

**ASSESSING THE RELATIONSHIP BETWEEN YOUTH CAPABILITIES AND FOOD  
SECURITY: A CASE STUDY OF A RAINWATER HARVESTING PROJECT**

*By*

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

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## ABSTRACT

The National Water Act of 1998 provides the policy framework for stakeholder participation and the engagement of stakeholders closest to the resource on which they depend to be involved in developing and managing their water resources. Rainwater harvesting presents a viable option for securing water availability in order to increase food production and cash returns from food in the Ehlanzeni District Municipality which is one of the poorest districts in the Mpumalanga Province, South Africa. The study focuses on rural youth (between the ages 18-35 years) in two villages of the Ehlanzeni District, Luphisi and Dwaleni, and seeks to assess the relationship between youth capabilities and food security. The study used both quantitative and qualitative methods but with more emphasis on the quantitative data, with qualitative data providing anecdotal evidence to back up the findings. The qualitative data was collected from focus group discussions and the quantitative data was based on a baseline survey within the context of an Integrated Rain Water Harvesting Project implemented by a local NGO. The data drew on indicators in the questionnaire that were to do with social capital and empowerment. The indicators tapped into attributes/capabilities like trust, social cohesion and inclusion and sociability and examined these within the context of Amartya Sen's Capability Approach, to consider whether and in what ways these attributes relate to food security. The results show that there are youth have high levels of certain attributes/capabilities such as trust, social cohesion and inclusion, collective action and co-operation, self-esteem, and meaning. The findings also show that in other dimensions there are less opportunities and that, in particular, access to networks, access to knowledge and information and sociability are lacking among youth. Low levels of adherence to networks, lack of access to knowledge and information and poor sociability show that there are inadequate opportunities for youth to engage with issues around

food and water security. The Chi-square test was used to investigate the relationship between youth capabilities and food security and at  $p < 0.05$  results showed that there was no relationship between youth capabilities and food security in Dwaleni. There were only three capabilities which showed any significant statistical relationship between youth capabilities and food security in Luphisi namely; collective action and co-operation, social cohesion and self-esteem. The study recommends that networking opportunities and access to information relating to food and water security should be improved. The thesis claims that there are adequate opportunities to build on existing capabilities such as self-esteem, trust and social cohesion that are not being maximized and that youth are not being adequately engaged in water resources management.

## **KEYWORDS**

Collective action, Food security, Integrated Water Resources Management, Rainwater harvesting, Self-esteem, Social cohesion, Trust, Youth



## DECLARATION

I hereby declare that *Assessing the relationship between youth capabilities and food security: A case study of a Rainwater Harvesting Project* 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 the sources I have used or quoted have been indicated and acknowledged by means of complete references.

Ndoh Owen B. Germaine

Signature .....



Professor Jacqueline Goldin

Witness .....

## DEDICATION

This thesis is dedicated to my parents, Mr Owen Charles Belo and Mme Bourdon Simone-Dorice. I thank you for instrumental contribution to my life and for your love and support.



## ACKNOWLEDGEMENT

I acknowledge the Almighty God for life and seeing me through every step of the way in the realisation of this work. I appreciate my Christian family at Bellville Presbyterian Church for their prayers and care.

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## **ACRONYMS AND ABBREVIATIONS**

CA: Capability Approach

EDM: Ehlanzeni District Municipality

FAO: Food and Agricultural Organisation

GWP: Global Water Partnership

HIV/AIDS: Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome

ICMA: Inkomati Catchment Management Agency

IDP: Integrated Development Plan

INRM: Integrated Natural Resources Management

IRWHP: Integrated Rainwater Resources Management

IWRM: Integrated Water Resources Management

MDG: Millennium Development Goal

NGO: Non-Governmental Organisation

PRA: Participatory Rapid Appraisal

PSU's: Primary Sampling Units

RWH: Rain Water Harvesting

SES: Sequential Explanatory Strategy

SPSS: Statistical Packages for Social Scientists

SSU's: Secondary Sampling Units

TAC: Technical Advisory Committee

UN: United Nations

UNCED: United Nations Conference on Environment and Development

WFS: World Food Summit





WMA: Water Management Area



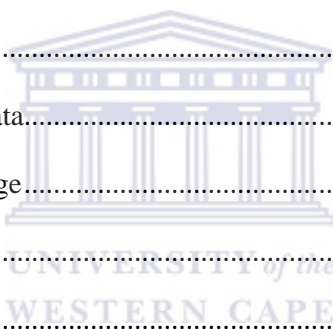
# Table of Contents

ABSTRACT.....	ii
KEYWORDS.....	iii
DECLARATION.....	iv
DEDICATION.....	v
ACKNOWLEDGEMENT.....	vi
Table of Contents.....	x
LIST OF TABLES.....	xvi
LIST OF FIGURES.....	xvii
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Introduction.....	1
1.2 Study Background.....	4
1.3 Problem statement.....	7
1.4 Rationale for the study.....	7
1.5 Aim of the Study.....	9
1.6 Objectives of the study.....	9
1.7 Research questions.....	10
1.8 Research hypothesis.....	10
1.9 Site of investigation/Study Area.....	11
a) Physical description.....	11
b) Socio-economic description.....	14
1.10 Study Design.....	15
1.11 Outline of Thesis.....	16
1.12 Summary.....	17
CHAPTER TWO.....	18



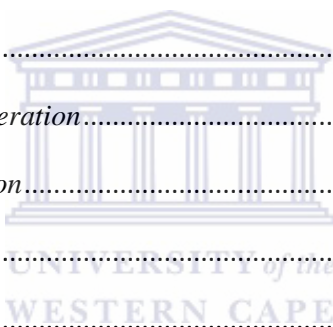
THEORETICAL FRAMEWORK AND LITERATURE REVIEW .....	18
2.1 Introduction.....	18
2.2 Background to IWRM.....	18
2.2.1 Dublin Statements and Principles .....	18
2.2.2 The Global Water Partnership (GWP) .....	20
2.2.3 Participatory Approaches .....	22
2.3 IWRM and implementation .....	25
2.4 The Capability Approach .....	30
2.4.1 Foundation and its development .....	30
2.4.2 The Capability Approach and Development.....	35
2.4.3 The Capability Approach and its relevance to the water sector .....	37
2.5 Youth and capabilities.....	38
2.5.1 Definition of youth.....	38
2.5.2 Youth rights and responsibilities in South Africa .....	39
2.5.3 From youth rights and responsibilities to youth capabilities.....	40
2.6 Food security.....	43
2.7 Summary .....	47
CHAPTER THREE .....	48
RESEARCH DESIGN AND METHODOLOGY .....	48
3.1 Introduction.....	48
3.2 Theoretical Overview.....	49
3.3 Research design .....	50
3.3.1 Qualitative component .....	50
3.3.1.1 Focus groups .....	50
3.3.1.2 Qualitative community mapping exercise.....	52

3.3.1.3 Data analysis .....	53
3.3.2 Quantitative component .....	54
3.3.2.1 Questionnaire design.....	54
3.3.2.2 Sampling households .....	55
3.3.2.3 Validation of the research instrument .....	58
3.3.2.4 Data capturing .....	59
3.3.2.5 Data analysis .....	59
3.4 Summary .....	60
CHAPTER FOUR.....	61
RESULTS AND DESIGN .....	61
4.1 Introduction.....	61
4.2 Key findings from qualitative data.....	61
4.2.1 Findings from Luphisi village.....	62
4.2.1.1 Water Committees.....	62
4.2.1.2 Belonging to associations.....	62
4.2.1.3 Community decision making .....	63
4.2.1.4 Household decision making .....	64
4.2.1.5 Food Security .....	64
4.2.1.6 Problems and solutions .....	65
4.2.2 Findings from Dwaleni village .....	66
4.2.2.1 Water Committees.....	66
4.2.2.2 Belonging to associations.....	67
4.2.2.3 Community decision making .....	68
4.2.2.4 Household decision making .....	68
4.2.2.5 Food Security .....	69



4.2.2.6 Problems and solutions .....	70
4.3 Results from quantitative data.....	72
4.3.1 Results from Dwaleni village.....	73
4.3.1.1 Description of study sample.....	73
4.3.1.2 Assessing capabilities among youth in Dwaleni.....	75
4.3.1.2.1 Access to networks as a capability.....	75
4.3.1.2.2 Knowledge/awareness as a capability .....	77
4.3.1.2.3 Trust as a capability.....	77
4.3.1.2.4 Collective action and co-operation as a capability .....	78
4.3.1.2.5 Social cohesion and inclusion as a capability .....	80
4.3.1.2.6 Sociability as a capability.....	80
4.3.1.2.7 Self-esteem as a capability.....	81
4.3.1.2.8 Meaning as a capability.....	83
4.3.1.3 Food security status in Dwaleni .....	83
4.3.1.4 Relationship between capabilities and food security .....	84
4.3.2 Results from Luphisi village .....	86
4.3.2.1 Description of study sample.....	86
4.3.2.2 Assessing capabilities among youth in Luphisi .....	88
4.3.2.2.1 Access to networks as a capability.....	88
4.3.2.2.2 Knowledge/awareness as a capability .....	90
4.3.2.2.3 Trust as a capability.....	90
4.3.2.2.4 Collective action and co-operation as a capability .....	91
4.3.2.2.5 Social cohesion and inclusion as a capability .....	93
4.3.2.2.6 Sociability as a capability.....	93
4.3.2.2.7 Self-esteem as a capability.....	94

4.3.2.2.8 <i>Meaning as a capability</i> .....	96
4.3.2.3 Food security status in Luphisi .....	96
4.3.2.4 Relationship between capabilities and food security .....	97
4.4 Summary .....	99
CHAPTER FIVE .....	100
DISCUSSION .....	100
5.1 Introduction .....	100
5.2 Youth capabilities .....	102
5.2.1 <i>Access to networks</i> .....	102
5.2.2 <i>Knowledge and awareness</i> .....	104
5.2.3 <i>Trust</i> .....	106
5.2.4 <i>Collective action and co-operation</i> .....	107
5.2.5 <i>Social cohesion and inclusion</i> .....	109
5.2.6 <i>Sociability</i> .....	109
5.2.7 <i>Self-esteem</i> .....	110
5.2.8 <i>Meaning</i> .....	112
5.3 Relationship between youth capabilities and food security .....	112
5.4 Summary .....	115
CHAPTER SIX .....	117
CONCLUSION .....	117
6.1 Introduction .....	117
6.2 Background .....	117
6.3 Main findings .....	119
6.4 Recommendations .....	121
6.5 Limitations .....	122



6.6 Conclusion ..... 124

LIST OF APPENDICES ..... 136



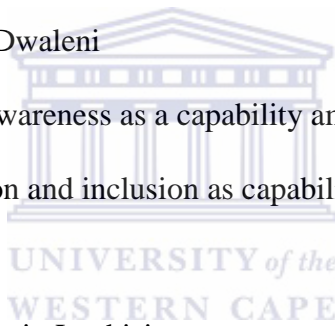
## LIST OF TABLES

## PAGE

Table 1.1 Monthly evapo-transpiration (mm) versus monthly rainfall (mm)	13
Table 4.1 Socio-demographic characteristics of the sample size for Dwaleni	74
Table 4.2 Assessing access to networks as a capability among youth of Dwaleni	76
Table 4.3 Assessing trust as a capability among youth in Dwaleni	78
Table 4.4 Assessing collective action/ co-operation as a capability among youth in Dwaleni	79
Table 4.5 Assessing sociability as a capability among youth in Dwaleni	81
Table 4.6 Assessing self-esteem as a capability among youth in Dwaleni	82
Table 4.7 Assessing meaning as a capability among youth in Dwaleni	83
Table 4.8 Significance between youth capabilities and food security in Dwaleni	85
Table 4.9 Socio-demographic characteristics of the sample size for Luphisi	87
Table 4.10 Assessing access to networks as a capability among youth in Luphisi	89
Table 4.11 Assessing trust as a capability among the youth of Luphisi	91
Table 4.12 Assessing collective action/ co-operation as a capability among youth in Luphisi	92
Table 4.13 Assessing sociability as a capability among youth in Luphisi	94
Table 4.14 Assessing self-esteem as a capability among youth of Luphisi	95
Table 4.15 Assessing meaning as a capability among youth of Luphisi	96
Table 4.16 Significance between youth capabilities and food security in Luphisi	98



<b>LIST OF FIGURES</b>	<b>PAGE</b>
Figure 1.1 Map of the study area	12
Figure 1.2 Water availability in the study area	13
Figure 3.1 Participatory Rapid Appraisal mapping exercise in Luphisi	53
Figure 3.2 Households map representation of Dwaleni	58
Figure 4.1 Assessment of knowledge/awareness of water committees among youth in Dwaleni	77
Figure 4.2 Assessing social cohesion and inclusion as a capability among youth in Dwaleni	80
Figure 4.3 Food security status in Dwaleni	84
Figure 4.4 Assessing knowledge/awareness as a capability among youth in Luphisi	90
Figure 4.5 Assessing social cohesion and inclusion as capability among youth of Luphisi	93
Figure 4.6 The state of food security in Luphisi	97



# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

The links between water and food, in particular in the study area for this thesis, the Ehlanzeni District Municipality (EDM) of Mpumalanga, South Africa are critical. Agriculture, including farming and livestock cannot be achieved without water. Water therefore plays an important role in achieving food security. The semi-arid to arid climate of South Africa calls for better management of the country's water resources. In addition, with climate change, now more than ever, careful management of the state's water resources for agricultural production in enhancing food security is critical. Koudstaal, Rijsberman and Savenije (1992) propose that water resources should be managed as an integral part of a nation's social and economic development. Without water, there is no life, no economic production and there would be no environment at all to consider (Savenije, 2002). The amount of rainfall reaching the earth is finite but all of it cannot be used. Savenije (2002) notes that water is unequally spread in space and time and large parts of the world experience shortages during certain periods of time. Koudstaal et al. (1992) state that:

“Water is only useful for human activities if it is available at the right time, in the proper location and if it is of satisfactory quality. If not, water is likely to be a burden rather than a resource” (Koudstaal et al., 1992, p. 279).

Although water is of critical importance to food security, it is not the only determinant for food insecurity around the world. Poor agricultural practices, land inaccessibility, poor understanding as well as poor management of water resources are some of the many causes that have contributed to food insecurity in the EDM and in the world at large.

The Food and Agricultural Organisation (FAO) in its report *'The State of Food Insecurity in the World,'* focuses on the importance of reducing hunger as the explicit target of the World Food Summit (WFS) and Millennium Development Goal 1 (MDG 1) which is, 'to eradicate extreme poverty and hunger,' is an essential condition for achieving the other seven MDGs (FAO, 2005). The report has highlighted that the prevalence of undernourishment in Sub-Saharan Africa (of which South Africa is a part) has been decreasing very slowly and even though the speed of progress improved in the 1990s, the region will have to step up the pace considerably in order to reach the MDG target. The objective for meeting MDG 1 is halving, between 1990 and 2015, the proportion of people who suffer from hunger, but if developing regions continue to reduce hunger at the current pace, they will not reach that goal. The WFS and the MDG targets can still be reached if efforts are refocused and redoubled in reducing and eliminating hunger in the rural areas where the majority of the world's hungry live (FAO, 2005).

According to the FAO (2005) report, the world population is expected to grow by approximately two billion between the baseline period 1990-1992 and 2015. Although the proportion of that larger population who are undernourished is already reduced by half, nearly 600 million people in the developing world still suffer from chronic hunger. The report states that in order to reach

the World Food Summit target of 400 million, the proportion of the population who are undernourished would need to be reduced by two-thirds and not by half.

Efforts to promote food security and environmental sustainability can often re-enforce each other (FAO, 2005). Promoting environmental sustainability is one of the three objectives that Integrated Water Resources Management (IWRM), the core water resources management paradigm within which this thesis is lodged, seeks to achieve. The sustainability of ecosystems is at the centre of human existence and without a healthy ecosystem, human needs could not be directly or indirectly satisfied. The National Water Act of 1998 encourages communities to become actively involved in developing and managing their water resources (Motteux, Rowntree & Fargher, 2006). Learning about the importance of the natural environment is likely to result in proper management of the resource on which human livelihoods depend. There are obvious interdependencies between human and ecosystems. When there is a healthy human environment the health of an ecosystem is also enhanced, and vice versa (Goldin, Rutherford & Schoch, 2008).

The Capability Approach (CA) developed by Amartya Sen is a robust theoretical framework within which this research is grounded.<sup>1</sup> The CA is the theoretical framework that is applied to inquire into the capabilities of the youth in the villages under investigation. Goldin et al. (2008) and Goldin (2010) note that, enhanced capabilities contribute not only to improved human development but also to improved management of the ecosystem. The current research suggests

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<sup>1</sup> The Capability Approach was introduced by the Nobel prize-winning economist, Amartya Sen in the 1980s. Sen was born in Santiniketan, India. The Capability Approach, its origin, development, critiques and application will be presented in the literature review chapter.

that with improved human capabilities, there is a likelihood that there will be a better management of water resources and subsequently better crop output in the EDM, resulting in enhanced food security.

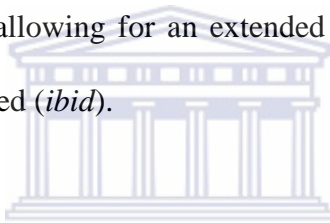
## 1.2 Study Background

The Ehlanzeni District Municipality is one of the poorest districts in the Mpumalanga Province, South Africa (Goldin, 2009). According to income data from the 2001 census, 67% of the population has no income, and 89% earn less than the official poverty breadline of R800 per month (*ibid*). The 2007 Poverty Node Survey<sup>2</sup> estimated the unemployment rate as high as 76% (Goldin & Amde, 2011). Many households rely on government grants or the unreliable cash flows from small-scale agriculture that provide some sort of livelihood (Goldin, 2009). The average rainfall for the EDM is 746 mm/year, although high variations exist between communities within this district. In the context of South Africa, this makes the research area a relatively wet area with the annual rainfall above the average for South Africa for successful crop production. However, the rainfall pattern only allows for a single rain-fed cropping season per year as almost all rain falls between October and April. Water availability remains a critical constraint; particularly in the mid-winter months from May to September which are dry, thus limiting crop production (*ibid*).

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<sup>2</sup> The Mpumalanga and Limpopo Provincial Report (Goldin and Amde 2011 forthcoming), forms part of the Southern Africa Labour and Development Research Unit (SALDRU) Poverty Node Migration Study, a project funded by the Mellon Foundation.

There is an Integrated Rain Water Harvesting Project (IRWHP) which has taken place in the EDM of Mpumalanga Province. The RWHP's objective is to improve output from communal food gardens through the collection, storage and management of surface run-off from precipitation and better management of soil moisture (*ibid*). The components to this project include; community capacity building to strengthen food security and income generation, construction of Rainwater Harvesting Infrastructure and related technologies, development of learning resources, outreach and institutional capacity strengthening and project management, monitoring and evaluation (*ibid*). A baseline study, also a component of the project has been implemented. The purpose of the project is to enhance food and water security and improve the lives of the target households by allowing for an extended cropping season. For this purpose, rainwater will be collected and stored (*ibid*).



Women, some youth and men in the EDM organised themselves into groups so that they could collectively discuss common concerns that face them in their daily lives, such as food production, community HIV/AIDS support and income generation. These collective efforts resulted in some income being generated through a mix of food gardening, poultry enterprise and artisan activities. The groups used land that was allocated by the tribal chief to grow vegetables. However, the real problem in securing sufficient food – both for their own consumption as well as for income generation, is not to do with land or other issues. It is to do with not having enough water to grow their crops. Thus, securing the availability of water in order to increase food production and cash returns from food gardening is top priority for the group (*ibid*).

Rain water harvesting (RWH) presents a viable option for securing water availability and it is for this purpose that the Integrated Rain Water Harvesting Project (IRWHP) was initiated in the EDM. The project was formulated by a Non-Governmental Organisation (NGO) Ecolink.<sup>3</sup> The intention was to address local water resource development and the management of small-scale productive enterprises.

The idea behind the rainwater harvesting project is to improve the socio-economic welfare in the target communities. As Goldin et al. (2008) noted, enhanced capabilities such as self-respect, empowerment and agency are critical attributes that enable individuals to gain control over their social and physical environments and some of these key attributes will be examined during the course of this thesis and are important and intended outcomes of the IWRHP.

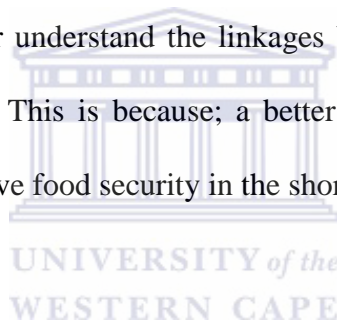
The research draws on the baseline study that was conducted as part of the first phase of the (IRWHP). The research focus is on youth in two of the villages in the EDM, Luphisi and Dwaleni. Although there is some social cohesion through group experiences in churches and sports events, the thesis aims to better understand what brings youth together and what keeps them apart. The research aims are to understand what positive outcomes emerge from 'being together' and to unpack vital capabilities of the youth that could improve water resources management and that are so crucial for the achievement of food security.

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<sup>3</sup>Ecolink is a registered non-profit NGO committed to promoting sustainable environmental and social development in rural communities in Mpumalanga and Limpopo Provinces. The NGO has been active in Mpumalanga Province for more than twenty one years, during which it has worked with over 20,000 people in dozen villages on issues related to environmental management and sustainable livelihood improvement. It has experience with interventions addressing a variety of issues including; water scarcity, food production, gender equality, HIV/AIDS, health and education (Goldin, 2009).

### **1.3 Problem statement**

Ecolink has observed that water availability for crop production in the EDM is limited in the dry mid-winter months from May to September and water stress or water scarcity in turn limits crop cultivation. Despite the wet months of October and April, cultivation of crops still presents a challenge as most of the water flows off as runoff. The limited crop productivity leaves the majority of households food insecure. There is uneven participation amongst community members in decision making processes as some members are more involved than others. The youth are almost left out completely in discussions around water and they seldom participate in decision making processes. The links between water, food and youth have not yet being properly unpacked. It is important to better understand the linkages between water, food and people in general - and youth in particular. This is because; a better understanding of linkage between youth, food and water could improve food security in the short-term but also in the long-term.



### **1.4 Rationale for the study**

Food is very vital for human growth and the absence of food results in stunting, malnutrition, starvation and even death. This indicates that malnutrition alters physical and mental development, hence perpetuating poverty and reducing productivity of societies (Gray, Cossman & Powers, 2006). On a societal level, hunger and malnutrition negatively affects labour productivity and national development (*ibid*). Rainwater harvesting is presented as one solution to improve food production because it reduces the rate of runoff and captures water for storage during drier months.



Youth are often not included in decision making processes although these decisions might affect their lives. They are not well informed about the importance of water resources and about the way in which their involvement could increase food security and improve individual, household and community well-being. Youth have the power to act as catalysts to bring about change, yet little has been done to motivate them, and their potential remains untapped (Etgen, Tindamanyire & Fuller 2009).

According to the National Youth Policy of South Africa 2008-2013 (Republic of South Africa, 2008), the country aspires to produce young empowered people who are able to realise their full potential and understand their roles and responsibilities in making meaningful contribution to the development of the country. This policy acknowledges the limitation of resources and as a result prioritises efforts and interventions that would benefit the most marginalised and excluded youth target groups. Amongst the six prioritised target groups, 'youth in rural areas' is included and the policy highlights that:

“Young women and men in rural areas face particular constraints with regard to both accessibility and availability of services and facilities, and this result in fewer opportunities and less infrastructure and employment than in urban areas. This concern requires that research be conducted... Interventions should specifically address the situation of young people in rural areas... government should invest in rural development... create mechanisms of attracting and retaining them to be of service to their communities. This can only be possible, if there is development of infrastructure in rural areas...” (National Youth Policy, 2008-2013, p. 15).

Youth form a very active population – a population which is capable of ensuring sustainability of their water resources and ensuring food security. The purpose of the IRWHP is to strengthen local capacity, to analyse and address issues of water scarcity in relation to food production and income-generating activities in the target communities. This project presents an opportunity for the rural youth in the targeted villages to exercise their responsibilities towards community development which will impact positively on their lives. Identifying the capabilities of youth is a process that will contribute to a better understanding in the ways youth are able to contribute to food security – and a better life for themselves and others in their communities.

An anticipated output of this research is that water professionals, academics, researchers, NGO's, policy makers as well as donor organisations, would be more aware of the links between capabilities youth, water and food security. In the process of researching this topic, it is hoped that the youth themselves might become more aware of the significance of their role in water and food security.

### **1.5 Aim of the Study**

The aim of the research is to study the relationship between water and food security and in what ways concerns around water and food security provide opportunities (enhanced capabilities) for the youth in the Luphisi and Dwaleni villages of the EDM.

### **1.6 Objectives of the study**

The research objectives are as follows

- To determine the capabilities that exist amongst the youth;

- To determine the state of food security in the villages;
- To determine whether there is a relationship between food security and youth capabilities;
- To ascertain which capabilities of youth would best promote food security;
- To better understand the differences that emerge among the youth around issues of food security and capabilities in the two villages.

### **1.7 Research questions**

The study aims to answer the following questions:

1. What is the relationship between youth capabilities and food security?
2. Is the Capability Approach a helpful framework to answer questions about youth involvement in food security?
3. What capabilities are most important for food security?


### **1.8 Research hypothesis**

The hypothesis that guides the research is that there is a strong relationship between youth capabilities and food security. There is also an assumption that improved water management in enhancing food production is dependent on improved human capabilities in general and vice versa, that improved water management increases human well-being and intangible assets such as self-esteem, dignity and autonomy.

