rainy season to plant in their garden. Instead of planting

vegetables they decided to try something different and so they agreed to grow maize

and peanuts.

"Everything dried up, everything…others lost hope and gave up. Just when

we thought our lives were about to improve everything dried up… died just

like our very own lives. Some of us had no choice but to continue with

Vukani… to try again and see where we went wrong… try something

different...to see if the maize and peanuts would not ripen. If there were even

two or three others who were willing to try again… I was going to be one of

them. I did not want to throw the towel in, at least not just yet." (interview:

Vukani women's Group, Luphisi, October 2012)

The claim of the Capability Approach is that assessments of well-being should focus on the effective opportunities that people have to lead the lives they have reason to value (Robeyns 2006). Sen's emphasis is on real opportunities that are available to individuals to lead a life they value. The women had to use and rely on everyday opportunities that were available to them within their community. In this case their best opportunity was this new garden that had, however just disappointed them and had not yielded anything. They now had to fall back on their collective action to make new choices. These are the real opportunities that were available to them, so it was now up to them to explore their best possible alternatives.

This also speaks to the concept of agency where these women were able to bring about change in their lives (Alkire and Deneulin 2009). The women agreed to try something different and they adapted their strategy from trying to grow vegetables using water from the river to planting maize and peanuts using rainwater. The women learnt from their mistakes and were ready to explore and experiment with new types of crops and an alternate water source.

4.3.4 Members of Vukani

After all its teething problems a total of 21 women remained and became the permanent members of Vukani. The graphs below show the demographics of the group:

Figure 4.1:   Participants age (n=16)
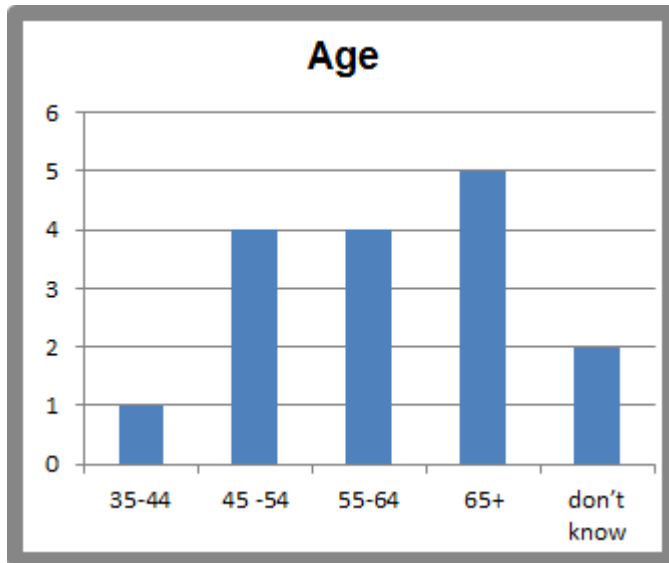
Figure 4.2:   Participants marital status (n=16)
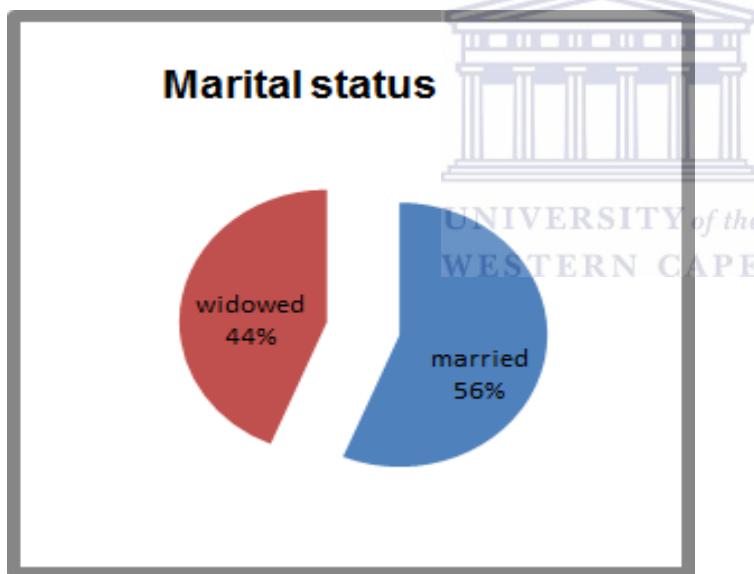
This group has more than half its membership aged above 55. This is a challenge because the survival of the group relies on the physical strength of the women yet their modal age is 65 plus. There are no young people in the group because, according to the women, the youth are not interested in doing manual work. All the women in the group are either married or widowed. On my first day at Luphisi when there were formal introductions all of them introduced themselves by saying:

"I am married to …. family, my name is…" (introduction meeting with Vukani women's group, Luphisi, October 2012)

Within this context a woman's identity is tied to the identity of her husband. The opposite of a person with agency is someone who is coerced, oppressed or passive and it might seem that in some regards the women are without agency. Do men feel that their own identity is threatened if women were to work? Do women enter into their marital relationships through coercion? Do women feel that they are 'lesser' than men in their communities? Would women like to have more autonomy or are they comfortable with the customary practices that are part of their day to day lives? These are some of the questions that merit further research.
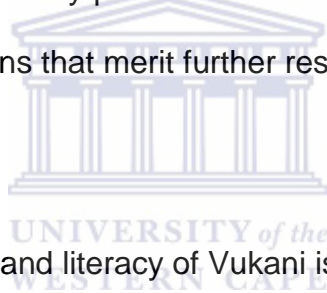
The highest level of education and literacy of Vukani is tabulated below:

Figure 4.3:   **Participants levels of formal education (n=16)**
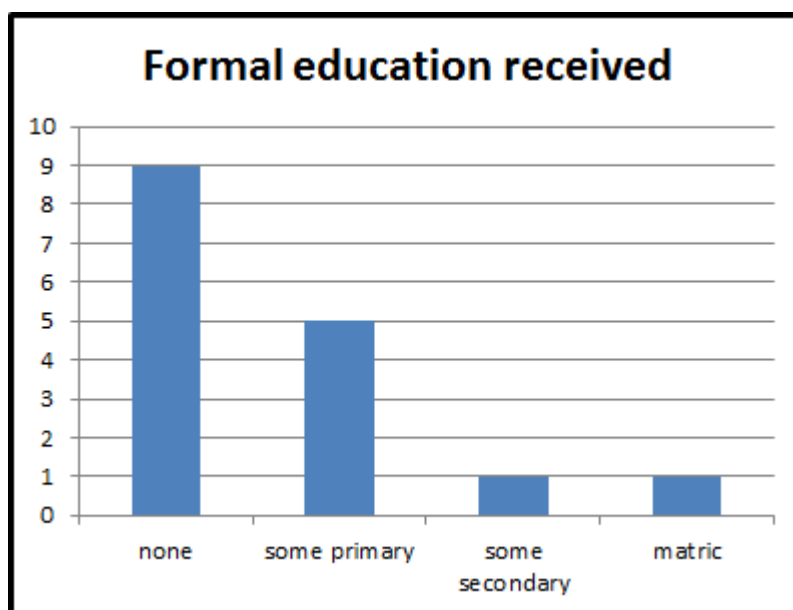
Figure 4.4:   **Participants ability to read and write (n=16)**
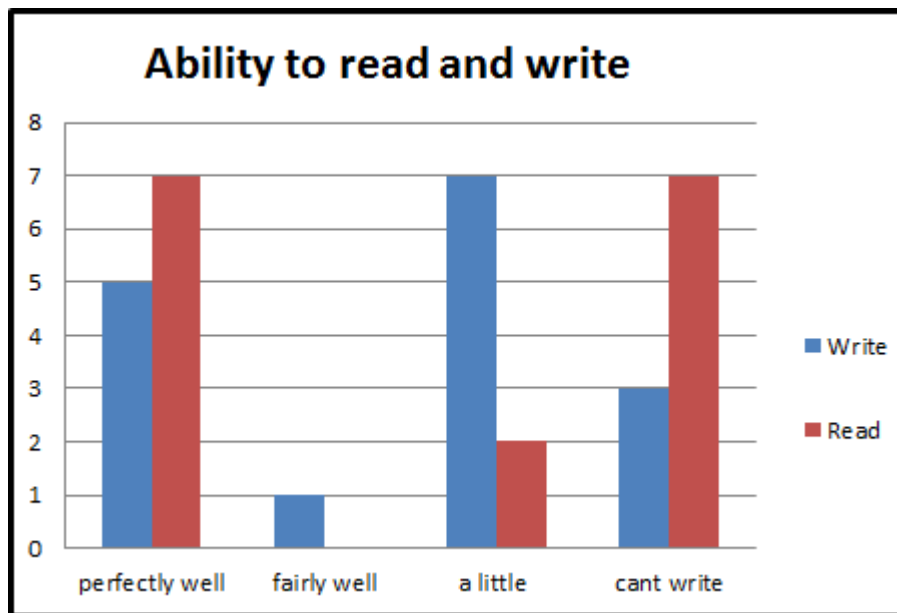
Of the 9 members who did not receive any formal education only 7 are able to write
a little. When asked what they could write they all said they could sign their names.
"Write a little" indicates, therefore, only the ability to write/sign their names. Only one
of the women who did not receive any formal education and could write her name
said she could read perfectly well. The fact that more than half of the respondents
did not receive any formal education reinforces Nussbaum's (2000) argument that
women are much less likely than men to have pre-professional or technical
education. This is however contended in Luphisi as the men also do not have any
pre-professional or technical education.

