

**LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-  
POOR RURAL CONTEXTS: A PHOTOVOICE STUDY OF ADULT  
EXPERIENCES IN KWAZULU-NATAL, SOUTH AFRICA**

**Onenkosi Simile Mkize**

April 2021

A Thesis submitted in fulfilment of the academic requirements for the degree of  
Master of Science

Discipline of Geography  
School of Agriculture, Earth and Environmental Sciences  
College of Agriculture, Engineering and Science  
University of KwaZulu-Natal  
Pietermaritzburg Campus  
South Africa

## DECLARATION

I, **Onenkosi Simile Mkize**, declare that:

- i. The research reported in this thesis, except where otherwise indicated, is my original research.
- ii. This thesis has not been submitted for any degree or examination at any other university.
- iii. This dissertation/thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
- iv. This thesis does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers.
- v. This thesis does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the thesis and in the References sections.



---

**Researcher: Onenkosi Simile Mkize**

## **STATEMENT BY SUPERVISOR**

This thesis is submitted with my approval.



---

Supervisor: Dr Ndumiso Daluxolo Ngidi

## ABSTRACT

This study examined how adults living in a resource-poor rural community experienced and communicated about their challenges of living in a place that had limited access to safely managed water. Seventeen adult women and men were purposively recruited from eMdubezweni in KwaZulu-Natal, South Africa. In order to explore these daily experiences, the study employed a participatory visual methodology, and used photovoice as a tool to generate data. Data generated using photovoice was augmented by four focus-group discussions and one-on-one interviews with the adult participants.

Analysis in the study was informed by two theories. First, the entitlement theory provided a framework for understanding how limited access to safely managed water in resource-poor rural communities resulted from enduring injustices that were inherited from a legacy of colonial and apartheid rule, and the failure of the democratic dispensation to rectify the impact of these historically unjust systems. Second, the gender socialisation lens provided a general framework used to examine the gender inequalities inherent in how water is accessed and who, between men and women, benefits the most from this access. Data analysis was in three layers: the first two layers involved the participants' own analysis of their photovoice images, the captions they wrote and the explanations they gave about their visual artefacts. The third layer involved my own thematic analysis of the data.

The overall finding pointed to the marginalisation of rural livelihoods from the practice of national development. Moreover, the findings pointed to gendered differences in how both the women and men in this study experienced and articulated the challenges they faced regarding their living in a resource-poor rural community with limited access to safely managed water. Emerging from the findings, this dissertation proposes a framework for amplifying rural voices for improving safely managed water services, with several implications for research and practice.

## **DEDICATION**

I dedicate this dissertation to my beautiful and kind-spirited mother. It was with you in mind that I was able to wake up and work a little harder every day to complete this work. I pray the Lord keeps you around long enough for you to enjoy the fruits of your investment in me.

## ACKNOWLEDGEMENTS

*“Seek first the Kingdom of God and He will give you your hearts desires” (Matthew 6: 33, The Holy Bible).*

- First, I would like to acknowledge God for the strength He has given me to complete this dissertation. The work He started in me, He has truly completed.
- I would like to thank my supervisor, Dr Ndumiso Daluxolo Ngidi. Your firm guidance, academic and emotional support, and patience have been truly amazing.
- I thank my mother for always being there to support every dream and ambition I have. No questions, no contest, just support. I thank you for your strong prayers, motivating texts every morning. They have been my source of strength throughout this qualification.
- Thank you to my family and friends for their support and encouragement.
- Special thanks for my friend, Mr. Bright Mukwedeya, and colleagues, Mr. Nkosinathi Madlala, and Mr. Sinenjongo Sphamla, who supported me throughout my fieldwork. Thank you for your invaluable guidance and academic advice. Having you to assist and support me made the greatest difference.
- Special thanks to my friends: Precious Yende, Ayanda Khumalo, and Njabulo Mzila. Having you to vent to, and talk to even for just a minute played a significant role in helping me complete this dissertation. Ngyabonga.
- Thank you to the community of eMdubezweni near Mooi River for allowing me into your spaces and for providing me with insights into your daily lives. Without your invaluable contribution into this research, writing this dissertation would not have been possible.

## **FINANCIAL ACKNOWLEDGEMENTS**

This research was supported by a scholarship from the Moses Kotane Institute (MKI). Opinions expressed and conclusions arrived at in this thesis are those of the author and are not to be attributed to MKI.

## **TABLE OF CONTENTS**

|                                                |             |
|------------------------------------------------|-------------|
| <b>DECLARATION .....</b>                       | <b>i</b>    |
| <b>STATEMENT BY SUPERVISOR.....</b>            | <b>ii</b>   |
| <b>ABSTRACT .....</b>                          | <b>iii</b>  |
| <b>DEDICATION .....</b>                        | <b>iv</b>   |
| <b>ACKNOWLEDGEMENTS .....</b>                  | <b>v</b>    |
| <b>FINANCIAL ACKNOWLEDGEMENTS .....</b>        | <b>vi</b>   |
| <b>TABLE OF CONTENTS .....</b>                 | <b>vii</b>  |
| <b>LIST OF FIGURES.....</b>                    | <b>xi</b>   |
| <b>LIST OF TABLES.....</b>                     | <b>xii</b>  |
| <b>LIST OF ACRONYMS AND ABBREVIATIONS.....</b> | <b>xiii</b> |

### **CHAPTER ONE**

#### **LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-POOR RURAL CONTEXTS: INTRODUCTION TO THE STUDY**

|                                                                   |    |
|-------------------------------------------------------------------|----|
| 1.1 Introduction .....                                            | 1  |
| 1.2 Study Rationale.....                                          | 3  |
| 1.3 Problem Statement and Study Purpose.....                      | 5  |
| 1.4 Research Aim .....                                            | 7  |
| 1.5 Research Questions .....                                      | 7  |
| 1.6 Clarification of Operational Concepts Used in the Study ..... | 7  |
| 1.6.1 Access to Safely Managed Water .....                        | 7  |
| 1.6.2 Service Delivery .....                                      | 8  |
| 1.6.3 Resource-Poor Rural Community .....                         | 9  |
| 1.7 Overview of Theoretical Framework .....                       | 9  |
| 1.8 Overview of the Research Methodology .....                    | 10 |
| 1.9 Overview of Ethical Considerations.....                       | 11 |
| 1.10 Synthesis and Overview of the Dissertation.....              | 11 |

### **CHAPTER TWO**

#### **UNDERSTANDING LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE- POOR RURAL CONTEXTS: A REVIEW OF THE LITERATURE**

|                        |    |
|------------------------|----|
| 2.1 Introduction ..... | 14 |
|------------------------|----|

|                                                                                           |    |
|-------------------------------------------------------------------------------------------|----|
| 2.2 Water Security and the Right to Safely Managed Water in Rural Contexts .....          | 15 |
| 2.3 Safely Managed Water in the South African Rural Context .....                         | 18 |
| 2.3.1 Water Service Delivery and Access in Apartheid South Africa.....                    | 20 |
| 2.3.2 Water Service Delivery and the Right to Water in Democratic South Africa.....       | 21 |
| 2.3.3 Water Service Conflicts in Resource-Poor Rural Context .....                        | 23 |
| 2.4 The Marginalisation of Rural Communities from Safely Managed Water Services.....      | 24 |
| 2.4.1 Poor Infrastructural Development and Maintenance.....                               | 24 |
| 2.4.2 Lack of Financial Capacity at the Municipal-Level .....                             | 26 |
| 2.4.3 The Geographic Remoteness of Rural Areas .....                                      | 28 |
| 2.4.4 Political Interference and Corruption .....                                         | 28 |
| 2.4.5 The Focus on Urban Development.....                                                 | 30 |
| 2.4.6 Climate Change .....                                                                | 31 |
| 2.5 Challenges Presented by Limited Access to Safely Managed Water in Rural Contexts..... | 33 |
| 2.5.1 Water, Health and Wellbeing .....                                                   | 33 |
| 2.5.2 Water Insecurity as a Socio-economic Challenge .....                                | 36 |
| 2.5.3 Gender and Access to Safely Managed Water .....                                     | 37 |
| 2.6 Discussion: Towards a Conceptual Framework .....                                      | 39 |
| 2.6.1 Conceptual Framework.....                                                           | 40 |

### **CHAPTER THREE**

#### **FRAMING LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-POOR RURAL CONTEXTS: TOWARDS A THEORETICAL FRAMEWORK**

|                                                       |    |
|-------------------------------------------------------|----|
| 3.1 Introduction .....                                | 44 |
| 3.2 Positioning Myself as a Researcher.....           | 45 |
| 3.3 The Entitlement Theory.....                       | 48 |
| 3.4 Gender Socialisation Framework .....              | 50 |
| 3.5 Discussion: Towards a Theoretical Framework ..... | 53 |
| 3.6 Synthesis.....                                    | 54 |

### **CHAPTER FOUR**

#### **ENGAGING ADULTS FROM A RESOURCE-POOR RURAL COMMUNITY WITHIN THE CONTEXT OF LIMITED ACCESS TO SAFELY MANAGED WATER**

|                        |    |
|------------------------|----|
| 4.1 Introduction ..... | 55 |
|------------------------|----|

|                                                                        |    |
|------------------------------------------------------------------------|----|
| 4.2 Research Paradigm .....                                            | 55 |
| 4.3 Research Design .....                                              | 57 |
| 4.3.1 Participatory Research.....                                      | 58 |
| 4.3.2 Participatory Visual Methodology.....                            | 59 |
| 4.4 Research Site .....                                                | 60 |
| 4.4.1 Geographic Location and Context of the Study .....               | 63 |
| 4.4.2 The Physical Environment and Landscape of the Research Site..... | 64 |
| 4.5 Gaining Access to the Community.....                               | 67 |
| 4.6 Study Participants and Recruitment Procedure .....                 | 68 |
| 4.6.1 Getting to Know the Participants.....                            | 71 |
| 4.7 Data Generation.....                                               | 72 |
| 4.7.1 Photovoice .....                                                 | 72 |
| 4.7.1.1 Using Photovoice in this Study .....                           | 73 |
| 4.7.2 In-Depth Interviews.....                                         | 77 |
| 4.7.3 Focus Group Discussions .....                                    | 77 |
| 4.7.3.1. The Process of Generating Data through the use of FGD .....   | 78 |
| 4.8 Data Analysis .....                                                | 80 |
| 4.8.1 Thematic Analysis .....                                          | 81 |
| 4.9 Trustworthiness of the Study.....                                  | 83 |
| 4.10 Ethical Considerations.....                                       | 84 |
| 4.10.1 Ethics of Using Photovoice in the Study.....                    | 85 |
| 4.11 Synthesis.....                                                    | 85 |