## 1.9 Site of investigation/Study Area

### a) Physical description

The research is limited to two rural villages namely, Luphisi and Dwaleni. Luphisi and Dwaleni are located in the EDM in northern Nsikazi, in the Mpumalanga Province North-East of South Africa (Goldin et al., 2008). The EDM is bordered by Mozambique and Swaziland in the east, Gert Sibando District in the south, Mopani and Sekhukhune Districts of Limpopo in the north and Nkangala District Municipality in the west (Republic of South Africa: Ehlanzeni District Integrated Development Plan (IDP) 2009-2010) The incorporation of the Bushbuckridge (Local Municipality) into Ehlanzeni has increased the total area coverage of EDM to approximately 27,895,47km<sup>2</sup> (*ibid*).

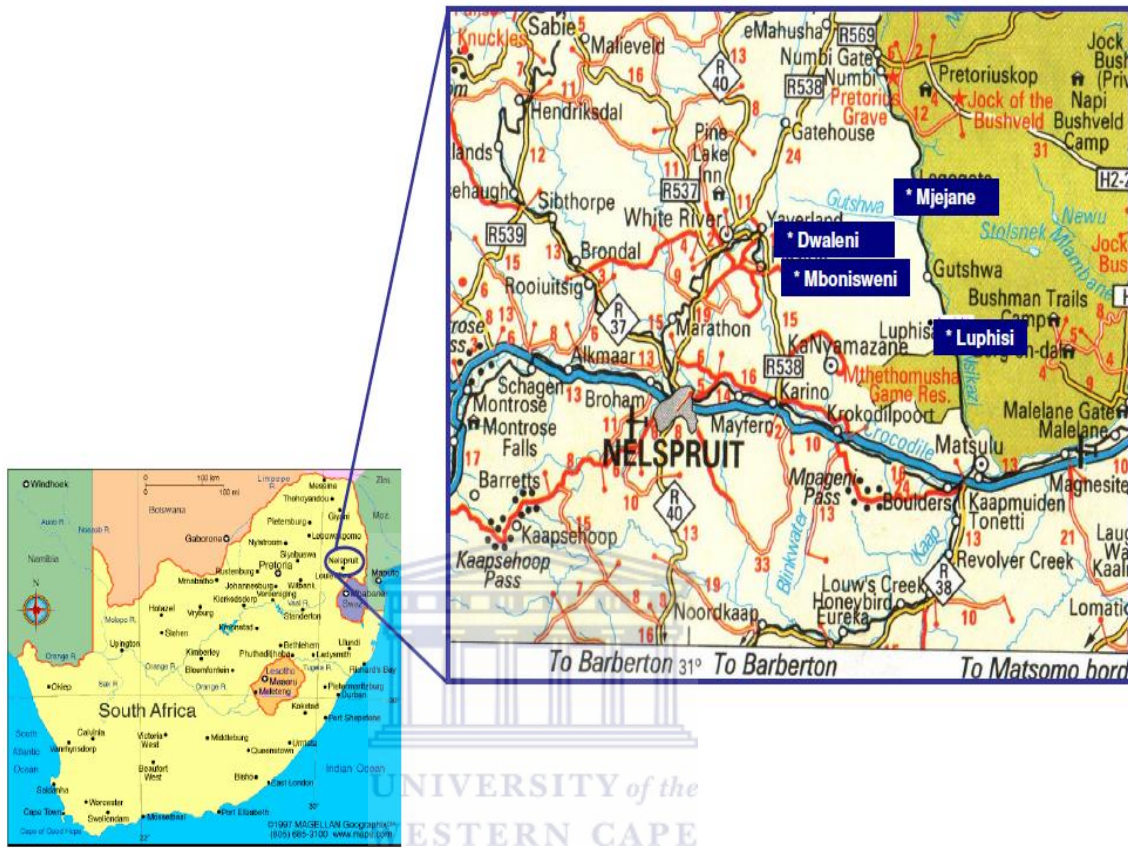


The villages are situated in the Inkomati catchment. This was the first, out of the 19 Water Management Areas (WMAs)<sup>4</sup> established in South Africa, to establish a Catchment Management Agency. The catchment is now managed by the Inkomati Catchment Management Agency (ICMA). The sub-catchments include; the Sabie-Sand sub-catchment, the Crocodile sub-catchment and the Komati sub-catchment (Goldin et al., 2008). The Inkomati catchment is an international river catchment which includes parts of Swaziland and Mozambique (*ibid*). Figure 1.1 shows the location of the study area.

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<sup>4</sup> At the time of writing this thesis there were 19 but there are now only 9 WMAs.

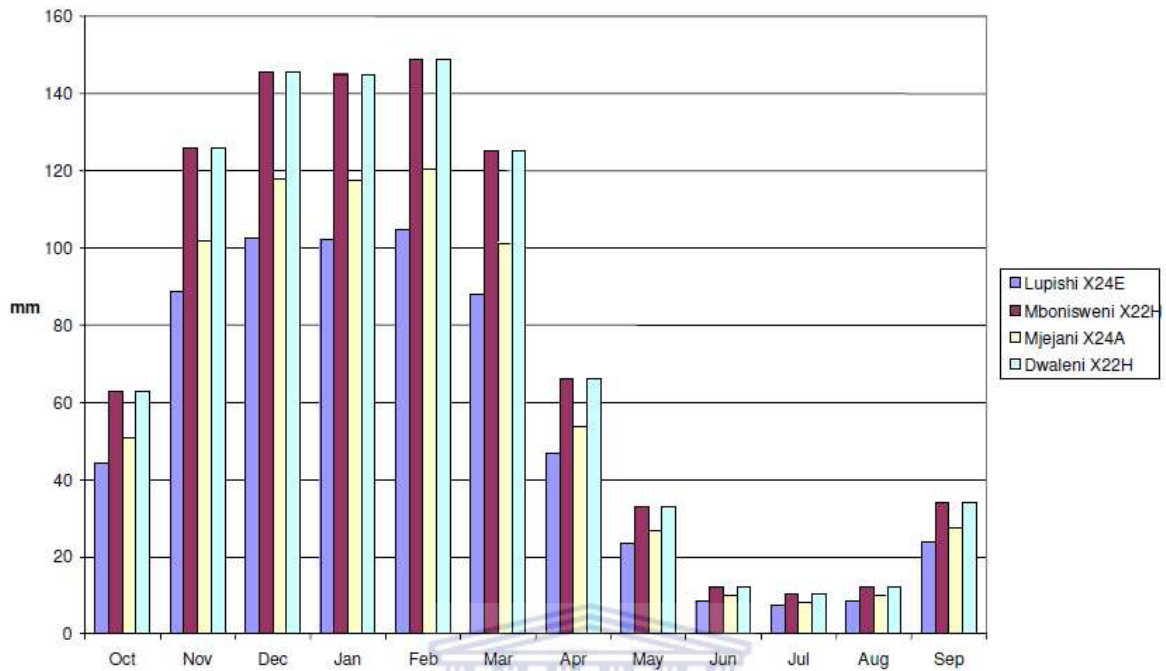
**Figure 1.1 Map of the study area.**



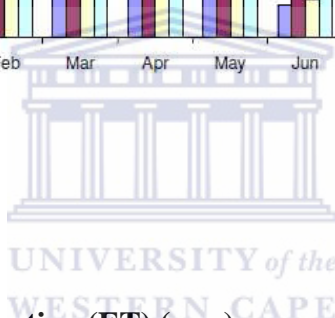
Source: Goldin (2009).

As already mentioned, the average rainfall for the Ehlanzeni Municipality is 746 mm/year and the rainfall pattern only allows for a single rain-fed cropping season a year. Water availability remains a critical constraint to crop production. Figure 1.2 and Table 1.1 show water availability and monthly evapo-transpiration and, monthly rainfall in the study area respectively.

**Figure 1.2 Rainwater availability in the study area**



Source: Goldin (2009)



**Table 1.1 Monthly evapo-transpiration (ET) (mm) versus monthly rainfall (mm).**

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP
<b>ET</b>	133.3	141	151.9	151.9	134.4	130.2	108	1116.6	87	86.8	102.3	123
<b>Rain</b>	50	105	116	117	132	102	54	20	10	8	10	28

Source: Goldin (2009)

From the diagram and table above, evapo-transpiration is greater than rainfall. The deficit is most significant in the month of May through September. This explains the single rain-fed cropping season per year and indicates the state of food insecurity in the villages.

## **b) Socio-economic description**

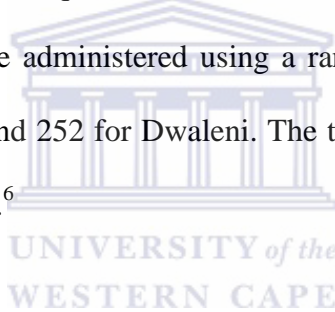
The EDM has a population of 1,526,236 people (Statistics South Africa Community Survey, 2007). The population is approximately 42% of the total provincial population (Mpumalanga) of 3.6 million. The population dynamics show that the district is dominated by a young population of about 38.21% (*ibid*). According to Statistics South Africa Community Survey the average household sizes have reduced from the year 2001 to 2007. The reduction is attributed to a number of factors such as impact of HIV/AIDS, people migration, socio-economic conditions, resources and influences and settlement patterns experienced by rural communities which were previously marginalised from mainstream socio-economic activities of the country (Republic of South Africa: Ehlanzeni District IDP, 2009-2010). Almost 94.4% of the people of Ehlanzeni are Black Africans who do not have access to sufficient services. Two thirds of the people and more than half of the households in the province are scattered across the rural areas of the province (*ibid*). The level of education shows relatively low levels of schooling in the district. Only 6.7% of the population has achieved a higher education and 29.5% have some secondary schooling (*ibid*).

The population with access to latrines in the district is estimated at 92% with only 7% having access to flush toilets (Goldin, 2009). The Mpumalanga – Limpopo Provincial Report Poverty Node survey conducted in 2008, shows that 8% of the population had piped water in the house, 48% had piped water on the stand, 36% fetched water from communal taps and 4% obtain water from a tank or carry it to the dwellings (*ibid*). A large portion of the EDM is rural and a high percentage of households do not have access to potable water. Drinking water in the area presents a fundamental problem as it is supplied on an intermittent basis sometimes only once in

two weeks (*ibid*). This reflects water scarcity and this profile is typical of the two rural communities, Luphisi and Dwaleni where the data for this research was gathered. The lack of bulk and reticulation infrastructure in these areas has aggravated the situation (Republic of South Africa: Ehlanzeni District IDP, 2009-2010).

### 1.10 Study Design

The research used both qualitative and quantitative methods. The qualitative data was collected using a semi-structured interview guide for youth focus groups held in both target communities.<sup>5</sup> The interviews were recorded. The quantitative data was collected through forty minutes household questionnaires that were administered using a random sample in both villages. The sample size for Luphisi was 213 and 252 for Dwaleni. The total number of people sampled and surveyed for both villages was 465.<sup>6</sup>



The research findings draw on the data captured from both qualitative and quantitative components of the study. The qualitative data is analysed using narrative texts and discourse analysis. And, the quantitative data is analysed using the statistical software, STATA. The

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<sup>5</sup> Four Masters Students from the University of the Western Cape were part of the team for the IRWHP that was implemented in four villages in the Ehlanzeni Municipality. The students carried out the qualitative study through a number of different focus group. Manqoba Dlamini was the interviewer for the men's focus group; Laudika Halueendo, the interviewer for the women's focus group; Juveta Ayuk, the interviewer for the farmers' committee and Germaine Owen (author of this research), the interviewer for the youth focus groups.

<sup>6</sup> The survey was conducted in four villages (Luphisi, Dwaleni, Mjejane and Mbonisweni) as part of the baseline study of the IWRHP presented in the study background section of this chapter. The total sample for the four villages was 832 households.



following quantitative methods were used; frequency analysis, Chi-square test and correlation analysis.

### **1.11 Outline of Thesis**

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

The first chapter has introduced the research and provides a background to the study area. It has identified the problem areas and provides the rationale and objectives behind the study. In this chapter, the hypothesis and research questions have been stated.

The second chapter deals with the theoretical framework and literature review. The review of literature includes background literature on IWRM as well as critiques made around the ideas of IWRM. The literature on IWRM is sometimes critical of participatory approaches and these criticisms are considered in this chapter. This chapter also introduces the theoretical framework of the Capability Approach and considers some cases where the CA has been usefully applied within the context of development discourse. Some background to the topic of food security is also provided. The category 'youth' is defined and relevant youth policies in South Africa and elsewhere are considered. The relationship of youth policies and youth capabilities is also examined. Finally, the relationship between youth capabilities and food security is considered.

The third chapter explains the research design and methodology that was used to undertake the study. Information on how the data was collected, managed and analysed is provided.

Chapter four covers the field work and presents findings from the empirical work. In this chapter, STATA is used to analyse the results from the quantitative component of the study.

Narrative texts gathered during the focus group interviews are presented and analysed using the notes and narrative texts from the focus group discussions.

Chapter five then discusses the findings and analysis emerging from the data that was gathered in the two villages. The results from the quantitative data are discussed and the qualitative data is used to compliment the quantitative data. Literature is also used to back up the findings of the study.

The sixth chapter, which is the concluding chapter, provides the reader with the summary of the research, conclusion and recommendations. In particular, it examines whether the data has been helpful in determining the relationship between food security and youth capabilities. The gaps and limitations of the study are also discussed in this chapter.



### **1.12 Summary**

This introductory chapter has provided the background to the study, highlighted the problem statement and described the aim and objectives of the study. The research hypothesis and questions have also been presented to the reader. The research design has also been briefly presented in this chapter. The chapter has introduced the reader to the geographical and socio-economic context within which this research was conducted. The chapter ended with the outline of the thesis. The next chapter will focus on the theoretical framework and literature review.

## **CHAPTER TWO**

### **THEORETICAL FRAMEWORK AND LITERATURE REVIEW**

#### **2.1 Introduction**

This thesis is grounded in two main theoretical frameworks. The Capability Approach (CA), which is a rigorous normative theoretical framework used for poverty and development evaluations and the Integrated Water Resources Management (IWRM), which is a dominant paradigm that informs water resources management. This chapter presents the reader with a background to IWRM drawing on the Dublin Statements and Principles, the Global Water Partnership (GWP) definition of IWRM as well as some critiques of this definition. The reader is introduced to the core ideas around stakeholder participation that are at the core of IWRM and the way these ideas affect water resources management. The chapter presents the reader with background literature on the CA. Literature on the CA, development and the water sector is also presented. The chapter introduces ideas around youth and development and finally, the chapter ends with literature on food security and how youth engage – or do not engage with food security.

#### **2.2 Background to IWRM**

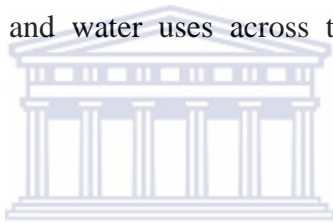
##### **2.2.1 Dublin Statements and Principles**

The United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro in June 1992 where the Dublin statements and principles that had been formulated in

Dublin, were fully taken on board. With trends of over consumption, pollution, and rising threats from droughts and floods, the United Nations (UN) Conference Report set out recommendations for action at local, national and international levels, based on four of the Dublin Principles (Global Water Partnership, 2000). These principles are as follows:

***Principle 1- Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.***

Since water sustains life the effective management of water resources demands a holistic approach that links social and economic development with protection of natural ecosystems. Effective management links land and water uses across the whole of a catchment area or groundwater aquifer.



***Principle 2- Water development and management should be based on a participatory approach, involving users, planners and policy makers at all levels.***

The participatory approach involves raising awareness of the importance of water among policy makers and the general public. This means that decisions are taken at the lowest level, with full consultation and involvement of users in the planning and implementation of water projects.

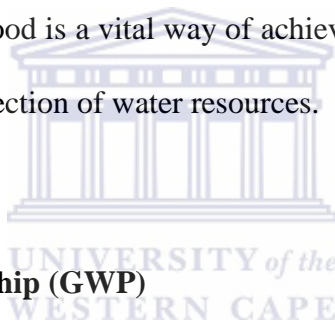
***Principle 3- Women play a central part in the provision, management and safeguarding of water.***

The pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. The acceptance and implementation of this principle requires

positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programs, including decision-making and implementation, in ways defined by them.

***Principle 4- Water has an economic value in all its competing uses and should be recognised as an economic good.***

Within this principle, it is vital to recognise first the basic right of all humans to have access to clean water and sanitation at an affordable price. Past failure to recognise that water has an economic value has led to wasteful and environmentally damaging uses of the resource. Managing water as an economic good is a vital way of achieving efficient and equitable use, and encouraging conservation and protection of water resources.



### **2.2.2 The Global Water Partnership (GWP)**

The IWRM concept has been defined by the Global Water Partnership Technical Advisory Committee (GWP TAC) as:

“A process which promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems” (GWP TAC, 2000, p. 22).

According to Jonch-Clausen and Fugl (2001), the world is far from securing water for basic human needs and development. The authors point out that many places are approaching or have

surpassed the limits for sustainable use of water resources and the ecosystems that they support. They remark that the continued growth in population and economic activity has led to further increases in water demands and pollution. They also state that the uses of water have some direct or indirect quantity and quality effects on the availability of water for other uses, and that, because of the linkages between the uses and the interdependences, there is a need for an integrated approach to water management. These authors focus on defining the concept and process of IWRM and in particular, what should be integrated.

IWRM has been on the global agenda for a long time and as Jonch-Clausen and Fugl (2001) posit, it has attracted attention since the international conferences on water and environmental issues in Dublin and Rio de Janeiro held in 1992. Jonch-Clausen and Fugl (2001) argue that IWRM has never been unambiguously defined and neither has the question about its implementation been fully defined. They extract from the work and thinking of the Technical Advisory Committee (TAC) of the GWP. The GWP TAC embarked on a process to clarify, within the GWP and among the GWP partners, how to interpret the IWRM concept and process (Jonch-Clausen & Fugl, 2001). The authors agree that the main purpose of this effort was to firm up the conceptual basis of IWRM, and in so doing to create a common framework for further discussion and consultation among professionals and decision makers.

The definition of IWRM as stated upfront is a process. Therefore, the concept is not a goal in itself, and rather, it is a means to an end or a process of balancing tradeoffs between different goals in an informed way (Jonch-Clausen & Fugl, 2001).

IWRM tries to bring together different water users to jointly manage their water resources (Van der Zaag, 2005). The IWRM has key objectives, environmental sustainability, economic efficiency and social equity which bring together disciplines of law, sociology, environmental science, civil engineering, political science and rural and urban planning, among others. “Dialogue between the disciplines and dialogue between members in user groups, is the backbone upon which the approach of IWRM depends” (Saruchera, 2008, p. 8).

### **2.2.3 Participatory Approaches**

Participation has been a central part of water reform in the water sector as it promotes sustainable management of water resources (Jaspers, 2001; GWP, 2000). Multi-stakeholder involvement and decision-making and management decentralised to the local level are at the core of IWRM (Goldin et al., 2008). Stakeholder participation is said to encourage sustainability because it decentralises resource management to the local level, and it has formed a large part of development policy in governments the world over (Cleaver, 1999; Warner, 2006).

Participation is used in social assessments as a procedure for obtaining local information and for tailoring activities and programs to add value to beneficiaries (Alkire, 2002). Alkire (2002) suggests that participation is likely to increase the success and sustainability of development activities. Goldin (2010) contends that the phasing out of top-down strategies and the growing popularity of participation and bottom-up processes encourages greater cooperation from local users because it provides an opportunity to obtain knowledge of local resources.

Vania and Taneja (2004) have carried out a study of the ways in which India has tried to institutionalise participation, particularly in the context of poverty alleviation and resource management. The authors propose that capacity building, both at the community level and within bureaucracy, is arguably the single most important issue that is required to improve participation. They also ascertain that participation is believed to be desirable and possible in India because, the rural poor have had greater control over precious resources that are necessary for livelihood and survival.

Water is a scarce resource yet very vital to users. This scarce resource is becoming scarcer as a result of improper management by stakeholders. Ostrom (1990) draws from ‘the tragedy of the commons’ by Hardin as one of the models, which has come to reflect how the degradation of the environment is to be expected whenever many individuals use a scarce resource in common. It is thus vital for stakeholders to participate in ensuring that the scarce resource is used in a sustainable manner without compromising the use by future generations. Hardin’s ‘tragedy of the commons’, the prisoner’s dilemma game by Dawes and the logic of collective action by Olson, are models which are diverse representations of a broader and still-evolving theory of collective action (Ostrom, 1990). Ostrom (1990) states that:

“An important challenge facing policy scientists is to develop theories of human organisation based on realistic assessment of human capabilities...empirically validated theories of human organisation will be essential ingredients of a policy science that can inform decisions about the likely consequences of a multitude of ways of organising human activities” (Ostrom, 1990, p. 23-24).



The author further proposes that:

“until a theoretical explanation based on human choice for self-organised and self-governed enterprises is fully developed and accepted, major policy decisions will continue to presume that individuals cannot organise themselves and always need to be organised by external authorities” (Ostrom, 1990, p. 25).

Olson (1965 cited in Ostrom 1990), states that:

“If the members of a group have a common interest or object - and if they would all be better off if that objective were achieved, it follows that the individuals in that group would, if they were rational and self-interested, act to achieve that objective” (Ostrom 1990, p. 5-6).

Crocker (2007) has classified weaker and stronger types of participation and proposes an ideal deliberative participation derived from the theory and practice of deliberative democracy. The author aims to improve the theory and practice of participation in local, grassroots, or micro-development initiatives. The author suggests that it requires more agency to attend a meeting than to be a stay-at-home member, and even more agency actively to comment or petition than merely listen, accept others' decisions, or do what one is told. In bargaining and deliberative participation, non-elite individuals and groups manifest even more robust agency because they are part of the decision-making process and not passive recipients for others' decisions.

According to Pretty (1995 cited in Cornwall, 2008), functional participation is a form of participation that is most often associated with efficiency arguments. In this type of participation,

people participate to meet project objectives more effectively and to reduce costs, after the main decisions have been made by external agents. Rudqvist and Woodford-Berger (1996 cited in Cornwall, 2008) suggest this type of participation as the most frequently found type of participation in development.

Goldin (2010) claims that knowledge is a pillar for participation and poor people are unable to take control over their environment and to participate in decisions to improve the quality of their lives without knowledge about the resources on which they depend. The author states that:

“the absence of knowledge, unequal power relationships between water users and the inhibition of agency, frustrates the process of participation because the production of trust is inhibited and feelings of shame, that aggravate issues of social exclusion and negate social agency, are activated” (Goldin, 2010, p. 6).

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Goldin (2010) suggests that non-participation perpetuates closed networks and it also reduces social and cognitive diversification as the same type of people gather for meetings. She states that even where there is social and cognitive variation amongst water users, the dominant discourse and power relationships that play themselves out neutralise these variations.

### **2.3 IWRM and implementation**

Jonker (2007) states that:

“With IWRM as a foundation of its water management regime starting in 1996 with the formulation of the water law principles, the elaboration of

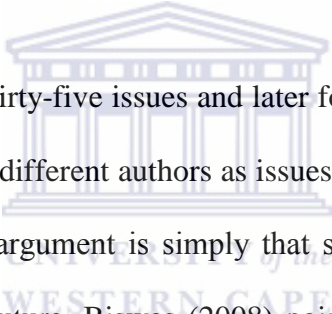
IWRM in the 1997 White Paper, the entrenchment of IWRM in the Water Act in 1998 and finally the guideline to implement provided by the NWRS completed in 2004, one would expect that in 2006, implementation would have been a breeze” (Jonker, 2007, p. 1260).

There are possible reasons advanced for the difficulty of implementing IWRM. Swatuk (2005 cited in Jonker, 2007) notes that some of these reasons include; a lack of human capacity in the water sector and a lack of funding. The other possible reason advanced by Allan (2003) and Swatuk (2005) is the reluctance of policy makers to embrace the notion of integration. Another reason as Jonker (2004 cited in Jonker, 2007) suggests is that, there is no clarity on the conceptual basis of IWRM and the GWP definition does not provide theoretical clarity required to practitioners for successful implementation.

Allan (2003 cited in Jonker, 2007) argues that IWRM can only be implemented given two conditions. One of these conditions is for IWRM to be acknowledged as an overtly political process. The author argues further that the conceptualisation of IWRM is not sufficient to ease implementation because it does not incorporate the inevitable political process. He points out that an expansion of the concept to include “allocation” takes care of the political process and that it would thereby make implementation more feasible. Jonker (2007) critiques Allan (2003) and claims that, by adding the term ‘allocation’ to the definition of IWRM, this still does not make the definition capable of assisting and guiding implementation.

As discussed in the introduction to this section on IWRM, IWRM leans heavily on the Dublin Principles of 1992. However, Biswas (2004) and Goldin (2005) argue that the concept of IWRM had been around for more than half a century. Biswas (2004, p. 251) criticises the authors of a

toolbox for IWRM by the GWP for being “blissfully unaware” of the longevity of the concept. The author questions the application and implementation of the concept as it uses many of the trendy words, but it does not provide any real guidance to the water professionals about how the concept can be used to make the existing water planning, management, and decision-making process more rational, efficient and equitable. Biswas (2008) has considered some of the fundamental questions that the definition IWRM raises in terms of its possible application in the real world and he concludes that though the definition of IWRM by the GWP appears impressive, any objective person can see that it is simply unusable, or un-implementable in operational terms.



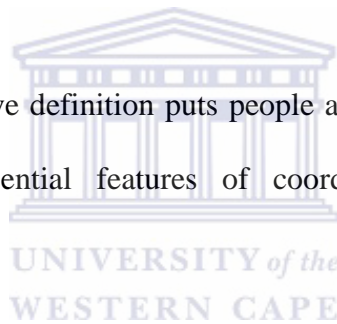
Biswas (2004) identifies a list of thirty-five issues and later forty-one issues (Biswas, 2008), that have supposedly been proposed by different authors as issues that should be integrated into ideas about IWRM. The author’s main argument is simply that such a vast set of issues cannot be achieved even in the foreseeable future. Biswas (2008) points out the linkages of water to all development sectors and social issues such as poverty alleviation and regional income redistribution, makes it impossible to bring them together in a semblance of integration. Furthermore, he argues that instead of helping to resolve our problems around water resources management, such integrations are likely to increase the complexities of managing the resources.