4.4   Strength in numbers

The woman of Luphisi had shared a common feeling of dissatisfaction with the
quality of the lives they were living. These women came together to combat hunger
in their community and in so doing showed how local people are able to cooperate in
times of scarcity. The fact that they now had a portion of land to cultivate gave them
hope. Having their own garden motivated them to work using their hands and they
were inspired by the expectation of someday harvesting vegetables. By working

together they encouraged one another and they were driven by the desire to not disappoint one another or drag their feet and hold the group up. Collective action gave them hope that they could achieve something for themselves. The women realised that they could achieve their goals individually and that they were doing something to bring about change because of the fact that they belonged to a group, and were therefore able to achieve what they could not achieve as individuals. The women came from the same village and shared norms, beliefs and values:

"When we meet we sing Swati songs while working in the garden. We are proud to be Swati. We dance as well, even those that think they can-not dance, join in and we all enjoy being Swati and working in our garden. We are Swati and we know how to sing and dance…" (interview: Vukani women's group, Luphisi, October 2012)
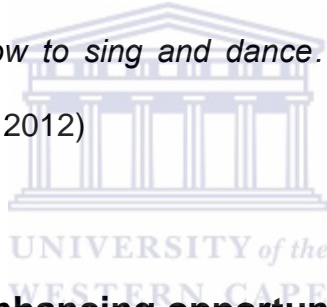
4.5   Collective action enhancing opportunity

The women have learnt over time that working together was not as easy as they thought but they also realised that they were better off belonging to the group than going at it individually:

"if you work alone by yourself your ideas are few… so by working with each other we help each other in so many ways… To come together and work with other women is far much better than to sit alone idle at home… if you are with others you talk and the mind opens up and you get ideas from others… you realise other possibilities you never imagined… you see how one can live…

you begin to have a different view about life in general as you realise you are

not alone." (interview: Vukani women's group, Luphisi, October 2012)

The women work together to increase their opportunities to live the life that they value. In this way they increase their personal (and collective) well-being and have more freedom. For Sen, development is freedom to live the life that you have reason to value.

4.6 Unexpected doors are opened through partnerships
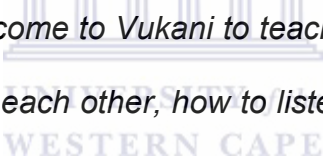
Vukani women, despite facing many obstacles, never gave up. Their ability to withstand many external obstacles resulted in the attraction of what Gallopin (2006) calls the emergence of new trajectories. For Vukani these were in the form of both government and NGO's. One of the NGO's we have already mentioned is called Ecolink. Ecolink, who had been working in the Ehlanzeni District for many years, took notice of this group and partnered with them in a number of training sessions funded by various donors, culminating in the Integrated Rainwater Harvesting Project that was implemented in 2009. Ecolink provides environmental education while other organisations have provided training in a variety of life skills.

"Mine enhlitiyweni yami iVukani yangivusa kuko konke, ngangilibele, sengiyatentela ngako ngitsi ngeke ngiwe…ngiyowa ngekungena ebhokisini ngiyolala"

"In my heart Vukani has made me aware of many things in and about life I could not have thought possible on my own… that's why I am saying I will never fall down… go back to where I was… the only way for me to fall down

will be into my coffin for eternal sleep." (interview: Vukani women's group, Luphisi, October 2012)

By being a member of Vukani this woman and others like here, have had their horizons and opportunities broadened. This is in line with one of the Capability Approach's key ideas, that social arrangements should aim at expanding people's capabilities and their freedom to promote or achieve what they value doing or being. Importantly these women appreciate and are aware that without their collective action they would not be able to have a view of the world that they now have. Through their collective action Vukani has put itself on the map and are now known beyond Luphisi:

"There are people who come to Vukani to teach us a lot of things… they have taught us how to talk to each other, how to listen to each other… how to cook and take care of our families, how to make petroleum jelly, Kentucky fried chicken and many, many other things including how to make the artefacts displayed in our office." (interview: Vukani women's group, Luphisi, October 2012)

Vukani women's group now not only receives donor or other input, but are giving support to their partners in and beyond the village. Vukani has been able to build an office that is decorated with their hand made artefacts and is less than ten minutes' walk from their garden. One of the local tourism operators, Bongani Lodge, brings tourists to their offices to showcase the local talent and to buy these fine works of art.

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Bongani Lodge also benefits from this relationship by offering a unique experience to its guests who can take back souvenirs from Mpumalanga. The sales from the artefacts provide Vukani with a steady flow of income. The women have over the years learnt how to budget and to reinvest by buying raw materials to produce more artefacts. The women have also realised that whilst waiting for the rains there were other ways that they could survive for instance, by making these artefacts or by dancing or/and singing. They have more freedom and opportunity to live the life that they have chosen to live.

4.6.1 Through innovation

"After a few years of successful harvests (of peanuts and maize) we decided to try and grow vegetables again. This time we had been taught on how to grow and nurture for them. We had been taught how long the vegetables would take to ripen and for how long we could harvest them. So we prepared a few beds and planted spinach, cabbages, lettuce and beetroot. We would take turns to go to the river and we now only watered in the evening. We would water each vegetable individually and with very little water… aaaaaah it was such a learning experience but it worked! Now we could have nutritious meals at home…" (interview: Vukani women's group, Luphisi, October 2012)

This extract reflects the opening up of opportunity. Despite the fact that they had found a working formula (maize and peanuts in the rainy season) they pressed on with different options. Because the availability of water is a limiting factor for crop growth, communities have to find innovative ways of irrigating their crops (Gerbens-Leenes and Nonhebel 2004). The women took on a form of drip irrigation where

each plant was watered separately. They also used mulching techniques. They were practising water demand management techniques by watering in the evenings to reduce evaporation. This technique allowed plants to have more time to absorb the water in their root zones before the sun came up the following day. These techniques provided new choices for the women. At the end of the day they managed to harvest these vegetables and provide their families with nutritious meals thus improving their health and overall well-being for themselves and their families. The Capability Approach asks whether people are well nourished and whether the means or conditions for the realization of this capability e.g. food entitlements, are being met (Robeyns 2011). For these women their garden produce has enabled their families to realise this capability.
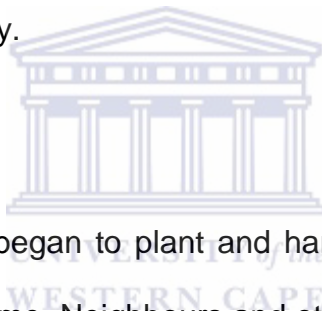
4.7   Empowerment

After some time, the women began to plant and harvest more peanuts and maize than their families could consume. Neighbours and other villagers would come to the garden and be given this excess harvest for free until the women realised that this was an opportunity for cash flow and they then decided to sell their produce:

"If you are a woman it is actually possible for you to stand on your own two feet meaning if you join the group… farm with others… using your own two hands…it will come as a surprise that one day after you have sold your produce you can buy meat, bread, sugar… take home to cook for the family… without even realising it your husband would have eaten the proceeds of your work, what you would have brought home… you would have provided for your family…" (interview: Vukani women's group, Luphisi, October 2012)

As we have stressed throughout our discussion, one of the key ideas behind the Capability Approach is that social arrangements should aim at expanding people's capabilities and their freedom to promote or achieve what they value doing or being (Alkire and Deneulin 2009). The women were able to feed their families through the maximisation of opportunities that were at their disposal so that they could lead the lives they have reason to value. The above extract also talks directly to Sen's idea of assessing individual well-being by looking at the actual opportunities that people have to live the lives they have reason to value (Robeyns 2006). The Capability Approach calls for a comprehensive and holistic approach and asks which sets of capabilities are open to an individual (*ibid.*). For the Luphisi women their opportunities and choices were within their community where they found ways to better their own lives and the lives of their families.
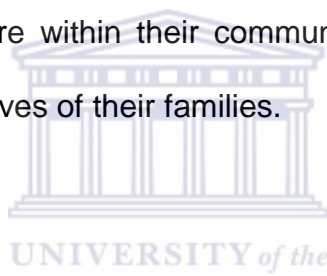
Clark (2005) notes that once we have identified goods and services we must take a further step and consider what people are able to achieve with them. We noted that the women that dropped out of the group early on did not pursue the opportunity to improve their well-being through the food garden initiative. The ones that remained maximised on the opportunity that presented itself and as a result were able not only to provide nutritious meals for their families as we have shown but also to develop relationships among themselves and with their various partners, build an office and earn money from their artefacts.

When the women were asked what benefits their families have derived from their membership to Vukani one said:

"They no longer know what hunger is… we used to miss eating bread but now we eat bread, imagine as a mother I used to miss bread, how about my children?" (interview: Vukani women's group, Luphisi, October 2012)

And as one member said:

"*We were taught how to make dresses and we were given sewing machines, gone are the days you would see my family's buttocks! Previously I would go on my own to buy them clothes but now I go with them and I sometimes allow them to choose for themselves…"* (interview: Vukani women's group, Luphisi, October 2012)
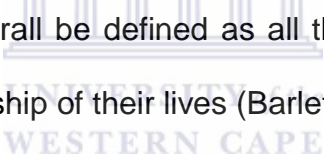
Another said:

"Now I can provide for my family… the whole world can no longer see there is no man in the house… Vukani has hidden that for me. My neighbours now realise there is a family living next to them, they now even talk to me when I pass by. I am no longer ashamed to be alive… they have forgotten that I am a widow… now I am just like them" (interview: Vukani women's group, Luphisi, October 2012)

The Capability Approach asks whether people have access to community activities that support them, that enable them to cope with struggles in daily life, and that foster caring and warm friendships (Robeyns 2011). For Vukani, their collective

action provided them with the support structure that not only enabled them to cope with their daily struggles but also enabled them to foster caring and warm friendships. The Capability Approach asks whether people feel good about themselves and inquires into what it is that makes them feel this way (ibid.) Clearly for Vukani, the above extracts show that it was their collective action, partnerships and their ability to be able to provide for their families that made them feel good about themselves.

All the above extracts also chronicle different experiences of empowerment that these women have as a result of being members of Vukani. There are several definitions of empowerment but the most applicable to this thesis are:

- Empowerment can overall be defined as all those processes where women take control and ownership of their lives (Barlett 2004)

- Empowerment is an intentional and on-going dynamic process centred on the local community, involving mutual dignity, critical reflection, caring and group participation, through which people lacking a valid share of resources gain greater access to and control over those resources (Van Eyken 1991 in Ibrahim and Alkire 2007)

- Empowerment is more than participation in decision-making, it must also include the process that lead people to perceive themselves as able and entitled to make decisions (Rowlands 1997)

By bringing to fruition the ideas behind the vision of Gogo MaNkosi, the Vukani women were able to take control and ownership not only of their own lives but also

the lives of their families. This did not happen over-night. It was a process that occurred over several years and took determination and effort. Hard work and perseverance has paid off:

"When I see my children eating, well dressed I am very happy… my heart rejoices. I do not want my family to ever lack food or clothing. As long as I have these two hands I will make sure of that. Now I want my children to go to school so they do not have to work as hard as I do…" (interview: Vukani women's group, Luphisi, October 2012)

This extract also draws attention to the fact that the women have set themselves new goals. This is as a result of interaction among themselves and with their partners. New goals, like education, are now important whereas previously the only goal was to have food on their plates, and to be able to feed at least the small children in their household.