## **CHAPTER FIVE**

### **LIMITED ACCESS TO SAFELY MANAGED WATER AS AN EVERYDAY CHALLENGE IN A RESOURCE-POOR RURAL COMMUNITY**

|                                                                                         |     |
|-----------------------------------------------------------------------------------------|-----|
| 5.1 Introduction .....                                                                  | 86  |
| 5.2 The Paradox of the Political Party T-Shirt and Access to Safely Managed Water ..... | 87  |
| 5.3 Infrastructural and Livelihood Neglect .....                                        | 91  |
| 5.4 The Challenge of Collecting Water from the Water Truck.....                         | 96  |
| 5.5 The Challenge of Collecting and Storing Water for Daily Use.....                    | 100 |
| 5.6 Sourcing and Using Water under Inhumane Conditions.....                             | 105 |
| 5.7 Relying on Limited Water for Everyday Household Use .....                           | 114 |
| 5.8 Limited Access to Water Disrupts Community Cohesion .....                           | 118 |

|                    |     |
|--------------------|-----|
| 5.9 Synthesis..... | 119 |
|--------------------|-----|

## **CHAPTER SIX**

### **GENDERED PERSPECTIVES ABOUT CHALLENGES ASSOCIATED WITH LIMITED ACCESS TO SAFELY MANAGED WATER IN A RESOURCE-POOR RURAL COMMUNITY**

|                                                                                     |     |
|-------------------------------------------------------------------------------------|-----|
| 6.1 Introduction .....                                                              | 122 |
| 6.2 Men’s Sentiments about Water Acquisition and Use.....                           | 122 |
| 6.3 Ruling Patriarchy in the Context of Limited Access to Safely Managed Water..... | 128 |
| 6.4 Women at the Centre of the Struggle for Access to Safely Managed Water .....    | 130 |
| 6.5 Women’s Compromised Health and Wellbeing.....                                   | 133 |
| 6.6 Synthesis.....                                                                  | 135 |

## **CHAPTER SEVEN**

### **LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-POOR RURAL CONTEXTS: REFLECTIONS, IMPLICATIONS, AND CONCLUSIONS**

|                                                                                            |     |
|--------------------------------------------------------------------------------------------|-----|
| 7.1 Introduction .....                                                                     | 137 |
| 7.2 Methodological and Theoretical Reflection .....                                        | 139 |
| 7.3 Reflecting on the Findings.....                                                        | 145 |
| 7.3.1 The Marginalisation of Rural Livelihoods from National Development .....             | 146 |
| 7.3.2 Gendered Differences in Experiencing and Articulating Water-Related Challenges ..... | 148 |
| 7.4 Contributions of the Study.....                                                        | 150 |
| 7.5 Implications of the study .....                                                        | 154 |
| 7.6 Conclusion.....                                                                        | 155 |

|                         |            |
|-------------------------|------------|
| <b>REFERENCES .....</b> | <b>157</b> |
|-------------------------|------------|

|                        |            |
|------------------------|------------|
| <b>APPENDICES.....</b> | <b>210</b> |
|------------------------|------------|

## LIST OF FIGURES

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| Figure 2.1: Framework for Understanding Limited Access to Safely Managed Water in Poor Rural Contexts.....   | 41  |
| Figure 4. 1: eMdubezweni surrounded by mountains .....                                                       | 62  |
| Figure 4. 2: Cattle resting around a waterhole in eMdubezweni rural community .....                          | 62  |
| Figure 4. 3: Geographic location of eMdubezweni rural community .....                                        | 64  |
| Figure 4. 4: Dried up dam in eMdubezweni rural community .....                                               | 65  |
| Figure 4. 5: Semi-arid nature of study site .....                                                            | 66  |
| Figure 5. 1: Woman wearing ANC T-shirt and pushing wheelbarrow with water containers                         | 88  |
| Figure 5. 2: Leaking Jojo tank used to service three households .....                                        | 92  |
| Figure 5. 3: Young woman trying to extract water form broken water pump . .....                              | 95  |
| Figure 5. 4: Water truck driver replenishing Jojo tank.....                                                  | 97  |
| Figure 5. 5: Water truck and Jojo tank positioned far from households.....                                   | 99  |
| Figure 5. 6: Buckets and water drums containing a household's water supply .....                             | 101 |
| Figure 5. 7: Young woman coming from collecting water.....                                                   | 103 |
| Figure 5. 8: Child fetching water from local borehole.....                                                   | 104 |
| Figure 5. 9: Children drinking water from a pipe connected to a waterhole.....                               | 106 |
| Figure 5. 10: A calf coming to drink water from a bucket .....                                               | 108 |
| Figure 5. 11: Woman standing in mud collecting water from Jojo tank .....                                    | 110 |
| Figure 5. 12: Woman doing household's weekly laundry .....                                                   | 111 |
| Figure 5. 13: Woman doing the washing using grey water .....                                                 | 112 |
| Figure 5. 14: Bucket with dirty water used to clean the house .....                                          | 114 |
| Figure 5. 15: Woman using limited water to cook.....                                                         | 115 |
| Figure 5. 16: Limited water available to boil water in kettle to make tea and cook .....                     | 116 |
| Figure 5. 17: Little water available for washing dishes .....                                                | 117 |
| Figure 7.1: Amplifying Rural Voices for Improving Safe Water Services and Addressing Gender Inequality ..... | 153 |

## LIST OF TABLES

|                                                                        |    |
|------------------------------------------------------------------------|----|
| Table 4. 1: Participant Biographical Information with alias names..... | 70 |
|------------------------------------------------------------------------|----|

## **LIST OF ACRONYMS AND ABBREVIATIONS**

|        |                                                                 |
|--------|-----------------------------------------------------------------|
| ANC    | African National Congress                                       |
| DWS    | Department of Water and Sanitation                              |
| FBW    | Free Basic Water                                                |
| FGD    | Focus Group Discussion                                          |
| HSSREC | Humanities and Social Sciences Research Ethics Committee        |
| IDP    | Integrated Development Plan                                     |
| KZN    | KwaZulu-Natal                                                   |
| O&M    | Operations and Maintenance                                      |
| OHCHR  | Office of the United Nations High Commissioner for Human Rights |
| PVM    | Participatory Visual Methodology                                |
| SAHO   | South African History Online                                    |
| SALII  | Southern African Legal Information Institute                    |
| SDG    | Sustainable Development Goals                                   |
| UKZN   | University of KwaZulu-Natal                                     |
| UNDESA | United Nations Department of Economic and Social Affairs        |
| UNDP   | United Nations Development Programme                            |
| UNICEF | United Nations International Children's Emergency Fund          |
| WHO    | World Health Organisation                                       |
| WSA    | Water Services Authority                                        |

## **CHAPTER ONE**

### **LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-POOR RURAL CONTEXTS: INTRODUCTION TO THE STUDY**

#### **1.1 Introduction**

Access to safely managed water is a human right that, if not adequately addressed, impacts health, sanitation, and overall human livelihood (Abdalla et al., 2018; Barlow, 2015; Grönwall, & Danert, 2020). Yet, many rural communities worldwide do not have access to safely managed water resources and supply (Hutton & Chase, 2016; Martínez-Santos, 2017). Globally, rural communities are the most neglected from receiving water from reliable sources such as taps. In African countries, and particularly those in the sub-Saharan Africa (SSA) region, many rural communities do not receive water from reliable sources that are provided by municipalities or other water services providing authorities (Rodina, 2016; Mekonnen & Hoekstra, 2016; Harris et al., 2017). The lack of a safe water supply inevitably impacts people's ability to conduct their daily water-related activities and in turn, affects their overall wellbeing (Kheswa, 2019; Sarkar, 2020).

Globally, an estimated 785 million people rely on drinking-water sources, such as streams and waterholes, that are not safe and are often contaminated with animal faecal matter and other health-threatening substances (WHO, 2019). In SSA, an estimated 144 million people depend on unsafe surface water sourced from rivers, streams, ponds, and dams (WHO, 2019). This dependence on natural sources for water makes recipients susceptible to various waterborne illnesses that threaten their health and livelihoods. Available literature confirms that communities who do not have access to safely managed water are vulnerable to waterborne diseases such as diarrhoea, Guinea worm, and cholera (Wijesiri et al., 2018). For example, annually, an estimated 485 000 people die of diarrhoeal-related illnesses due to drinking contaminated water (WHO, 2019). Thus, scholars and activists contend that when people do not have access to safe and reliable water, their dignity becomes diminished, their health is compromised, and their human rights are violated (Armah et al., 2018; Martins & Heller, 2018).

Access to safely managed water is also a major concern in South Africa (Majuru et al., 2012). Only 64 percent of the country's households have access to safe and reliable water supplied by

local municipalities and accessed through piped taps (Department of Water and Sanitation: Water and Sanitation Master Plan, 2018). However, in the country's rural communities, there is a significant backlog in water delivery with an estimated 90 percent of households not receiving reliable municipal water services and supply (Graham et al., 2016). Therefore, these households are forced to rely on rainwater harvesting, as well as other natural and man-made sources such as wells and water tankers (Aziz et al., 2020; Abdullahi & Sa'idu, 2020). To illustrate, recently, residents of Henley, a rural-township in the greater uMsunduzi Municipality area in KwaZulu-Natal (KZN), went on a service delivery protest because of frustrations regarding their limited access to reliable water services. Community members reported that they had not had piped water connections, which forced them to use unsafe water from streams, rain, and occasionally from water tankers that delivered water infrequently (Makhanya, 2019).