Merrey, Drechsel, Penning de Vries and Sally (2005) have also criticised the IWRM concept from the livelihoods perspective. The authors argue that IWRM does not put the issue of improving livelihoods of people at the centre. They also argue that IWRM does not take a truly holistic ‘natural resources’ view as it omits forest resources and biodiversity. These authors

argue that the weaknesses of the concept lead to an unintentionally narrow perspective, making it counterproductive as an analytical framework from the perspective of the poor. These authors proposed an alternative formulation of IWRM, which is within the larger Integrated Natural Resources Management (INRM) and is as follows:

“IWRM is the promotion of human welfare, especially the reduction of poverty and encouragement of better livelihoods and balanced economic growth, through effective, democratic development, and management of water and other natural resources at community and national levels, in a framework that is equitable, sustainable, transparent, and as far as possible conserves vital ecosystems” (Merrey et al., 2005, p. 203).

According to the authors, the above definition puts people and their well-being at the centre of IWRM while retaining the essential features of coordination, integration, equity, and sustainability.



Jonker (2007) criticises the IWRM definition by Merrey et al. (2005) as not being an improvement on the GWP definition. The author also recognises livelihoods as a concern but criticises that the expansion of the definition makes it more unmanageable and unlikely to assist in guiding implementation. Jonker (2007, p. 1261) also criticises the phrase “as far as possible conserve vital ecosystems” that Merrey et al. (2005) deploy, as compromising on the conservation of ecosystems and that they seem to diminish the value of ecosystems services.

According to Rahaman and Varis (2005 cited in Jonker, 2007), the issues of privatisation, water as an economic good, trans-boundary river basins management, restoration and ecology,

fisheries and aquaculture, need to focus on past IWRM experiences and the spiritual and cultural aspects of water must be resolved before IWRM can be successfully implemented. The authors believe that addressing these issues, rather than redefining IWRM, will lead to successful IWRM. Merrey et al. (2005 cited in Jonker, 2007) on the other hand critique the issues listed by Rahaman and Varis as having nothing to do with the struggle to implement IWRM and that these issues are second generation problems.

Van der Zaag (2005 cited in Jonker, 2007) is of the opinion that there are three obstacles impeding the implementation of IWRM. One obstacle is that there would need to be a clearer definition of roles between the new institutions and the existing ones such as the local authorities and government departments and that many functions will not be performed because of unclear jurisdictions. Another obstacle is that decision-making has to be consultative and the new water managers need to be knowledgeable and skilled at recognising and communicating inevitable tradeoffs. The last obstacle that needs to be addressed is the issue of upstream-downstream linkages. Van der Zaag (2005 cited in Jonker, 2007, p. 1261) therefore describes IWRM as “an approach, a perspective, a way of looking at problems and how to solve them.” Jonker (2007) argues that the problem with the conceptualisation of IWRM as a process is that this makes it difficult to guide implementation. The author proposes that the definition of IWRM could be changed to put people at the centre and then relate people’s activity to water as demanded by Merrey et al. He therefore proposes a definition of IWRM as “a framework within which to manage people’s activities in such a manner that it improves their livelihoods without disrupting the water cycle” (Jonker 2007, p. 1262).

Jonker (2007) notes that the above proposed definition allows us to measure the critical components of the definition (people's activities, improvement of their livelihoods and disruption of the water cycle) unlike the GWP and Merrey et al. definitions. The IWRM framework however, assists us to focus on the goals in water resources management whilst allowing us to identify the appropriate tools available to achieve these goals (Jonker, 2007). And if a tool proves not to be best or if new and better tools become available, we can choose a different tool without changing the goals (*ibid*).

## **2.4 The Capability Approach**

### **2.4.1 Foundation and its development**

The CA was introduced by the Nobel Prize winner Amartya Sen in the 1980's. The CA is a broad normative framework for evaluating individual well-being and social arrangements, policy designs and proposals about social change in society (Robeyns, 2003). The CA is used in a wide range of fields, most prominently in development thinking, welfare economics, social policy and political philosophy (*ibid*). It can also be used to evaluate a wide variety of aspects of people's well-being, inequality and poverty (*ibid*). Clark (2005) also notes that the CA has emerged as the leading alternative to standard economic frameworks for thinking about poverty, inequality and human development. Sen acknowledged strong connections with Smith's (1776) analysis of necessities and living conditions and Marx's (1844) concern with human freedom and emancipation (Clark, 2005).

Clark (2005) has explained that although the roots of the CA can be traced back to Aristotle, Classical Political Economy and Marx, other more recent links with philosophical questions

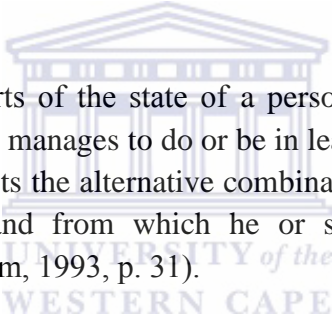
about well-being have been identified. For instance, Clark (2005) draws attention to the way in which Sen (1992) engages with Rawl's *'Theory of Justice'* (1971) and how this has influenced Sen's ideas of self-respect and access to primary goods that are so fundamental to the Capability Approach.

The conceptual foundations of the CA can be found in Sen's critiques of traditional welfare economics, which typically conflate well-being with either wealth or utility (Clark, 2005). Sen (1983 cited in Clark, 2005) emphasises that economic growth and the expansion of goods and services are necessary for human development. However, Clark (2005) draws our attention back to the fundamental point that Sen (1990, p. 44) makes which is "...wealth is not the good we are seeking; for it is merely useful and for the sake of something else." Clark (2005) notes that quality of life should be judged in terms of what people are able to achieve. The author remarks Sen's observation about how different people and societies differ in their capacity to convert income and commodities into valuable achievements. He emphasises that in comparing the well-being of different people, there is not much information provided by just looking at the commodities each can successfully command. So, one must consider how well people are able to function with the goods and services at their disposal. Sen also challenges the welfare or utility approach which concentrates on happiness, pleasure and desire-fulfillment (Clark, 2005). This challenge is evident in Sen's assertion that there is more to life than achieving utility and that the welfare approach fails to acknowledge many other things of intrinsic value such as positive freedoms.



Clark (2005) concludes that neither wealth nor utility effectively signifies human well-being and deprivation and, rather suggests that there be a more direct approach that focuses on human functionings and the capability to achieve such functionings. The central characteristic of the CA is its focus on what people are effectively able to do and to be, that is, on their capabilities (Robeyns, 2003).

The CA has two major components which include; functionings and capabilities. The terms ‘capabilities’ and ‘capability’ are used inter-changeably. Sen defines functionings and capability as follows:



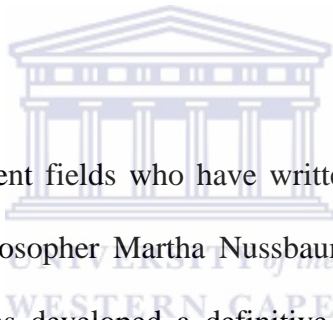
“Functionings represent parts of the state of a person - in particular the various things that he or she manages to do or be in leading a life. And, the capability of a person reflects the alternative combinations of functionings the person can achieve, and from which he or she can choose one collection” (Sen & Nussbaum, 1993, p. 31).

Sen (1987) differentiates the terms functioning and capability more clearly as:

“A functioning is an achievement, whereas a capability is the ability to achieve. Functionings are, in a sense, more directly related to living conditions, since they are different aspects of living conditions. Capabilities, in contrast, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead” (Sen, 1987, p. 36).

Sen and Nussbaum (1993, p. 31) note that, the CA “is based on a view of living as a combination of various doings and beings, with quality of life to be assessed in terms of the capability to achieve valuable functionings.” Thus, simply put, Sen calls these beings and doings achieved

functionings, which together constitute what makes any life valuable (Robeyns, 2003). So, functionings will include; being literate, being healthy, working, resting, being part of a community, being respected and so on (Robeyns 2003). Robeyns (2003) points out that the difference between functionings and capabilities is between achievements and freedoms. The author notes that what is of importance is the freedoms, in other words the capabilities that people have, to lead the kind of lives they want to lead, to do what they want to do and to be the person they want to be. She illustrates this difference with an example and states that “every person should have the opportunity to be part of a community and practice religion, but if someone prefers to be a hermit or atheist, they should also have this option” (Robeyns, 2003, p. 7).



There are many scholars in different fields who have written on the CA but the most widely known, alongside Sen, is the philosopher Martha Nussbaum. Nussbaum’s version of the CA differs from Sen’s in that; she has developed a definitive list of central human capabilities. Nussbaum (2011, p. 33) notes that a decent political order must secure to all its citizens at least a minimum level of ten central capabilities which are: 1) *Life*; 2) *Bodily health*; 3) *Bodily integrity*; 4) *Senses, imagination, and thought*; 5) *Emotions*; 6) *Practical reason*; 7) *Affiliation*; 8) *Other species*; 9) *Play*; and 10) *Political and material control over one’s environment*. The author sees the benefit of looking for capabilities and functionings as these help to identify the best intervention points for public policy and that, all citizens should be raised above all ten capabilities. Thus, according to Nussbaum (2011), capabilities are not just the abilities residing inside a person but also the opportunities or freedoms created by a combination of personal abilities and the social, economic and political environment. Nussbaum (2000) distinguishes

three kinds of capabilities; basic capabilities (which are innate potentialities of individuals that serve as necessary basis for the development of other capabilities such as sight, hearing, and capability for work), internal capabilities (which are developed states that an individual would have achieved within oneself to various degrees using basic capabilities such as bodily maturity and freedom of expression) and combined capabilities (which are internal capabilities combined with suitable external conditions for functioning).

Sen has always objected to a definite list of capabilities. Some of the capabilities that he finds to be relevant in social assessment include; “the freedom to be well nourished and to live disease-free lives, to be able to move around, to be educated and to be able to participate in public life” (Sen, 2005, p. 158). Sen (1999 cited in Clark, 2005), argues that it is the people directly involved with any development agenda who must have the opportunity to participate in deciding what should be chosen and that this is not a decision to be made by elites or cultural experts.

Sen (2005) states that:

“The problem is not with listing important capabilities, but with insisting on one pre-determined canonical list of capabilities, chosen by theorists without any general social discussion or public reasoning. To have such a fixed list, emanating entirely from pure theory, is to deny the possibility of fruitful public participation on what should be included and why” (Sen, 2005, p. 158).

Thus, as the above quote indicates, Sen does not object per se to listing capabilities but he is adamantly against any proposal of a ‘grand mausoleum’ to one fixed and final list of capabilities (Sen, 2005, p. 160). He states that:

“Lists of capabilities have to be used for different purposes, and so long as we understand what we are doing (and in particular, that we are getting a list for a particular reason, related to assessment, evaluation, or critique), we do not put ourselves against other lists that may be relevant or useful for other purposes” (Sen, 2005, p. 159).

#### **2.4.2 The Capability Approach and Development**

“A focus on people’s capabilities in the choice of development policies makes a profound theoretical difference, and leads to quite different policies compared to neo-liberalism and utilitarian policy prescriptions” (Robeyns, 2003, p. 5). The CA is the conceptual framework used in this research to assess the relationship between water and food security. The research draws on the baseline study component of the IRWHP in Mpumalanga Province. In this instance, the CA is applied as a framework for understanding whether and in what ways the IRWHP is able to improve aspects of human development for the communities who were targeted as beneficiaries in the Ehlanzeni District Municipality.

Sen (1999) posits that, in viewing development in terms of expanding substantive freedoms, attention is given to the ends that make development important, rather than some of the means that, inter alia, play a prominent role in the process. Sen argues that the lack of substantive freedoms is closely related to economic poverty, which robs people of the freedom to satisfy hunger, or to achieve sufficient nutrition, or to enjoy clean water or sanitary facilities. Sen (1999)

notes that, development is about the expansion of human capabilities. Meaningful participation is about improved capabilities and functioning of individuals which enables citizens to take control over their environment and to participate in decisions to improve the quality of their lives and to maintain the equilibrium of ecosystems (Goldin et al., 2008).

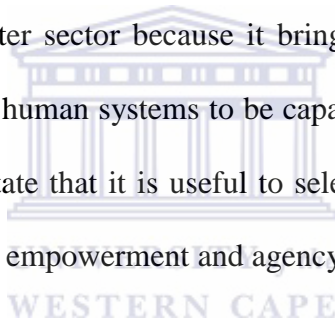
Sen (1999) notes that, freedom is central to the process of development for two reasons; the evaluative reason, which suggests that, assessment of progress has to be done primarily in terms of whether the freedoms that people have are enhanced and, the effective reason, which suggests that, the achievement of development is thoroughly dependent on the free agency of people.

According to Sen (1999), freedoms are not only the primary ends of development, but they are among its principal means. He suggests an understanding of the empirical connections that link freedoms of different kinds with one another. He proposes that, political freedoms (for example, free speech and elections), help to promote security, social opportunities (for example, education and health facilities) and that these freedoms facilitate economic participation.

Having greater freedom to do things, one has reason to value, is in itself significant for any person's overall freedom. This freedom is also important because it provides an opportunity for an individual to improve on an opportunity to have valuable outcomes. These outcomes are relevant to the evaluation of freedom of the members of the society and therefore, crucial to the assessment of the society's development (Sen, 1999).

### 2.4.3 The Capability Approach and its relevance to the water sector

Anand (2007 cited in Goldin et al., 2008) notes that the CA has been only been recently applied to the water sector. However, it is a useful development framework within which to reflect on the extent of achievements in the water sector (Goldin et al., 2008). The multi-dimensional poverty approach, with particular reference to Sen's (1993, 1999) CA, embraces notions of development that pay particular attention on the expansion of human capabilities (Goldin et al., 2008). According to Goldin et al. (2008), the expansion of human capabilities is built on principles of social justice and equity which includes the just allocation of resources. The authors note that, the multi-dimensional approach encourages an expanded set of poverty indicators that are of great importance to the water sector because it brings to the fore vital capabilities and functionings that are necessary for human systems to be capable of managing the ecosystems on which they depend. The authors state that it is useful to select measurement indicators that tap into constructs such as self-esteem, empowerment and agency as measurements of well-being.



Goldin (2010, p. 3), in her article in the '*Review of Radical Political Economics*,' makes the links between knowledge, agency and shame explicit and argues that "unequal relations of power and knowledge restrict agency, jeopardize the building of trust and may perpetuate feelings of shame." Goldin goes on to state that, "where there is an unequal distribution of resources and knowledge to gain access to those resources, there is also social exclusion that can create vicious cycles that entrench feelings of unworthiness, embarrassment - and shame" (*ibid*). Smith (1776 cited in Goldin et al., 2008) has reflected on the right of people to appear in public without shame. Shame is something a person carries around inside his/her head that makes that person feel bad about him or herself (Goldin, 2010). Goldin (2010, p. 7) claims that "shame does not sit

comfortably with dignity, pride and self-esteem, which are important attributes of social justice and anticipated outcomes of the equitable distribution of resources” - such as water.

The CA is thus a very helpful framework to apply to the water sector where participation is seen to be the core principle in IWRM. Such participation is difficult where there is shame, lack of agency and trust, and social exclusion. Sen (1999, p. 19) states that “an agent is someone who acts and brings about change.” Sen (1985, p. 203) defines human agency as “what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important.” When there is lack of agency, people are unable to influence decisions that affect their everyday living (Goldin 2010). Ibrahim and Alkire (2007, p. 11) state that “the opposite of a person with agency is someone who is coerced, oppressed, or passive” and thus their opportunities and access to public goods are likely to be restricted. Sen’s CA considers social justice: fair treatment and opportunities, such as universal access to water supply and necessary goods that are required to make this possible, sanitation and education (Goldin, 2010).

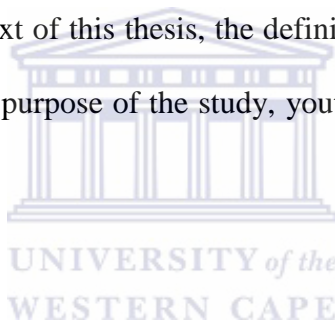
## **2.5 Youth and capabilities**

### **2.5.1 Definition of youth**

Selvam (2008) defines youth as:

“A window period between childhood and adulthood, often between the onset of puberty and marriage (or another permanent form of settling down in life), that is marked by a restless energy, fast sprout of growth, hence also by extreme vulnerability, while being so rich in promise” (Selvam, 2008, p. 2).

Age criterion is another possible way of defining youth and this varies according to youth policies of different countries. The United Nations defines youth as those persons aged between fifteen and twenty-four years. Tanzania for example adapts the definition of youth as declared by the United Nations which is between fifteen and twenty-four years. The Commonwealth (UK) defines youth as an individual aged between fifteen and twenty-nine. According to the National Youth Policy (2008-2013) of South Africa, youth is defined as those individuals falling within the age group of fourteen to thirty-five years. The motivation for South Africa extending the age of youth to thirty-five years is in order to correct imbalances of the past and provide opportunities to those who are not strictly 'youth' because they were negatively affected by the apartheid regime. Within the context of this thesis, the definition of youth is that adopted by the National Youth Policy and for the purpose of the study, youth are between the ages of eighteen to thirty-five.



### **2.5.2 Youth rights and responsibilities in South Africa**

According to the South African National Youth policy (2008-2013, p. 17), some of the youth rights include a right to:

- Enjoy the fruits of a free, democratic and prospering society;
- Enjoy their youthfulness;
- Access youth development services;
- Participate in the planning and implementation of youth development by becoming the custodians of their own development;
- Attain an educational level commensurate with their aspirations;



- Access employment opportunities equal to their abilities; and
- Self-determination

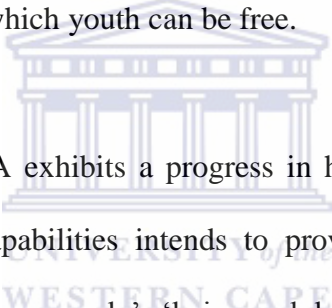
Concomitantly youth have the responsibilities to:

- promote and advance their rights as they relate to themselves, other young people and fellow South Africans in general;
- build and guarantee the democratic order through playing a positive developmental role in South Africa, the region and the continent;
- promote human dignity;
- work towards family, community and societal cohesion;
- promote peace, security and development;
- promote tolerance, understanding, dialogue, consultation and respect for others regardless of age, race, ethnicity, colour, gender, sexual orientation, ability, religion, status or political affiliation;
- engage in peer to peer education to promote youth development in areas such as literacy, use of information and communication technology, Healthy lifestyles to prevent non-communicable and communicable diseases like HIV and AIDS and others, violence prevention and peace building; and
- promote sustainable development and protection of the environment.

### **2.5.3 From youth rights and responsibilities to youth capabilities**

Selvam (2008) points out the fact that youth are a vulnerable group, by virtue of the transitional stage of life they are in and that, there is need for an explicit assertion of a set of rights proper to

them. According to Selvam, the existing youth policies in East Africa, for instance fail to provide an adequate framework for the promotion of the wellbeing of young people. Selvam claims that the CA provides a viable alternative to the otherwise legalistically naïve human rights discussions. The thesis proposes that the CA can present a constructive framework within which to consider youth and aspects of their freedom and opportunities, in a developing country context, such as South Africa. When considering youth capabilities in Africa, certain cultural and contextual elements are also relevant because culturally specific social aspects matter to the way in which young people can be or do what they would like to be or do. In other words, any discussion on the Capability Approach and youth in Africa would need to be sensitive to cultural contexts that influence the way in which youth can be free.



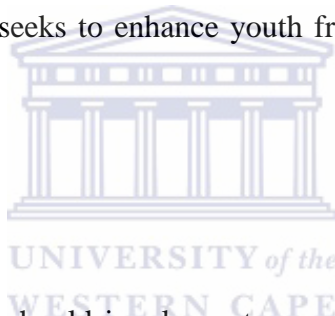
Selvam (2008) claims that, the CA exhibits a progress in human consciousness about human rights and that the concept of capabilities intends to provide a yardstick for governments, institutions and individuals to enhance people's 'being and doing.' Selvam points out that a good government should be able to create an environment for its citizens' potential so that every person would be able to access their capabilities. He proposes a list of central capabilities for young people in Africa and this includes the area where governments can intervene to enhance freedoms. The author considers the list to be flowing from and at the same time supplementing that of Nussbaum. The capabilities proposed by Selvam (2008, p. 8-9) are:

### ***1. Abundant life***

Selvam considers that youth is a stage of human life where every aspect of life is at its peak. Therefore public policy that is designed to benefit youth in Africa, needs to prioritise the idea of an abundant life.

### ***2. Religion and transcendence***

Selvam notes that in the context of rising secularism, the young people in Africa are finding meaningful ways of fulfilling their inner need for transcendence and finding meaning for their existence. Religion plays an important role in the development of people in Africa. For this reason public policy that seeks to enhance youth freedoms needs to consider religious factors or religious leaders.



### ***3. Holistic education***

Selvam proposes that schools should involve extra-curricular activities like drama, music, games and literary activities. In this way education will cater to body (physical aspects), mind (mental aspects), heart (emotional aspects) and the soul (spiritual aspects) of the individual.

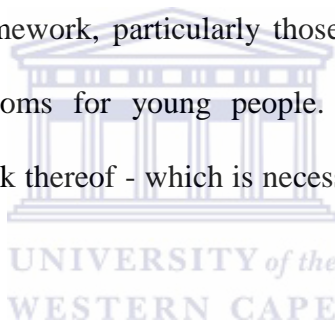
### ***4. Meaningful employment***

Selvam observes that nowadays, lack of access to cash means lack of access to food, clothing, shelter, and especially to healthcare, education and other consumer goods. Affirmative action on behalf of youth implies that governments should create employment opportunities.

## ***5. Access to truth***

Selvam remarks that young people of Africa stand in need to be exposed to truth telling. Due to inadequate education, young people are all ill equipped to distinguish between facts that are true and those that are not. When young people have access to the truth they would be more likely able to find solutions to their own problems and they would be more likely to have the information needed to make decisions that would help them lead a dignified life.

Selvam (2008) does not propose an exhaustive list of youth capabilities for the African context but proposes that youth policies could be enhanced by considering an expanded set of freedoms or capabilities within the CA framework, particularly those capabilities that contribute to the achievement of substantial freedoms for young people. Chapter five will identify those capabilities and functionings or lack thereof - which is necessary to enhance food security in the targeted villages.



## **2.6 Food security**

Food security is one of the important objectives of the IRWHP but the assessment of food security is not simple because it relies on a number of corresponding indicators. For this reason the concept of food security is difficult to operationalise, and studies often examine the relationship between proxies, such as child malnutrition, consumption, or even standard measures of poverty (Alwang, Siegel & Jorgensen, 2001).

Maxwell et al. (2000 cited in Alwang et al., 2001) note that, food production or consumption is the most important component of a livelihood. Ahmed and Lipton (1999 cited in Alwang et al., 2001) define livelihood as:

“A set of flows of income..., that should be sufficient to avoid poverty ...implies systems of how rural people make a living and whether their livelihoods are secure or vulnerable over time...” (Alwang et al., 2001, p. 11).

Livelihood vulnerability refers to the probability that livelihood stress will occur - with more stress or a higher probability implying increased vulnerability (Alwang et al., 2001). Alwang et al. (2001) note that the concept of vulnerability features as part of a new managerial discourse that aims to target sectors of the population for policy intervention. Davies (1996 cited in Alwang et al., 2001) summarises livelihood vulnerability as a balance between the sensitivity and resilience of a livelihood system. Davies states that though sensitivity is considered as a combination of risk and response, it relates to outcome. Resilience, a component of vulnerability, is also an outcome.

Food security is attained when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life (World Bank, 1986 cited in Alwang et al., 2001). The definition of food security by the FAO (2009) differs slightly to that of the World Bank (1986). According to the FAO (2009), the definition of food security is thus:

“food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2009, p. 8).

The FAO (2009) explains household food security as the application of the food security concept to the family level, with individuals within households as the focus concern. Food insecurity on the other hand, exists when people do not have adequate physical, social or economic access to food (*ibid*). Barrett (1999 cited in Alwang et al., 2001, p. 14) takes an outcome-based approach and defines food insecurity as “the risk of irreversible physical or mental impairment due to insufficient intake of macronutrients or micronutrients.”

The FAO (2005) focuses on the critical importance of reducing hunger as the explicit target of the World Food Summit (WFS) and MDG 1 which is, ‘to eradicate extreme poverty and hunger,’ as an essential condition for achieving the other seven MDGs. Their report has highlighted that the prevalence of undernourishment in Sub-Saharan Africa (of which South Africa is a part) has been decreasing very slowly. Even though the speed of progress improved in the 1990s, the region will have to step up the pace tremendously in order to reach the MDG target. According to the FAO (2005, p. 2) the objective for meeting MDG 1 is halving between 1990 and 2015 the proportion of people who suffer from hunger, but if developing regions continue to reduce hunger at the current pace, none will reach that goal. However, the WFS and the MDG targets can still be reached if efforts are refocused and redoubled in reducing and eliminating hunger in the rural areas where the majority of the world’s hungry live (FAO, 2005).

In the efforts to address food security in the world, the USAID has developed a widespread and impactful program (Feighery, Ingram, Li & Redding, 2011). However, it has been noticed that the interests of youth are not always explicitly advocated in food security initiatives. Youth should be viewed as an integral part of the solution to food security (Feighery et al., 2011). There is limited research that looks at food security through a youth lens. It is important to note that the youth is a homogenous group of people. It is therefore necessary that when development practitioners target them for intervention, they should view them as an asset instead of viewing them as a hard group to target (*ibid*).