Thus, we see that the Capability Approach asks what is each person able to do or to be? (Clark 2005, Robeyns 2006, 2011, Nussbaum 2011). It establishes whether people are happy and if they feel empowered and it is able to examine the 'intangible goods in communities that make people feel good about themselves. Because of Vukani and its partnerships these women are now able to drive their children in a direction that will provide formal education and they experience pride in this achievement.

4.7.1 Or is it not empowerment?

"Hiiii ahah! Bantfu labanyenti ngiyabasaba njani…ngiyabasaba bantfu labanyenti…ngikhulume emkuatsini webanfu… ngiyabasaba bantfu. Ebantfwini lengingabati ngiyasaba. Angikhoni ngiyahluleka. Ngiyaphendvula nje uma ikhona mibuto lebayibutako. Angikaze ngikhulume nabo. Angikhoni vele ngiyasaba. Ngiyawasaba mehlo ebantfu kutshi batawutsi njo!"

"Hiii ahah… If there are many people like a community gathering I am very scared to speak, I am afraid to speak in such a large crowd… I am afraid of people… I do not know these people… I cannot speak, no I cannot! Should there be questions however directed at me, I will answer them. I have never spoken to so many people, and I cannot… I am afraid. I am afraid of their eyes… I think they will all stare at me…" (interview: Vukani women's group, Luphisi, October 2012)

Within the context of other extracts in this chapter, this is a confusing extract but it presents a feeling that was shared by the majority of Vukani. These are women who say they now feel empowered and who talk freely among themselves and their families. However, although they are now the bread-winners in their households they do not boast about this in public. This affirms Nussbaum's (2000) argument that should women enter the workplace (in this case their gardening project), they face greater obstacles, including intimidation from family or spouse. The women know everyone in the village but they feel embarrassed in public spaces. They clarify this:

"In Vukani when you speak you know no one will laugh at you… we have learnt to listen to each other and not be judgemental, but with the community meetings it is different… Our husbands would also be ridiculed if we were to speak in such a gathering." (interview: Vukani women's group, Luphisi, October 2012)

Their inability to speak is because of a fear of being judged and they also fear that their husbands will be ostracised. The women are confident that should a question be directed to any one of them they would be able to answer it. Are there different levels of empowerment? Are the gender skews that exist in the village undermining the way in which the women are able to share their knowledge openly with others in the village? There are permutations and degrees of empowerment and it seems that women's empowerment in public spaces remains somewhat restricted. This is also an issue that merits further inquiry.

Ibrahim and Alkire (2007) are able to provide insights into these contradictions. "One can be empowered as a professional doctor who has the respect of colleagues, but disempowered as a wife because the husband makes the decisions" argues Ibrahim and Alkire (2007, p.11). Thus, these women are empowered in certain ways but remain disempowered and oppressed by their husbands who retain the position of family head despite the fact that they are not providing for their families.

Within the Capability Approach literature, it has been argued, for instance by Alkire and Deneulin (2009) that agency and the expansion of valuable freedoms go hand in hand. In order to be agents of their own lives, people need the freedom to speak in public without fear and to have freedom of expression and association (ibid.). All members of Vukani feel that they can speak freely within their group and in their homes. One might consider the group an extension of each member's family and as such, for the women this is a private rather than a public space. If this is the case, can one claim that the women have the freedom to speak in public without fear? The fact that they are all sure that should a question be directed to them they will be able to answer it in a community gathering indicates a certain level of empowerment and agency yet they do not exercise this agency as they feel inhibited and 'scared' to speak out.
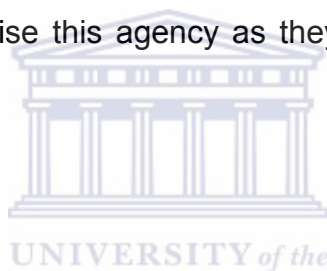
The Vukani women have grown up in a community where gender roles are clearly defined. They have grown up knowing that their place is in the home and that it is only within a defined space that they can speak freely. By being members of Vukani they have now learnt that there is a space outside the homes where they can freely express their opinions without fear. The women who have a position of leadership within the group are more confident that they can speak out in front of the community if the need arises. When asked why they thought they could speak in such a gathering MaNdlovu the secretary of Vukani said:

> *"I do not think I can speak… I know I can, but we are never given the opportunity…" (*interview: Vukani women's group, Luphisi, October 2012)

The women who have taken on a leadership position within the group have had training from both NGO's and the State. These women attend meetings on behalf of the group. They have been trained on how to manage the group, how to resolve conflict, how to address gatherings, how to work in harmony with others and in many other aspects or organisational life, including book-keeping. These women have more exposure to gatherings than those that are not leaders and it is likely that for this reason they feel free to speak out in community gatherings.

4.8 Summing up

IMWI (2007) states that efforts to improve food security and especially rural livelihoods must focus on giving the capacity to both male and female farmers to raise water productivity in rain-fed and irrigated agriculture. Luphisi women confronted a number of hurdles to gain this capacity. The women now practice both rain-fed and irrigated agriculture. They practice the rain-fed agriculture for their maize and peanuts and to a lesser extent irrigated agriculture for their vegetables.

The families of Vukani are now well nourished as they get vegetables from the garden complemented by maize and peanuts. Despite all benefits that family members are reaping from the women's work, neither their children nor their husbands want to help them in the garden. This is of some concern because Alkire (2008) postulates that the process of improving quality of life often requires the sustained collective action of people, and indeed of generations. There doesn't yet seem to be the necessary intergenerational linkages that would promote wellbeing in the future.

The women have developed a sense of belonging by working together. This is reinforced through ritual song and dance. The crafts that they produce are sold in their office and this provides them with a steady cash flow. The extracts that have been presented in this chapter reflect the dignity of the women and how they feel good about themselves. Vukani could not have achieved all of this on their own, they have developed partnerships with many organisations. They modestly claim that they owe most of their success to their partners.

4.9 A new dawn

We have shown in this chapter how the perseverance of these women has earned them recognition beyond their village. Other villages are now emulating what Vukani is doing. Water scarcity remains a challenge and it still restricts food security. Communities living in villages such as Luphisi have had to find more innovative ways for irrigating. One of Vukani's partners has recently responded to the needs of Vukani. Ecolink has implemented a rainwater harvesting project in Luphisi and constructed a 1000 cubic meter earth dam for Vukani. The dam is still new and Vukani women say that now that they have water the sky is their limit. They have dreams of providing vegetables not only for Mpumalanga District but for the whole of South Africa:

> *"With this dam, Ecolink has made us kings, we now feel like kings"* (interview: Vukani women's group, Luphisi, October 2012)

4.10 Summary

The chapter has presented the reader with empirical findings and data from the women of Vukani. These findings were discussed within the context of the Capability Approach. The study traced the group's activities from its formation to date and considered the different capabilities achieved along the way. Vukani's well-being was also discussed. Vukani is a case study of a learning organization which relied on actual opportunities that were available to them and the women, through their collective action, have enhanced their everyday well-being and become more free to be and to do what they chose to be or to do.

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CHAPTER FIVE

CONCLUSION

5.1 Introduction

This chapter will give a summary of the case study of the Vukani women's group in Luphisi and present the conclusions reached. The limitations to the study experienced by the researchers will also be presented. Recommendations will be drawn from the case study as well as future possible areas of study.

5.2 Background

Apartheid era's political and administrative realities benefited the minority of the population and left villages like Luphisi to fend for themselves. Despite the progressive policy framework of the National Water Act of 1998, which tried to redress the apartheid injustices, villages like Luphisi are still without piped water. Luphisi does not enjoy any benefits from the use of this precious resource as it still does not have proper and adequate access to this water. Today Luphisi continues to reflect the skews of the apartheid era and Ehlanzeni is still one of the poorest districts in the country (Goldin et al 2008).

There are very high unemployment levels in the village. The few people who are employed have jobs in the nearby towns of Nelspruit and White River. Those that are not employed have no other source of income besides government grants. With low

levels of education and without industry specific skills it is difficult for the unemployed to penetrate the job market. There are also major gender skews in this village. Men dominate decision-making structures in the village and they oppose their women entering into the labour market and seeking employment. Men feel that empowerment of this kind would threaten their role as head of the household. Although there are job opportunities for women as domestic workers, men feel that if their wives and daughters were to be bringing in the income for their household they themselves would then be the laughing stock of the community.

The fact that there are such limited job opportunities for women, impacts negatively on household food security. Most of Luphisi villagers do not have backyard gardens that can be used to supplement food requirements and the community fields are far from their homes. As a result these fields are only cultivated during the rainy season. Those who do have backyard gardens are not producing excess food and thus there is no opportunity to generate income. In Luphisi the lack of water is a serious delimiting factor in food production.

The achievements of the Luphisi women resonate against this background. Against considerable odds, such as the entrenched gender bias that is manifest in Luphisi, women became change agents and improved their own lives and the lives of their family members by generating cash flows, however small and at the same time improved food security for their families.

5.3   Main findings

According to Amartya Sen, development means freedom and the opportunity to live a better and fuller life. Freedom and opportunity are inextricably linked with the notion of agency. An agent uses and creates opportunities to improve their everyday life. In the case of the Vukani women, they did not wait for external interventions but were determined to create opportunities for themselves so that they could live the kind of lives that they value and have reason to value.

The case of Vukani provides evidence of how a development agenda can be driven from within the community. Vukani members had the disadvantage of being in a community with extreme levels of poverty. A number of factors aggravated poverty in Luphisi including high levels of unemployment and entrenched gender bias that meant that women could not apply for the few jobs that were available. Our case study focussed on the efforts of Gogo MaNkosi, an old woman who was determined to find ways to get out of the poverty trap. Gogo MaNkosi was a driving force in her village and she initiated the Vukani women's group that was to change the lives of many women in the village.

Shared norms and values (in this case discontent) consolidated the relationship of a group of women in Luphisi who together found a strategy of survival that worked for them. It was important for the women that this strategy would allow them to maintain their status quo within the household, not alienating men whilst at the same time creating a space for themselves to bring in cash and secure food and water. The women self-organised, an important component linked into the notion of agency

within the Capability Approach. The thesis has reflected on the properties of self-organisation as manifest within Vukani, examining the impulse for self-organisation from the Capability Approach perspective.