Notably, the issue of access to safely managed water<sup>1</sup> in rural communities is also gendered, and disproportionately affects women more than men (Winter, Darmstadt & Davis, 2021). For example, studies report that women have to walk long distances to collect water in the rural communities of Africa and Asia (Baker et al., 2018; Sewell, 2019). In several reported cases, these women walk a distance of over six kilometres to get to the nearest water source (Jeil, Abass & Ganle, 2020; Sarkar, 2020; Moumouni, Pounyala & Dapola, 2020). This is troubling given reports that women face many risks such as physical and sexual victimisation and maltreatment when they take this journey (Graham et al., 2016; Soyapi, 2017).

Studies further report that women in rural communities fear this journey (Stevenson et al., 2012). For instance, in a study that examined women's psychosocial distress related to water insecurity in Ethiopia, researchers found that women feared walking the distance needed to reach the closest water sources (Stevenson et al., 2012; Wutich et al., 2014). One prominent reason that fuelled fear among women in that study was the experience of sexual violence. Likewise, evidence from another study conducted across 44 countries in Africa revealed that women experienced sexual assault while walking to collect water (Sorenson, Morssink & Campos, 2011).

Against this background, this study examined the water-related challenges of adults living in a resource-poor rural community in KwaZulu-Natal (KZN), South Africa. Specifically, I

---

<sup>1</sup> The ability to obtain water that is consistently available, from a safe and reliable water source such as pipe water connection (sited in the clarification of terms section)

examined how limited access to safely managed water impacted their daily lives. The study focused on the lack of piped water connections in both their households and their greater community. For this research, I used a combination of research tools, namely; photovoice<sup>2</sup>, in-depth interviews, and focus group discussions (FGD) to examine how adults living in one resource-poor rural community experienced and described their challenges in the context of living in a rural community that has limited access to safely managed water. The study further explored gendered differences in the experiences described by the adult participants in this study.

## **1.2 Study Rationale**

Multiple measures have been put in place locally and internationally, both in terms of policy and programmes, to ensure that everyone has access to a reliable water supply. Some of these measures include the Free Basic Water (FBW) Policy introduced by the South African Department of Water and Sanitation (DWS). This policy makes provision for every low-income household in the country to get at least 25 litres of free and safe water per day. . The 25 litres is a per capita allocation. Assuming an average household size of 4 and a 30-day month, this amounts to 200 litres/household/day, and 6,000 litres/household/month. However, recipients have found it to be insufficient for both domestic and productive uses (Farrar, 2014; Mehta, 2014; Mosdell, 2006). Internationally, the World Health Organisation (WHO) (2011, p. 1) made a call to its member states to “ensure that national health strategies contribute to the realisation of water and sanitation-related goals while supporting the realisation of access to safely managed water and sanitation as a human right”.

While these enabling policies and programmes provide the necessary steps that countries should follow to provide universal access to reliable water, there are still many communities that do not enjoy this right (WHO, 2019c). Linked to this are high water fees payable to municipalities and the expenses involved in delivering water sources (such as piped water connections) to remote rural communities (Barde, 2017; Aleixo et al., 2019). In this light, reliable water supply, particularly the provision of piped water connections, is understood as a privilege that discriminates against poor and marginalised communities (Yang et al., 2013; Barde, 2017). Likewise, South Africa remains burdened by a legacy of discrimination and

---

<sup>2</sup> A research tool used in qualitative methodologies that uses image and photographs to represent the experiences and realities of the research participants (Wang, 2005).

inequality that was inherited from its colonial and apartheid history, which continues to disadvantage rural communities in terms of the provision of, and access to quality water supply over two decades since the end of apartheid.

Since 2015, South Africa has been facing a national water crisis and persistent issues mainly caused by a recurrent drought (DWS, 2018). These issues are compounded by the country's history of inequality, as well as insufficient water infrastructure, maintenance, and investment (Netshipale, 2016). There are significant urban-rural inequalities in water supply and access, with rural and other urban-poor communities largely lagging in terms of receiving water services (Dos Santos et al., 2017). Specifically, only two out of five people in rural areas have access to piped water connections compared to four out of five residents in urban areas who enjoy this right (United Nations International Children's Emergency Fund [UNICEF], 2016). Scholars attribute this to a legacy inherited from the colonial and apartheid periods that were characterised by geographic inequalities in terms of service delivery; an inequality that discriminated against rural, and mostly black, communities (Sithole & Mathonsi, 2015).

In South Africa, and specifically, the KZN province where this study was located, resource-poor and marginalised communities are mostly situated in rural areas that are the most deprived of basic services such as water (Bulled, 2017; Dixon, 2015). As a result of the lack of skilled labour to install water infrastructure, and political boundaries, coupled with municipal level corruption, many rural communities are side-lined from municipal services (Koelble & Liphuma, 2010; Mulenga, 2017). Government financial constraints make it difficult to increase supply beyond the basic minimum provision subsidised by the state (Mothetha, Nkuna & Mema, 2013; Tortajada & Biswas, 2018). Unfortunately, rural places do not even get this minimum provision, which is an omission that leaves communities without any reliable water sources.

As discussed above, gender is a significant issue to unpack where access to a safely managed water supply is concerned. For example, literature reports that women, when compared to men, often have more inadequate or no access to safe water supply (Buechler & Hanson, 2015). These water-access inequalities are disadvantageous for women since in several global south countries, women are expected to acquire water and perform activities that require water such as cooking, cleaning, and taking care of the household (Collins et al., 2019; Fisher, 2006; Van Houweling, 2016). In recognition of women's role with regards to water collection, the United Nations (UN) established a Convention of Elimination of all Forms of Discrimination against

Women (1979). This statement declares that all countries shall ensure that women in rural communities enjoy the right to adequate living conditions. In response, some countries, in Latin America and the Caribbean, formulated and implemented public policies to assist women's access to land and other natural resources (Office of the United Nations High Commissioner for Human Rights [OHCHR]). However, in some global south countries, including South Africa, this right is yet to materialise for its rural constituencies (Cetrulo et al., 2020; Loftus, 2005).

Research has further pointed to the fact that access to safely managed water is central for addressing some of the world's development problems which lies within the broad spectrum of food security, poverty reduction, rural and economic development, human health, and human rights (Birkenholtz, 2016; Chidya, Mulwafu & Banda, 2016; Sinyolo, Mudhara & Wale, 2014a; Sinyolo, Mudhara & Wale, 2014b). However, water delivery remains inconsistent, with rural communities sitting on the margins of such services (Roekmik, Chua & Baskaran, 2018). This neglect has many negative implications for rural livelihoods. For example, crops tend to die, which heightens household food and economic insecurity (Ncube, 2018). Yet, the subjective experiences of adults living under these daily conditions are not well understood. Moreover, their voices tend to be silenced in research that examines their challenging experiences.

In light of the context detailed above, I examined how 17 adults who lived in a resource-poor rural community in KZN described their experiences of having limited access to safely managed water. Moreover, to provide a gendered analysis of these experiences, I explored differences in the challenges experienced by the men and women who participated in this study.

### **1.3 Problem Statement and Study Purpose**

In South Africa, the supply of safely managed water among rural communities remains relatively low. Three and a half a million households go through the day without access to safe and reliable water (Price et al., 2021). While there are contestations in reliable statistics, recent estimates suggest that the country only provides safe water to 42 percent of its rural households (Tortajada & Biswas, 2018). Lack of access to water in rural communities is problematic since South Africa is one of the signatories of the Sustainable Development Goals (SDG); these are set goals and objectives to combat social issues such as water inaccessibility and poverty. The

South African Constitution<sup>3</sup> asserts that free basic water is supplied to all citizens (Kahinda, Taigbenu & Boroto, 2007). However, despite the recognition of water as an essential health, development, and human rights concern, most rural communities in the country continue to face extreme deprivation of safely managed water supply. The Water Services Act states that reliable services should deliver water of exceptional quality, which is physically obtainable with appropriate technology such as taps, be within a reasonable distance from each household, be affordable, and be consistently available at the source in adequate quantities for daily household demand (Majuru, Jagals & Hunter, 2012). This is, however, still forthcoming.

In communities where water infrastructure is installed, it is often not functional (Carter & Ross, 2016; Truslove et al., 2019; Whaley & Cleaver, 2017). The distribution of water to these taps is often irregular, thus failing to provide adequate water supply evenly across all rural households (Kulinkina et al., 2016). Not only is access to water threatened by the infrastructure reliability, and the unaffordability of the actual service. Rural communities are mostly inhabited by low-income and poverty-stricken households. Poverty in rural communities forces communities to obtain water from unsafe sources such as rivers, dams, waterholes, and water tankers distributed by relevant municipalities. Water supply inadequacies cause water access issues that pose a challenge to health, sanitation, and household productivity since water is used for socioeconomic purposes (Karodia & Khan, 2015; Madi, 2016 & Akinyemi, Mushunje & Fashogbon, 2018). Therefore, it was vital to hear from adults in rural communities about how they are challenged by limited access to safely managed water sources and services.

In light of this context, the purpose of this study was to examine how adults living in a resource-poor rural community described their daily challenges with regards to having limited access to safely managed water services and sources. In particular, through this research, I set out to understand how living under such conditions impacted the daily activities and livelihoods of adults, and whether or not these experiences were gendered.

---

<sup>3</sup> Section 27 (1) (b) Everyone has the right to have access to sufficient food and water...” Section 27 (2) states that “the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights”. (Government of South Africa, 1996).

## 1.4 Research Aim

This study aimed to investigate how adults living in a resource-poor rural community in KZN described their daily challenges about having limited access to safely managed water, and whether or not these challenges were gendered.