Although the food security stakeholders globally are making many efforts to improve the state of food security, the participation of youth in the food production activities is minimal. Feighery, Ingram, Li & Redding (2011) indicates that despite the fact that the average population of the world is young, youth continue to be disinterested in agriculture and this becomes a key challenge for the international development community; policies must encourage young people to enter careers in the agricultural sector (*ibid*) . Among the factors that have made the youth to run away from agriculture is the belief that it does not bring them income. Consequently the industry has been dominated by the older generation which lacks the innovation to develop the industry and will eventually die out (Feighery et al., 2011).

The villages of Lumphisi and Dwaleni are vulnerable to food insecurity and this is especially due to water scarcity. The lack of availability of water for crop production and animal husbandry does not allow for food security in these areas. The IRWHP offers an opportunity to improve on

water availability and through collective action in the management of water resources, to create an enabling environment for food security.

## **2.7 Summary**

This chapter has discussed the background to IWRM as well as some critique of this idea. The chapter has also proposed the CA as the conceptual framework against which to consider achievements and gains in freedom or opportunities for the IRWHP. It sets the stage for the CA as a useful framework within which to consider whether or not local actors, in particular youth, are participating in water resources management and whether there are enhanced freedoms or opportunities for and from such participation. This chapter has discussed the importance of the CA as a theoretical framework that can help understand issues that are critical in water resources management and that are likely to improve food security in the target communities. The chapter has also considered ideas about vulnerability and food security because food security is one of the central research questions for this thesis and it is also an anticipated outcome of the IRWHP. It has provided a definition of youth and the rationale for the specific age category used in this thesis. Youth capabilities for youth in a particular African case study using the CA framework were also presented. It has also contextualised the discussion on lists that Sen puts forward and his stand point of listing capabilities, warning that the application of a list should be done with respect to the purpose of the study. The next chapter will give attention to the research design and methodology.



## CHAPTER THREE

### RESEARCH DESIGN AND METHODOLOGY

#### 3.1 Introduction

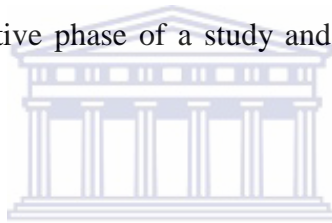
This chapter presents an overview of the methodology used to undertake this research. As presented in chapter one of this thesis, the research is based on the Integrated Rainwater Harvesting Project being implemented in two villages, Luphisi and Dwaleni in the Ehlanzeni District Municipality in Mpumalanga Province.

The study uses a mixed research methodology. Data was collected using both quantitative and qualitative methods. The qualitative data is used to compliment the quantitative data. The use of mixed research is helpful in answering research questions that can be considered both through standardized coded measurement as in a structured questionnaire and uncoded texts (measures) from qualitative methods. The use of mixed methods will give an in-depth understanding of the relationship between youth capabilities and food security in the target communities of Luphisi and Dwaleni and other research questions that inform this study. Both the quantitative and qualitative data tapped into ideas that describe ‘capabilities’ within the framework of the CA as presented in the previous chapter.

### 3.2 Theoretical Overview

This part of the work examines literature sources that relate directly to concerns about research methods and in particular the purpose of using both quantitative and qualitative data collection in one study.

Tashakkori and Teddlie (1998) define mixed method studies as those that combine both qualitative and quantitative approaches into the research methodology of a single study or multiphased study. These methods are subdivided into five specific types of designs of which Creswell (1995) has identified four types and one of them being sequential studies, where the researcher first conducts a qualitative phase of a study and then a quantitative phase, or vice-versa. The two phases are separate.



Denzin and Lincoln (1998 cited in Goldin, 2005) claim that, because of the recognised difficulty of achieving objective reality in both quantitative and qualitative research methods, the multiple methods focus attempts to secure an in-depth understanding of the phenomenon in question. Goldin's chapter on methods refers to Fielding and Fielding's (1986) idea of triangulation that can be considered as an alternative method of validation where several methods are used to validate particular findings. Goldin (2005) describes methodological triangulation as a method which involves the use of both qualitative and quantitative methods and data to study the same phenomena within the same study or in different complementary studies. Creswell (2002) explains that the use of mixed methods is to expand an understanding from one method to another so as to converge or confirm findings from different data sources. The use of mixed

methods in the IRWHP is helpful for this study as it furthers the pursuit of the researcher in understanding the relationship between food security and youth capabilities.

### **3.3 Research design**

As already mentioned, the type of study design used in this study is the sequential study and particularly the Sequential Explanatory Strategy (SES). The qualitative phase of the study was first conducted and followed by the quantitative component.

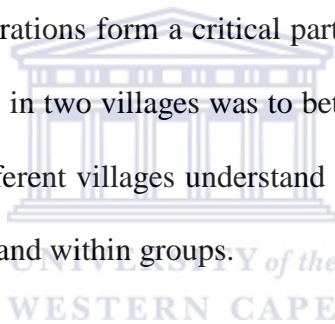
#### **3.3.1 Qualitative component**

The qualitative method is used to compliment the data collected in the quantitative survey and as such it is not treated as a free standing study because its purpose is to provide evidence that adds value to, or complements, the quantitative data. The youth focus group discussions and the participatory map drawing procedure form the qualitative part of this research.

##### **3.3.1.1 Focus groups**

The communities were contacted by Ecolink (see footnote 3) to fix a date and time when the focus group discussions could take place. On the appointed dates and times, the community members were divided into specific focus groups (see footnote 6). The focus group discussions in Luphisi took place in the community hall and, in Dwaleni; the discussions took place outside the chicken abattoir. The different settings each served as the focal point of meeting for the community and were ideal for carrying out the discussions. Before the interviews began, an information sheet/consent form (Appendix A) was given to the participants to read so that they

would understand what the study is all about. Once they were sure about the study purpose the selected participants agreed to sign the consent form. The researcher herself facilitated the focus group discussions. A SiSwati speaking translator was available for both villages. The youth focus groups consisted of members between the age of eighteen and twenty-six. There were twelve participants for the focus group discussions in both villages. There were other ethical considerations and for instance, before the discussions began, the consent of participants was solicited about the use of tape recorders. Written notes and narratives were used as backup. Visual images were also captured.<sup>7</sup> The participants were informed that the information was strictly confidential and that the findings were going to be used for the purpose of the research project only. These ethical considerations form a critical part of the research design. The reason for choosing the youth focus group in two villages was to better understand whether and in what ways different youth groups in different villages understand water related issues, and to identify similarities and variances between and within groups.



The focus group discussions were guided by a semi-structured interview guide (Appendix B) which included a list of questions around water issues of that were relevant to the IRWHP. These questions were designed to fit within the CA framework. Some questions, more than others, addressed head-on the theoretical notions that the CA framework considers – for instance the question on ‘suggestions to improve this,’ is particularly important in bringing out the human capabilities of the respondents and reflects on whether and in what ways human capabilities and food security are linked. Similarly the questions about decision-making help tap into ideas of

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<sup>7</sup> For practical reasons only one photograph (a typical picture showing the map drawing process) of the youth focus group has been included in this thesis.

agency and empowerment. The focus group discussions lasted for an average of one hour fifty minutes. A probing technique was used to clarify the participants' responses and to obtain more information (Britten, 1995). The information gathered from the discussion groups provided insights into the range of capabilities that are central to the youth for managing water resources and securing food in the community.

### **3.3.1.2 Qualitative community mapping exercise**

In Luphisi and Dwaleni, community mapping was done using the Participatory Rapid Appraisal (PRA) technique. This method empowers local people who, through the mapping activity, assume an active role in analysing their own living conditions, problems and potentials – with the aim of contributing to changes in their situation.<sup>8</sup> Mapping is a PRA technique where community members are asked to identify the different resources, services and institutions in the community. A sketch map was drawn by the youth during the focus groups in Luphisi and Dwaleni on the 8<sup>th</sup> and 15<sup>th</sup> of March 2010 respectively. Participants from both focus groups were active in drawing the map that depicted the physical characteristics of their community and in particular showed water sources, infrastructure, utilities, institutions and roads. Figure 3.1 illustrates a typical mapping exercise and it is the map for Luphisi.

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<sup>8</sup> Available at [http://participation.110mb.com/PCD/PRA\\_Training/pcdpra/How%20to%20carry%20out.pdf](http://participation.110mb.com/PCD/PRA_Training/pcdpra/How%20to%20carry%20out.pdf)

**Figure 3.1 Participatory Rapid Appraisal mapping exercise in Luphisi**



### **3.3.1.3 Data analysis**

Data analysis identifies the meaning in the information gathered in relation to the purpose of the study (Rubin & Rubin, 2004). The responses from the youth focus groups were compiled and together formed the body of text on water issues and food security in both villages. Data was analysed manually. After the interviews the recorded notes were transcribed. The content of the transcribed notes and backup notes were scrutinised and the audio tapes were listened to several times to familiarise the researcher with the nuances and to thoroughly understand the data (Marshall & Rossman, 1999).

### 3.3.2 Quantitative component

The quantitative method selected for the research was a baseline household poverty survey that was conducted within the context of the Integrated Rain Water Harvesting Project in the villages of Luphisi and Dwaleni. A team of field workers was trained to administer the household questionnaires.<sup>9</sup> The training included how to introduce the survey, how to select respondents in the sampled households, how to ask questions to the respondents and how to codify their responses. The structured survey generates quantifiable data that measures the situation in the communities using selected indicators.

#### 3.3.2.1 Questionnaire design

The questionnaire was administered in about forty-five minutes. It was organised under the following subthemes: demography, utilities, food security, income, social capital and empowerment, skills training and social change. The questions under each sub theme were informed by ongoing research on ‘missing dimensions’ and were adjusted so that they captured relevant information required for the IRWHP.<sup>10</sup> During interviewers’ training sessions, the questions and concepts were translated into SiSwati after lengthy debate and discussion about what the words meant and where there might be confusion in the meaning of words. The field

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<sup>9</sup> The field workers were selected by Ecolink. They were eleven in total and all were fluent in the vernacular SiSwati.

<sup>10</sup> The questions were informed by people interested in capturing ‘missing dimensions’ in poverty many of whom are working with Oxford Poverty and Development Initiative (OPHI) in Oxford University and under the leadership of Sabina Alkire. Some of the other researchers include; Solava Ibrahim, Emma Samman, Severine Deneulin, Diego Zavaleta and Jacqueline Goldin. The ‘missing dimensions’ refer to those indicators pertaining to a number of dimensions that are often valuable to poor people and instrumentally important to poverty reduction but are not traditionally reported internationally. The inclusion of ‘missing dimensions’ in household surveys facilitates poverty research as these dimensions become more familiar and acceptable – eventually standardized and incorporated into living standard survey instruments.

team contributed to the debates in meaning and translation, and there was agreement in the training which words should be used in the field when asking the respondent the question. Questions were tried and tested through special pre-testing training sessions and again in the field during a number of field pilots. The questions were adjusted, dropped or improved accordingly and the survey instrument was fine-tuned so that in the end the questionnaire flowed well and each question tapped into the construct that it was designed to measure.<sup>11</sup> There were nine drafts before the Ecolink household questionnaire (Appendix C) was finalised. Data collected under the subsections food security, social capital and empowerment were of particular importance because these were the sections that were relevant to the topic of this thesis.

### 3.3.2.2 Sampling households<sup>12</sup>

The first stage of sampling involved the random selection of the two villages that make up the primary sampling units (PSU's). The selection of villages was done using non-random sampling and particularly judgment sampling. The reason for selecting these villages is first of all because the villages are typical of other villages in the District.<sup>13</sup> The two villages, Luphisi and Dwaleni also have typical poverty profiles of other villages in the EDM, a fact that was confirmed in the focus group discussions. The mapping exercise was done after the villages were selected. All habitable dwellings were counted and this was done by walking through the villages. This was not an easy task but it was nonetheless worthwhile given that the Municipal maps were outdated

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<sup>11</sup> As the constructs are new and the indicators have not been widely tested elsewhere, some of the indicators are likely to need further adjustment in follow up surveys.

<sup>12</sup> An acknowledgment to Woldekidan Amde, Aki Stavrou and Jacqueline Goldin for this part of the chapter as the sampling section has largely been taken from the IRWHP sampling report.

<sup>13</sup> The IRWHP was demand driven as all four communities had approached Ecolink because they were water and food insecure.



and were not reliable for sampling. New houses have been built and the population has changed quite dramatically since the census was conducted. The mapping exercise was implemented by the team of Masters Students from the University of the Western Cape, with the researcher inclusive.<sup>14</sup> The students were assisted in this mapping activity by trainers from Ecolink as well as the enumerators for the survey who know the District well. The mappers were trained thoroughly before starting the mapping activity. The maps were used to determine the sampling intervals. The maps also guided the interviewers in finding the sampled households as the maps reflected landmarks such as schools, shops, sport fields, churches and so forth. These landmarks served as anchors or references for locating selected households, not just for enumerators conducting the survey but also for the survey validation and for follow up visits.

The final maps incorporated homesteads, public infrastructure such as bridges and roads, shops, churches schools and health clinics. Natural features such as streams, rivers, boreholes, land used for crop production and livestock rearing and forests were also marked on the maps. All habitable dwellings for both villages were given a specific number on the maps. The maps and the numbering and listing of every household in the villages were thus essential tools used to draw up the sampling frame for both villages. In Lumphisi, there were 478 habitable dwellings while in Dwaleni, there were 732 households.

Households constituted the secondary sampling units (SSU's) and a set of households proportional to the size of households in the two villages was selected. The sample size was

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<sup>14</sup> All four Masters Students (who have been acknowledged earlier) were involved in the mapping exercise in all four villages. The mapping exercise for Lumphisi and Dwaleni took place on the 20<sup>th</sup> of March 2010.

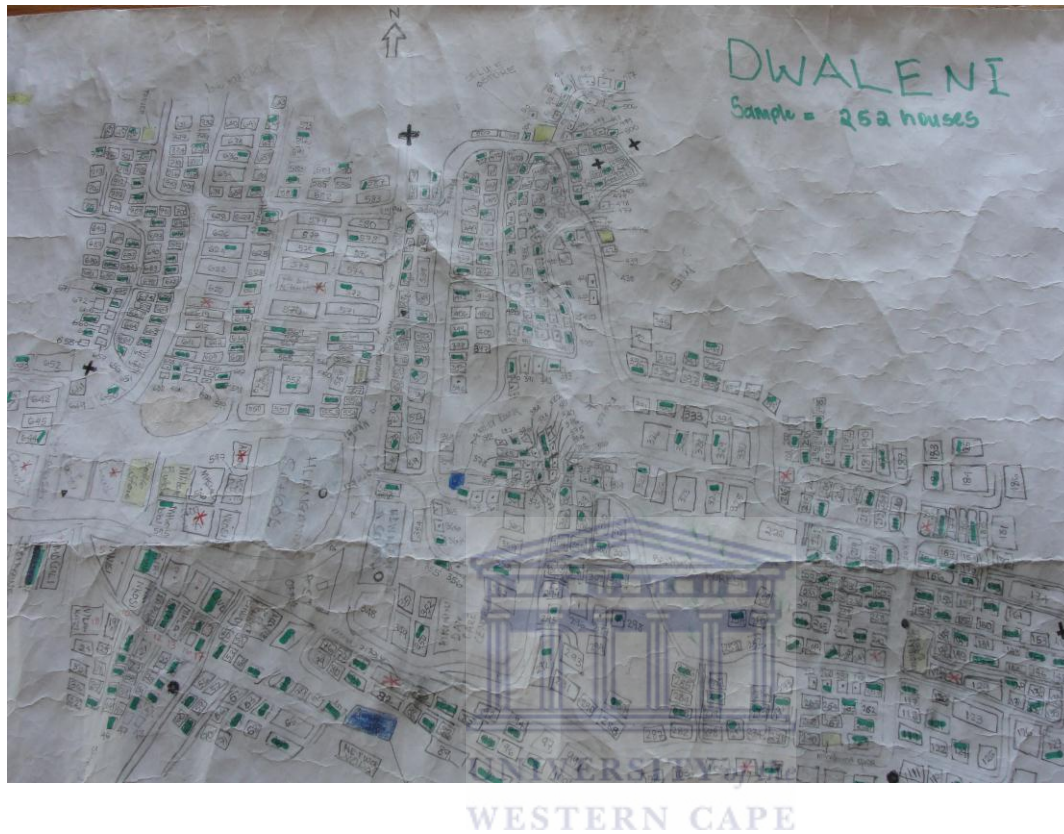
computed from the total number of households in each of the villages with a 95% confidence level and a 5% confidence interval (margin of error). In Lumphasi the sample size was 213 households and in Dwaleni 252 households. After determining the sample size, a sampling interval was computed for each village by dividing the total number of households in the village to its respective sample size. The sampling interval for Lumphasi and Dwaleni was 2.2 and 2.9 respectively. The sample households were selected using systematic sampling, skipping as many households as was stipulated for the sampling interval. The households selected were colour shaded on the map. Figure 3.2 shows a typical map of households and it is the map for Dwaleni.

The third stage of sampling was the random selection of adult household members aged eighteen years and above who were selected as the respondent for the household interview<sup>15</sup>. The selection was done by the enumerators using the household roster and this roster had been put together prior to the respondent selection phase of data collection. Before the interviews began, the selected respondent for the household was given an information sheet/consent form (Appendix D) explaining the purpose of the interview and soliciting the consent of the respondent.

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<sup>15</sup> There are several ways of deciding who belongs to a household but for the purpose of this survey a household member roster is a list of all people who live in the household; they share food together and contribute to a common resource pool.

**Figure 3.2 Households map representation of Dwaleni**



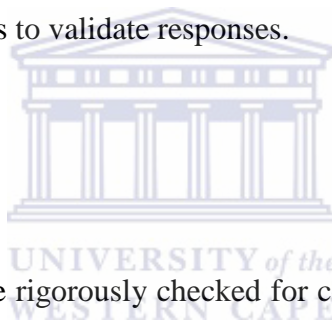
The respondent was selected from the household roster using the birthday rule. By using this method, all adult household members had an equal chance of being selected in responding to the questions. The interviews started in March 2010 and ended in July 2010.

### **3.3.2.3 Validation of the research instrument**

According to Babbie (2004), validity refers to the extent to which an empirical measure accurately reflects the concept it is intended to measure. To ensure quality control, strategies were put in place to ensure the quality of the survey. A 20% validation of all questionnaires was

done. This meant randomly selecting two questionnaires out of a batch of ten and this random selection was done for every interviewer. The percentage dropped to 10% for those whose work was satisfactory. The standard yes/no questions and the household roster were selected to check if the interview was done properly – and a couple of random questions were also then selected from the questionnaire. The validation process was as follows:

1. Telephone the respondent;
2. Find out whether the respondent follows the birthday rule and that the correct respondent has been chosen and;
3. Ask them selected questions to validate responses.



#### **3.3.2.4 Data capturing**

The completed questionnaires were rigorously checked for completeness and consistency by the data manager. Codes were created for the open ended questions and responses that were similar were categorized and coded. The coding of open ended questions was a lengthy process and was completed over a six week period. Data was captured using SPSS (Statistical Packages for Social Scientists) version 13.

#### **3.3.2.5 Data analysis**

The data was analysed using STATA version 11. Frequency distributions (percentages and cross tabulations) were used to summarise the quantitative data. The Chi-square test was used to investigate the relationship between different independent variables (which consist of the

capabilities) and food security (outcome/dependent variable). As indicated in the previous chapter, the age category of youth is 18-35. The data was analysed in three parts as per the objectives of the research. The first part of the analysis involved the identification of the capabilities that exist amongst the youth. This part was analysed by grouping the various response categories (where applicable) into two categories and then running percentage tables. The second part of the analysis was to select specific questions from the questionnaire that had to do with food security and then a score was assigned to these questions. The third part was to test for the relationship between food security and variables representing capabilities. This was done by applying the chi-square test for association or independence. The significance level was set to 5% ( $\alpha = 0.05$ ).



### **3.4 Summary**

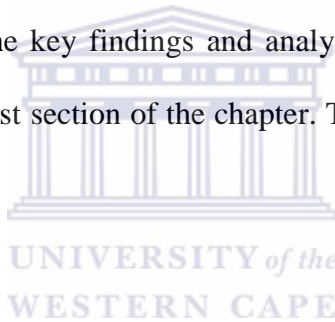
This chapter has described the research settings, study design and sampling methods. The methodological approaches and the motivation for the choice of the methods were explained. The instruments used in data collection, procedures followed and data analysis was also described. The chapter ended also presented the limitations of the study. The next chapter will focus on the findings of the study.

# CHAPTER FOUR

## RESULTS AND DESIGN

### 4.1 Introduction

A mixed methodology research was used in this study, using both qualitative and quantitative research approaches. This chapter presents the results obtained from the qualitative and quantitative data for the study. The key findings and analysis from the focus groups for both villages will be presented in the first section of the chapter. The analysis of the quantitative data is presented in the second section.



### 4.2 Key findings from qualitative data

The qualitative data was acquired from youth focus groups held in the villages of Luphisi and Dwaleni. The youth focus groups for both villages were made up of males and females between the age eighteen and twenty-six. The semi-structured interview guide includes questions that tapped into anticipated outcomes as stated in the IRWHP's objectives. The analysis below is organised under the main themes that match the objectives of this thesis and some observations are made as to how this data links to the idea of capabilities and functionings.

## **4.2.1 Findings from Luphisi village**

### **4.2.1.1 Water Committees**

The youth are not aware of any water committee in the community. The following is a response from a youth:

“We don’t know, but we have meetings where we talk about water problems...we know about the borehole, but we don’t know who put it there.” (Interview youth focus group, March 2010).

The lack of knowledge about water committees is a handicap to the youth in the way. With limited knowledge about water sources and water problems they are unable to actively engage with the issue of water and food security. Youth are excluded from these decision making bodies, bodies that are critical in decision making around water and food security. This is disempowering. The deprivation is multiplied because youth do not have the knowledge (deprivation of information and ability to translate this into knowledge) and deprivation of power to take part in decision making. These deprivations have a negative impact on food security.

### **4.2.1.2 Belonging to associations**

The youth were also asked if they belonged to any other committee or association. Some of the youth had belonged to a sports association in the past but the association was no longer functioning because of lack of financial support. Youth are looking for ways to come together and they had created their own youth group:

“We can start income generating projects instead of sitting at home and gossiping all day.” (Interview youth focus group, March 2010).

Youth coming together could have a positive impact on their livelihoods. As youth work together on issues of common interest trust is built and this solidarity, commonly referred to as social capital, sets the stage for co-operation around living conditions and livelihood strategies – including food and water security.

#### **4.2.1.3 Community decision making**

The youth were unaware of how the decisions are taken in their communities and in particular decisions around improved infrastructure. When asked ‘*who takes real decisions when infrastructural projects need to be undertaken in the community?*’

“We don’t really know”

and

“We just see things happen”

and

“Maybe the councilor”

(Interview youth focus group, March 2010).



Despite the fact that youth are forming groups, these groups do not seem to be giving them tighter connections to community decision-making structures.



#### 4.2.1.4 Household decision making

According to the youth who participated in the focus group, youth rarely take part in decisions for the household. For some, it is their parents who make the decisions while for others without parents, it is their relatives who make the decisions. Some of the youth said that they could make certain decisions but that they still needed to make these decisions under the guidance of an adult - either their parents or a relative. There was no youth in the group who headed a household although there is a high HIV/AIDS prevalence in the area. Household decision making amongst youth seldom happens. The lack of decision making in this context could impact on the way youth engage – or do not engage – with issues relating to food security in their community.

#### 4.2.1.5 Food Security

The youth were asked what, in their opinion, was the major constraints to producing food. A pertinent response follows:

“We struggle on water availability in Luphisi as you can see the soil is also dry. The food produced is not sufficient for all of us, we do not have water, hopefully this dam will bring us water and we can produce more. Also we are not employed no income no food, and no means of making food it is just a lot of problems, my brother, in this village.” (Interview youth focus group, March 2010).

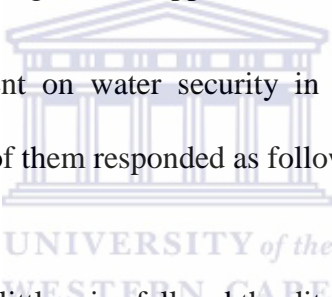
The youth are aware of the water and food insecurity state in their village and they express concern about the situation.

The youth were asked, *what activities are you involved in helping out the food insecurity situation in the village?* One of the youth responded as follows:

“We try to assist our mothers in the gardening but not all of us. My dream is to start my own garden so that I can be independent and sell vegetables. We also attend agriplanner at Ecolink, it also help to teach us to be more profitable.” (Interview youth focus group, March 2010).

Some youth are involved in gardening which contributes to food security in the village. However, it is the women who are actively involved in enhancing food security and the youth only assist. They have not yet taken the issue of food security on themselves as a responsibility. The youth seem to be motivated to gain knowledge and to learn about how to make farming profitable. This shows that they are willing to better their lives and that food security is an option for improved livelihoods if they were given the opportunities/capabilities.

The youth were asked to comment on water security in their village since this cannot be separated from food security. One of them responded as follows:



“Luphisi is just a dry place, little rains fall and the ditches, springs dry up so our village is natural dry. But I wonder if the dam will be able to supply all of us but it is better than nothing. Water is life indeed my brother.”  
(Interview youth focus group, March 2010).

#### **4.2.1.6 Problems and solutions**

The youth were asked what they would change if they had the power to make any changes around water issues and their responses were as follows:

“We will come together and form a youth committee”

or

“Elect representatives to speak on our behalf”

or

“Invite the Department of Water Affairs to test the water”  
(Interview youth focus group, March 2010).

The youth were then asked; *if DWA doesn't react what would you do?* And they responded as follows:

“There's nothing we can do”

and

“We will refer the matter to ANC”

(Interview youth focus group, March 2010).

It seems that the youth were eager to see changes and to be more active in decision making but it was also evident from the focus group, that youth were not sure how they could make a difference in their communities and that they were reliant on adults and others in authority to make decisions on their behalf.