The propensity to self-organise despite considerable external constraints, placed the women who are the central focus of this thesis, in a favourable position to attract other organisations as partners. As a consequence the members of the Vukani group had access to a wider range of opportunities that could promote freedom and well-being. Some of the opportunities included; general life skills (bereavement counselling, how to open a bank account and so forth), access to sewing machines and sewing skills, cooking and catering skills and importantly within the context of this study, skills around the production of food and maintenance of food gardens. This set of life skills has strengthened the group and made it sustainable.
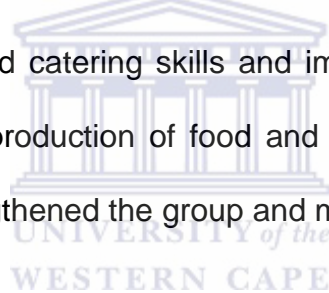
The case of Vukani has also shown that the process of improving the quality of life often requires sustained collective action. At an individual level, goals are often socially influenced by interactions with family and friends. But an expanded set of capabilities is more likely to be produced, as is the case with the Vukani women, through interaction and co-operation within public spaces. For instance, Vukani was visible to Ecolink and they were able to forge new pathways of development that could not have been achieved individually. Their strength lies in their ability to co-operate as a group and to create opportunities for themselves as a group.

Notions of opportunity, freedom and human well-being fit well within the capability framework. The Capability Approach promotes freedom and opportunities that make it possible for individuals to bring about change in their lives. Self-esteem, agency and empowerment are manifest within the group as the women feel good about themselves and support one another. Collective belonging and social learning are catalysts for promoting capabilities and enhancing well-being.

Vukani members have learnt how to communicate with one another and trust has been brokered between members. Through group membership individual women have not only consolidated their role as women (within the group) but also as women who are providers for their families and who have been able to improve the quality of life of household members. This has boosted their self-esteem and given them a sense of dignity. Women have taken charge of the financial aspects of their household although their spouses still consider themselves as breadwinners of their families.

The gender skews in Luphisi will not change overnight. Despite the fact that they are the actual breadwinners, they allow the 'myth' to continue that the men are the real providers. The women have a tacit agreement amongst themselves that they will not rock the boat. Their feelings of dignity and self-esteem come from their achievements in the garden and from knowing that they are the real providers for their families. As one woman explained, this is a 'secret' that the women share amongst themselves.

They have a new kind of freedom that has come through the work that they do collectively and they do not feel the need to challenge the 'norm', although, of course, that is exactly what they have done. In their food garden the women feel that they are in charge. It is in this space that they experience a sense of freedom, belonging and pride. The claim of the Capability Approach is to focus on the effective opportunities that people have to lead the lives they have reason to value (Robeyns 2006). We have shown that it also asks what each person is able to do or to be (Clark 2005, Robeyns 2005, 2011, Nussbaum 2011). Most importantly the Capability Approach asks whether people feel good about themselves and what is it that makes them feel this way.
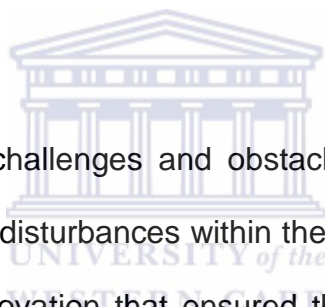
Vukani encountered several challenges and obstacles in achieving food security. They had to take into account disturbances within their everyday lives and had to be innovative and it was this innovation that ensured the survival of the group. They also had to learn many new things amongst themselves; how to operate as a group; how to cultivate their garden and how to maximise on other income generating opportunities. As new opportunities arose, Vukani grew from strength to strength. Access to information has also helped Vukani' s diversification. Today they no longer rely solely on the food garden but have opened an office where they sell their hand made artefacts to tourists. The women also sew clothes which they sell.

Knowledge sharing and co-learning has helped to strengthen their strategies to cope with water stress. For Vukani this has in turn improved the social adaptive capacity of the group to cope with external stress. The women worked out new ways of

saving water for the garden such as mulching and drip irrigation. They also changed crops and now cultivate maize and peanuts that are better adjusted to the cropping season and to the available water.

The case study of Vukani provides an example of how a community, and in particular a group of women within that community, has been able to adjust to poverty around the issue of food and water security. The women have worked within the constraints of the community and have found ways, despite these constraints, to achieve the kind of freedom that they value. As a result of their persistence, they were able to attract the attention of an NGO and become part of a rainwater harvesting project which has resulted in the building of an earth dam that captures 1000 cubic metres water. This will make it possible to crop for at least 8 months of the year, thus doubling the annual harvest. The women believe that the dam will transform their arid valley into an agricultural paradise.

5.4   Recommendations

Based on the research findings, the thesis proposes the following:

- The case of Vukani may serve as a pilot that can be upscaled for the region. The women have taken on a range of simple activities within their community that together have brought major changes in their lives

- An earth dam has already been completed by Ecolink for Vukani and has been filled to capacity by rainwater from the catchment area. Such

appropriate low cost technology applied in small villages has the potential of going a long way in alleviating food insecurity

- Because of gender bias in villages such as Luphisi, women and men should be separated in training or information sessions provided by service providers (NGO's). This is likely to encourage women to feel freer to participate in water issues and to express themselves without the fear they feel when they are with their spouses

- The women foresee a very bright future as a result of the new earth dam that has been constructed. A follow up study of the effect that the dam has on everyday lives of the women and how it impacts on their food security would be worthwhile

- The water in the dam is strictly for Vukani's gardening activities. This may cause tension among Vukani and other villagers and it would be worth following up on conflict situations and how they are resolved

5.5 Limitations

Language was an inhibiting factor and although there was a translator, many of the ideas (such as self-esteem, empowerment, trust and dignity) have subtle meanings and nuances that can be lost in the translation of these words. The study made every effort to deal with this limitation. This meant that the researcher had to take time to learn about the subtleties and to take care in training the translator so that nuances were not lost in translation.

5.6   Conclusion

Water is a scarce resource that is critical for both social and economic development and it has a direct influence on the lives of communities (Appelgren and Klohn 1999). This thesis has however shown that despite the importance of water for development, the lack of water does not necessarily result in community inertia or vulnerability. The case study of Vukani has shown us that despite water stress women have developed innovative ways of planning and planting their crops as well as finding low cost technologically appropriate irrigation solutions. The women have also illustrated that while their major income generating focus is to do with water and the use of water for food security, they have diversified and have taken on other business ventures to supplement their income while "waiting for the rain".

One of the central goals of human development is enabling people to become agents, determining their own freedom and improving their quality of life. Women like Gogo MaNkosi have created spaces for themselves where they can actively shape the trajectory for their lives. This reflects the freedom to set goals and to make decisions and to see these decisions through to fruition. For Vukani this freedom was achieved through struggles against restrictive social protocols and gender skews in the village. The case study of Vukani has shown how the women defined what it is that they value doing or being and they mapped out the best means to achieve their goals.

The Vukani members are now empowered. They have high levels of self-esteem, self-confidence and dignity and they have become agents of change. This case

study has focussed on the development of people and not just the development of material goods. It has shown how the Vukani group have improved their quality of life and gained more freedom for themselves (and their households) by taking up opportunities around food and water security.

This focus on human freedom and the improvement of quality of life (self-esteem, dignity, pride for instance) contrasts with narrow views of development that view development as improved income or simply an improved human development index (income, education and long life). In this study we have shown preference for the idea of development as expanded opportunity. The lack of substantive freedom also relates directly to economic poverty which in turn robs individuals, households and communities of the freedom to satisfy hunger and to achieve sufficient nutrition. Importantly, Vukani members are now able to be and to do what they value being and doing and they feel good about themselves.

Substantive freedom, in this case, is linked to the idea of collective action because individually the women would not have achieved what they have been able to achieve through their participation as a group. Gogo MaNkosi, although no longer directly participating in the food garden, maintains her sense of freedom, dignity and self-esteem by managing the office and working closely with the group. Vukani women through their collective action now have the freedom to live fuller lives they have reason to value.

By presenting the case of the Ehlanzeni women in the province of Mpumalanga, South Africa, this study contributes to a better understanding of the water-gender-food challenges facing water scarce countries in developing country contexts. It offers important insights into the role that water and food security can play in poverty alleviation and development. Water scarcity can be a catalyst for women to organise themselves and in so doing develop strategies to cope with water stress. With increasing water scarcity in developing countries, particularly, but not only, in sub-Saharan Africa, collective action creates an enabling environment in which to address poverty and development concerns in general and food and water security challenges in particular.

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LIST OF APPENDICES

Appendix A   SR1 form

Appendix B   Translator's statement

Appendix C   Participant information sheet

Appendix D   Consent form

Appendix E   Questionnaire

LIST OF APPENDICES
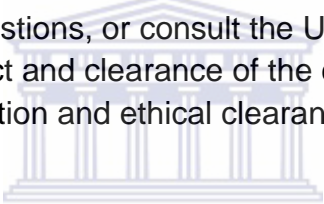
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DEPARTMENT OF RESEARCH DEVELOPMENT

APPENDIX A: UWC RESEARCH PROJECT REGISTRATION AND ETHICS CLEARANCE APPLICATION FORM

This application will be considered by UWC Faculty Board Research and Ethics Committees, then by the UWC Senate Research Committee [SR]. SR may also consult outsiders on ethics questions, or consult the UWC ethics subcommittees, before registration of the project and clearance of the ethics. No project should proceed before project registration and ethical clearance has been granted.

A.   PARTICULARS OF INDIVIDUAL APPLICANT
NAME: Jacqueline Goldin   TITLE: Professor
DEPARTMENT: Environmental and Water Science   FACULTY: Science
FIELD OF STUDY: SADC-WaterNet Chair for Water and Society

ARE YOU:				
A member of UWC academic staff?	Yes	☐	No	☐
A member of UWC support staff?	Yes	☐	No	☐
A registered UWC student?	Yes	☐	No	☐
From outside UWC, wishing to research at or with UWC?	Yes	☐	No	☐

B. PARTICULARS OF PROJECT

PROJECT NUMBER: **K5/1971**

EXPECTED COMPLETION DATE: March 2013

PROJECT TITLE: A CASE STUDY OF THE COLLECTIVE ACTION OF WOMEN IN RESPONSE TO WATER AND FOOD SECURITY IN THE EHLANZENI DISTRICT MUNICIPALITY, MPUMALAGA PROVINCE

THREE KEY WORDS DESCRIBING PROJECT: Capabilities, freedoms, Resilience

PURPOSE OF THE PROJECT: To highlight how working together enables resilience to external stresses

M-DEGREE: MSc. Environmental Science   D-DEGREE:

POST GRADUATE RESEARCH:

C. PARTICULARS REGARDING PARTICULAR RESEARCHERS

FAMILY NAME: Goldin

INITIALS: J   TITLE: Prof.