## 1.5 Research Questions

The study addressed two main research questions:

- *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?*
- *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?*

## 1.6 Clarification of Operational Concepts Used in the Study

To provide clarity, understanding, and meaning to the use of concepts in this study, I provide the following clarification of operational concepts.

### 1.6.1 Access to Safely Managed Water

Access to safely managed water is a complex and multifaceted issue (Nastiti, 2017). Aiga and Umenai (2003) argue that there is no one universal way of describing access to water. Rather, each country modifies the concept according to its relevance to its population and according to three factors: *distance*, *time*, and *water quantity*. This suggests that access to safely managed water is more than just the obtainment of water. Instead, it is a result of various factors such as distance from the water source to the household and vice-versa; the time taken and spent for collecting water; and water quantity, as well as water infrastructure (Aiga & Umenai, 2003). The World Health Organisation describes access to water as the proportion of the population that uses piped water, public taps, borehole hand pumps, protected wells, or springs. This definition draws focus on the infrastructural perspective of access to water in that it emphasizes the actual source from which water is obtained.

In support, Smiley (2013) argues that access to water is defined by where water comes from, which refers to the source and how convenient it is to obtain. Smiley (2013) focuses on distance by arguing that access to water is measured by the distance an individual travel to the water source, with 200 meters being the standard acceptable distance. Similarly, in South Africa, distance to accessing water is described as the ability to obtain water from a piped water connection within a dwelling or a maximum of 200 meters from the household (DWS, 2017).

Dinka (2018), Johnson (2017), and Office of the United Nations High Commissioner of Human Rights [OHCHR] (2010) further adds a definition that addresses water quantity by describing access to water as the ability for every individual to receive 25 to 30 litres of safe water per day for daily use. However, this definition has been challenged because it overlooks important aspects such as the reliability of the source, the quality of the water, and the cost of water; factors that can threaten a household or an individual's access to safe water (Smiley 2013). Onda, LoBuglio & Bartram (2012) argue that water quality is also a defining factor as water that is contaminated is unusable, therefore threatening its safety and accessibility. Under the SDG goal 6.1.1, safely managed drinking water services is defined as one located on premises, available when needed and free from contamination. In this study, access to safely managed water is understood to be the ability to obtain water that is consistently and frequently available, from a safe and reliable water source such as pipe water connection, is of good quality and quantity, and at a maximum distance of 200 meters from a household (Adams & Smiley, 2018).

### **1.6.2 Service Delivery**

Service delivery is concerned with providing a product or service by a government or an official body of authority to a community (Reddy, 2016; Voorberg et al., 2017). Reddy (2016) argues that service delivery is the distribution of basic communal needs and services such as housing, water and sanitation, and health care. In South Africa, these services are expected to be provided by local municipalities. Various studies have highlighted the discrepancies in service delivery in the country (Mehrotra, 2006; Muchadenyika, 2017). For example, Joshi (2013) argues that its service provision is often unreliable and lacks accountability.

Moreover, the literature reports political influence and municipal-level corruption, among others, that negatively impact the delivery of services to communities (Davis, Camp & Coleman, 2004; Lawal, 2007; Vyas-Doorgapersad, Tshombe & Ababio, 2017; Kosec &

Wantchekon, 2020). Resource-poor communities, such as the one that was the focus of this study, are hard hit when essential services are not delivered adequately. For this study, service delivery refers to the act of government, or any of its legislated entities, providing basic services and infrastructure (particularly as it relates to water) that is safe, reliable, and functional.

### **1.6.3 Resource-Poor Rural Community**

During the apartheid period, the black majority in South Africa were restricted to resource-poor rural areas which were referred to as homelands. These communities were deprived of essential services such as public schools, public healthcare facilities, and several others that were needed to facilitate development (Noble & Wright, 2013). Although the democratic government has made strides in providing essential public services and infrastructure, major backlogs still exist. In particular, several rural communities in the country remain under-resourced and lack the essential services and infrastructure needed to facilitate social and economic development (Dixon, 2015; Gwaka, May & Tucker et al., 2014). Within this context, such communities are often referred to as resource-poor. This is to bring attention to their urgent need for basic and essential services and resources. In this study, a ‘resource-poor community’ refers to a rural community that has limited to no services that are provided by the municipality or its appointed constituencies. In particular, the lack of provision of, or access to safely managed water needed to improve wellbeing suggests that a rural community is resource-poor (Angoua et al., 2018; Van Heerden et al., 2015).

## **1.7 Overview of Theoretical Framework**

Analysis in this study was informed by two theories: the entitlement theory and the gender socialisation framework. The entitlement theory is premised on the notion that resource distribution is just if everyone is entitled to them (Ju & Moreno-Ternero, 2018; Salahuddin, 2018; Rizvi, 2002; Nussbaum, 2003). This theory has three tenets; *justice in holdings* which points to how people come to own resources; *justice in transferability*, which refers to how one person can hold resources from another; and *justice in rectification*, which focuses on resources that are acquired or transferred unjustly and unevenly by a government (Arrow, 1978; Christmas, 2017; Guoqing, 2020). For analysis in this research, *justice in rectification* was relevant because it highlights the injustices suffered by communities in the past, and the current system's failure in addressing historical injustices (Salahuddin, 2018). Therefore, *justice in*

*rectification* suggests that limited access to safely managed water in resource-poor rural communities results from past injustices and the failure of current systems to rectify historical injustices.

Gender socialisation, the second theory which informed analysis in this study, analyses the socially constructed and culturally sanctified roles and responsibilities enforced on men and women based on their sex at birth (Okin, 1989; Peano, 2019; Weeks, 2017). Basu et al. (2017) argue that gender socialisation is a process of learning about the social role of being either male or female, which often starts as early as birth. In this study, this framework was used to analyse and frame the gendered inequalities inherent in how water is accessed and used in resource-poor rural contexts that have limited access to safely managed water. A detailed discussion of the theoretical framework is provided in Chapter Three.

## **1.8 Overview of the Research Methodology**

As noted above, this study addressed two critical research questions. To address these questions, I located the research within the humanistic geography paradigm. Humanistic geography involves documenting marginalised communities' voices and experiences, including those in rural areas (Corbett, 2016; Philo, 1992; Varghese et al., 2020). As a philosophy, humanistic geography frames the interaction between people and their environment to fully understand this relationship (Smith, 1984; Harper, 1987 & Holt-Jensen, 2018). Humanistic geographers position their research in the experiences of groups that have traditionally been vulnerable, oppressed, or excluded (Ecclestone & Goodley, 2016; Manzo & de Carvalho, 2020). This paradigm is further rooted in participatory research and feminist geographic research. Informed by humanist geography, this study adopted a participatory research design, which recognised that adults in resource-poor rural communities have superior knowledge about their lives. As a result, they can be producers of knowledge about their experiences.

Informed by the above, to generate data, the study used a participatory visual methodology<sup>4</sup> (PVM), and photovoice in particular, with 17 participants living in eMdubezweni (not its real name); a resource-poor rural community that had limited access to safely managed water.

---

<sup>4</sup> A qualitative research methodology that uses collaborative and interactive tools to engage participants in a specific topic and portray their subjective experiences (cited in full in chapter 4).

Photovoice data was complemented by data generated through focus group discussions (FGD) and in-depth interviews. To generate data that addressed the first research question: *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?* My data sources included photovoice and transcripts from the FGD and in-depth interviews. To generate data that addressed the second research question: *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?* My data sources were transcripts generated from both the FGD and in-depth interviews.

Data generated using these tools were analysed using both visual data analytical procedures and thematic analysis. Thematic analysis focused on identifying themes and patterns within the context of the generated data. According to Braun and Clarke (2006, p, 79), thematic analysis is “a method for identifying, analysing, and reporting patterns (or themes) within the data”. This method helped to organise and describe the data. A detailed overview of the research design and methodology is outlined in Chapter Four.

## **1.9 Overview of Ethical Considerations**

Given that this study examined people’s experiences, ethical issues emerged that had to be mitigated. First, before the commencement of the study, written permission to conduct the research was sought and subsequently granted by relevant institutions and gatekeepers. To ensure ethical research, the participants were given sufficient written information, both in English and isiZulu (their local language), about the study to make an informed decision about their participation. The participants were also trained on the use of photovoice, and the sort of ethical photographs they could produce. The photographs they produced were staged to depict their everyday experiences. In Chapter Four, I provide a detailed discussion of all the ethical issues that emerged and how they were addressed in the study.

## **1.10 Synthesis and Overview of the Dissertation**

The study reported in this dissertation examined how adults in a resource-poor rural community described their daily experiences about the limited access to safely managed water. In particular, the study explored the participants’ perspectives about their daily experiences of accessing and using water in contexts where this resource was limited. Finally, the study explored gendered differences in the experiences shared by the participants. This dissertation

is organised into seven chapters. In this chapter, I introduced the study, outlined its purpose, background, and context. Further, the chapter identified the study's aim and the research questions used to generate data. The remainder of this dissertation is structured as follows:

Chapter Two, a literature review, provides a broad overview of the scholarship on the topic under study. The review also highlights gaps in the scholarship and locates this study's contribution. Finally, the review provides a conceptual framework for understanding resource-poor rural communities' experiences concerning limited access to safely managed water.

In Chapter Three, I discuss the theoretical framework that informed this study. First, I locate myself as a researcher. Second, I discuss the entitlement theory, which informed this research. I also offer a discussion about the gender socialisation framework, which was also used to analyse data in the study. The chapter concludes with some propositions that guided data analysis in the study.

In Chapter Four, I outline the research design and methodology employed in the study. I further outline the research approach used for generating data. Specifically, I outline a detailed discussion of participatory visual methods, by focusing particularly on photovoice as an approach used to generate visual data. This is followed by a discussion of the study's geographic context, the participants, the data generation process, and the data analysis strategy employed. Finally, I answer questions regarding trustworthiness and ethical considerations applied to the study.