## **4.2.2 Findings from Dwaleni village**

### **4.2.2.1 Water Committees**

The youth reported that there are no water committees in the community. They added that the Ward Councilor helps out in taking complaints around water issues to the municipality.

#### 4.2.2.2 Belonging to associations

The youth were asked whether they belonged to any other association or group and their responses were as follows:

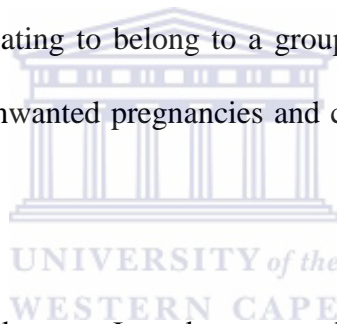
“...yes, I belong to the choir and drama group...I’ve been in the sports committee, I don’t have time to go for sports”

and

“...yes, I belong to the HST Sibongimpilo...it is about fighting against HIV AIDS...I can assist community about HIV”

(Interview youth focus group, March 2010).

For many of the youth it is motivating to belong to a group or association because this keeps them away from drugs, alcohol, unwanted pregnancies and crime. One of the young men made the following observation:



“I benefit in the committee because I can learn something...sometimes the youth of today, they say you are stupid...it’s not like that because you get to gain something...they say you are listening sometimes to get something because, people these days, they need money, R250 from the government...that is not good because when a youth finish school, maybe you can make something...you can open a garden or farm...you create in your own mind”

(Interview youth focus group, March 2010).

Not all youth in the focus group belong to a group. Here is a response from one of the young women:

“...some of us are not even informed about any association...”

(Interview youth focus group, March 2010).

The different groups that the youth belong are existing structures where they could engage in decisions regarding the food insecurity situation in their village.

#### **4.2.2.3 Community decision making**

There is uncertainty about who takes real decisions for the community:

“We don’t really know...maybe the Ward Councilor”  
(Interview youth focus group, March 2010).

Although the youth in Dwaleni seemed to be uncertain about who takes decisions in the village they did seem more certain when it came to decisions around water and asserted with confidence that it is the responsibility of the Ward Councilor.



#### **4.2.2.4 Household decision making**

Most youth do not participate in decision making at the household level and decisions are taken on their behalf by adults - either a parent or a relative. Some of the youth in the focus group had certain obligations for the household. The responses on household decision making were:

“My parents decide on needs of the family”

or

“Big father and big mother take care of the family”

or

“As a youth, I provide food for my sister’s children”

or

“As a wife I decide on cooking”  
(Interview youth focus group, March 2010).

The youth seem to take decisions when it comes to food but not much else. This is however significant within the context of this research. There does seem to be some level of equality in decision making around water because the youth asserted that when it came to water related issues in the household, all household members were responsible. The youth are, however, not responsible for any substantial decision making around water issues but rather for chores related to water (collection of water).



#### **4.2.2.5 Food Security**

When the youth were asked *what do you think are the major constraints to producing food?*

Their responses were as follows:

“I think food security is good for our people; one can harvest, sell and have money in the household. Like we do in the abattoir there are ten of us youth involved in farming.”

and

“However, food insecurity is a big issue in Dwaleni, there is always less food to supply us all. Our biggest problem is a small area available for planting in our village, I wish we had more land but it will cost us we do not have money to purchase it.” (Interview youth focus group, March 2010).

Some of the youth are already involved in farming and producing food crops in the village and this contributes to their livelihoods. The youth themselves realize that food security is critical for

their well-being and by identifying some of the issues themselves (land, water for instance), they are showing some autonomy and agency. Autonomy is a capability amongst youth which would enhance food security in Dwaleni and contribute to agency and well-being.

The youth were asked the kind of activities they were involved in, in assisting with the food insecurity situation in their village and one of them replied as follows:

“I am involved in the garden in Dwaleni by helping planting to reduce food insecurity. Youth initiatives in Dwaleni involves craftwork, singing, cultural activities and football that what we do as youth. I wish the government can have short courses for youth so that we can be empowered and have more skills.” (Interview youth focus group, March 2010).

The youth were asked to comment on water security in their village and one of them answered as follows:



“Water is not enough the abattoir water borehole is stretched since we all depend on it and water sometimes run out. Water is insufficient and we have to pay R1 for 20- 25litres of water sometimes this cost is too much for us.” (Interview youth focus group, March 2010).

#### **4.2.2.6 Problems and solutions**

The youth said that there were a number of challenges in the community and mentioned lack of job opportunities, crime, limited containers for water storage, no recreation facilities and water scarcity. Water scarcity is certainly one of the many challenges that community members face:

“There is water scarcity...we must complain first before the water tank supplies water after five days” (Interview youth focus group, March 2010).

There are some innovative ways that you help to get water – for instance by fitting drums in a spring but this is not an ideal solution at all. One of the problems associated with putting drums in the spring is the issue of water quality. Reportedly some people kill frogs and put these into the drums thus contaminating the water. And when asked why, the following statement was made:

“You see, we blacks...I don’t know how we behave because, if I have already got my water, I don’t care about the other people...it’s not fair.”  
(Interview youth focus group, March 2010).

The above statement reflects problems of in-group/out-group dynamics in the village of Dwaleni. These are tensions that impact negatively on opportunities/capabilities for social cohesion and feelings of belonging. Working together, shared values and norms and ‘belonging’ are important ingredients for promoting food security in general and in the village of Dwaleni in particular.

The youth made suggestions as to how they could solve this type of problem. They suggested creating a youth committee as a forum where they come together to discuss development in the community. They also said that they would like to find a sponsor so that they have starter funds for a development project. Many of the youth do want to be part of the solution and as one reported:

‘...build tanks around Dwaleni...we can do it as youth...we have to do the jobs ourselves, in the case of Sinovile to put the taps there...to get something to eat...’ (Interview youth focus group, March 2010).



From the quote above, the youth are enthusiastic and willing to be part of the solution of water and food insecurity. The youth have agency and more freedom to do the things that they value.

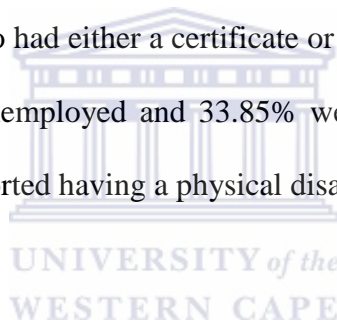
### **4.3 Results from quantitative data**

The quantitative data was obtained from the household questionnaires. The analysis focused on the youth between eighteen to thirty-five years. The data was analysed using the statistical analytical package STATA. The results for both villages are presented in four sections. The first section shows the socio-demographic characteristics of the youth. The second section shows the assessment of capabilities among youth. The attributes (such as trust and self-esteem) that were used to assess youth capabilities were chosen under the main domain 'Social capital and Empowerment' in section E of the household questionnaire. These attributes have indicators/questions that seek to measure these constructs. The third section presents the state of food security in the villages and the fourth section shows the relationship between youth capabilities and food security. The fourth section looked at all the indicators (not grouped under their attributes) which scored 50% and above to represent youth capabilities that exist among youth.

### **4.3.1 Results from Dwaleni village**

#### **4.3.1.1 Description of study sample**

In the village of Dwaleni, the sample size for the youth category (18-35 years) was 79 youth. However for some questions, the sample did not total 79 as not all youth responded to all the questions. As illustrated in table 4.1 the majority of the participants (51.9%) were female. The male participants made up 48.1% of the sample and this reflects the national gender skew of 51% female to 49% male. There were 12.66% of households that were headed by youth of whom 5.06% were married. The majority (68.35%) were children in the household. Some of the youth (41.77%) had some secondary level of education and 27.85% had completed secondary education. There were 17.72% who had either a certificate or had matric. No one had any tertiary education. There were 30.77% unemployed and 33.85% were full-time students. Almost nine percent (8.86%) of the sample reported having a physical disability.



**Table 4.1 Socio-demographic characteristics of the sample size for Dwaleni**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	38	48.1
Female	41	51.9
<b>Relationship to household head</b>		
Head	10	12.66
Spouse	5	6.33
Child	54	68.35
Other family	9	11.39
Lodger	1	1.27
<b>Marital status</b>		
Single	63	79.75
Married	4	5.06
Partnership	11	13.92
Widow/er	1	1.27
<b>Highest educational qualification</b>		
None	1	1.27
Some primary	5	6.33
Complete primary	1	1.27
Some secondary	33	41.77
Complete secondary	22	27.85
Certificate no matric	1	1.27
Certificate and matric	14	17.72
Diploma and matric	2	2.53
<b>Health problems/disability</b>		
Physical	7	8.86
Mental	1	1.27
None	71	89.87
<b>What do you do for a living?</b>		
Full time scholar/student	22	33.85
Part time scholar/student	3	4.62
Full time home worker (own home)	4	6.15
Retired/pensioner	1	1.54
Unemployed seeking non-farm employment	20	30.77
Employed part time non-farm	4	6.15
Informal sector employed full time	4	6.15
Other	7	10.77



### **4.3.1.2 Assessing capabilities among youth in Dwaleni**

#### *4.3.1.2.1 Access to networks as a capability*

The study has considered belonging to an association, number of friends and speaking to committees or people dealing with water as a proxy measure for ‘access to networks.’ As access to networks is likely to increase opportunities for youth, it is considered to be a core capability. As illustrated in table 4.2 information relating to ‘belonging’ to four different community networks was captured. There were 33.77% who belonged to a community association and of those who belonged, 7.69% were actively involved and 3.84% were in the management committee. There were 7.59% who belonged to a health/disability organisation and none belonged to the management of that organisation. Almost thirty two percent (31.65%) belonged to sports association, 20% were actively involved in the sports association and 12% were part of the management committee of the sports association. Only 6.33% of the sample in Dwaleni belonged to a water committee and of these, none actively took part or were on the management committee. Only 14.86% of the respondents had spoken to committees/people who deal with water. There were 43.04% of the youth who said they did not have many friends, and only 7.59% said that they had lots of friends.

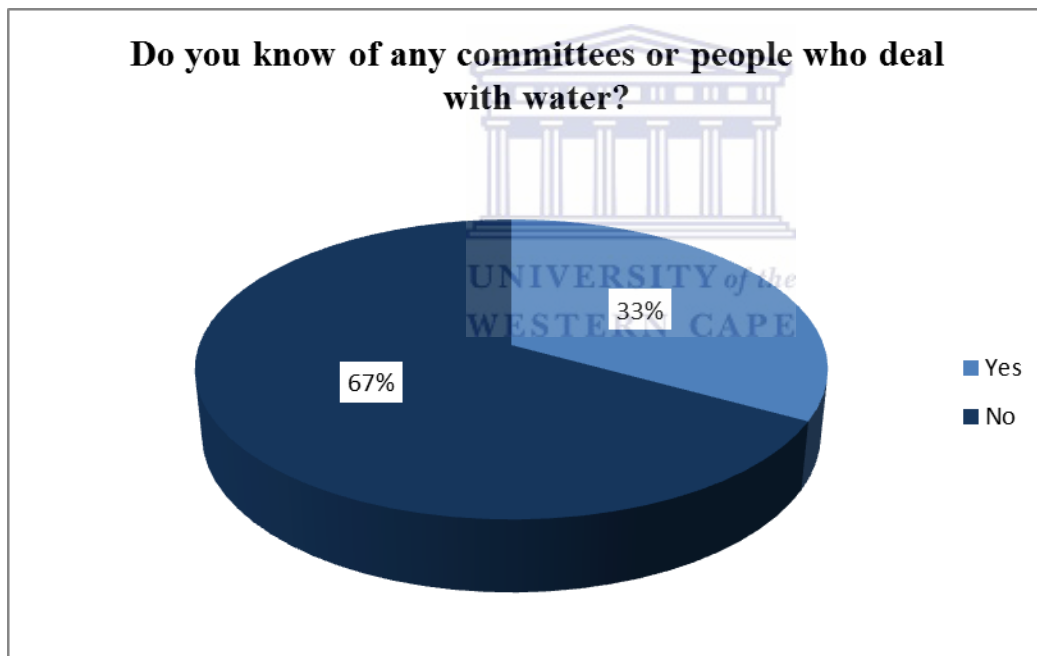
**Table 4.2 Assessing access to networks as a capability among youth of Dwaleni**

<b>Access to networks inquiry ideas</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>A Belonging to associations</b>		
<b>1 Do you belong to a Community association?</b>		
Yes	26	33.77
No	51	66.23
<b>If yes do you:</b>		
a Actively take part in?	2	7.69
b Belong to the management/organisation committee?	1	3.84
<b>2 Do you belong to a Health or disability related organisation?</b>		
Yes	6	7.59
No	73	92.41
<b>If yes do you:</b>		
a Actively take part in?	0	0
b Belong to the management/organisation committee?	0	0
<b>3 Do you belong to a Sport association?</b>		
Yes	25	31.65
No	54	68.35
<b>If yes do you:</b>		
a Actively take part in?	5	20
b Belong to the management/organisation committee?	3	12
<b>4 Do you belong to a water committee?</b>		
Yes	5	6.33
No	74	93.67
<b>If yes do you:</b>		
a Actively take part in?	0	0
b Belong to the management/organisation committee?	0	0
<b>B Personal and group level interaction</b>		
<b>1 Would you say that in terms of friends you have...</b>		
Lots of friends	6	7.59
A few but good friends	39	49.37
Not many friends	34	43.04
<b>2 Have you ever spoken to any committees or people who deal with water?</b>		
Yes	11	14.86
No	63	85.14

#### 4.3.1.2.2 Knowledge/awareness as a capability

The following pie chart (figure 4.1) will be discussed in more detail in chapter five but suffice to say here, that, as reflected in the chart, when asked ‘do you know of any committees or people who deal with water’, of the total sample of 79 only 33% were aware of committees/people dealing with water.

**Figure 4.1 Assessment of knowledge/awareness of water committees among youth in Dwaleni (n=78)**



#### 4.3.1.2.3 Trust as a capability

There were two indicators that tapped into the idea of trust among youth. As illustrated in table 4.3, there were 87.01% of the respondents who said that people can be trusted and only 12.99%

who said that nobody can be trusted. A high percentage (72.15%) said that if they disagreed with someone else, they would feel free to speak and this has been considered as a proxy measure of trust.

**Table 4.3 Assessing trust as a capability among youth in Dwaleni**

<b>Trust inquiry ideas</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>1. On the whole would you say:</b>		
Nobody can be trusted	10	12.99
People can be trusted	67	87.01
<b>2. If you disagree with what everyone else agreed on, would you feel free to speak out?</b>		
Yes	57	72.15
No	22	27.85

#### 4.3.1.2.4 *Collective action and co-operation as a capability*

The data presented in table 4.4 reflects co-operation and collective action. There were 97.47% of youth who said that they would take a person in their household, or a close friend, to the doctor or health worker if that person were sick and 98.7% would do this because this is what they want to do. However, there are only 18.92% who have worked with others in their neighbourhood for the benefit of the community. The youth (53.16%) reported that it is common for neighbours to do things together although 46.84% reported that it was not common for neighbours to do things

together. One of the questions asked was ‘how common is it that people discuss water issues’ and here 83.33% responded that it is common for people to discuss water issues.

**Table 4.4 Assessing collective action/ co-operation as a capability among youth in Dwaleni**

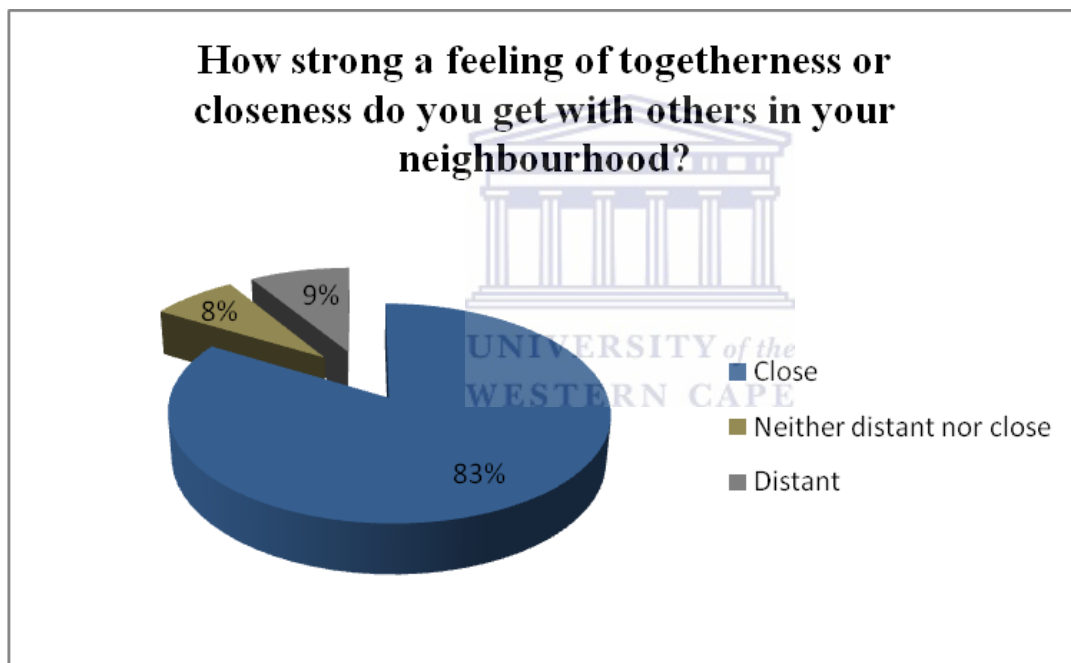
Collective action/ co-operation inquiry ideas	Frequency	Percentage (%)
<b>1a Would you make a decision to take a person in your household or a close friend to a doctor or health worker if that person is sick?</b>		
Yes	77	97.47
No	2	2.53
<b>b I do this because this is what I want to do</b>		
True	76	98.70
Not at all true	1	1.30
<b>2 In the past 12 months, have you worked with others in your neighbourhood or village to do something for the benefit of the community?</b>		
Yes	14	18.92
No	60	81.08
<b>3a How common is that neighbours help each other out?</b>		
Common	51	64.56
Not common	28	35.44
<b>b How common is that neighbours do things together?</b>		
Common	42	53.16
Not common	37	46.84
<b>c How common is it that people discuss water issues?</b>		
Common	65	83.33
Not common	13	16.67



#### 4.3.1.2.5 Social cohesion and inclusion as a capability

The youth were asked whether or not there is a strong feeling of togetherness or closeness and whether they get on with others in their neighbourhood. As illustrated in figure 4.2, the vast majority (83%) said there is a feeling of closeness and only 9% and 8% respectively said, they feel distant or that they feel neither distant nor close.

**Figure 4.2 Assessing social cohesion and inclusion as a capability among youth in Dwaleni (n=79)**



#### 4.3.1.2.6 Sociability as a capability

As shown in table 4.5, the thesis used two questions as a measure for sociability as an opportunity/capability. The majority (93.67%) have never discussed water related community

development projects in a week. There were only 36% of the respondents who knew of developments projects that have created the space for people to meet more often.

**Table 4.5 Assessing sociability as a capability among youth in Dwaleni**

Sociability inquiry ideas	Frequency	Percentage %
<b>1 In the last week, how many times would you have discussed water related community development projects with others when meeting for food or drinks?</b>		
<b>Number of times</b>		
0	74	93.67
1	3	3.80
2	2	2.53
3	0	0
4	0	0
7	0	0
<b>2 Do you know of any development projects that have created the space whereby you can meet more people generally?</b>		
Yes	28	36
No	50	64

#### 4.3.1.2.7 Self-esteem as a capability

From the indicators chosen to assess self-esteem as a capability (reflected in table 4.6), 44.16% of the youth were satisfied with their life as a whole and they (91.14%) said that they had control in making decisions for themselves. The respondents (96.2%) feel valued by family and friends and 62.82% feel valued by their community. The majority of the youth (87.67%) feel they can bring about change in their community.

**Table 4.6 Assessing self-esteem as a capability among youth in Dwaleni**

<b>Self-esteem inquiry ideas</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>1. Taking all things together, how satisfied are you with your life as a whole these days? generally speaking would you say you are:</b>		
Satisfied	34	44.16
Neither satisfied nor dissatisfied	6	7.79
Dissatisfied	37	48.05
<b>2. How much control do you feel you have in making decisions that affect your everyday activities?</b>		
Control	72	91.14
No control	7	8.86
<b>3. Overall, how much impact do you think you have at this current time in making your neighbourhood a better place to live?</b>		
Impact	60	75.95
No impact	19	24.05
<b>4. Do you feel you are valued by your family and friends?</b>		
Yes	76	96.20
No	3	3.80
<b>5. Do you feel you are valued by your community?</b>		
Yes	49	62.82
No	29	37.18
<b>6. Do you feel that people like yourself can generally change things in your community if they want to</b>		
Yes	64	87.67
No	9	12.33

#### 4.3.1.2.8 *Meaning as a capability*

Another way to consider opportunities (capability) is to assess how much meaning or sense an individual makes of his or her life. The questions (reflected in table 4.7 below) show that the vast majority of youth (94.87%) say that their life had a clear meaning and 88.16% know what it is in their lives that gives it meaning.

**Table 4.7 Assessing meaning as a capability among youth in Dwaleni**

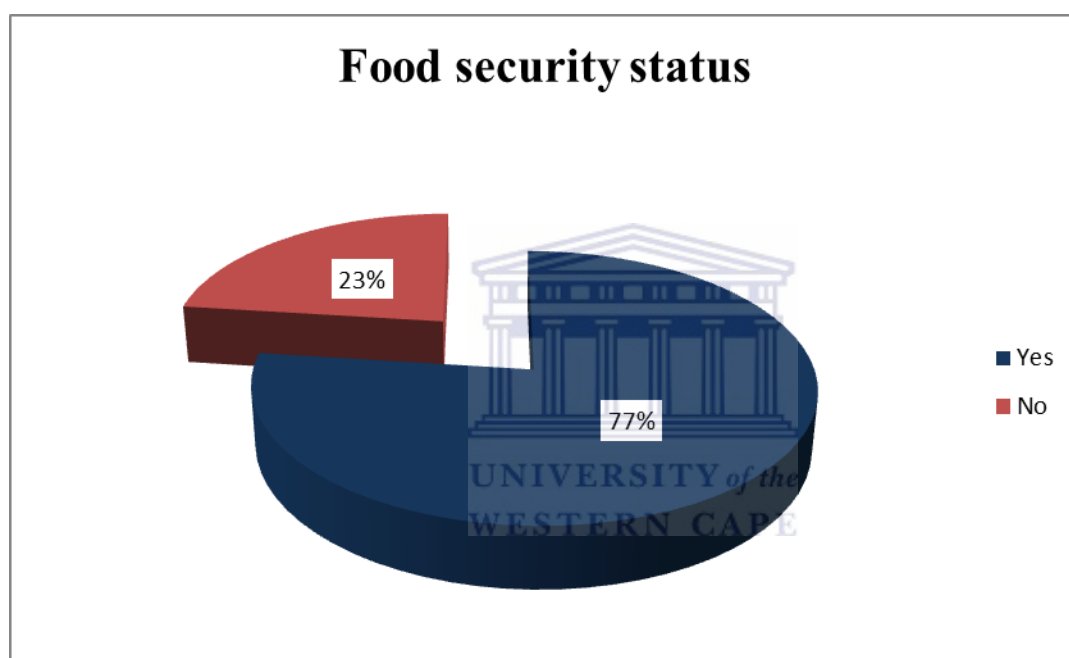
Meaning inquiry ideas	Frequency	Percentage (%)
<b>Would you say “Yes or No” to the following two statements?</b>		
<b>1. My life has a clear meaning or purpose</b>		
Yes	74	94.87
No	4	5.13
<b>2. I have a clear sense of what gives meaning to my life</b>		
Yes	67	88.16
No	9	11.84

#### 4.3.1.3 **Food security status in Dwaleni**

For the purpose of this thesis, two questions (in the past 12 months, how often did any adult go to bed hungry because there was not enough food? and, in the past 12 months, how often did any child go to bed hungry because there was not enough food?) were selected from the questionnaire to represent the status of food security. The questions were merged to represent “anyone” going to bed hungry. As illustrated in figure 4.3, 77% of the sample indicated that their

households were food secure, but, although a much smaller percentage, it is significant that 23% of the sample indicated that their households were food insecure and people (either child or adult) went to bed hungry because of insufficient food.

**Figure 4.3 Food security status in Dwaleni (n=79)**



#### **4.3.1.4 Relationship between capabilities and food security**

The chi-square test for independence was used to assess whether there was an association or relationship between food security and youth capabilities. The results (table 4.8) indicated that there was no statistically significant relationship between youth capabilities and food security in Dwaleni since the p-values associated with the chi-square statistics were greater than 5% level of significance. This means that youth capabilities did not influence food security in this region.