PRINCIPAL RESEARCHER: Jacqueline Goldin

OTHER RESEARCH PROJECT LEADERS: N/A

OTHER CO-SUPERVISOR: N/A

THESIS: STUDENT RESEARCHER: Greater Ncube

THESIS: SUPERVISOR: Prof. Jacqueline Goldin
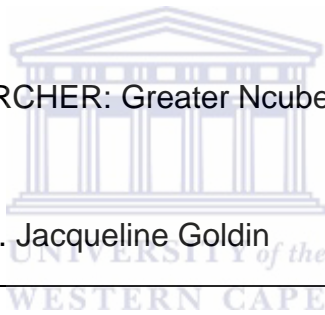
C. GENERAL INFORMATION

STUDY LEAVE TO BE TAKEN DURING PROJECT (days): 30 days leave

IS IT INTENDED THAT THE OUTCOME WILL BE SUBMITTED FOR PEER REVIEWED PUBLICATION?

YES ☐   NO ☐

COMMENTS: DEPARTMENTAL CHAIRPERSON:

SIGNATURE OF THESIS STUDENT RESEARCHER – WHERE APPROPRIATE:

DATE

SIGNATURE OF THESIS SUPERVISOR – WHERE APPROPRIATE:

DATE

SIGNATURE OF PRINCIPAL RESEARCHER – WHERE APROPRIATE:

DATE:

SIGNATURE OF DEPARTMENTAL CHAIRPERSON:

DATE:

NOTE: THESE SIGNATURES IMPLY AN UNDERTAKING *BY THE RESEARCHERS*, TO CONDUCT THE RESEARCH ETHICALLY, AND AN UNDERTAKING BY THE THESIS SUPERVISOR (WHERE APPROPRIATE), AND THE DEPARTMENTAL CHAIRPERSON, TO MAINTAIN A RESPONSIBLE OVERSIGHT OVER THE ETHICAL CONDUCT OF THE RESEARCH.

E. DESCRIPTION OF PROJECT AND RESEARCH ETHICS STATEMENT

Please type below, or attach a typed document, usually between 500 and 5000 words, setting out the purpose and process of the research. Please include a clear research ethics statement. The onus is on the applicant to persuade UWC that the research will be conducted ethically. This will normally require evidence of an up to date research ethics literature search in the particular discipline; evidence of what the world standard ethical practice is, in the particular discipline; an explanation of how the proposed research is to be conducted ethically; a detailed justification of any proposed departure from world standard ethical practice; and a clear undertaking to conduct the research ethically. It may be useful also to agree to conduct the research in line with the published ethical rules of a national or international disciplinary association. UWC reserves the right to stop or suspend any research undertaken by its staff or students, or by outsiders on its property or in association with it, if the research appears to be unethical.

TITLE: A CASE STUDY OF THE COLLECTIVE ACTION OF WOMEN IN RESPONSE TO WATER AND FOOD SECURITY IN THE EHLANZENI DISTRICT MUNICIPALITY, MPUMALANGA PROVINCE

ABSTRACT:

The historical patterns of access to water and other areas of public service delivery in South Africa predominantly favoured the white minority. There was inadequate distribution of water where township and rural areas bore the brunt of the apartheid administration. Women are disadvantaged within the household and carry the burden of providing not just food but also water for their families. This is particularly true in a water stressed environment, such as the Ehlanzeni District Municipality in Mpumalanga. It is well documented that the causes and experiences of poverty are not gender neutral. This study seeks to address the practical application of the core elements of the Nobel price winner Amartya Sen's Capability Approach (CA) to development. In particular, the CA's ideas of opportunities and freedom to be well nourished and to have water and food security in Ehlanzeni, will be assessed. The practical application of Sen's ideas will be considered and how these ideas help understand collective action with regards to strategies of resilience towards water stress and poverty by the women. The paper considers how community involvement, in particular women's involvement in groups, impacts on water related issues.

The empirical work draws on a current integrated rain water harvesting project in Ehlanzeni and considers participation of women in this project as an entry point for women to gain resilience and improve their food security. The study considers the links between women's participation in water related issues and their levels of empowerment.

Keywords: Capability Approach, poverty, resilience, well-being, institutional adequacy, freedoms, water security, capabilities

AIM OF THE RESEARCH

The main aim of the study is to propose a practical application of the Capability Approach for the purpose of understanding the relevance of ideas behind resilience and collective action of the women in the Ehlanzeni District Municipality to water stress.

The study, through face to face interviews, considers how working together results in resilience enhancing strategies to combat external stress. Data will be collected by means of a semi structured questionnaire being distributed to Vukani women's group.

Water is a scarce resource. It is critical for social and economic development, and directly affects the lives of communities (Appelgren 1998). Food security requires sufficient amounts of water as water is a prerequisite for plant growth. With the intensification of water stress and the limited potential for additional water supply, increasing emphasis has been given to the improvement of water use efficiency in recent years (Gerbens-Leenes and Nonhebel 2004). In the agricultural sector, this has been concretized as ''more crop and higher value per drop'' (IMWI 2011). A classical pursuit of this goal has been to shift to higher-value cash crops, typically vegetables and fruits. It has been widely accepted that this shift is conducive to raising rural incomes while providing them with nutritional diets and Israel has often been referred to as a successful case in this regard (Yang and Zender 2002).

This case study highlights how a vegetable garden has empowered Vukani women not only by providing their families with food and income but most importantly by helping them build resilience to water stress and thus also attract a local Non-Governmental organisation interest in their project

RATIONALE

The Capability Approach which is a multi-dimensional approach to poverty is a useful development tool that can be practically applied in the understanding of social issues and achievements in the water sector. The Capability Approach can be practically applied to better understand the relationship between collective action and resilience to water stress and as noted by Clark (2005), it is a framework that centres on enhancing choices and human freedom to live "the good life". While Sen's approach has identified the need to expand the conceptualization of poverty beyond the dimension of income deficiency, there is, according to Sen (1999) no one-for-all list of predetermined capabilities. The strength of the Capability Approach is that it enables capabilities to be identified for specific situations and communities.

The Capability Approach presents itself as a useful tool human development studies in that it proposes that well-being be assessed in terms of real and actual opportunities available to specific settings. Vukani's wellbeing can therefore be assessed in terms of the actual opportunities that are available to these women in Luphisi village.
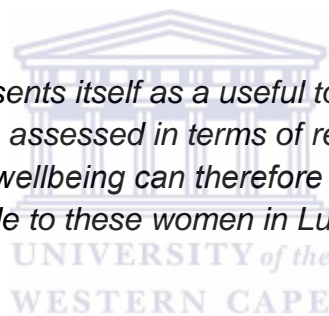
LITERATURE REVIEW

During this study I will investigate how collective action enables resilience to external stress such as resource shortages and scarcity. The question of resource scarcity in terms of food or water has led to many debates on whether scarcity will lead to conflict and war. The underlining reasoning behind most of these discourses over food and water wars comes from the Malthusian belief that there is an imbalance between the economic availability of natural resources and population growth since while food production grows linearly, population increases exponentially (Allouche 2010). Following this reasoning, neo-Malthusians claim that finite natural resources place a strict limit on the growth of human population and aggregate consumption; Allouche (2010) suggests that if these limits are exceeded; social breakdown, conflict and wars result. Blignaut and Choles (2011) however argue that scarcity and dissatisfaction will often lead to collective action, where communities have a common enemy and hence try to work collectively in fighting this enemy.

I will use the Capability Approach as a framework for analysing the actual opportunities available to Sikuvile group in term of their attainment of well-being.

The Capability Approach

The Capability Approach can be viewed as a broad normative framework for the evaluation and assessment of individual well-being and social arrangements, the design of policies, and proposals about social change. It can be used as an alternative to mainstream economics to empirically assess aspects of an individual or group well-being and to examine inequality and poverty. The Capability Approach emphasizes that it is better to focus on the ends rather than the means, because people differ in their ability to convert means into valuable opportunities (capabilities) or outcomes (functions) (Sen 1992 in Robeyns 2011). The Capability Approach is multidimensional as several things matter at the same time in the assessment of well-being. Well-being cannot be reduced to income, or happiness or any single thing (Alkire and Deneulin 2009, Nussbaum 2011). The Capability Approach two core concepts are functionings (beings and doings) and capabilities (combination of beings and doings). One of the chief strengths of Sen's framework is that it is highly flexible and exhibits a considerable degree of internal pluralism. This allows researchers not only to develop but also apply it in many different ways (Alkire 2002 in Clark 2005).

Food security

Food security, meaning access to adequate food for all, at all times, requires sustainable and increased production and productivity in the agricultural sectors as well as more equitable distribution of food produced (IMWI 2011). Wenhold et al (2007) point out that for food security to be achieved, adequate policies and institutions in the many sectors that influence the ability of men and women to produce and purchase food, and the ability of their families to derive adequate nutrition from it, are required. Wenhold et al (2007) state that food security is the outcome of many interrelated factors, one of which is water as it is an essential resource for food production. People's access to water in rural areas, and the price of water, affects their food security for the following reasons:

- Rural water costs tend to be high and unstable, whether in monetary terms or in the time and effort required by households to fetch water, thus influencing their real incomes. Rural clean water sources are often vulnerable to droughts and floods, leading to increased costs of obtaining clean water at times when food prices typically are also likely to be high.

- Water related local diarrhoeal diseases reduce food absorption.

- Access to water for livestock and particularly for the irrigation of crops, including food crops, is one of the ways poverty and food insecurity can be reduced in rural areas. This has resulted in water being called the dividing line between poverty and prosperity, as it is a cross cutting tool for the achievement of the millennium development goals and the improvement of the lives of the poor.

Food production is the most water intensive activity in society and water is the number one food limiting factor in many parts of sub-Saharan Africa.