Chapter 5 presents an in-depth discussion of key findings that addressed the first research question: *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?* In particular, I used data generated using photovoice, in-depth interviews, and FGD to address the first research question and to outline the challenges reported by the participants about their experiences of living in a resource-poor rural community with limited access to safely managed water. The chapter concludes with a synthesis of the key findings that addressed the first research question.

In Chapter Six, I present an in-depth discussion of key findings that addressed the second research question: *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?* Specifically, I used data generated from the in-depth interviews and FGD to provide a gendered analysis of the

differences in the challenges reported by both men and women who participated in this study. I conclude the chapter with a synthesis of the critical findings that addressed the second research question.

In Chapter Seven, I reflect on the study's methodology by focusing on strengths and limitations. I further reflect on the study's findings before I discuss its contribution. Finally, I discuss the study's implications and I conclude the study. The next chapter is a review of existing literature.

## **CHAPTER TWO**

# **UNDERSTANDING LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-POOR RURAL CONTEXTS: A REVIEW OF THE LITERATURE**

### **2.1 Introduction**

The United Nations has enshrined access to safely managed water services and supply as a fundamental human right and a daily need (Mwabi et al., 2011). However, an estimated 2.2 billion people globally are denied this right in various ways (Boinet, 2020; WHO Newsroom, 2019). Specifically, in Africa, 320 million people do not have access to daily safe drinking water and water for productive purposes (Rodriguez, 2019; WHO, 2019c). Within this context, rural communities carry a substantial burden as they remain severely water insecure and continue to face marginalisation and neglect from access to safely managed water, both at the community and household level. Available research has identified various health, sanitation, and socio-economic livelihood challenges that result from persistent water insecurity<sup>5</sup> in rural communities (Basu et al., 2017; Fielmua & Dongzagla., 2020; Sen & Kansal, 2019; Tanto & McKay, 2020). This is troubling since safe and readily available water is critical for public health, dignity, and improved socio-economic livelihoods (WHO, 2019b; Wrisdale et al., 2017; Wutich et al., 2017). Whether used for drinking, sanitation, food supply, or other domestic uses, safely managed water can bolster economic growth and contribute immensely to poverty reduction. As discussed in Chapter One, this study examined adults' experiences concerning living in a resource-poor rural community with limited access to safely managed water services and supply in KwaZulu-Natal (KZN), South Africa. Specifically, I explored how these adults experienced and communicated about their day-to-day challenges and livelihoods in a context where they are continuously marginalised from daily access to safely managed water services.

In this chapter, I present a review of the literature relevant to the study. Specifically, I review literature about the challenges brought by limited access to safely managed water in resource-poor rural contexts. The discussion is organised around six sections. First, I present a review of the literature which focuses on water security and the right to safely managed water in rural

---

<sup>5</sup> Defined as the “inability to access or to benefit from adequate, reliable and safe water, is widely recognised as a threat to human health and well-being” (Young, Boateng & Jamaluddine et al., 2019, p1).

contexts. Specifically, I highlight how, despite access to water being recognised as a human right, several rural communities still do not enjoy this right. In section 2.3, I discuss factors associated with safely managed water in the South African rural context. Specifically, the section outlines water service delivery and access in both apartheid and post-apartheid South Africa. The section ends with a discussion focusing on water service conflict in resource-poor rural contexts. In section 2.4, I focus on the marginalisation of rural communities from safely managed water services; highlighting various factors associated with rural water insecurity. In Section 2.5, I discuss the challenges that arise due to limited access to safely managed water in rural contexts. In Section 2.6, I provide a summarised discussion of the reviewed literature. This discussion leads to a final sub-section of the conceptual framework that guided analysis in the study.

## **2.2 Water Security and the Right to Safely Managed Water in Rural Contexts**

Water security, which includes access to safely managed water for human needs, is a fundamental human right and has been a topic of various scholarly discussions (Aleixo et al., 2019; Angel & Loftus, 2019; Oliveira, 2017; Strosnider et al., 2017; Van Houtven et al., 2017). In fact, as Soyapi (2017) notes, water security means that there is sufficient provision of safely managed water that meets the basic standard of human wellbeing and health. In the context of this study, 'safe and reliable' relates to water that is fit for daily human consumption and promotes dignity and health (Adeyeye, Gibberd & Chakwizira, 2020; Muller, 2008 & Nichols, 2018). Thus, the water right encompasses water availability<sup>6</sup>, water quality<sup>7</sup>, the physical accessibility of water<sup>8</sup>, and water affordability<sup>9</sup> (Nowicki, Koehler & Charles, 2020).

Of particular interest to this study is the issue of access involves how water is obtained, and the costs of getting water for people who are located in resource-poor settings. Available literature has pointed to the fact that people living in poor communities, such as those who were the focus of this study, are more likely to suffer from water access issues (Armah et al., 2018; Tantoh & McKay, 2020; Workman & Ureksoy, 2017). However, as various authors note, sustainable

---

<sup>6</sup> The sufficient quantity of water that humans can use to carry out their daily activities and perform their livelihoods (Horsley et al., 2014).

<sup>7</sup> The overall health and condition of the water (Li, & Wu, 2019).

<sup>8</sup> Refers to whether or not water sources are of reasonable reach to individuals and their households (Armah et al., 2018).

<sup>9</sup> Referring to individuals' purchasing power and ability to pay for water services and supply (Pierce, Chow & DeShazo, 2020).

access to safely managed water is reliant on the users contributing economically towards receiving safely managed water services (Libey, Adank & Thomas, 2020; Van Houtven et al., 2017). Admittedly, as I discuss in a section below, because of their geographic remoteness and limited participation in economic activities, rural communities are not always in a position to make this contribution (Hoque et al., 2019). In circumstances where people are not able to pay for water services, the United Nations believes that governments must facilitate the provision of basic water to their citizens (Brown, Neves-Silva & Heller, 2016; OHCHR, 2010; Winkler, 2019).

Globally, there has been significant progress towards the realisation of water security and the right to access safely managed water services. For example, a 2019 report by the World Health Organization (WHO) suggests that 71 percent of the global population is water secure. This means that around 5.3 billion people worldwide have access to and use drinking-water services that are safely managed and of good quality. These positive developments are aligned with the Sustainable Development Goals' target number six, which calls for universal and equitable access to safe and affordable drinking water (United Nations Development Programme [UNDP], 2019). This target is measured with the indicator of "safely managed drinking water services" (UNICEF, 2015b; WHO, 2017). That is water from a safely managed source, located at proximity to premises, available when needed, and is free from contamination including faecal and chemical contamination (WHO, 2017). There has been a notable significant increase in people consuming safely managed drinking water in the last 20 years. For example, the number of people globally who drink safely managed water increased from 61 percent in the year 2000 to 71 percent in 2017 (UNICEF, 2015b; WHO, 2017a; WHO, 2019a).

Despite these laudable developments, water insecurity remains a significant challenge for many communities around the world (Adams & Smiley, 2018; Jepson et al., 2017; Wutich et al., 2017). In countries where geographic and socio-economic inequalities persist and where people live in impoverished settings (including low-cost settlements), access to safely managed water is often limited (Adams, Juran & Ajibade, 2018). In extreme cases, some of those who live in impoverished communities are completely cut out from accessing safely managed water services (Dos Santos et al., 2017; Nelson-Núñez & Pizzi, 2018). WHO (2019b) reports that 435 million people globally depend on water sourced from unprotected wells and springs. Further, 144 million people use untreated surface water from lakes, ponds, rivers, and streams.

Several people who lack access to safely managed water services live in often marginalised and remote rural areas (Achore, Bisung & Kuusaana, 2020; Carrard et al., 2019).

The World Health Organisation (2017a) reports that 900 million people who live in rural communities still lack access to basic water services and safe sanitation. Moreover, data from WHO (2019a) paints a stark picture regarding safely managed water services among people in rural areas. To demonstrate, just over half (53 percent) of the global rural population had access to safely managed water in 2017. In comparison, over 85 percent of the global urban population enjoyed access to safely managed water in the same period. Several factors explain this urban-rural discrepancy in terms of water security, with the global movement towards urbanisation and urban development being the most obvious factor (Omarova et al., 2019; Yang et al., 2013).

Unfortunately, this move towards urbanisation has slowed and dented rural development, further marginalising rural communities that receive minimal benefits from the so-called 'urban-rural linkage'<sup>10</sup> that has become a buzzword for many urban geographers (Koehler, 2018; Lynch, 2005; Somanje et al., 2020). Urban areas now house most of the global population<sup>11</sup>, which means that more and more people are becoming part of an urbanised world. In return, urban areas benefit, but not without their share of problems, from an ever-increasing pool of people who contribute towards its development via fiscal revenue. This inequality is particularly pronounced in the African continent, where rural areas are often located in remote environments that are cut out entirely from the economic powerhouses in the urban centers' (Adu-Ampong, Novelli & Ribeiro, 2020; Robinson et al., 2020).

In terms of access to safely managed water services and supply, the African continent is without a doubt lagging behind global progress (Hope et al., 2020). According to the Deutsche Gesellschaft für International Zusammenarbeit (GIZ), a German development agency, 42 percent of people in the sub-Saharan region have no basic water supply, and 72 percent are without basic sanitation (GIZ, 2019). In 2014, the Joint Monitoring Programme (JMP) reported that 338 million people in this region of the world lacked access to readily potable water and that a 10 percent mortality rate was attributed to illnesses from poor sanitation (see also, Tantoh & McKay, 2020). This devastation occurs even though many tropical African countries receive

---

<sup>10</sup> The movement of goods, services and people across urban and rural spaces thus creating a linkage between the two areas (Adu-Ampong, Novelli & Ribeiro, 2020; Robinson et al., 2020).

<sup>11</sup> An estimated 68 percent or 4.2 billion people globally is projected to live in urban areas by 2050 (Ritchie & Roser, 2019).

abundant rainfall (Majuru, Jagals & Hunter, 2012). The situation is even more dismal in rural African communities.