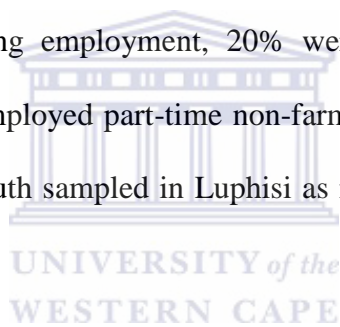
**Table 4.8 Relationship between youth capabilities and food security in Dwaleni**

Variable	Food security		Significance p-Value
	Food security (Yes)	Food security (No)	
1. On the whole would you say:	75.12	24.88	0.787
2. If you disagree with what everyone else agreed on, would you feel free to speak out?	80.70	19.30	0.234
3. Would you make a decision to take a person in your household or a close friend to a doctor or health worker if that person is sick?	76.62	23.38	0.436
4. I do this because this is what I want to do	77.63	22.37	0.068
5. How common is that neighbours help each other out?	80.39	19.31	0.364
6. How common is that neighbours do things together?	85.71	14.29	0.055
7. How common is it that people discuss water issues?	78.46	21.54	0.902
8. How strong a feeling of togetherness or closeness do you get with others in your neighbourhood?	78.79	21.21	0.402
9. How much control do you feel you have in making decisions that affect your everyday activities?	79.17	20.83	0.185
10. Overall, how much impact do you think you have at this current time in making your neighbourhood a better place to live?	76.67	23.33	0.836
11. Do you feel you are valued by your family and friends?	78.95	21.05	0.065
12. Do you feel that people like yourself can generally change things in your community if they want to	78.13	21.87	0.141
13. My life has a clear meaning or purpose	78.38	21.62	0.189
14. I have a clear sense of what gives meaning to my life	79.10	20.90	0.400

## **4.3.2 Results from Luphisi village**

### **4.3.2.1 Description of study sample**

The sample size for the youth category (18-35 years) in Luphisi was 120. However, there were some questions which were not answered by some of the youth. The majority of the participants (56.67%) in this village, as illustrated in table 4.9 were female. This shows some typical gender bias in the national gender skew of 51/49. There were 23.93% of youth headed households, 11.67% of whom were married. The greater majority (56.41%) were children of the household. Some of the youth (55%) had some secondary education and 20% had completed their secondary education. Only 16.67% had a certificate or had matric. There were 10% of the sample who were unemployed and were not seeking employment, 20% were unemployed and were seeking employment and, 13.75% were employed part-time non-farm. There were 17.5% of youth who were full time students. Of the youth sampled in Luphisi as many as 9.17% reported a physical health disability.



**Table 4.9 Socio-demographic characteristics of the sample size for Luphisi**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	52	43.33
Female	68	56.67
<b>Relationship to household head</b>		
Head	28	23.93
Spouse	17	14.53
Child	66	56.41
Other family	5	4.27
Lodger	1	0.85
<b>Marital status</b>		
Single	83	69.17
Married	14	11.67
Partnership	23	19.17
<b>Highest educational qualification</b>		
None	1	0.83
Some primary	3	2.5
Complete primary	1	0.83
Some secondary	66	55
Complete secondary	24	20
Certificate no matric	1	0.83
Certificate and matric	20	16.67
Diploma no matric	1	0.83
Diploma and matric	3	2.5
<b>Health problems/disability</b>		
Physical	11	9.17
Mental	2	1.67
None	107	89.17
<b>What do you do for a living?</b>		
Full time scholar/student	14	17.5
Part time scholar/student	1	1.25
Full time home worker (own home)	14	17.5
Unemployed not seeking employment	8	10
Unemployed seeking non-farm employment	16	20
Employed part-time non-farm	11	13.75
Informal sector employed full-time non-farm	3	3.75
Informal sector employed full-time farm	1	1.25
Formal sector employed part-time non-farm	2	2.5
Other	10	12.5



### **4.3.2.2 Assessing capabilities among youth in Luphisi**

#### *4.3.2.2.1 Access to networks as a capability*

The study has considered belonging to an association, number of friends and speaking to committees or people dealing with water as a proxy measure for ‘access to networks’ and as presenting opportunities for youth that contribute to their well-being. As such these are valuable capabilities. As illustrated in table 4.10, information relating to ‘belonging’ to four different community networks was captured. There were 47.5% who belonged to a community association and of those who belonged, 3.5% were actively involved and 1.75% were in the management committee. There were 21.85% who belonged to a health/disability organisation but none were on the management committee of that organisation. There were 38.33% who belonged to sports association, 21.74% of whom were actively involved in the sports association and 4.35% were part of the management committee of the sport association. Only 16.81% of the sample in Luphisi belonged to a water committee and of these, 5% actively took part but none were on the management committee. There were 42.24% of the youth who said they did not have many friends, and only 12.07% said that they had lots of friends while 45.69% said they had a few but good friends. There were 41.59% who said that they had spoken to committees/people who deal with water.

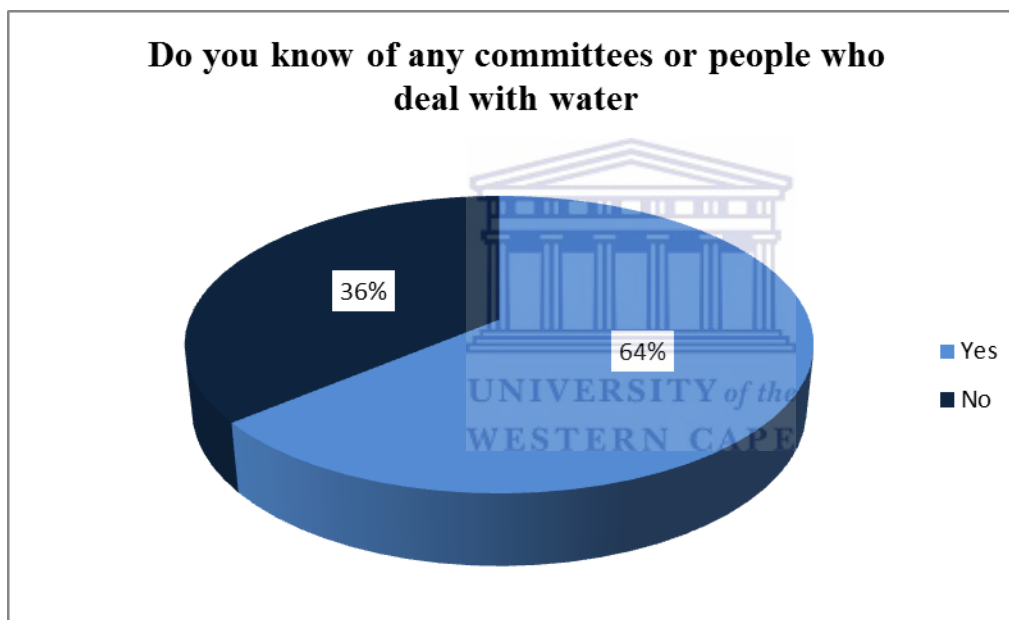
**Table 4.10 Assessing access to networks as a capability among youth in Luphisi**

<b>Access to networks inquiry ideas</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>A Belonging to associations</b>		
<b>1 Do you belong to a Community association?</b>		
Yes	57	47.5
No	63	52.5
<b>If yes do you:</b>		
a Actively take part in?	2	3.51
b Belong to the management/organisation committee?	1	1.75
<b>2 Do you belong to a Health or disability related organisation?</b>		
Yes	26	21.85
No	93	78.15
<b>If yes do you:</b>		
a Actively take part in?	0	0
b Belong to the management/organisation committee?	0	0
<b>3 Do you belong to a Sport association?</b>		
Yes	46	38.33
No	74	61.67
<b>If yes do you:</b>		
a Actively take part in?	10	21.74
b Belong to the management/organisation committee?	2	4.35
<b>4 Do you belong to a water committee?</b>		
Yes	20	16.81
No	99	83.19
<b>If yes do you:</b>		
a Actively take part in?	1	5
b Belong to the management/organisation committee?	0	0
<b>B Personal and group level interaction</b>		
<b>1 Would you say that in terms of friends you have...</b>		
Lots of friends	14	12.07
A few but good friends	53	45.69
Not many friends	49	42.24
<b>2 Have you ever spoken to any committees or people who deal with water?</b>		
Yes	47	41.59
No	66	58.41

#### 4.3.2.2.2 Knowledge/awareness as a capability

As reflected in the chart (figure 4.4), when asked ‘do you know of any committees or people who deal with water’, from the total sample of 120, the majority (64%) of the respondents knew of the committees/people who deal with water.

**Figure 4.4 Assessing knowledge/awareness as a capability among youth in Luphisi (n=117)**



#### 4.3.2.2.3 Trust as a capability

There were two indicators selected (as shown in table 4.11) to measure trust as a capability. There were 84.62% of those who responded who said that people can be trusted and only 15.38% said that nobody can be trusted. A high percentage (71.43%) of those who responded said that if they disagreed with someone else they would feel free to speak. And as indicated above, this has been taken as a proxy for trust between people.

**Table 4.11 Assessing trust as a capability among the youth of Luphisi**

<b>Trust inquiry ideas</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>1. On the whole would you say:</b>		
Nobody can be trusted	18	15.38
People can be trusted	99	84.62
<b>2. If you disagree with what everyone else agreed on, would you feel free to speak out?</b>		
Yes	85	71.43
No	34	28.57



**4.3.2.2.4 Collective action and co-operation as a capability**

As illustrated in table 4.12 the indicators reflect different aspects of collective action. There were 92.44% of youth who said that they would take a person in their household, or a close friend, to the doctor or health worker if that person were sick and, 98.17% would do this because this is what they want to do. There were 31.3% who have worked with others in the neighbourhood for the benefit of the community. The majority, almost 70% (69.64%) of the respondents said it was common for neighbours to do things together. One of the questions asked was ‘how common is it that people discuss water issues’, and here 79.46% responded that it is common for people to discuss water issues.

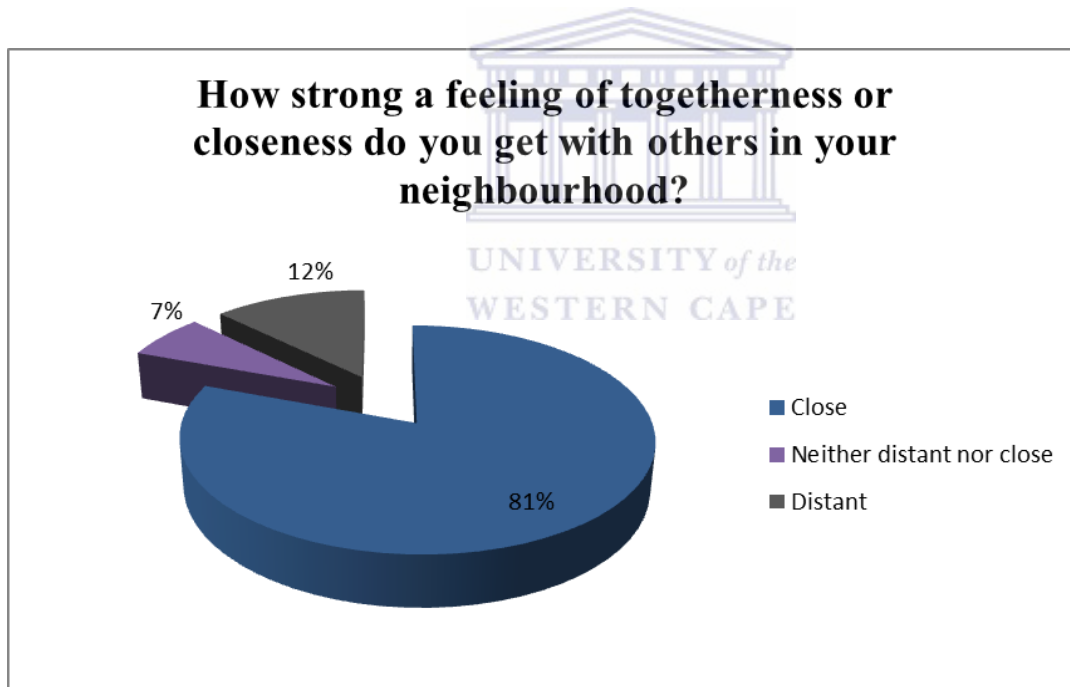
**Table 4.12 Assessing collective action/ co-operation as a capability among youth in Luphisi**

<b>Collective action/co-operation inquiry ideas</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>1a. Would you make a decision to take a person in your household or a close friend to a doctor or health worker if that person is sick?</b>		
Yes	110	92.44
No	9	7.56
<b>b. I do this because this is what I want to do</b>		
True	107	98.17
Not at all true	2	1.83
<b>2 In the past 12 months, have you worked with others in your neighbourhood or village to do something for the benefit of the community?</b>		
Yes	36	31.3
No	79	68.7
<b>3a. How common is that neighbours help each other out?</b>		
Common	82	73.21
Not common	30	26.79
<b>b How common is that neighbours do things together?</b>		
Common	78	69.64
Not common	34	30.36
<b>c How common is it that people discuss water issues?</b>		
Common	89	79.46
Not common	23	20.54

#### 4.3.2.2.5 Social cohesion and inclusion as a capability

In order to assess social cohesion as a capability as shown in figure 4.5, the youth were asked whether or not there is a strong feeling of togetherness or closeness and whether they get on with others in the neighbourhood. The majority (81%) of the respondents said they get a feeling of closeness and only 7% and 12% respectively said that they felt neither distant nor close or that they felt distant.

**Figure 4.5 Assessing social cohesion and inclusion as capability among youth of Luphisi (n=119)**



#### 4.3.2.2.6 Sociability as a capability

The indicators selected to measure sociability as presented in table 4.13 indicated that the majority (63.03%) have never discussed water related community development projects with

others in a week. Only 45.95% of youth knew of projects that have created the space where they can meet more people.

**Table 4.13 Assessing sociability as a capability among youth in Luphisi (n=111)**

Sociability inquiry ideas	Frequency	Percentage %
<b>1 In the last week,how many times would you have discussed water related community development projects with others when meeting for food or drinks?</b>		
<b>Number of times</b>		
0	75	63.03
1	14	11.76
2	4	3.36
3	3	2.52
4	2	1.68
7	1	0.84
<b>2 Do you know of any development projects that have created the space whereby you can meet more people generally?</b>		
Yes	51	45.95
No	60	54.05

#### 4.3.2.2.7 Self-esteem as a capability

Of the indicators selected for self-esteem as a capability/opportunity reflected in table 4.14, 46.67% of youth were satisfied with their lives generally. There were 95.8% who felt that they could make decisions that affect their everyday activities. Almost all of the respondents (95%) feel valued by their family and friends and, 68.64% feel valued by their community. The majority of the respondents (91.15%) feel they could bring about a change in their community.

**Table 4.14 Assessing self-esteem as a capability among youth of Luphisi**

Self-esteem inquiry ideas	Frequency	Percentage (%)
<b>1. Taking all things together, how satisfied are you with your life as a whole these days? generally speaking would you say you are:</b>		
Satisfied	56	46.67
Neither satisfied nor dissatisfied	3	2.5
Dissatisfied	61	50.83
<b>2. How much control do you feel you have in making decisions that affect your everyday activities?</b>		
Control	114	95.8
No control	5	4.2
<b>3. Overall, how much impact do you think you have at this current time in making your neighbourhood a better place to live?</b>		
Impact	96	80.67
No impact	23	19.33
<b>4. Do you feel you are valued by your family and friends?</b>		
Yes	114	95
No	6	5
<b>5. Do you feel you are valued by your community?</b>		
Yes	81	68.64
No	33	31.36
<b>6. Do you feel that people like yourself can generally change things in your community if they want to</b>		
Yes	113	91.15
No	10	8.85



#### 4.3.2.2.8 *Meaning as a capability*

Another way to consider opportunities (capabilities) is to assess how much meaning an individual makes of his or her life. Two indicators were selected to measure meaning as a capability and these are shown in table 4.15. The vast majority of the respondents (94.96%) say that their life had a clear meaning and 91.15% know what it is in their lives that gives their life meaning.

**Table 4.15 Assessing meaning as a capability among youth of Luphisi**

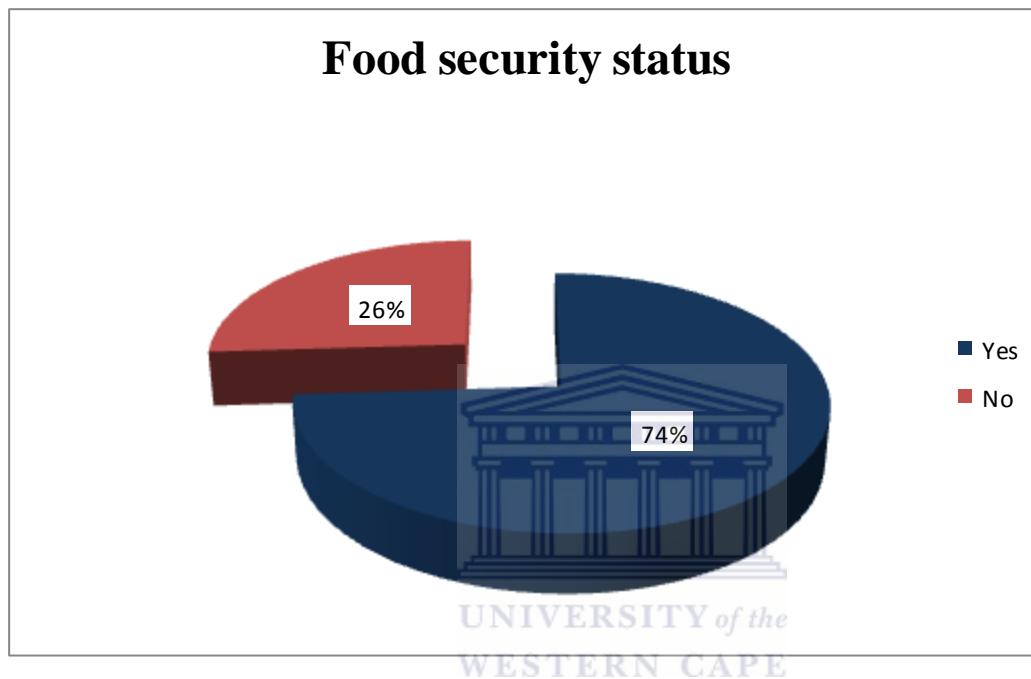
<b>Meaning inquiry ideas</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Would you say “Yes or No” to the following two statements?</b>		
<b>1. My life has a clear meaning or purpose</b>		
Yes	113	94.96
No	6	5.04
<b>2. I have a clear sense of what gives meaning to my life</b>		
Yes	103	91.15
No	10	8.85

#### 4.3.2.3 Food security status in Luphisi

Two indicators (child going to bed hungry and adult going to bed hungry in the past 12 months) were used to evaluate the status of food security status in Luphisi. The questions were merged to represent “anyone” going to bed hungry. As illustrated in figure 4.6, 74% of the total sample indicated that their households were food secure, but although a smaller percentage (26%), it is

significant that as many as 26% of their households were food insecure and people went to bed hungry because of insufficient food.

**Figure 4.6 The state of food security in Luphisi (n=120)**



#### **4.3.2.4 Relationship between capabilities and food security**

The chi-square test for independence was used to examine the relationship between some of the capabilities and food security. The inquiry ideas which showed a significant relationship with food security at 5% level of significance as shown in table 4.16 were only the following: “I do this because this is what I want to do” (p-value = 0.013), “how strong a feeling of togetherness or closeness do you get with others in your neighbourhood?” (p-value = 0.021) and, “do you feel you are valued by your family and friends?” (p-value = 0.019).

**Table 4.16 Significance between youth capabilities and food security in Lumphasi  $p \leq 0.05$** 

Variable	Food security		Significance p-Value
	Food security (Yes)	Food security (No)	
1. Do you know of any committees or people who deal with water?	73.33	26.67	0.734
2. On the whole would you say:	75.76	24.24	0.416
3. If you disagree with what everyone else agreed on, would you feel free to speak out?	74.12	25.88	0.947
4. Would you make a decision to take a person in your household or a close friend to a doctor or health worker if that person is sick?	75.45	24.55	0.559
5. *I do this because this is what I want to do	76.64	23.36	0.013*
6. How common is that neighbours do things together?	80.77	19.23	0.068
7. How common is it that people discuss water issues?	76.40	23.40	0.803
8. *How strong a feeling of togetherness or closeness do you get with others in your neighbourhood?	80.21	19.79	0.021*
9. How much control do you feel you have in making decisions that affect your everyday activities?	75.44	24.56	0.077
10. Overall, how much impact do you think you have at this current time in making your neighbourhood a better place to live?	76.04	23.96	0.288
11. *Do you feel you are valued by your family and friends?	76.32	23.68	0.019*
12. Do you feel that people like yourself can generally change things in your community if they want to?	74.76	25.24	0.714
13. My life has a clear meaning or purpose	75.22	24.78	0.638
14. I have a clear sense of what gives meaning to my life	75.73	24.27	0.689

\* Significant at 5% level

#### **4.4 Summary**

This chapter presented the results from both target villages, Luphisi and Dwaleni. It presented the qualitative results obtained from the youth focus groups and quantitative results obtained from the household survey. The socio-demographic characteristics of youth as well as the findings for indicators used to measure capabilities have been presented. Finally, the state of food security and the relationship between youth capabilities and food security was presented.



## **CHAPTER FIVE**

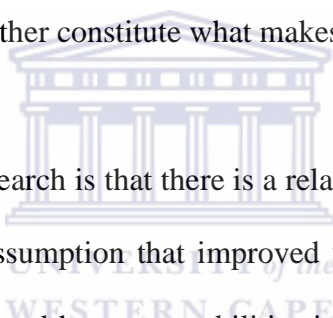
### **DISCUSSION**

#### **5.1 Introduction**

This chapter presents the discussion of the findings so as to answer the research question and objectives of the thesis as presented in chapter one. The data collected for the thesis was collected within the context of the IRWHP in the Ehlanzeni District in Mpumalanga province. The overall objective of the IRWHP was to improve output from communal food gardens but an important component of this project was community capacity building so as to strengthen food and water security and income generation over time. The idea behind the IRWHP was that enhanced food and water security, by allowing for an extended cropping season through the collection and storage of rainwater, would create better opportunities - and improved well-being - for the targeted individuals, households and communities.

This thesis drew on data from the larger IRWHP study and its aim is to study the relationship between water and food security and to consider whether and in what ways engaging with issues around water and food security could provide opportunities for the youth (enhanced capabilities) in Luphisi and Dwaleni villages. The research objectives were to determine the capabilities that exist amongst the youth, to determine the state of food security in the villages and to determine whether there is a relationship between food security and youth capabilities. In addition the study considers which particular capabilities are most likely to promote food security and it aims to better

understand the differences that emerge among the youth around issues of food security and capabilities in the two villages. Based on these objectives, a good starting point is to answer the research question on whether there is a relationship between youth capabilities and food security and whether the CA is a helpful framework for considering the engagement – or lack thereof, of youth in food security and then, more generally to consider what capabilities are most likely to bring better food security. The central characteristic of the CA is its focus on what people are effectively able to do and to be, that is on their capabilities (Robeyns, 2003). Robeyns (2003) gives an example on how every person should have the opportunity to be part of a community but if someone prefers to be a hermit, they should have this option. Sen calls these beings and doings achieved functionings, which together constitute what makes any life valuable (*ibid*).



The hypothesis that guides the research is that there is a relationship between youth capabilities and food security. There is also an assumption that improved water management and enhanced food production is dependent on improved human capabilities in general and vice versa, that improved water management increases human well-being and intangible assets such as self-esteem, dignity and autonomy. Sen (1999) notes that, development is about the expansion of human capabilities and that development is freedom. Goldin et al. (2008) also note that meaningful participation is about improved capabilities and functionings of individuals which enables citizens to take control over their environment and to participate in decisions to improve the quality of their lives and to maintain the equilibrium of the ecosystems. In the discussion on youth capabilities below we consider access to networks, knowledge and awareness, trust, collective action and co-operation, social cohesion and inclusion, sociability and meaning, as opportunities and freedoms that allow people to be or to do what that would like to be, or do, with the assumption that if they should

choose, they would be able to contribute to improvements in their community, contributing, if they so choose, to food and water security.

## **5.2 Youth capabilities**

### **5.2.1 Access to networks**

For the basis of this thesis, there were three main ideas which were used as proxy measures to consider access to networks as a capability among youth in the target communities; community networks (participation in associations), number of friends and whether or not youth were speaking to committees or people dealing with water. The study showed that belonging to associations, actively taking part and belonging on the management of the associations was generally low for Dwaleni and Luphisi. Only 47.50% of youth in Luphisi and 33.77% in Dwaleni respectively, belonged to a community association. Very few youth (6.33%) in Dwaleni and 16.81% in Luphisi belonged to a water committee. Given young people's interest and often passion for sport, it is surprising that the majority, 68.35% in Dwaleni and 61.67% in Luphisi, do not belong to a sport association. Anecdotal evidence from the focus groups discussions in Dwaleni showed that the sport association was no longer functioning due to financial constraints and this might be the case in Luphisi as well.

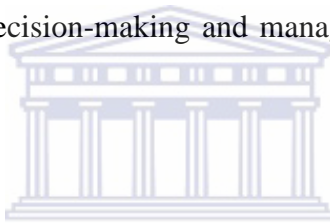
Water plays an important role in achieving food security. Principle two of the Dublin statement and principles (GWP, 2000) which is, 'water development and management should be based on a participatory approach, involving users, planners, and policy makers at all levels', addresses the need for a participatory approach in water development and management, claiming that water

resources management should involve all users at all levels. Participation is used in social arrangements as a procedure for obtaining local information and for tailoring activities and programs to beneficiary values (Alkire, 2002) and according to the same author, participation is likely to increase the success and sustainability of development activities. As Goldin (2010) states, the phasing out of top-down strategies and the growing popularity of participation and bottom-up processes encourages greater co-operation from local users because it provides an opportunity to obtain knowledge of local resources. The fact that youth in both target villages do not seem to participate in water committees and community associations limits their knowledge about the natural resources on which they depend. Therefore, within the context of this study, the assumption is that this is a restricted opportunity (capability), which, as a consequence, limits their control over decisions that affect the livelihood of their households and the community as a whole. The quantitative results showed that none of the youth were on the management committee of the water committee in either of the villages. This was confirmed in the focus groups where youth were not playing an active role in water committees. The absence of youth in decision making bodies seems to be fairly general because, according to the youth in the focus groups, youth rarely participate in decision making at the household level. Reportedly decisions are taken on their behalf by a parent or relative. The qualitative results also showed that youth in the target villages are not responsible for any substantial decision making around water issues but rather for chores related to water such as, collection of water. The quantitative results showed that the vast majority of youth (68.35% in Dwaleni and 56.41% in Luphisi) were children in households, meaning that most of them still depend on the decisions of older members of the household. The fact that youth are not encouraged to participate in decision making processes could explain why there is a more general reluctance by youth to participate in water committees. The fact that there are such low levels of participation in



the water committees is likely to impact on the way in which youth engage – or do not engage – with issues relating to water and food security in their community. Crocker (2007) proposes an ideal deliberative participation and suggests improvement on the theory and practice of participation in local, grassroots, or micro-development initiatives.