Water vulnerability, food security, and poverty relations

In order to reach the millennium development goal of eradicating poverty and hunger, water management in agriculture would need to be geared up to increase agricultural production and to meet increasing demands while maintaining affordable prices for the poor and sustaining essential ecosystem services (Rockstrom 2003). Water contributes to poverty alleviation in a variety of ways, these include; improving water supply and sanitation; enhanced health and resilience to disease; improving productivity and output; helping to provide more affordable food and working against the impacts of climate change and environmental degradation (IMWI 2011). Generally, the poorest populations in the world have the poorest access to water supplies and sanitation, and they are the most dependent on water resources for their daily livelihoods (Comprehensive Assessment 2007).

For Vukani having water would mean that they can not only provide nutritious meals for their families but also provide some form of income which would supplement the government grant.

Water scarcity and resilience

With close links between society and water management, the importance of social and economic approaches to management of water scarcity is increasingly being recognised (Appelgren 1998). The focus here is on the adaptive capacity of a given social group to address water scarcity, recognising also the limitations of these capacities. Social resource scarcity could limit not only the capacity to address water scarcity but could also have wider social security implications for adaptive processes and for the ability of communities to cope with outside stress factors.

Vukani presents a unique setting where they are managing water which is not even there. This is done by adapting and finding innovative ways to address their scarcity. This scarcity has enabled these women to think outside the box and come up with strategies to combat their external stresses.

Building social resilience

Cacioppo et al (2011) state that embarking on programs to enhance social resilience means departing from the usual ways of thinking about the problems of people in three fundamental ways:

- First, the term itself emphasizes strengths that encourage patterns of positive adaptation rather than sources of vulnerability that place people at risk

- Second, stressful experiences are inherently tied to the formulation, so that interventions to promote resilience need to be designed with specific sources of adversity in mind and with attention to the nonlinear dynamics of coping with and adaptation to that adversity

- Third, the "social" in social resilience widens the angle of the researcher's lens from a focus on individual capacities to the examination of ways to build more adaptive social ecologies for people, groups, organizations, and communities

Indeed, one of the outstanding features of resilience is that it can be thought of as a systemic process (or processes) inherent in virtually any type of organized entity, from a simple biological system to a person, an organization, a neighbourhood, a community, a city, a state, or even a nation (Cacioppo et al 2011). In essence, social resilience represents a paradigmatic shift in our ways of thinking about people and their problems and thus requires a fresh look at the design of interventions to promote the kinds of qualities that increase the likelihood of resilient outcomes (Folke 2006).

Vukani has been operational for more than ten years despite acute water stress. This may be an indication of some level of adaptive capacities of the women to their external stresses. There should be some levels of innovativeness to enable this resilience to water stress over such a long period of time. It is these capabilities that I will attempt to uncover and consider if they can be applied to other communities facing external stresses.

STUDY AREA

Ehlanzeni district municipality is located in Mpumalanga which is at the North East of South Africa. It has an estimated population of 125 000 (Goldin et al 2008) with most of this population living in remote villages and scattered settlements. Holden and Mathabatha2007 (in Goldin 2008) describe it as a tiny strip of land sandwiched between South Africa and Swaziland. Nelspruit and White River are the two biggest urban centres and provide employment for roughly 30% of the Ehlanzeni community (Goldin et al 2008a). Like many of the former homeland regions, for the unemployed, it is inadequate cash flows from small scale agriculture that provide any form of livelihood (Goldin et al 2008a). There are many backyard gardens that do not produce enough surplus produce to generate any significant income for the families. Those whose gardens produce any surplus sell their produce to supplement the meagre government grant income (Goldin et al 2008a).

The on-going integrated rainwater harvesting project that is being implemented in four villages (Luphisi, Dwaleni, Mjejane and Mbonisweni) in the Ehlanzeni District Municipality is enabling some form of collective action for women and it is within this context that this study will attempt to establish the relationship between collective action, in particular by women, and resilience to water stress.

DESIGN AND METHOD

A qualitative approach will be adopted for this study. Secondary data has been gathered from articles, reports and theoretical renderings of the capability approach. Concepts, notions and theories of resilience as they relate to food and water are also being consulted. Purposive sampling will be used to identify only the key informants who belong to Vukani. All of Vukani group's members reside in Luphisi village. Twenty semi-structured questionnaires will be distributed to these women. The questionnaire will be administered in English as I am not familiar with the local language and a translator will be present at all times. The role of the translator will be read the questionnaire and translate the questions to SiSwati for the participants and then translate their responses to the researcher in English. The aim of the questionnaire is to obtain information on firstly how the group was initially formed and secondly how working together has enabled the group to build resilience enhancing strategies towards water scarcity. The questionnaire is divided into sections that would give insight to respondents' demographics, individual and group capabilities, resilience building, well-being and induced social water security. It should take about fifty minutes to complete the questionnaire. The interviews will be audio recorded and a few photos will be taken of the respondents gardening activities should they permit. The project leaders will validate 10% of all questionnaires telephonically. During the validation process, the project leaders will cross-check and verify questionnaire data. Before conducting my research I will contact the local, traditional and political authorities to ensure that a good foundation is being laid for my research project. I will also utilize a digital voice recorder and camera to capture the atmosphere and environment. Prior to voice recording and taking

photos, I will get permission from participants to use this data. I will clearly explain how the recordings and photos will be used and that they have the right to refuse utilization of the digital voice recorder and camera.

ETHICS STATEMENT

The rights to privacy of the respondents and protection of their confidential information which are a central principle will upheld in the daily conduct of all field work which include the gathering,

dissemination and use of information for the purposes of this study. I will be truthful with respect to

my identity and purpose of my research as well as the identity of the University I am enrolled in during the course of my research. I will conduct myself in the utmost professional mannerism and in accordance with the standards of the University.

I will also take all the necessary care to ensure that my work is as accurate as possible. This will be achieved by recording all data that is appropriate to the study and protect the confidentiality of all

information at all times. I will also obtain the consent from all respondents and ensure that they are voluntarily participating in the research with full knowledge of my intentions. I will also give the respondents information about how their data will be used, what I will use their photos, audio recordings and other material I will obtain from them.

CONFIDENTIALITY STATEMENT

Efforts to ensure confidentiality at all times will be taken. Generic names and code numbers will be used to identify respondents on all official documents, reports of the completed study and to all external parties.

Audio recordings will be uploaded to a portable laptop and will be password-protected. Original records will be destroyed following the upload. The same procedure will count for photos taken of gardening activities.

Paper documents will be protected. All computerized files will be password-protected and

encrypted.

Participants have the right to stop the interview at any time and withdraw whatever data has been collected to that time.

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(959 2949; 959 2948 secretary, 959 3170 fax, and email: rchristie@uwc.ac.za)
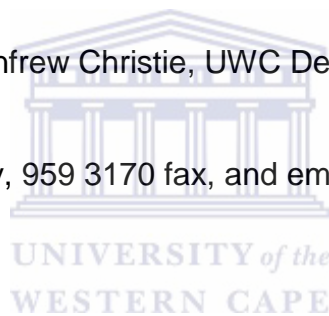
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APPENDIX B: TRANSLATOR CONFIDENTIALITY: VUKANI QUESTIONNAIRE

TITLE: **A CASE STUDY OF THE COLLECTIVE ACTION OF WOMEN IN RESPONSE TO WATER AND FOOD SECURITY IN THE EHLANZENI DISTRICT MUNICIPALITY, MPUMALANGA PROVINCE.**

I agree to keep all information that I learn through this study confidential. I also undertake to   keep strictly confidential all information that will be communicated to me verbally or in written or any other form for purposes of translation by the researcher.

I undertake not to use any information provided for any other purpose than to provide the translations required and not to keep any copies, summaries or transcripts of the translated documents in any form

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SIGNATURE: TRANSLATOR   NAME OF TRANSLATOR   DATE

                         Ms. Greater Ncube

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SIGNATURE: RESEARCHER   NAME OF RESEARCHER   DATE

                         Prof J Goldin

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PRINCIPAL INVESTIGATOR   NAME OF PRINCIPAL INVESTIGATOR   DATE

APPENDIX C: Information Sheet

Title: A CASE STUDY OF THE COLLECTIVE ACTION OF WOMEN IN RESPONSE TO WATER AND FOOD SECURITY IN THE EHLANZENI DISTRICT MUNICIPALITY, MPUMALANGA PROVINCE

This is a case study of women in Ehlanzeni district municipality who have been working together on a gardening project for more than a decade despite acute water stress and have since developed strategies that have enabled them to build resilience to external stresses.

Purpose: The main aim of the study is to propose a practical application of the Capability Approach for the purpose of understanding the relevance of ideas behind resilience and collective action of the Vukani women in the Ehlanzeni District Municipality. The study considers how working together by women results in strategies that enable resilience to external stresses. The study area will be Luphisi village with main focus on the Vukani women's group. You are being invited to participate in the research study because of your expertise and/or personal experience in your community and your membership in the Vukani women's group. The research is conducted as part of a Magister Scientiae degree and collected data will be part of a thesis. The thesis will be submitted in partial fulfilment of the requirements for the degree of Magister Scientiae, in the Department of Environmental and Water Science, University of the Western Cape.

Study Procedures: You will be participating in this research by completing a semi structured questionnaire. The questionnaire is divided into sections that would give insight to respondents' demographics, establishment of Vukani group, institutional adequacy, individual capabilities, attainment of well-being, identification of capabilities, resilience enhancing qualities, individual freedoms, income, the commons, and water security. It should take about fifty minutes to complete the questionnaire. The interview will be audio recorded and a few photos will be taken of your garden and gardening activities. This is being done to capture all data and to give the supervisor insight into your gardening project. You reserve the right to skip some questions on the questionnaire. You may change information on the questionnaire at any time and you have the right to withdraw from the interview at any given time. You have the right to refuse being audio recorded or of photos being taken of you, your garden and gardening activities.

Potential Risks: No potential risks are expected.

Potential Benefits: Respondents may not benefit directly from participation in the study, but may appreciate being able to share their personal experiences   of their collective action in response to food security and water stress.

Confidentiality: Efforts to ensure confidentiality at all times will be taken. If you choose not to disclose your identity in the results of the study, your identity will be kept strictly confidential. Generic names and code numbers will be used to identify respondents on all official documents, reports of the completed study and to all external parties.