In South Africa, access to safely managed water services is also a major concern (Majuru, Jagals & Hunter, 2012). Only 64 percent of South African households have access to water supplied by municipalities and accessed through piped taps (Nnadozie, 2011). However, there is a significant backlog in water service delivery within rural communities in the country, with an estimated 90 percent of households not receiving safely managed water services (Graham, Hirai & Kim, 2016). Instead, communities rely on water trucks (also known as water tankers), or water tanks that are installed in and around rural households, as their primary source of safe water.

Despite the country's renowned legislation, water's constitutional recognition as a human right has failed to improve access to water in various parts of South Africa. For example, over 3 million people are still without access to a basic water supply service, of which the majority are the rural poor (Van Koppen et al., 2020; Rodina, 2016; Karunanathan, 2019). According to Sambo, Senzanje & Dhavu (2018), rural communities are receiving water services below the legislative standards stipulated in the Water Services Act (1997) and the Republic of South Africa's Constitution<sup>12</sup>. Scholars argue that the right to water in South Africa facilitates inequality as its implementation is grounded on property rights in which, as a consequence of the history of apartheid, poor black people, mostly in rural areas, have no access to these essential services (Bond, 2014; Francis, & Webster, 2019; Kemerink, Ahlers & Van der Zaag, 2011). Against this background, safely managed water is an essential resource, but interventions to ensure everyone has access still do not match this realisation.

### **2.3 Safely Managed Water in the South African Rural Context**

South Africa is one of the top three largest economies in the African continent<sup>13</sup> and is endowed with relatively strong institutions in comparison to its continental comparators (Izvorski,

---

<sup>12</sup> Other legislations and acts that shaped inequality such as the 1913 Native Land Act which states that Section “a native shall not enter into any agreement or transaction for the purchase, hire, or other acquisition from a person other than a native, of any such land or of any right thereto, interest therein, or servitude thereover” (SAHO, 2021a) and the Group Areas Act of 1950 which states that The Group Areas Act (GAA) aimed to control the transfer of land and immovable property throughout the South Africa. This meant that people could only buy property from someone of the same race (SAHO, 2021b).

<sup>13</sup> Nigeria, South Africa and Egypt are the largest economies in Africa, respectively (World Bank, 2018).

Coulibaly & Doumbia, 2018). The World Bank (2018) regards South Africa as an ‘upper-middle-income country’ that is comparable to countries, such as Brazil and India, with advanced developing economies. South Africa’s recent history was characterised by a struggle against minority rule, culminating in the introduction of the apartheid policy in 1948. Apartheid was characteristically a system that marginalised and excluded, from most aspects of national life, racial groups that were not considered white (Gradín, 2019; Khalfani & Zuberi, 2001). During this period, several restrictions regarding free movement, land ownership, political representation, and access to basic services were imposed by the white-only nationalist government<sup>14</sup> (Acey et al., 2019; Tshishonga, 2020). Consequently, because of apartheid legislation, the majority black population, who mostly lived in rural areas (previously known as homelands), found themselves marginalised from accessing safely managed water services since priority was given to the minority white population, most of whom lived in urban areas (Adeyeye, Gibberd & Chakwizira, 2020; Hommes & Boelens, 2017). However, the history of water legislation in South Africa goes back further than the apartheid period (Makaya et al., 2020; Tempelhoff, 2017). For example, the Irrigation and Conservation of Water Act No. 8 of 1912 came into effect soon after the establishment of the Union of South Africa<sup>15</sup> (South African History Online [SOHO], 2020a; Tempelhoff, 2017).

The Irrigation and Conservation of Water Act was mainly resourceful in enabling the agricultural sector<sup>16</sup> to meet the country’s food demand (South African History Online [SAHO], 2020; Perret, 2002). Yet, even with this piece of legislation in place, black rural communities remained marginalised from accessing safely managed water (Adeyeye et al., 2020; Ssozi-Mugarura et al., 2017; Tantoh & Simatele, 2017). As the country entered its democracy in 1994, it laid the ground for change in the African continent in terms of progress in realising human rights for all. Of particular interest to this study, the country became one of the first nations in Africa to provide for the human right to water under Section 27 of its Constitution (Gleick, 2000; Kidd, 2019; Sahle et al. 2019; Rodina, 2016). Specifically, the Constitution of the Republic of South Africa (1996) states that everyone has the right to

---

<sup>14</sup> The National Party (NP) government was voted into power through an election that sidelined the majority black population in 1948. Thus, the NP led government subsequently passed a number of separate development policies that saw the systemic exclusion and discrimination of a majority of the people in the country (SOHO, 2020c).

<sup>15</sup> The Union of South Africa was formed in 1910 when four former British colonies (Cape of Good Hope, Natal, Transvaal and the Free State) united to form a single, unitary state (SOHO, 2020b).

<sup>16</sup> At the time, the agricultural sector was dominated by white farmers to the exclusion of black farmers who had been forced off their land through various, often violent, means (Sato, 2019).

sufficient food and water. The state is also mandated to take reasonable measures to ensure that each right is realised and achieved (South African Government [SAG], 2020). Yet, while there has been significant progress, the country still faces challenges in providing essential services to rural communities that continue to face marginalisation and isolation from national life.

### **2.3.1 Water Service Delivery and Access in Apartheid South Africa**

In 1948, the National Party (NP) took governance of South Africa after a discriminatory election that excluded the black population. Eight years after taking power, the NP led government passed the Water Act No. 54 of 1956, whose main objective, according to Tempelhoff (2017, p. 190), "was to consolidate and amend South Africa's existing legislation related to the control, conservation and use of water". The Water Act's passing coincided with the then government's separate development policy (called apartheid). The apartheid period was underpinned by racial discrimination against non-white people and permeated across political, social, and economic life in the country. The apartheid legacy left high levels of poverty and inequalities in terms of access to resources, infrastructure, and social services (Tshishonga, 2019; Wrisdale et al., 2017). These conditions were, and continue to be, felt across the country. However, rural areas have carried the heaviest load when compared to urban areas (Brinkerhoff, Wetterberg & Wibbels, 2018; Hope et al., 2020; Sewell et al., 2019).

In tandem with the above, Yerema et al.'s (2020) study, which examined the relationship between economic development and surface water quality in South Africa, argues that the inequitable water policy's legacy under apartheid continues to impact water services in economically less developed rural areas. The study also revealed that economic growth in former white-dominated areas improves water quality and neglects rural areas since rural areas had no economic investments during the apartheid period in terms of water management, water quality was low compared to predominantly white populated urban areas. Moreover, during the apartheid era, there was no central government department dedicated to the universal supply and management of water resources in South Africa. Homeland governments ran water service infrastructures (Denby et al., 2006; Shikwambane, 2017).

In poorer black rural areas, these services were managed inefficiently by uncoordinated homeland government structures that were almost entirely dependent on the racist South African government for funding. Consequently, by 1994 over half of the rural population were

without adequate water and sanitation services (Nnadozie, 2011; Wrisdale et al., 2017). The impact of the country's history of apartheid is still felt even in the present day. Thus, it is essential to acknowledge its impact on water service delivery challenges in rural communities. Rural communities were disadvantaged since they were previous homelands and continue to experience this legacy.

### **2.3.2 Water Service Delivery and the Right to Water in Democratic South Africa**

In 1994, South Africa experienced the end of apartheid rule, which led to the country's first democratic elections<sup>17</sup> that saw the African National Congress (ANC) winning and framing a new vision for the country (Clark, 2017; Le Pere, 2017). The move towards democracy not only marked a turning point in the country's socio-economic and political landscape but also brought with it a commitment to human rights (Davids et al., 2002; O'Connell, 2018). Under the democratic government, several policies and programmes were tabled to redress inequalities in all spheres of South Africans everyday lives, including the lack of access to safely managed water services (Auriacombe & Ukwandu, 2020; Sindane, 2020). For example, shortly after the April 1994 elections, the government established the Reconstruction and Development Programme (RDP), which made provisions for universal access to basic water services (Lewis, 2020; Sahle et al., 2019). Subsequently, several other policies were introduced to elevate poverty and narrow the inequality gap. In 1998, the government framed the *Population Policy of South Africa*, which according to Nnadozie (2013, p. 81), "looked forward to the establishment of a society that provides a high and equitable quality of life for all South Africans" (Joshua, 2017; Snowball, Collins & Tarentaal, 2017). Indeed, during this period, the National Water Act (NWA) of 1998 was passed into law. The preamble to the Act recognises that "water is a scarce and unevenly distributed national resource which occurs in many different forms which are all part of a unitary, inter-dependent cycle (Southern African Legal Information Institute, 2014, 1). Moreover, the Act makes the following observations:

- Recognising that while water is a natural resource that belongs to all people, the discriminatory laws and practices of the past have prevented equal access to water and use of water resources;

---

<sup>17</sup> On 27 April 1994, South Africa held its first democratic elections that included all racial groups. The African National Congress won the election and Nelson Mandela became the country's first democratically elected president (Angier, 2017; Jung & Shapiro, 1995).

- Acknowledging the National Government's overall responsibility for and authority over the nation's water resources and their use, including the equitable allocation of water for beneficial use, the redistribution of water, and international water matters;
- Recognising that the ultimate aim of water resource management is to achieve the sustainable use of water for the benefit of all users;
- Recognising that the protection of the quality of water resources is necessary to ensure the sustainability of the nation's water resources in the interests of all water users; and
- Recognising the need for the integrated management of all aspects of water resources and, where appropriate, the delegation of management functions to a regional or catchment level to enable everyone to participate; (Southern African Legal Information Institute, 2014, 2).