The results showed that the majority of the youth and in particular in Dwaleni, (85.14% in Dwaleni and 58.41% in Luphisi) have not spoken to committees or people who deal with water. Participation has been a central part of water reform in the water sector as it promotes sustainable management of water resources (Jaspers, 2001; GWP, 2000). Goldin et al. (2008) emphasise that multi-stakeholder involvement, decision-making and management decentralised to the local level are the backbone of IWRM.

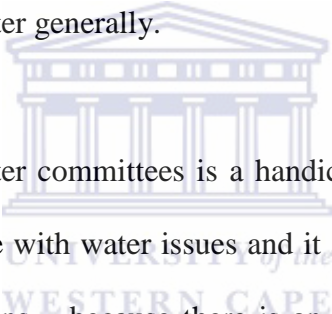


The study also revealed that quite a high percentage of youth (43.04% in Dwaleni and 42.24% in Luphisi) did not have many friends. As the social capital literature confirms (Goldin 2005; 2010), good social networks set the basis for trust amongst people and getting together with others helps people talk about what works and what does not work as they share knowledge and raise awareness around common concerns in their villages.

### ***5.2.2 Knowledge and awareness***

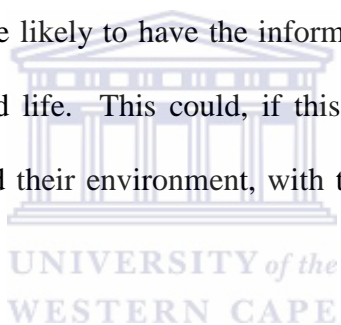
The results from the quantitative data show that a vast majority of youth in both target villages were not aware of any committees or people who deal with water. The fact that they are not aware could be another reason why their turn out in water committees is very low. In a study conducted by Baros and Manafi (2009) assessing migrant youth marginalisation using the Capabilities

Approach, lack of knowledge/awareness about an opportunity acted as an obstruction to conversion of that opportunity into real capabilities. The results from the focus group discussions, particularly in Luphisi, also revealed the same trend of youth not being aware of water committees or of any mechanism in the village related to decision making processes around water. The case was slightly different for youth in Dwaleni who indicated they knew that the Ward Councilor is the one responsible for issues around water in their community. Despite the fact the qualitative results in Dwaleni revealed some level of awareness of who takes responsibility around water issues, some of the youth still said they were not informed about any association dealing with water in the community. Overall, there does seem to be a lack of information amongst the younger cohort in both villages when it comes to water generally.



The lack of knowledge about water committees is a handicap to the youth because it means that youth do not know how to engage with water issues and it also means that they are unlikely to be strongly committed to food gardens – because there is an obvious link between water and food. Goldin (2010) claims that knowledge is a pillar for participation and that poor people are unable to take control of their environment and to make decisions to improve the quality of their lives without knowledge about the resources on which they depend. This current study shows that youth are deprived of information around water issues and deprived of the ability to translate information into knowledge. Information sharing takes place between people but unequal access to knowledge aggravates in-group and out-group dynamics, enabling either vicious or virtuous cycles of engagement and shaping the way in which actors (like youth) are able, or unable, to co-operate with one another (Goldin, 2010). These deprivations have a negative impact on food security because, since they do not have the capability of ‘access to information’, they also lack the

functioning of ‘being knowledgeable’ about water resources and how improved water resources management, in this case rainwater harvesting technologies, can enhance food security. This is a missed opportunity because many of the youth in the youth focus group in both target villages, said that it was important that they come together and support one another. The youth in Dwaleni, for instance, find it motivating to belong to an association because it keeps them away from drugs, alcohol, unwanted pregnancies and crime. Although they did not express the need of belonging to a water committee, their willingness to take part in any association indicates a willingness to better their living conditions. Selvam (2008) proposes ‘access to truth’ as one of the central capabilities youth in Africa should possess because, they would be more likely able to find solutions to their problems and they would be more likely to have the information needed for decision-making that would help them lead a dignified life. This could, if this opportunity were maximized, impact positively on the way they regard their environment, with the possibility then of higher levels of water and food security.



### ***5.2.3 Trust***

The study revealed that the vast majority of the youth, 87.01% in Dwaleni and 84.62% in Luphisi, said that people can be trusted. The study also showed that the majority, 72.15% in Dwaleni and 71.43% in Luphisi, would disagree and feel free to voice disagreements even if others in the group were agreeing to a certain matter. There is a link between trusting one another and feeling free to speak because, as Goldin’s (2005; 2010) work on trust and shame show, those who do not trust one another and who, on the contrary often feel shame, are unlikely to speak out in a group and are certainly unlikely to express their opinion if others disagree with it. Trust is a capability because it

provides the freedom, through the trusting process, to engage with people and learn about what works and what does not work. Trust enhances collaboration. Thus, bearing in mind that collaboration is about working together, it would be hard for the youth to work together if they do not find others trustworthy. Being together in a public space and being able to argue, dissent and debate is a good sign of a vibrant democracy (Goldin 2010). The culture of trust liberates and mobilises human agency; it releases creative, uninhibited, resourceful, entrepreneurial activism (Sztompka, 1997, p. 9). And according to Luhmann (1979, p. 8) “...when there is trust, there are increased possibilities for experience and action.”

#### ***5.2.4 Collective action and co-operation***

The study revealed that youth had high levels of collective action and co-operation, 97.47% in Dwaleni and 92.44% in Luphisi, when it came to decisions, for instance taking a sick person (in the household or who was a close friend) to a doctor or health worker. The results also showed that 98.7% of youth in Dwaleni and 98.17% of youth in Luphisi, would make the decision to do something of this nature not because they had to, but because this is what they want to do. On the other hand, working with others on something of benefit to the whole community is unusual as the vast majority in Dwaleni (81.08%) and Luphisi (68.7%), have not done so. The youth seem to show more freedom in decision making and action when it comes to a close person than taking action for the benefit of the community. But it is also possible that there are missed opportunities because youth seem willing to engage but they do not have many opportunities to so. The youth reported that it is common for neighbours in both villages to help each other out and to do things together. The questionnaire did not unpack the kind of things neighbours do together but the responses

reflect co-operation. Although there seems to be some degree of collective action amongst community members, what is clear is that youth are not engaged in activities that could benefit the community. It is likely therefore, that there are only restricted spaces for them to be involved in community issues. Less than half of youth in Dwaleni (41.77%) and 55% in Luphisi, have completed secondary education and are not illiterate. If the youth do feel free to make a decision and take action as reflected above, they are most likely not taking positive actions that are contributing to the development of their communities, simply because, even though they could do so, they are most likely not being given the opportunities to do so. If given the opportunity for collective action that would be of benefit to the community, for instance through projects aimed at enhancing food security, such as the IRWHP, youth would most likely willingly engage and maximise on the opportunity. Olson (1965 cited in Ostrom 1990) notes that if members of a group have identified a common interest or object (in this case, water resources), they should act rationally and out of self-interest in such a way to achieve that objective. Bearing in mind that degradation of the environment is expected whenever many people use a scarce resource (Ostrom, 1990), it is important for stakeholders to participate in ensuring that the scarce resource is used in a sustainable manner (*ibid*). The lack of opportunities for collective action in water resources management does not encourage youth to work together, restricting opportunities that could help them contribute to food insecurity.

### ***5.2.5 Social cohesion and inclusion***

The results showed that 83% of youth in Dwaleni and 81% of youth in Luphisi have a close feeling of togetherness and a sense of belonging within their neighbourhood. This is a positive finding and the sense of togetherness can be considered as an opportunity (capability) for individual, household and community well-being. Nussbaum (2000; 2011) refers to social cohesion and inclusion as ‘affiliation’ in her list of capabilities which is, being able to live with and for others, to recognise and show concern for others, to engage in various forms of social interaction, and to be able to imagine the situation of another. Goldin (2011) in her paper entitled ‘Vagueness to Precision: raising the volume on social issues for the water sector’ lists significant relations with others and participation in social life as essential ingredients of well-being. With social cohesion, trust is likely to be present and people are more likely then to have a sense of belonging (inclusion) that makes them feel good about themselves in relation to others. According to the South African National Youth policy 2008-2013, youth have the responsibilities to work towards family, community and societal cohesion, to promote human dignity, to promote tolerance, understanding, dialogue, consultation and respect for others. Having feelings of social cohesion and inclusion is very crucial because there is a likelihood that youth can work together of their own accord and co-operate around issues that are of common interest to them. This is an attribute that would bode well for food (and water) security.

### ***5.2.6 Sociability***

The results also showed that 64% of youth in Dwaleni and 54% of youth in Luphisi, do not know of any development projects that have created the space for them to meet more people. The results

also showed that almost everyone (93.67%) in Dwaleni and a more than half (63.03%) in Luphisi, had never met with others to discuss water related community development projects in the last week that they were interviewed. In the first instance, the majority of youth do not know of development projects where people could meet, so this would most likely be the reason why a vast majority of them have never met to discuss water related projects in a week. This indicates a very low level of sociability among youth around water related projects. Sociability, is likened to Nussbaum's (2000; 2011) capability, 'affiliation', in the context of meeting friends (her variable) the indicator is, 'to engage in various forms of social interactions'. As discussed earlier on when people meet, there is knowledge sharing. As people share information and knowledge about what works and what does not work (Goldin 2005;2010) around food and water concerns, there are likely to be more positive steps taken to manage and protect natural resources, in particular water and soil, which in turn has positive repercussions on food security. The IRWHP has activities whose focus is to engage with community members, sharing knowledge and building awareness around food and water security – with a particular focus on soil conservation and rain water harvesting. Although the baseline survey results show poor sociability, it is likely that as the IRWHP unfolds, spaces will open up where community members, and hopefully youth, will engage with activities around water and food.

### ***5.2.7 Self-esteem***

Although only about half of the youth, 48.05% in Dwaleni and 50.83% in Luphisi, were generally dissatisfied with their current lives, the majority, 75.95% in Dwaleni and 80.67% in Luphisi, felt they had an impact on their community and that they could make their neighbourhood a better

place to live. When asked, ‘do you feel people like yourself can generally change things in your community if they want to’, that the vast majority, 87.67% and 91.15% of youth in Dwaleni and Lumphisi respectively, felt they could bring about change. This question did not specify the type of change, either positive change or negative change, but the idea behind this question was that people felt they had agency, and that they could make a difference, presumably positive, in their community. This data shows that youth in the target communities seem to have a high level of self-esteem and feel empowered, capabilities (opportunities) for improved ‘doings and beings’ – improved functioning, around natural resources management and food security. The study also showed that the vast majority felt that they had control, (91.14% in Dwaleni and 95.8% in Lumphisi) in making decisions that affect their everyday activities. The kind of activities which they decide to do – or not do, was not part of the question but, the qualitative results revealed that decision making in the household was most often in the hands of a parent/parents or relative and that, even if they took a decision, it had to be guided by either a parent/parents or a relative. It could be possible that the question was not properly understood, and it does beg further inquiry, so as to better grasp which aspects of everyday life the youth are referring to where they feel that they do have the power to make decisions.

The youth also feel valued by their family and friends, as almost all of them, 96.2% in Dwaleni and 95% Lumphisi, say that this is true. The feeling of being valued drops when it comes to feeling valued by their communities as in this case, only 62.82% in Dwaleni and 68.64% in Lumphisi feel valued. This data shows that young people do feel good about themselves and that they also feel part of their community. As noted by Goldin (2010), empowering people implies that people change their perceptions about themselves so that they can claim their right to equal treatment.



When people (youth) feel good about themselves and have self-esteem, these are positive attributes and they could impact positively on the way that youth engage with others in securing food within their communities.

### ***5.2.8 Meaning***

The vast majority of youth, 94.87% in Dwaleni and 94.96% in Luphisi, said their life has a clear meaning or purpose and, 88.16% in Dwaleni and 91.15% in Luphisi said they had a clear sense of what gives meaning to their lives. Although some of youth felt they were dissatisfied with their lives, they still feel that there is meaning. This is an opportunity because it means that they have aspirations – they feel that life has meaning and it is worthwhile. This is certainly a capability that would lead to improved functioning and better well-being. Here again, the data shows that there is potential for youth to act as catalysts to initiate change, and if they were engaging with food and water issues, this would mean that they feel there is meaning and that it would be worthwhile to engage in activities with others that would bring or enhance food security in their community.

### **5.3 Relationship between youth capabilities and food security**

One of the objectives of this research is to determine whether or not a relationship exists between youth capabilities and food security. The results showed that there was no statistical relationship between youth capabilities and food security in Dwaleni. However, three indicators of youth capabilities in Luphisi were seen to have had significant statistical value with food security. The indicators which showed a relationship with food security were: ‘I do this because this is what I want to do’ ( $p=0.013$ ), ‘how strong a feeling of togetherness or closeness do you get with others in

your neighbourhood' ( $p= 0.021$ ) and 'do you feel you are valued by your family and friends' ( $p= 0.019$ ). The indicator 'I do this because this is what I want to do' is an indicator for collective action and empowerment and it is part of the question 'would you make a decision to take a person in your household or close friend to a doctor or health worker if that person is sick?' The majority of youth (98.17%) who responded to the question said they do this because that is what they want to do. This indicator shows that youth possess a strong sense of agency, collective action and freedom of decision making – values that are vital for stakeholder participation in the management of water resources – and attributes that are key for the successful implementation of IWRM. The indicator 'how strong a feeling of togetherness or closeness do you get with others in your neighbourhood' is an indicator for social cohesion and inclusion. The majority of youth (81%) had a close feeling of togetherness with others in their neighbourhood and this had a significant relationship with food security. The indicator, 'do you feel you are valued by family and friends' is an indicator for self-esteem. The vast majority, (95%) of youth, feel valued by their family and friends and, here again, this showed a significant relationship with food security.

Considering the high levels of poverty in the two villages, it was surprising to find that the status of food security for both villages was high, with 77% for Dwaleni and 74% for Luphisi not being food insecure. These findings merit further research. The Ehlanzeni District Municipality is reported to be water scarce with limited opportunities for crop productivity. Only two indicators (in the past 12 months, how often did any adult and, child in this household go to bed hungry because there was not enough food) were selected to determine the state of food security. The questions on food security covered the household in general. The fact that food security was high in the target villages could be a reflection of the indicators which were chosen. These indicators do not reflect the

quality of food or nutritional intake and there would have been anthropometric modules, or a battery of questions that tapped into nutritional value of food, included in the survey, if the quality of the food and nutritional intake were to be determined. Results from the qualitative data in both villages showed that food availability in sufficient amounts was still a major constraint and they said that the lack of income and access to land were the challenges they faced. As indicated in chapter two of this thesis, food security has been defined by the FAO (2009) as follows: “food security exists when people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2009, p. 8). Considering the health and income levels of the households and that the socio-economic indicators show that these households are amongst the poorest of the poor, draws attention to the fact that we should not presume that the data that reflects high levels of food security is reliable. It is thus critically important to remember that when we discuss the data on food security, we are referring to hunger and we can say with confidence that 77% and 74% of household members in Dwaleni and Lumphisi respectively are not going to bed hungry. Nonetheless, far too many, 23% and 26% in Dwaleni and Lumphisi, are still going to be hungry and we cannot say anything about the quality of the food that they are getting.

The hypothesis of this research was that, there is a relationship between youth capabilities and food security. Using statistical chi square (p values), only three of the selected indicators that tapped into attributes of interest (self-esteem, meaning, collective action and social cohesion), in Lumphisi indicated that there is a relationship between youth capabilities and food security. In Dwaleni there was no statistical significance at all between these capabilities and food security. Youth in both villages have possessed some vital capabilities which are mainly internal capabilities but despite

having these capabilities they are not able to convert them into functionings that would be valuable for food and water security. In other words, youth seem to be cut off from the avenues where these conversions could take place. The CA is concerned with providing the environmental support system (social, political, economic and cultural) where people, as individuals and groups can convert their achieved internal capabilities into valued functionings. Nussbaum (2000) refers to this as combined capabilities, which is when internal capabilities are combined with suitable external conditions for the exercise of the functionings.

As presented in chapter two of this thesis, it has been noted that the interests of youth are not always explicitly advocated in food security initiatives (Feighery et al., 2011). Youth should be viewed as an integral part of the solution to food security (*ibid*). There is limited research that looks at food security through a youth lens and in particular, youth capabilities and food security. Feighery et al. (2011) note that, youth participation on food production is minimal and recommend that it is essential for policies to encourage youth to enter careers in the agricultural sector.

#### **5.4 Summary**

This study assessed youth capabilities thought to be crucial in the enhancement of food security. Capabilities such as trust, self-esteem, collective action, social cohesion and meaning were identified in the two villages, Luphisi and Dwaleni. However, although certain capabilities (for instance knowledge, awareness, access to networks and sociability) are thought to be crucial for the enhancement of food security, some are not present among youth in the target villages. The study showed that there is no acute problem of food insecurity, although, as indicated above, this does

merit further research. Only three capabilities seem to be linked to food security in Luphisi and none in Dwaleni. Youth capabilities cannot be said to enhance food security in Dwaleni, but, in Luphisi, some capabilities do seem to be linked to food security. The next chapter which is the concluding chapter presents the background, limitations and recommendations of the study.



# CHAPTER SIX

## CONCLUSION

### 6.1 Introduction

This chapter will give a summary of the study and the conclusions reached. It also presents the limitations experienced by the researcher in the course of the study. Recommendations coming from the research findings are also highlighted.

### 6.2 Background

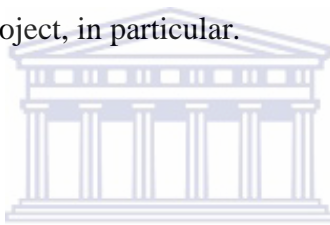
The villages of Luphisi and Dwaleni are vulnerable to food insecurity and this is exacerbated by erratic rainfall and a limited cropping season due to the lack of water. There is therefore an obvious relationship between water and food security. In poor communities such as Luphisi and Dwaleni, in the absence of job opportunities and income generation options, food security is essential for human well-being. Rain water harvesting has been identified as an appropriate low cost solution that can create an enabling environment for food security because it allows for an additional cropping season by extending the potential for food production from six to twelve months. Within the context of a particular rain water harvesting project, the IWRHP, in the Ehlanzeni District municipality, Mpumalanga, the thesis considered the participation of youth in matters related to water such as belonging to water committees, being part of the management of such committees and interacting with other people regarding water. It also looked more generally at the way in which youth engage with community development projects. The thesis considered belonging and feeling valued as opportunities (capabilities) that would provide a platform for

engaging in livelihood options, such as crop production and agricultural activities. The capability approach was a helpful theoretical framework for this study.

The hypothesis of this study was that youth capabilities would enhance food security. Youth capabilities, food security and the relationship between these, was determined using data from a quantitative survey that was backed up by qualitative data from focus groups. The data gathered on youth in the two villages showed that youth did have trust, self-esteem and they felt that their lives had meaning. They also took part in collective action and experienced general feelings of social cohesion within their respective villages. Despite opportunities that were open to the youth there were also limited opportunities for other reasons, for instance lack of access to networks, lack of knowledge and awareness and limited opportunities for sociability.

Although people in these villages are very poor, food security was high. We have drawn attention to the cautionary note around the limited notion of food security but for the purpose of the thesis we used the indicator of ‘going to bed hungry’ as an indicator of food insecurity. There was a significant relationship between youth capabilities and food security in Lumphisi in three capabilities: collective action, social cohesion and self-esteem. Youth in the two villages have several capabilities which can be considered as endowments that give them an opportunity and potential to get involved in projects that can improve food security. The fact that three capabilities; self-esteem, social cohesion and collective action, correlated well with food security puts youth in a favourable position to participate meaningfully in community development and projects around water and food. Youth have a lot to offer in a community and the fact that they feel good about themselves (have self-esteem), and that they engage with their

community (social cohesion and collective action) are qualities, or capabilities (opportunities) that can lead to more freedom and general well-being. One of the findings of this study is that youth have enormous potential and that this potential could be used to improve village food security by getting involved in food and water projects. Currently this opportunity is not being maximised. A recommendation is therefore, that engaging with youth would improve not only their own chances of better food security and livelihood potential through selling crops, but that youth have a role to play in boosting the livelihoods and well-being of their villages as a whole. They have the potential to be custodians of water and food in their villages and to take an active role in water resources management in general and food security through engaging with projects such as the rain water harvesting project, in particular.

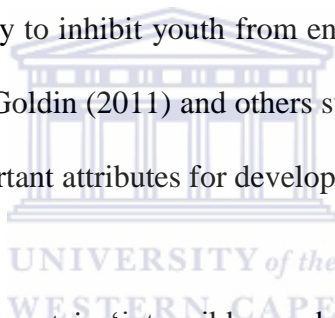


### **6.3 Main findings**

This study has identified a number of capabilities among youth in the villages of Lumphisi and Dwaleni in the Ehlanzeni District Municipality of Mpumalanga. The study considered the attributes of self-esteem, trust, knowledge and awareness, collective action and co-operation, social cohesion and inclusion, being valued and having meaning. The state of food security in these villages is surprisingly high although it is worrying that there are people going to bed hungry in the villages. It is only in Lumphisi that three particular capabilities correlated positively with food security. But there are several points worth noting. First of all, the state of food security that was identified in the two villages, although reportedly high, may not in fact have been so because the study only asked whether members of a household go to bed hungry or not. Measures for food security would merit expansion but for the purpose of the study, these were the only two indicators that measured food security.



The Capability Approach that was used as a theoretical framework for the assessment of youth involvement in matters of food security was particularly helpful because it makes the linkages between opportunities that youth have to feel good about themselves and/or to get involved in community issues explicit. It has helped us to tap into some of the strengths and weaknesses of youth that could be opportunities or obstacles for youth to engage in water and food related projects. Knowledge and awareness of various water related activities in the communities was considered a capability that can contribute to youth being able to secure food, and it was one of the capabilities, together with access to networks and sociability that was conspicuously absent. The lack of these attributes is likely to inhibit youth from engaging meaningfully with food and water related concerns because as Goldin (2011) and others such as Alkire (2000) and Nussbaum (2011) have shown, these are important attributes for development initiatives.

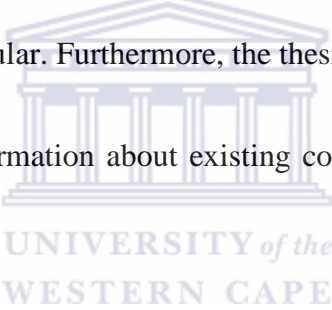


The CA was able to help focus on certain ‘intangible goods’ that make people feel good about themselves, encourage them to participate with others and that reflect general feelings of belonging, feeling valued, trust and awareness of being together as a community. These are qualities that are critical for collective action and that present an opportunity for youth to contribute to a better social and natural environment – ensuring at the same time that they cooperate with one another – and others, in improving food and water security. There are a number of very positive attributes that are being used currently and are therefore not converting into functionings, improved ‘doings and beings’ that can be linked with food and water security. One of the observations from this study is that the role of youth in water and food security initiatives is not currently being recognized. Their exclusion means that opportunities are being wasted and

are not converting into improved well-being. IWRM advocates engagement with all stakeholders and this thesis recognises the enormous potential that youth have to improve individual, household and community level food and water security.

#### **6.4 Recommendations**

Based on the research findings, the thesis proposes the following: to pay particular attention that stakeholder participation, which supposedly involves participation of all water users, engages more actively with the young cohort in the rural villages. This would give opportunities to youth to participate in community development projects in general and to development projects relating to food and water security in particular. Furthermore, the thesis recommends the following:

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- Broad based access to information about existing community projects relating to water should be improved.
  - When considering youth community development projects to deliberately nurture existing capabilities such as self-esteem, trust and social cohesion.
  - To continue to tap into ‘intangible goods’ such as self-esteem, trust, feeling valued and so forth and to further develop indicators that tap with greater precision into these constructs.
  - To pursue further research to consider whether and in what ways capabilities promote food and water security – in other words, how to use these opportunities to promote the principles of social equity, financial efficiency and environmental sustainability and secure water and food for now and for future generations.

- To explore and further develop relevant indicators that tap into quality of food, nutritional intake and other aspects of food security that are not simply to do with hunger.
- To find out from youth what they consider to be the most valuable attributes or capabilities (opportunities) for ensuring food and water security.
- To consider how to best package and disseminate knowledge on water and food security so that it is accessible to youth, even those who have a low level of education.
- Policies should encourage youth to enter careers in the agricultural sector.

## 6.5 Limitations

The results of the study should be interpreted in the light of the following limitations.

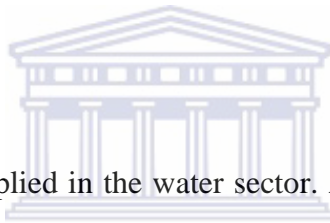
- The quantitative component relied on the survey design, sampling, questionnaire design, interview training and implementation of the baseline survey for the IRWHP. The survey design and sampling had not been designed for this study on youth and food security. There was therefore a limited battery of questions around food security and the youth sample was relatively small because the survey was not a youth survey.
- There is some skew in gender bias, particularly in Luphisi. This is because it was often very difficult to apply the respondent selection criteria as the employed, particularly the employed males, were unavailable and could not respond even though, according to the birthday rule, they had been selected as respondents. Many of these individuals live away from the villages and come home intermittently. At other times, the respondents who said

they would be at the household at a given time for an interview simply did not appear and the interview had to be rescheduled. For these reasons and because there were often more than the planned three visits to each household, the survey took longer than anticipated and in the end, also resulted in a gender bias.