Audio recording will be uploaded to a portable laptop and will be password-protected. Original records will be destroyed following the upload. The same procedure will count for photos taken of your gardening activities where I will not use your name and if you chose not to be identified in the photo, I will not show your face. Paper documents will be protected. All computerized files will be password-protected and encrypted.

Withdrawal: Participants have the right to stop the interview at any time and may withdraw whatever data has been collected to that time.

Contact for concerns about the rights of research respondents:

If you have any concerns about your treatment or rights as a research respondent, you may contact the Research Office at 021 959 2948 or via mail:

> Ms. H. Williams
> Research Office
> Modderdam Road
> Private Bag X17
> Bellville
> 7535

Contact for information about the study:

If you have any questions or desire further information with respect to this study, you may contact:

Principal Investigator: Professor Jacqueline Goldin, Environmental and Water Science, University of the Western Cape, 021 959 3931. E-mail: jgoldin@uwc.ac.za

Student Investigator: Ms. Greater Ncube, Environmental and Water Science, University of the Western Cape, 021 959 9728. E-mail: 3057261@uwc.ac.za

All investigators can be reached in writing at: Environmental and Water Science

> New Life Science Building
> Core 2, Level 3
> Modderdam Road
> Private Bag X17
> Bellville
> 7535

Appendix D: Consent Form: VUKANI Questionnaire

TITLE: A CASE STUDY OF THE COLLECTIVE ACTION OF WOMEN IN RESPONSE TO WATER AND FOOD SECURITY IN THE EHLANZENI DISTRICT MUNICIPALITY, MPUMALANGA PROVINCE

I hereby acknowledge that I have been advised about the risks and benefits of participating in this project. This has been done in a language that I understand through a translator and I agree to participate.

I agree / disagree (circle appropriate) that photos and voice recordings of me in my immediate environment as well as photos of my garden may be used as part of this project.

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SIGNATURE: RESPONDENT   NAME OF RESPONDENT   DATE

                                         Ms. Greater Ncube

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SIGNATURE: RESEARCHER   NAME OF RESEARCHER   DATE

                                         Prof J Goldin

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PRINCIPAL INVESTIGATOR   NAME OF PRINCIPAL INVESTIGATOR   DATE

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APPENDIX E: Household questionnaire

Student Name   **Greater Ncube**

Student number   **3057261**

Supervisor   **Prof J. Goldin**

Research topic:

A case study of the collective action of women in response to water stress in the Ehlanzeni District Municipality

A. DEMOGRAPHICS

Interviewer: I would like to start with asking you questions about your household

A.1	Gender	*Circle response*	1. Male 2. Female	**B.1.2**	Age	*Circle response*	1. 21 and Under 4. 45 to 54 2. 22 to 34 5. 55 to 64 3 . 35 to 44 6. 65 and Over
A.2	What is your marital status?					*Circle response*	1. Single 2. Married 3. In partnership 4. Divorced/separated 5. Widow/widower
A.3	What is the highest educational qualification you have attained					*Circle response*	1. None 2. Some primary 3. Complete primary 4. Some secondary 5. Matric 6. Diploma 7. Other (Please soecify) …………………………………
A.4	In terms of your writing which of the following applies					*Circle response*	1. I can write perfectly well 2. I can write quite well enough 3. I can write fairly well 4. I can write a little 5. I can't write at all
A.5	In terms of your reading which of the following applies					*Circle response*	1. I can read perfectly well 2. I can read quite well enough 3. I can read fairly well 4. I can read a little 5. I can't read at all

How many members in the household are: ......?

Interviewer to read out options and enter the correct response for each

A.5.1.1	Aged 5 years and younger		A.5.1.6	Aged over 60 years	
A.5.1.2	Aged over 5 years up to 15 years		A.5.1.7	Attending Primary school	
A.5.1.3	Aged over 15 years up to 20 years		A.5.1.8	Attending Secondary school	
A.5.1.4	Aged over 20 years up to 35 years		A.5.1.9	Attending vocational or academic college	
A.5.1.5	Aged over 35 years up to 60 years				

Interviewer to read out options and enter the correct response for each

A.5.2.1	Working full time in a job		A.5.2.6	Full time scholar	
A.5.2.2	Working part time in a job		A.5.2.7	Part time scholar	
A.5.2.3	Not working but looking for work		A.5.2.8	Receives pension fund	
A.5.2.4	Not working but not looking for work		A.5.2.9	Receives child grant	
			A.5.2.6	Receives disability grant	

B. ESTABLISHMENT OF COLLECTIVE ACTION

Interviewer: Now I am going to ask you questions about the formation of your gardening group and project

B.1	When was this group formed?		
B.1.1	How many initial members did it have?		
B.1.2	How many members does it now have?		
B.1.3	How was it formed?		
B.1.4	How did you become a member of this group?		
B.1.5	Should a member involuntarily leave the group, is she replaced by a member of their family or is a new member recruited?	*Circle response*	*1.Replaced by family member* *2. New member recruited* *3. Other (state)*
B.2	Who started the group?		

B.2.1	What where the circumstances leading to the formation of this group?			
B.2.2	How where the initial members recruited?			
B.3	What kinds of people where chosen for group membership?			
B.3.1	What criterion is/was used for group member selection?			
B.3.2	What personal qualities are considered for selection?			
B.3.3	Do all members live in the same neighbourhood?	*Circle response*	Yes No Don't know	
B.4	Why do you think you got together as a group?			
B.4.1	Do you think of yourselves as all being pretty much the same or being different type?	*Circle response*	**Same** **Different** **Don't know**	
B.4.1.1	Why do think this is?			
B.5	Do you think you were forced to join the group?	*Circle response*	Yes No Don't know	*If yes ⇨ B.8* *If no ⇨ B.6*
B.6	What are the reasons that made you want to join this group?			
B.7	What personal qualities do you have that make you a member of the group?			
B.8	What do you think makes people want to belong to this group?			

C. INSTITUTIONAL ADEQUACY				
Interviewer: Now I am going to ask you questions about the other groups that you belong to and their membership dynamics				
C.1	Have you in the past belonged to groups that are no longer functional?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ C.1.1* *If no ⇨ C.2*

C.1.1	What do you think were the reasons that made that group/s to collapse?			
C.1.2	What do you think should have been done to avoid the collapse?			
C.2	Since you became a member of this group, are you aware of any people that have since left the group?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ C.2.1* *If no⇨ C.3*
C.2.1	What do you think were their reasons of leaving the group?			
C.3	Have you in the past encountered situations that made you feel the need to leave this group?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ C.3.1* *If no⇨ C.4*
C.3.1	Please tell me more about those situations and experiences?			
C.3.2	What made you to stay?			
C.4	Are you aware of any members who once considered leaving the group but did not?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ C.4.1* *If no⇨ C.5*
C.4.1	What do you think were their reasons for staying?			
C.5	Are there any penalties for leaving the group	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ C.5.1* *If no⇨ C6*
C.5.1	Please tell me more about them			
C.6	What are the strengths of this group?			
C.6.1	What are the weaknesses of this group?			
C.6.2	What, if anything, do you think could be done to make the group stronger?			
C.7	How are decisions made in this group?			
C.7.1	Who makes the decisions	*Circle response*	*1. We all do* *2.Some do* *3.We take it in turns* *4.The chairperson does*	

				5.other (specify)	
C.7.2	Does the group have a constitution?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ C.7.3* *If no⇨ D*
C.7.3	What do you use the constitution for			
C.7.4	Of what use is the constitution to this group			
C.7.5	How does the constitution help this group?			

D. COLLECTIVE ACTION CRITIQUED

Interviewer: Now I am going to ask you questions about the benefits you have derived from working together

D.1	How/what do you personally contribute to the group?			
D.2	What benefits have you derived from this group?			
D.2.1	What benefits has your family derived from this group?			
D.2.2	How has this group membership benefited you as an individual?			
D.2.3	Do you think people in your neighbourhood who do not belong this group are at a disadvantage	*Circle response*	*Yes* *No* Don't know	*If yes ⇨* *D.2.3.1* *If no⇨ D.2.4*
D.2.3.1	Why do you say that			
D.2.4	In what ways does/has the community benefited from this group?			
D.3	What do you think are the main things you have learnt by working together as a group on the garden?			
D.3.1	What do you think are the main things you are learning from each other as a group?			

D.4	What does this group mean or represent to you?	*Circle response*	1.It makes me feel good about myself	
			2.I like feeling that I belong to a group	
			3.I am learning things about growing of food	
			4.I am learning how the groups works.	
			5.Other. Please specify	

E. INDIVIDUAL CAPACITIES

Interviewer: now I am going to ask questions about you, your aspirations and support structures.

E.1	Tell me about yourself, how would you define yourself?			
E.2	What are your (values) those things that are important or that you value and hold dear to your heart?			
E.2.1	What are your (aspirations) hopes/dreams/ambitions, that what you want to achieve?			
E.2.2	What are your (aspirations) hopes/dreams/ambitions for the garden?			
E.2.3	What are your (aspirations) hopes/dreams/ambitions for your family?			
E.2.4	What are your (aspirations) hopes/dreams/ambitions for your community as a whole?			
E.3	Do you think your individual attributes are nurtured by the group (that is a quality that represents you eg loyalty, honesty, humour, common sense, motivation)?	*Circle response*	Yes No Don't know	
E.3.1	Can you tell me more about this?			
E.4	Do you feel that there are things that are being done by the group that make you to be a better person?	*Circle response*	Yes No Don't know	*If yes ⇨ E.4.1* *If no ⇨ E.4.2*
E.4.1	What are those things?			
E.4.2	What do you think the group should be doing to make its members improve their wellbeing? (that is a contented state of being happy and healthy and prosperous)			

F. ATTAINMENT OF WELLBEING

E.5	Do you have access to education (not restricted to formal education) that supports you/your dreams and aspirations?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ E.5.1* *If no ⇨ E.5.2*
E.5.1	What learning experiences are these?			
E.5.1.1	How do they support you?			
E.5.2	What learning opportunities would you want to have access to?			
E.6	Do you have access to community activities that support you/your dreams and aspirations?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ E.6.1* *If no ⇨ E.6.2*
E.6.1	What activities are these?			
E.6.1.1	How do they support you?			
E.6.2	What activities would you want to have access to?			
E.7	What opportunities, chances or situations do have access to or that are created by being a member of the community in general?			
E.8	What do you think you have achieved so far in terms of living a healthy and happy life?			
E.8.1	Why do you say this?			
E.9	Do you have access to community activities that foster caring and warm friendships?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ E.9.1* *If no ⇨ E.9.3*
E.9.1	Which ones are they?			
E.9.2	In what way do they foster caring and warm friendships?			
E.9.3	Which community activities would you like to have access to?			
E.9.4	Do you think this will benefit you?	*Circle response*	*Yes* *No* Don't know	
E.9.5	In what way?			