While this policy seemed progressive in theory, inequalities in water services persisted, and resource-poor communities continued to carry the legacy of discrimination, which limited their access to essential basic services. To make matters worse, in the late 1990s, the ANC-led government adopted a neoliberal programme referred to as Growth, Employment and Redistribution (GEAR)<sup>18</sup> as its model for basic service delivery. Adopting this market-led approach to basic service delivery contributed to the continued spatial imbalances, the continuation of colonial-apartheid segregation, and the stark inequalities prevalent across South Africa (Mphambukeli, 2019). Gukurume (2012) argues that rural areas continued to be perpetually overlooked in the delivery of basic social services and amenities under this programme. Moreover, this programme demanded that households, including low-income households, should pay for water services (Gukurume, 2012). Therefore, even in the post-democratic period, observable inequalities and socio-economic discrimination continue to frame the service delivery landscape of South Africa. The impact of apartheid legislation and post-apartheid market-oriented policies have done little to bridge inequality and provide safely managed water and other social services to historically resource-poor rural communities. This legacy has created several challenges for rural communities.

---

<sup>18</sup> Policy introduced to address unemployment and poverty by removing exchange controls and privatising trade for economic growth (Masipa, 2018 & Maleka, 2020).

### **2.3.3 Water Service Conflicts in Resource-Poor Rural Context**

In democratic South Africa, water has become a source of violence (Breakfast, Bradshaw & Nomarwayi, 2019; Webster, 2017; Wessels et al., 2019). The politics around water access are often characterised by scarcity, and as a result, there continues to be conflict over the allocation of water. The greater the scarcity of water, the more intense (and even fatal) the conflict surrounding its access (Adnew Degefu et al., 2020; Dos Santos et al., 2017; Prosper, 2020). To demonstrate, on 13 April 2011, the televised fatal shooting of 33-year-old community activist Andries Tatane by the police, who opened fire on unarmed protesters in the Meqheleng semi-rural community, led to a shutdown of the small cherry-farming community of Ficksburg, in the Free State Province (Shoba, 2020). The protests were in response to the country's perpetual inequality between different spatial spaces and the lack of water service delivery in resource-poor communities.

Local governments' inability to effectively respond to communities' water needs has already become a major cause of service delivery protests. Moreover, the lack of safely managed water services has subsequently become a source of competition and more recently, violent conflict in resource-poor communities around the country (De Juan & Wegner, 2019; Du Plessis, 2017; Jankielsohn, 2012). In conjunction with public perceptions of poor water quality, water outages have resulted in increasing frustration among the public; culminating in several service delivery protests that peaked in the early 2000s (Grant et al., 2019; Weaver et al., 2017). As noted above, service delivery protests in the country are continuously signified by the violence that causes injuries and even death.

Although the death of Andries Tatane did not put an end to the water-related challenges in the country, it did raise public and international awareness about inadequate access to water in South Africa's most needy communities. It further signaled the rising level of public frustration about the lack of essential water services in communities. Following Tatane's fatal incident, several water-related protests have ensued across the country. In one notable case, Christina Manqele took her local municipality to court for violating her right to accessing safely managed water. The incident occurred when the city disconnected her water supply when she failed to make payment in one semi-rural community near Durban in KZN (Angel & Loftus, 2017). This case sparked interest from social activists and community members, which resulted in the

rise of protest action against the state of water service delivery and constitutional rights violation (Akinboade, Mokwena & Kinfack, 2013).

Several scholars have made the argument that the Constitution's recognition of water as a human right has failed to improve communities' access to safely managed water (Bond, 2014; Rodina, 2016; Karunanathan, 2019). Moreover, this failure has resulted in converting social movements from effective resistance platforms to those of violence and tension. Bond (2014) argues that the right to water facilitates inequality as its implementation is grounded in property rights. As a consequence of the apartheid regime, poor black people, mostly in rural areas, have no access. To remedy their marginalisation from safely managed water, rural communities turn to unsafe sources that compromise their health and wellbeing. To demonstrate, in the early 2000s a cholera outbreak in the rural communities of KZN, which resulted from individuals drinking unsafe and contaminated water, led to the infection of over 14 000 people and many deaths (Hoque & Worku, 2005). These examples, and many others beyond the scope of this study, demonstrate the impact of water-related challenges on resource-poor rural communities. Challenges that sometimes lead to fatal conflicts.

## **2.4 The Marginalisation of Rural Communities from Safely Managed Water Services**

The marginalisation of rural communities from accessing safely managed water services is attributed to various factors. It is beyond the scope of this study to discuss all of these factors; however, in this section, I draw focus on critical factors associated with this neglect. This is to illuminate why rural communities continue to face neglect in accessing essential services, which renders rural populations water insecure. Therefore, while the right to water is recognised globally and in South Africa, rural communities continue to face marginalisation, which infringes on their right to safely managed water.

### **2.4.1 Poor Infrastructural Development and Maintenance**

Rural communities face tremendous infrastructural neglect. Available literature reports that investing in the development and maintenance of infrastructure increases the prospect of rural communities' access to safely managed water services (Aleixo et al., 2019; Hope et al., 2020; Machado et al., 2019). Yet, in several global south countries, including those in sub-Saharan Africa (SSA) broadly, and South Africa specifically, there are significant challenges in water

infrastructural development and maintenance (Griggs, 2019; Truslove et al., 2019). For example, in SSA, over 600 000 borehole hand pumps are installed across rural communities each year, but only one-third of them are functional (Miller et al., 2019; Onda, LoBuglio & Bartram, 2012). The lack of water infrastructure in rural communities is mostly associated with the non-maintenance of this infrastructure (Chima, 2018; Ogueri, Mgbada & Ogueri, 2017). Likewise, among rural communities in Ghana, the neglect of water infrastructure reduces access to safely managed water (Marks et al., 2018). Therefore, the lack of sustainable water infrastructure is a great hindrance in providing reliable access to safely managed water.

In instances where infrastructure is available and functional, studies show that communities have access to reliable and safe water. Empirical work by Aleixo et al. (2019), which explored how a rural community in Brazil gained access to water before and after the implementation of water infrastructure, found that the construction of functional water infrastructure reduced water collection trips, especially for women and children. The availability of water infrastructure increased access to safely managed water supply and reduced victimisation that women and children encountered while making the trip to collect water. The authors further observed positive changes in women and children, which affirm that operational water infrastructure is significant in providing reliable access to water services for rural communities. Adequate operation and maintenance are crucial to obtaining satisfactory services from investments over the infrastructure's planned lifespan. In South Africa, infrastructural maintenance across the country is supposed to be assigned seven percent of the total operational budget. However, that is not the case since less than five percent is allocated to infrastructural development and maintenance (Hofstetter, Bolding & van Koppen, 2020).

The lack of infrastructure denies rural communities the opportunity to experience the full benefits of accessing safely managed water services (Bulled, 2017; Botha, 2020). Infrastructural development is critical for the socio-economic development of communities and individuals. To illustrate, in Meeks' (2017) study that explored improvements in water technologies, the author found that water infrastructure reduced the distance travelled to access drinking water sources and the time spent maintaining the home in terms of cleaning and other profit-making activities. Instead, there is more time available for productive activities such as crop farming. The increase in productivity as a result of water access suggests that having water closer to the household saves time, with approximately 170 minutes less per day spent on home-based productive activities (Meeks, 2017). In farming households, the less time spent

collecting water allows for more time to be spent in agricultural production which increases household income generation (Meek, 2017).

It is crucial to acknowledge the significant role played by adequate water infrastructural development. Not only does it provide access to reliable and safely managed water, but it also acts as a medium for socio-economic development and livelihood sustainability. With less time spent on water collection, more time can be spent on income-generating activities, increasing household income and the overall economic status of a household and the community (Bisung & Elliott, 2018; Brewis et al., 2020). Likewise, the lack of or inadequate access to water infrastructure can threaten livelihoods and the overall socio-economic wellbeing of the household and the community.

#### **2.4.2 Lack of Financial Capacity at the Municipal-Level**

Rural municipalities often have minimal and over-stretched budgets for running operations for their communities (Maimuna & Kidombo, 2017; Munanura, 2019). This is because rural communities do not generally participate in many revenue-generating activities that are often experienced in urban communities. Financial constraints in rural communities limit their service delivery scope, including the delivery of essential water infrastructure and services (Al'Afghani et al., 2019; Humphreys, van der Kerk & Fonseca, 2018). For example, one study examined service delivery effectiveness in rural Limpopo, South Africa, and found that inadequate financial support from municipal revenue streams undermined the effective and efficient delivery of essential services, mainly water services (Ndebele & Lavhelani, 2017).

Indeed, inadequate local government finances lead to meagre infrastructural development and poor socio-economic development (Adeoti & Fati, 2020; Tortajada, 2016). A major hindrance in rural water service delivery is consumers' inability to pay for services (Pilusa & Kanyane, 2020; Rautanen & White, 2018). Payment for services is a problem because of high unemployment rates that persist in rural areas (De Kadt & Lieberman, 2020; Mangai, 2017; Rautanen & White, 2018). Non-payment for water services becomes a challenge for the local governments and/or water service authorities as consumers' payment for services serves as cost recovery money to pay for other service provisions.

Globally, access to safe drinking water will require an investment of over US\$140 billion in capital expenditures to meet the targets set by the United Nations Sustainable Development Goals (Alaerts, 2019; Misra & Kingdom, 2019). The World Bank estimates that recurring operations and maintenance costs for basic water and sanitation (WASH) services will rise from about US\$4 billion to over US\$30 billion per year by 2030, significantly outweighing capital costs for basic WASH services. Self-sufficiency implies that tariffs (and taxes) are expected to play an important role in covering the full (life cycle) costs of water service provision. However, as water service provision is considered a public good, governments often feel pressured to keep tariffs low (Neto & Camkin, 2020; Omar et al., 2017).

Many water service providers struggle to raise sufficient funds to cover operating and maintenance (O&M) costs and create a surplus that could potentially be used to mobilise commercial borrowing for future expansion or asset renewal (Hutchings et al., 2017; Libey, Adank & Thomas, 2020; Owen, 2020). It is further emphasised that “utility performance and tariff affordability also affect households' willingness and ability to access and pay for water services. Poor service levels lead to lower revenues, and increasing tariffs lead to lower usage, a double negative feedback loop that can be hard to escape, thus preventing investments in improved services” (Libey et al., 2020, p, 11).).