- Another challenge was that the birthday rule assumed that the person who was approached for the household roster knew the birthdays of all the household members but this was not always the case. In some instances this meant replacing the household with another household in consultation with the statistician, and in some instances it meant estimating the age of household members.
- Translating and getting the right concepts for the intangible goods – such as self-esteem, belonging and so forth - into SiSwati was a challenge and a lot of time was spent on the translation aspect to ensure that the interviewers understood the meaning of the constructs and would apply the correct word when translating.
- The qualitative component of the study was also challenging because the study did not provide incentives for the participants for the focus group. It was not easy to control people coming and leaving focus group discussions. Some of the respondents were reluctant to speak to the researcher and at times the responses that were given were not only slow in coming, but were also brief and not very informative.

## 6.6 Conclusion

There is clearly a link between water security and food security. IWRM tries to bring together different water users to jointly manage their water resources (Van der Zaag, 2005). Vania and Taneja (2004) propose that capacity building at community level is essential to improve participation. Youth are an untapped resource and could certainly have control over, or at least make a meaningful contribution to the protection of precious resources – such as water. Principle three of the Dublin statements and principles which is ‘Women play a central part in the provision, management and safeguarding of water emphasise the pivotal role of women (and this, of course includes young women) as providers and users of water and guardians of the living environment.



The CA has only been recently applied in the water sector. As indicated in section 2.4.3 in this thesis, which is *‘the CA and its relevance to the water sector’*, the CA embraces notions of development that pay particular attention to the expansion of human capabilities (Goldin et al., 2008). The CA is a helpful framework to apply to the water sector because of the focus on participation and stakeholder engagement which are seen to be at the core of IWRM. However, such participation is difficult where there is shame, lack of agency, lack of trust and social exclusion (Goldin, 2010). According to Selvam (2008), youth are a vulnerable group, by virtue of the transitional stage in life they are in and there is need for an explicit assertion of a set of rights that make sure that youth are not made to feel bad about themselves or are not excluded when it comes to water and food security. According to the South African National Youth Policy 2008-2013 (Republic of South Africa, 2008), some of the youth rights include; participation in the planning and implementation of youth development by becoming the custodians of their own

development and attaining an educational level commensurate with their aspiration and self-determination. Although it is beyond the scope of this study to consider ways in which general education levels could be improved, the study does recommend making information available in such a way that youth are able to attain new knowledge – that they can apply to food and water projects. The CA is a constructive framework within which to consider youth and particular aspects around their freedom and opportunities. The study has done this within a developing country context, in the villages of Luphisi and Dwaleni and around a particular interest in food and water security.

Too many of our small sample in Luphisi and Dwaleni, 26% and 23% respectively, go to bed hungry and this is in contradiction to the expected MDG 1 which is ‘to eradicate extreme poverty and hunger’, which is an essential condition for achieving the other MDGs (FAO, 2005). The (FAO, 2005) report has highlighted that the prevalence of undernourishment in Sub-Saharan Africa has been decreasing very slowly and that, if developing regions continue to reduce hunger at the current pace, it is unlikely that MDG 1 will be attained. However, the report notes that the WFS and the MDGs can be met provided that efforts are refocused and redoubled in reducing and eliminating hunger in rural areas where the majority of the world’s hungry live (FAO, 2005). Efforts to promote food security and environmental sustainability thus re-enforce each other and promoting environmental sustainability is one of the objectives of IWRM (Jonch-Clausen & Fugl, 2001). As indicated in chapter two of this thesis, there are many reasons for the difficulty of implementing IWRM but one reason, stated by Allan (2003) and Swatuk (2005) is the reluctance of policy makers to embrace the notion of integration. Integration is complex and it refers to cross-sectoral integration and so forth but pertinent to this study is the integration of

youth as agents of change and stakeholders who could actively take part in the implementation of IWRM at the grassroots level. By creating a healthy human environment, the health of ecosystems for future generations is also enhanced (Goldin et al., 2008).

With a greater focus on young people in rural villages such as Luphisi and Dwaleni, who, as the study has shown, reflect the potential for youth to co-operate, trust and feel good about themselves, MDG 1 might be achieved. Clark (2005) notes that neither wealth nor utility effectively signifies human well-being and deprivation, rather, he suggests that there be a more direct approach that focuses on human functionings and the capability to achieve such functionings. Sen and Nussbaum (1993) note these human functionings are what makes any life valuable. The central characteristic of the CA is the focus on what people are effectively able to do and to be (Robeyns, 2003). As emphasised by Robeyns (2003), everyone should have the opportunity to be part of a community and practice religion, but if someone prefers to be a hermit or atheist, they should also have this option. Youth should be given the opportunity to be part of projects on water and food security. If some youth prefer not to be, of course they should also have this option. The critical point of this thesis is that youth have enormous potential to do and be more than they are actually doing and being in relation to food and water resources management – and that engaging them in food and water security projects more deliberately, would provide them with more freedoms to be and to do what they choose to be or to do.

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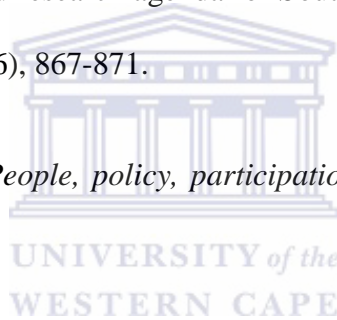
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## **LIST OF APPENDICES**

- Appendix A            Information sheet/consent form
- Appendix B            Interview guide on the youth focus group
- Appendix C            Ecolink Household Questionnaire
- Appendix D            Information sheet/consent form





**APPENDICES**  
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WESTERN CAPE



**APPENDIX A: INFORMATION SHEET/CONSENT FORM, Participants in the focus groups**

My name is .....

I am from the NGO Ecolink that is on the Plaston Road, White River.

Thank you very much for agreeing to participate in this focus group. We are wanting to gather some information from people like yourself, living in this village, so that we know a bit more about the people who we are working with. The focus group is bringing together people who all live in this village and who might have different views of their village and way things work around here.

The background to the focus group meeting is a rain water and agriculture project that Ecolink is implementing in four villages in the Ehlanzeni District Municipality. We will be conducting focus group meetings in all four villages. The purpose of this study is to learn more about how people in Ehlanzeni are doing and we are especially interested, although not only, in aspects of food and water.

Your participation is entirely voluntary. You may refuse to take part in the focus group, and you may stop at any time if you do not want to continue. You also have the not to respond to any issues in the group if you feel uncomfortable

The focus group is about 1 hour and 30 minutes. We will serve tea after the meeting and continue the discussions over tea if you are willing to do so.

- By signing below, you signify that you agree to participate in the study and that your participation is entirely voluntary.
- *if you have questions about this focus group meeting or project you can call us **013 7512120** or email us at [2918998@uwc.ac.za](mailto:2918998@uwc.ac.za) / [info@ecolink.za.org](mailto:info@ecolink.za.org)*

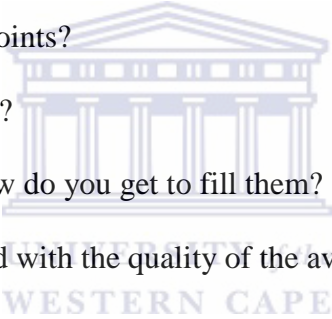
-----  
SIGNATURE

-----  
DATE

## **APPENDIX B**

### **INTERVIEW GUIDE ON THE YOUTH FOCUS GROUP**

#### **WATER ISSUES**

- 1) What are the water sources in this community?
  - 2) Who mainly collects the water for the household?
  - 3) How do people get to these water points?
  - 4) How frequent is the water collected?
  - 5) What containers do you use and how do you get to fill them?
  - 6) Is the community generally satisfied with the quality of the available water?
  - 7) How do you treat/purify the water before usage for drinking and cooking in your household?
- 

#### **WATER COMMITTEES**

- 1) Are there any water committees in this community?
- 2) Is there anyone who belongs to a water committee?

#### **JOINING COMMITTEES**

- 1) Do you belong to any other committees?
- 2) As youths, do you think it is necessary to join committees?
- 3) What are your opinions for joining such committees?
- 4) What encourages some of the youths to join these committees and others not?

## **COMMUNITY DECISION MAKING**

- 1) Who makes the real decisions for any developmental projects in the community?
- 2) Who decides on water related issues within the community?

## **HOUSEHOLD DECISION MAKING**

- 1) Who makes decisions in the household? What are they?
- 2) Who decides on water related issues for the household?

## **FOOD SECURITY**

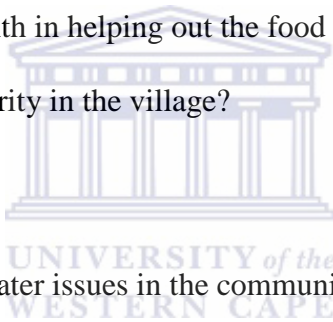
- 1) In your opinion, what are the major constraints to producing food?
- 2) What activities are you involved with in helping out the food insecurity situation in the village?
- 3) What can you say about water security in the village?

## **PROBLEMS AND SOLUTIONS**

- 1) As youths, how would you solve water issues in the community?

## **OTHER ISSUES**

- 1) Are there any other issues you wish to add?



### APPENDIX C: Household Questionnaire

A.1 QUESTIONNAIRE & RESPONDENT DETAILS					
A.1	Questionnaire No	Letter code:		Number:	
A.2	Village	Circle response	1 Dwaleni	2 Luphisi	3 Mjejane 4 Mbonisweni
A.4	Name			A.5	Surname
A.6	Street Address			A.8	Postal Code
A.9.1	Phone Number (home)			A.9.2	Phone Number (Work)
A.9.3	Phone Number (Mobile)			A.10	Email Address
A.11.1	First Language			A.11.2	Second Language
A.11.3	Third Language			A.11.4	Fourth Language

### RAINWATER HARVESTING PROJECT

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B. DEMOGRAPHICS					
<i>INTERVIEWER READ OUT: We would like to start by asking you questions about your household.</i>					
B.1.1	Gender	Circle response	1 male 2 female	B.1.2	Age in years
			Enter actual age in years only at next birthday		
B.2	What is your relationship to the household head?	Circle response	1 head 2 spouse 3 child 4 other family 5 lodger		
B.3	What is your marital status?	Circle response	1 single 2 married 3 in partnership 4 divorced/separated 5 widower		
B.4	What is the highest educational qualification attained by you?	Circle response	1 none 2 some primary 3 complete primary 4 some secondary 5 complete secondary 6 certificate no matric 7 certificate & matric 8 diploma no matric 9 diploma & matric 10 undergrad degree 11 post grad degree		
B.5	Do you have any serious health problem or disability	Circle response	1 physical 2 mental 3 none		
B.5.1	How does this disability or health problem effect your daily activities?	Circle response	1 limits work 2 cannot work 3 have to stay in house x other , please specify		
B.6	What do you do for a living?	Circle response	1 f-t scholar / student 1.1 p-t scholar / student 2 f-t home worker (own home) 3 retired / pensioner 4 disabled, do no work 5 unemployed not seeking employment 6 unemployed seeking non-farm employment 6.1 unemployed actively seeking farm employment 7 employed part-time (less than 20hrs/wk) – non farm 7.1 employed part-time (less than 20hrs/wk) – farm 8 informal sector employed full-time – non farm 8.1 informal sector employed full-time – farm 9 formal sector employed (paid) part-time – non farm 9.1 formal sector employed (paid) full-time – non farm 10 other (specify)		
					If 5 to 6.1 ⇒ Q.B.7  If 7 to 10 ⇒ Q.b.8.1

B.7	If you <b>did not work</b> in the last month, what did you <b>mainly</b> do to get any money?	Circle response	1 Got money from family or friend 2 Made things to sell 3 Looked after children or relatives for pay or food 4 Begged for food or money 5 Sold some crops 6 Other (specify)		
How many members in the household are: .....?		<i>Interviewer to read out options and enter the correct response for each</i>			
B.8.1	Aged 5 years and younger	Please enter raw numbers ⇒			
B.8.2	Aged over 5 years up to 15 years				
B.8.3	Aged over 15 years up to 20 years				
B.8.4	Aged over 20 years up to 35 years				
B.8.5	Aged over 35 years up to 60 years				
B.8.6	Aged over 60 years				
B.8.7	Attending Primary school				
B.8.8	Attending Secondary school				
B.8.9	Attending vocational or academic college				
B.8.10	Physically disabled				
B.8.11	Mentally disabled				
How many members in the household are:		<i>Interviewer to read out options and enter the correct response for each</i>			
		Full-time	Part-time	Occasional	
Over 20 years and working in agriculture	B.9.1		B.9.7	B.9.13	
Over 20 years and working as an employee	B.9.2		B.9.8	B.9.14	
Over 20 years and working as self employed	B.9.3		B.9.9	B.9.15	
Over 20 years and unemployed	B.9.4				
Over 20 years and selling goods on the side of the road	B.9.5		B.9.11	B.9.17	
Over 20 years and exchanging work for food or other goods	B.9.6		B.9.12	B.9.18	





D.2.1	If you have none, why not?	<b>Circle response or give other reason</b>	1 other people occupying the land 2 because of sickness X other specify	⇒ Q.D.4
D.3	In the past 12 months, how often did any <u>adult</u> in this household go to bed hungry because there was not enough food?	<b>Circle response</b>	1 always 2 sometimes 3 rarely 4 never	
D.4	In the past 12 months, how often did any <u>child</u> in this household go to bed hungry because there was not enough food?	<b>Circle response</b>	1 always 2 sometimes 3 rarely 4 never	
D.5	How many meals a day do you usually eat?	<b>Enter raw number</b>		

<b>E. INCOME</b>				
E.1	Did anyone in this household receive income <u>from employment or self employment</u> last month?	<b>Circle response</b>	1 Yes 2 No	
E.2	How much is your average monthly household income?	<b>Please enter amount</b>	Rands	
E.3	Did anyone in this household receive <u>rental income</u> in the last month?	<i>Please note that this includes income from backyard shacks, shacks, boarders, and flats and / or homes people own.</i>	<b>Circle response</b>	1 Yes 2 No
E.4	Did anyone in this household receive income from <u>government grants</u> last month?	<i>Please note that this includes the old age pension, the child support the disability grant, the care dependency grant or any other kind of grant.</i>	<b>Circle response</b>	1 Yes 2 No
Is the income that you receive and this household receives more than sufficient, about adequate or insufficient for.....?			<b>Interviewer to read out options and enter the correct response for each</b>	
E.5.1	Food			1 More than sufficient 2 Adequate 3 Insufficient
E.5.2	Clothing			
E.5.3	Healthcare			
E.5.4	Housing			
E.5.5	Education			
E.5.6	Transport			
E.5.7	Leisure, entertainment			
E.5.8	Funeral plans/stokvel			
E.5.9	Savings (Bank or otherwise)			
E.5.10	Farming/planting/cultivating			
IN THE PAST 12 months did you have to do any of the following:.....?			<b>Interviewer to read out options and enter the correct response for each</b>	
E.6.1	Borrow money			1 yes 2 no
E.6.2	Take children out of school			
E.6.3	Sell land			
E.6.4	Sell assets including livestock			
E.6.5	Stop growing crops			
E.6.6	Stop looking for work			
E.6.7	Not being able to participate in stokvel or other savings			
E.6.8	Withdraw from community life/committees			

<b>E: SOCIAL CAPITAL AND EMPOWERMENT</b>					
<b>Networks</b>					
Which of the following, if any, do <u>you</u>		belong to?	actively take part in?	belong to the management / organisation committee of?	actively take part in the management of?
1 No	2 Yes				
E.1.2	Community association				
E.1.3	Health – or disability – related organization				
E.1.4	Choirs				
E.1.5	Tribal group				
E.1.6	Sport association				
E.1.7	Stokvel				
E.1.8	Burial society				
E.1.9	Political association				
E.1.10	Water committee				
<b>INTERVIEWER READ THE FOLLOWING STATEMENTS FOR EACH OF THE GROUPS ABOVE IF THE RESPONDENT EITHER ACTIVELY TAKES PART IN THE ORGANISATION OR IS INVOLVED WITH THE MANAGEMENT OF THE ORGANISATION IN ANY WAY.</b>					
<b>FOR EACH GROUP, ENTER THE CORRESPONDING NUMBER FROM THE QUESTIONS ABOVE (e.g. E.1.5 for Tribal group)</b>					
E.2.1	I participate in the group to avoid punishment				1 = Completely True 2 – Somewhat True 3 – Not very True 4 – Not at all True
E.2.2	I participate in the group to gain some reward				
E.2.3	I participate in the group to avoid blame				
E.2.4	I participate in the group so that other people speak well of me				
E.2.5	I participate in a group because this is what I want to do				
E.2.6	I don't participate in any group. I would feel guilty if I did				1 = Completely True 2 – Somewhat True 3 – Not very True 4 – Not at all True
E.2.7	I don't participate in any group because I would get into trouble if I did				
E.2.8	I don't participate in any group because I don't believe that there are benefits to gain by working together				
E.2.9	I don't participate in any group because I do not value working together to try and accomplish something				
E.2.10	I don't participate in any group because I gain more from doing other things				
E.2.11	I feel better about myself by not participating in any group				
E.2.12	I don't participate in any group because I don't believe it is important				
E.2.13	Which committees or groups do you belong to? (please name them)				
E.3	Are you or have you ever been on any development committee, during the last two years?	<i>Circle response</i>	1 No 2 Yes		
E.4	Do you know of any committees or people who deal with water?	<i>Circle response</i>	1 No 2 Yes		
E.5	Have you ever spoken to any committees or people who deal with water?	<i>Circle response</i>	1 No 2 Yes		
E.6	Would say that, in terms of friends, you have ...	<i>Circle response</i>	1 lots of friends 2 a few, but good friends 3 not many friends		
<b>Trust and Solidarity</b>					
E.7	On the whole would you say:	<i>Circle response</i>	1 many of the people in your community can be trusted; 2 some can be trusted; 3 a few can be trusted; 4 nobody can be trusted; 5 don't know.		
E.8	If there is one category of person who cannot be trusted, who would	<i>Circle response</i>	1 government officials 2 community leaders 3 outsiders – people in areas different to mine		

	they be?		4 neighbours 5 business people 6 others (specify)	
E.9	If you disagree with what everyone else agreed on, would you feel free to speak out?	Circle response	1 No, not at all 2 Yes, definitely 3 Yes, but only on certain matters	
<b>Collective Action and Co-operation</b>				
E.10	Would you make a decision to take a person in your household or a close friend to a doctor or health worker if that person is sick?	Circle response	1 No 2 Yes	YES ⇒ E.10.1 NO ⇒ E.10.6
<b>INTERVIEWER READ: ARE THE FOLLOWING STATEMENTS COMPLETELY TRUE, SOMEWHAT TRUE, NOT VERY TRUE, NOT AT ALL TRUE</b>				
E.10.1	I make the decision to avoid punishment			1 = completely true 2 – somewhat true 3 – not very true 4 – not at all true ⇒ Q.E.11
E.10.2	I make the decision to gain some reward			
E.10.3	I make the decision to avoid blame			
E.10.4	I make the decision so that other people speak well of me			
E.10.5	I do this because this is what I want to do			
E.10.6	I don't do this because I would feel guilty if I did			
E.10.7	I don't do this because I would get into trouble if I did			
E.10.8	I don't do this because I don't believe that there are benefits to gain by doing this			
E.10.9	I don't do this because I do not value trying to accomplish something like this			
E.10.10	I don't do this because I gain more from doing other things			
<b>Interviewer Read Out: Next, we want to ask you some questions about your relationship with your neighbours and the social interactions that you have with those around you.</b>				
E.11	In the past 12 months, have you worked with others in your neighbourhood or village to do something for the benefit of the community?	Circle response	1 No 2 Yes	
E.11.1	How common is that neighbours help each other out?			1 Never happens 2 Very rare 3 Not common 4 Fairly common 5 Very common
E.11.2	How common is that neighbours do things together?			
E.11.3	How common is it that people in your neighborhood are aggressive?			
E.11.4	How common is burglary and theft in your neighborhood?			
E.11.5	How common is it that people discuss water issues?			
<b>Social Cohesion and Inclusion</b>				
E.12	How strong a feeling of togetherness or closeness do you get with others in your neighbourhood?	Circle response	1 very close 2 somewhat close 3 neither distant nor close 4 somewhat distant 5 very distant	
<b>Sociability</b>				
E.13	In the last week, how many times have you met with people in a public place either to talk or to have food or drinks?	Raw number	_____ times	
E.14	In the last week, how many times would you have discussed water related community development projects with others when meeting for food or drinks?	Raw number	_____ times	
E.15	Do you know of any development projects that have created the space whereby you can meet more people generally?	Circle response	1 yes 2 no	
<b>Self Esteem</b>				
E.16	Taking all things together, how satisfied are you with your life as a whole these days? generally speaking would you say you are very satisfied, Neither satisfied nor dissatisfied, not very satisfied or not satisfied at all?	Read out categories	1 very satisfied 2 satisfied 3 dissatisfied 4 very dissatisfied 5 Neither satisfied nor dissatisfied (Do not read out last option)	
E.17	How much control do you feel you have in making decisions that affect your everyday activities?	Circle response	1 control over all decisions 2 control over most decisions 3 control over some decisions 4 control over very few decisions 5 no control	
E.18	Overall, how much impact do you think you have at this current time in making your neighbourhood a better place to	Circle response	1 a big impact 2 a small impact	

	live?		3 no impact	
E.19	Do you feel you are valued by your family and friends?	Circle response	1 Yes, very much 2 No, not much	

E.20	Do you feel you are valued by your community?		1. yes very much 2. No, not much	
E.21	Do you feel that people like yourself can generally change things in your community if they want to	Circle response	1 a lot 2 a little 3 not at all	

<b>Meaning</b>				
	Are the following three statements completely true, somewhat true, not very true or not true at all:	Interviewer to read out options and enter the correct response		
E.22.1	My life has a clear meaning or purpose		1= Yes 2 = No	YES ⇒ E.22.2 NO ⇒ F.1
E.22.2	I have found a satisfactory meaning in my life			
E.22.3	I have a clear sense of what gives meaning to my life			
E.23.1	Why do you feel that your life has meaning? <i>Please describe:</i>			
E.23.2	Which things do you feel have given your life significance or meaning? <i>Please describe:</i>			

<b>F: SKILLS TRAINING</b>				
F.1	Since leaving school or reaching adulthood have you gained any useful skills or experience from employment, farming, or household work – or any other experience that you might have gained	Circle response	1 Yes 2 No	YES ⇒ .F.1.1 NO ⇒ F.3
F.1.1	If Yes - specify			
F.2	Which of your qualifications or skills is most useful in everyday life?	(Main reason Only) PLEASE DESCRIBE		
F.2.1	Why do you say this?			
F.3	Which qualifications or skills would be most helpful to gain in the foreseeable future?	(Main reason Only) PLEASE DESCRIBE	.....	
F.3.1	Why do you say this?			

<b>Social Change</b>				
G.1	Consider a 9-step ladder where on the bottom, the first step, stand the poorest people, and on the ninth step, stand the richest. On which step are you today?	PROMPT CARD Circle response	Step no:.....	
G.2	Do you think this situation will improve in the future?	Circle response	1 Yes 2 No	
G.3	Why do you say this?			

<b>H. RESPONDENT SELECTION ROSTER</b>			
<i>INTERVIEWER READ OUT: We would like to start by asking you questions about the people who are part of your household.</i>			
<i>Interviewer: Read out the membership criteria before proceeding.</i>			
H1	H2 LIST ALL THE PEOPLE WHO LIVE IN THIS HOUSEHOLD – that live under the same roof, share food together and contribute to a common resource pool	H3 Gender 1 = Male 2 = Female	H4 Birthday (day, year and month)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

<b>I INTERVIEWER DETAILS</b>			
<i>To be completed by interviewer only</i>			
I1	Interviewer name	Please write in name	
I2	Date of interviewer (dd/mm/yyyy)	Please write in date	
I3	Interview start time	Please write in time	
I4	In general how did the respondent act towards you during the interview?	1 Hostile 2 Neither hostile nor friendly 3 Friendly	
I5	How attentive was the respondent to the questions during the interview?	1 Not at all attentive 2 Somewhat attentive 3 Very attentive	
I6	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	
I7	Did more than one person help to complete this questionnaire?	1 Yes 2 No	
I8	If so, which household members helped to complete the questionnaire? Fill in the Pcodes of those who assisted	1 Pcode 2 Pcode 3 Pcode	
I9	End time of interview	Please write in time	



## APPENDIX D: INFORMATION SHEET/Consent Form

*This questionnaire is to be administered by the headman in the household and/or another household member who is knowledgeable about the living arrangements and spending patterns of the household. While participation from other household members is encouraged, this consent form should be signed by the main respondent.*

Good morning/good afternoon

My name is .....

I am from the NGO Ecolink that is on the Plaston Road, White River.

I have been asked to gather some information from people like yourself, living in this village, so that we know a bit more about the people who we are working with.

This is a study about rain water and agriculture. The purpose of this study is to learn more about how people in Ehlanzeni are doing and we are especially interested, although not only, in aspects of food and water. We will be asking you to provide some background information about your household, such as whom usually lives here, whether you have access to services such as water and electricity, which assets you own and generally how you are feeling about living in the area. Before we begin the interview, we want to make sure you understand the following information about the study:

- Your participation is entirely voluntary. You may refuse to take part in the interview, and you may stop at any time if you do not want to continue. You also have the right to skip any particular question or questions if you do not wish to answer them.
- The time it takes to complete the interview will be about 40 minutes.
- You have the right to ask questions at any point before the interview, or after the interview is completed.
- All information collected for this study will be kept strictly confidential. While the data collected will be used for research report or publication.
- By signing below, you signify that you agree to participate in the study and that your participation is entirely voluntary.
- *if you have questions about this interview or project you can call us 013 7512120 or email us at 2918998@uwc.ac.za / [info@ecolink.za.org](mailto:info@ecolink.za.org)*

-----  
SIGNATURE

Fieldworker and supervisor to countersign below if respondent is not able to sign:

-----  
DATE

-----  
SIGNATURE: FIELDWORKER

-----  
SIGNATURE: SUPERVISOR