Interviewer: now I am going to ask you questions about the things you do to live a happy life			
F.1	What do you do as a group to better your lives?	
F.1.1	What do you do as a group to make group members to feel good about themselves?	
F.1.2	What do you do as a group to make group members live a happier life?	
F.1.3	As a group what are you are able to do or to be to help you and your families to live happy and healthy lives?	
F.1.4	As a group what do you think you have managed to do for your families to live happy ,healthy lives?	
F.2	What are you able to do and be to achieve wellbeing for yourself? (that is a contented state of being happy and healthy and prosperous)	
F.2.2	What is the community able to do and to be that can enable the community as a whole to live happy and healthy lives?	
F.2.3	What can this community be or do to enable its members to live a happy life?	
F.3	How do you define a good quality of life?	
F.3.1	Describe to me the ideal life that one could have if you had no restrictions?	
F.4	Describe to me the things that people do in an average day that makes them feel good about themselves?	
F.4.1	Which ones of these do you do?	
F.4.2	What do you think should be done to feel good about oneself?	
F.4.3	What do you do to feel good about yourself?	
F.4.4	In what way do these things make you feel good about yourself?	

F.5	Do you feel good about yourself?	*Circle response*	*Yes* *No* Don't know	
F.5.1	What makes you say this?			
F.6	In life there are tangible goods such as your house and things such as chairs, radios etc. There are also non material things such as trust, love belonging etc. What, if any, of these goods do you think matter?			
F.6.1	What, if any, of these goods make you feel good about your family?			
F.6.2	What, if any, of these goods make you feel good about your community?			
F.6.3	What, if any, of these goods make you feel good about your gardening group?			

G .IDENTIFICATION OF CAPABILITIES				
Interviewer: now I am going to ask you about what you are able to do and be in pursuit of living a happy life				
G.1	Do you think this garden has empowered you? (that is enable (someone) to do something)	*Circle response*	*Yes* *No* Don't know	*If yes ⇨G.1.1* *If no ⇨G.2*
G.1.1	In what way has it empowered you?			
G.2	What can you do and be now because of the being a member of the garden project?			
G.2.1	What has working together in the garden enabled you to do and to be that you were not being or doing before?			
G.3	What is important to you in general in your life?			
G.3.1	What things do you value being and doing?			
G.3.2	What do you think you capable of being and doing?			
G.3.3	What could you be capable of being/doing to achieve wellbeing?			

G.3.4	What have you been capable of being and doing?	
G.4	What effective opportunities do you have to lead the life that you have reason to value?	

H. RESILIENCE ENHANCING QUALITIES				
Interviewer: I will now ask you about the things that make you keep working on the garden even when there was no water				
H.1	How do you think you have survived as a group for so long?			
H.2	Has being a member of this group helped you to withstand difficult times and not give up hope?	***Circle response***	*Yes* *No* Don't know	*If yes ⇨H.2.1* *If no⇨ H.3*
H.2.1	Can you tell me a bit more about why you say this?			
H.2.2	Do u think it is because you as a person do not give up hope that made you want to join this group?	***Circle response***	*Yes* *No* Don't know	
H.2.3	Can you tell me more about why you say this			
H.3	What have you learnt from working together in this group that has enabled or is making you to withstand difficult times and situations in your life in general?			
H.4	What personal abilities enable you to be resilient i.e. your interpersonal skills, your unique talents and abilities that enable you to withstand shocks like water stress but still continue to work on the garden?	***Circle all applicable***	1.Work unsupervised 2.reliable 3.honest 4.work under pressure 5. Trustworthy 6. Motivational 7.Leadership skills 8. Physical ability 9.Expertise 10.Decesion making 11.Analytical skills 12. Listening skills 13. Team player 14. Negotiating 15. Organising skills 16. Creative thinking 17. Innovation Other, specify	
H.5	Do you have access to education, (and this is not limited to class room education) that enable you to cope with daily struggles?	***Circle response***	*Yes* *No* Don't know	
H.5.1	Can you tell me more about this?			

H.6	What are your resilience enhancing qualities?(that is your ability to get up and go to the garden before you had a dam despite the water stress)			
H.6.1	From your own experiences with the group, what do you think has made the group to survive for such a long time?			
H7	Do you think working together with others at the garden has helped you to become the person you have always wanted to be and to do things you have always wanted to do?	*Circle response*	*Yes* *No* Don't know	
H.7.1	Can you tell me a bit more about why you say this			

I. INDIVIDUAL FREEDOMS

Interviewer: now I will ask you about your ability to speak freely

| I.1	By working together do you feel that there have been new opportunities for you?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ I.1.1* *If no⇨ I.2*
I.1.1	What are these opportunities?			
I.2	Do you now have a new ability to speak freely in the group?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ I.3.1* *If no⇨ I.3*
I.2.1	Why do you say this			
I.3	Do you think you have more freedom now to speak your mind on community matters?	*Circle response*	*Yes* *No* Don't know	*If yes ⇨ I.3.1* *If no⇨ I.3*
I.3.1	Why do you say this			
I.3.2	Do you think you have more freedom now to speak your mind on community matters outside the group?	*Circle response*	*Yes* *No* Don't know	
I.3.3	Why do you say this			
I.3.4	Do you think you have more freedom now to speak your mind on family matters in your household?	*Circle response*	*Yes* *No* Don't know	
I.3.5	Why do you say this			
I.3.6	Do you think you have more freedom now to speak your mind on gardening group matters?	*Circle response*	*Yes* *No* Don't know	

I.3.7	What difference has this kind of freedom made to your quality of life?	
I.4	What can you now do in terms of your power to speak, act and think as you want without any hindrance because of working together?	
I.5	How has working together changed/ promoted or even taken away any power you might have had to speak, act and think as you want without hindrance.	
I.6	What can you now do in terms of your power to speak, act and think as you want without any hindrance because of working together?	

J. INCOME

Interviewer: now I will ask you if you sell any of the garden produce and other ways of making a living

J.1	Do you sell the vegetables from your garden?	*Circle response*	Yes No Don't know	If yes ⇨ J.1.1 If no ⇨ J.2
J.1.1	To whom?			
J.1.2	How significant has this income been to your life and that of your family?	*Circle response*	1 Very significant 2 Somewhat significant 3 Significant 4 Not significant at all 5 Don't know	
J.1.3	What changes have you experienced in your life and that of your family due to the income earned from income from the garden?			
J.1.4	What can you do now that you could not do then because of the income earned from the garden project?			
J.2	What are your (other) sources of income?		1 Own business 2 Government grant 3 Children send me money 4 Sell my livestock 5 other, please specify	
J.3	Is the income that you receive and this household receives more than sufficient, about adequate or insufficient		*Interviewer to read out options and enter the correct response for each*	

J.3.1	Food			J.3.6	Transport	
J.3.2	Clothing		*1 More than sufficient* *2 Adequate* *3 Insufficient*	J.3.7	Leisure, entertainment	
J.3.3	Healthcare			J.3.8	Funeral plans/stokvel	
J.3.4	Housing			J.3.9	Savings (Bank or otherwise)	
J.3.5	Education			J.3.10	Farming/planting/cultivating	

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K. THE COMMONS		
Interviewer: I will now ask you about the dam		
K.1	Whose idea was it to build the dam?	
K.1.1	Did you contribute to its building?	
K.1.2	How did you contribute to its building?	
K.1.3	Who owns this dam?	
K.2	Who manages this dam?	
K.2.1	How is it managed?	
K.2.2.	Who is maintaining it?	
K.2.3	How is it being maintained?	
K.3	Who makes decisions concerning the dam?	
K.4	Who uses the water in the dam?	
K.4.1	For what purposes?	
K.4.2	What would you also want the water to be used for?	
K.4.3	Who decided on who uses the water?	
K.4.4	How does that make you feel?	
K.4.5	Who decided how the water is used?	
K.4.6	How does that make you feel?	
WATER SECURITY		
L.1	I saw from the last time I was here that you have two old water sources. Please tell me more about them?	

L.1.1	What are the changes that you made when you built the second water source?	
L.1.2	What was your reasoning for those changes?	
L.1.3	Did these changes result in your desired outcomes?	
L.1.4	What then did you notice changed in terms of water supply between the two water sources?	
L.1.5	What lessons did your first water sources teach you?	
L.1.6	What lessons did you learn from water source 1 to water source 2?	
L.2	What has the dam enabled you to be and do?	
L.2.1	What are you now able to do and to be because of the new dam?	
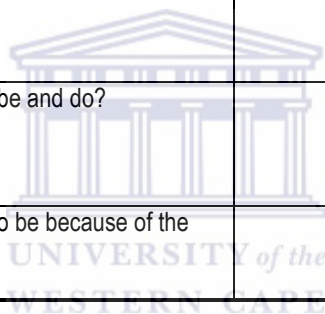
M. RESPONDENT DETAILS						
M.1	Questionnaire No	Letter code:			Number:	
M.2	Name		M.3	Surname		
M.4	Street Address		M.5	Postal Code		
M.6.1	Phone Number (home)		M.6.2	Phone Number (Work)		
M.6.3	Phone Number (Mobile)		M.7	Email Address		
M.8.1	First Language		M.8.2	Second Language		
M.8.3	Third Language		M.8.4	Fourth Language		

N. INTERVIEWER DETAILS

To be completed by interviewer only

N.1	**Interviewer name**	*Please write in name*		
N.2	**Date of interviewer (dd/mm/yyy**	*Please write in date*		
N.3	**Interview start time**	*Please write in time*		
N.4	**In general how did the respondent act towards you during the interview?**	1 Hostile 2 Neither hostile nor friendly 3 Friendly		
N.5	**How attentive was the respondent to the questions during the interview?**	1 Not at all attentive 2 Somewhat attentive 3 Very attentive		
N.6	**Were other persons within hearing range at any time during the interview?**	1 No other person within hearing range at any time 2 1 + people within hearing range for part of the interview 3 1 + people within hearing range for all of the interview		
N.7	End time of interview	Please write in time		