Despite South Africa's efforts to provide free water with the Free Basic Water Policy for the first 6000 litres per person monthly, households are still unable to pay for water (Loftus, 2005; Peters & Oldfield, 2005). For example, in Peters & Oldfield's (2005) study, researchers found that using cost recovery as an approach to service delivery was unsustainable. The system was framed such that after the depletion of water, the consumers would pay for the additional water used. In this way, the revenue generated would go towards providing more services to communities (Dugard, 2008). Unfortunately, consumers' inability to afford additional water use renders the reliant on the possible payments unsustainable; thus, the failure of the cost recovery approach and no finances for service delivery (Nkabane, 2019; Tivavone, 2018).

Klingelhöfer, Erasmus & Mayo (2015) argue that although municipalities are not primarily profit-making organisations, they still need to have financial assets that will make it financially feasible to provide services sustainably. These scholars conducted a comparative theoretical analysis consisting primarily of legislation and policy documents between South Africa, New Zealand, and Australia to identify similarities and differences in the public sector financial

planning legislation. They found that all three countries experienced financial differences stemming from inefficiencies in their respective inter-governmental assignments. Similarly, Tong, Fan & Niu (2017) argue that water service delivery is of low quality in the rural areas of underdeveloped countries due to significant financial investment required for purchasing and delivering equipment necessary to provide safely managed water supply. To further complicate issues, local governments might not be able or willing to pay all costs of producing and distributing the water (Acey et al., 2019; Enqvist, & Ziervogel, 2019). Thus, this highlights the importance of financial capacity at the municipal level to carry sustainable and safely managed water services in a resource-poor rural context.

### **2.4.3 The Geographic Remoteness of Rural Areas**

Geographically, rural communities, particularly in South Africa, are often located in areas that are remote and hard to access, which makes them subject to isolation and deprivation from basic services and resources (Adeyeye et al., 2020; Sewell et al., 2019; Vitale, Brovarone & Cotella, 2020). Moreover, urban areas' remoteness and distance have also been a significant constraint to service delivery in rural communities (Foster et al., 2018). Likewise, because they are often far from urban areas, rural areas have difficulty attracting and retaining skilled service providers (Brinkerhoff, Wetterberg & Wibbels, 2018). Brinkerhoff, Wetterberg & Wibbels (2018) found that in remote rural areas, residents are less likely to have access to basic services provided by the government. There is a visible absence of government interventions the further away a rural community is to urban centres (Adeyeye et al., 2020). Indeed, as Humphreys, van der Kerk & Fonseca (2008) argue, rural communities are less likely to receive essential basic services the further their distance is from urban areas. O'Reilly, Dhanju & Goel (2017) add that the legacy of socio-spatial inequality in South Africa has rendered rural communities remote and difficult to access. Within this context, structural inequality is intensified by the physical and social distance, further exacerbated by high public services costs that rural residents struggle to pay. Therefore, remoteness is a significant challenge in the service delivery of safely managed water in rural areas (Foster et al., 2018; Kosec & Wantchekon, 2020).

### **2.4.4 Political Interference and Corruption**

Corruption and political interference significantly impact a government's constitutional obligation and responsibility to deliver services. For example, a South Asian study examined

the types and magnitude of corrupt behaviour concerning water services and the authors found that institutions that provide water spent over 35 percent more on construction contracts than the value of the service rendered (Davis, Camp & Coleman, 2004; Ezebilo, Odhuno, & Kavan, 2019). Further disheartening are findings that funds allocated for water services in several African and Asian countries are used to pay bribes, courting tender preferences, and providing free water services to preferred (often politically affiliated) households (Brown, 2016; Davis, 2004).

In South Africa, local government corruption has been reported in research. According to Masuku & Jili (2019), poor service delivery at the local government level is attributed to the politicisation of administrative components in municipalities. These authors report that political interference in administration disrupts efficient administrative opportunities. The politicisation of the public service means that the appointment of those in the public sector is subjected to a ruling political party (Masuku & Jili, 2019; Rakolobe, 2019). This means that political interference dictates administrative personnel's appointment at particular government departments, which in turn dictates where resources are allocated. These unlawful acts add to the strain that is already faced by rural communities and further hinders the delivery of efficient and safely managed water services (Madi, 2016; Shikwambane, 2017).

To illuminate this point, the 2018 forensic audit report by the office of the Auditor-General of South Africa (AGSA) found that only 33 out of 278 municipalities (13 percent) received a clean audit. The report confirmed a disturbing R28 billion in unaccounted municipal expenditure (Makwetu, 2020). In a 2020 follow-up report, AGSA lamented the increased irregular expenditure from South African municipalities, which amounted to over R32 billion. The KZN province reported the highest amount of irregular expenditure (R6.5 billion) than any of the other South African provinces. This emphasizes the level of corruption in the country and how it is inevitably affecting the delivery of basic services to South African citizens.

While KZN reports the highest number of irregular expenditures, the Limpopo province provides an example of corruption relevant for analysis in this study. Reportedly, the province is characterised by high levels of corrupt practices such as asset theft, mismanagement of funds, irregular awarding of tenders, and non-compliance with service delivery standards (Makwetu, 2020; Mafunisa, 2007). Further troubling are reports of unqualified public officials' appointments, which illustrates an ever-increasing prevalence of nepotism and corrupt

practices (Munzhedzi, 2016; Sepuru, 2018). The AGSA (2020) report found that 17 executive directors in various municipalities in Limpopo were trained in professions that had no significant bearing to municipal management. One of those 17 directors held a secretarial diploma, while another one who was appointed as a municipal chief financial officer had only an office administration qualification. The rest of the appointees had only a Grade 12<sup>19</sup> as their highest education achievement and no relevant work experience (Mafunisa, 2007). Consequently, such corruption and nepotism within local governments have had devastating implications for rural communities in receiving adequate service delivery, particularly access to safely managed water services. In this regard, corruption and nepotism are major challenges both in the African continent and South Africa. Available literature relates setbacks in service delivery in rural communities because of corrupt practices that directly impact poor and under-resourced communities (Akokuwebe & Adekanbi, 2017; Mafunisa, 2007; Molina et al., 2017).

#### **2.4.5 The Focus on Urban Development**

Globally, water services and access are relatively better in urban communities when compared to their rural counterparts (Dos Santos et al., 2017). As highlighted in the previous chapter, just over half of rural households have access to safely managed water supply. This is significantly low compared to the over 90 percent of urban households that have access to such services. Lamenting this finding, Hope et al. (2020) argue that years of efforts and investment into rural water supply have yielded minimal gains. Available literature suggests that there is a general preference for the development of urban areas to the neglect of rural communities (Clarck, 2017; Noring, 2019). Rural development researchers have attributed urban areas' preference to the economic potential of urban centres (Farrell, 2017; Peng et al., 2018; Potter & Unwin, 2017). Moreover, scholars add that investors often fund the development of urban areas because of the potential financial returns they might receive through a growing urban economy (Bosworth & Venhorst, 2018; Clarck, 2017; Noring, 2019; Tjebana & Rachidi, 2018).

Hope et al. (2020) further maintains that due to the high costs of developing and maintaining water infrastructure and the fact that rural communities often cannot afford the price of water, investment in the rural water supply is thought to make no economic logic for developers. Due to the potential of financial gain and development through water-related industrialised

---

<sup>19</sup> Grade 12 is equivalent to a high school certificate.

activities, urban water services remain a priority (Kane, 2017). In this context, urban communities undeniably receive the benefits of water access investments compared to rural areas. There is also a recognition among health geographers that poor water quality causes disease outbreaks in rural areas, which inevitably reduces labour force participation in economic growth activities (Levengood et al., 2018). For instance, scholars report that urban households are more likely to receive and use safe drinking water sourced from reliable piped taps when compared to rural households (Marks et al., 2020; Thomas et al., 2020; Tomaz et al., 2020). Indeed, because of their economic viability and investment opportunities, urban areas attract and enjoy better services, including safely managed water services, in comparison to rural areas.

#### **2.4.6 Climate Change**

Climate change is one of the most critical challenges facing our planet, and it has had a significant impact on water availability (Herrera-Pontoja & Hiscock, 2015). This impact is more apparent in arid and semi-arid<sup>20</sup> regions of the world, where water scarcity, increasing population, and the experience of recent droughts have led to famine, loss of livestock, crop failure, rural-urban migration, and even death (Herrera-Pontoja & Hiscock, 2015). To date, water scientists have made projections about the future impact of climate change on water availability by arguing that there will be more frequent and less predictable high and extreme temperatures, weather conditions that will affect the availability and distribution of rainfall, river flows, and groundwater, and deteriorate water quality (Herrera-Pontoja & Hiscock, 2015; Konapala et al., 2020). These scholars have subsequently advised governments to adopt effective and sustainable water management strategies in fear of a future that is water insecure.

Water scarcity resulting from climate change could negatively impact economic growth, encourage rural-urban migration, and cause a lot of conflicts (World Bank, 2021). According to the World Bank (2021), water scarcity aggravated by climate change could cost some regions of the world up to 6% of their GDP due to water-related impacts on agriculture, health, and income. Scholars argue that climate change is accompanied by decreased blue water<sup>21</sup>

---

<sup>20</sup> The difference between arid and semi-arid is that arid refers to a dry area with very little to no rain whilst semi-arid refers to a place or climate that is reasonably dry but receives more rain than arid regions (Verheye, 2009).

<sup>21</sup> Blue water is the water in our surface and groundwater reservoirs. In irrigation agriculture, blue water is abstracted to maintain transpiration. Soil is a storage reservoir for the blue water which has been added through irrigation from blue-water reservoirs (Clothier, 2010).

resources and an increase in green water<sup>22</sup> resources (Serur, 2020; Nouri et al., 2020 & Zhang et al., 2020). This difference results from warming temperatures, leading to greater evaporation that increases green water (Badou et al., 2017; Badou et al., 2018; Ellison et al., 2017; Veettil & Mishra, 2016). Therefore, a decrease in blue water resources means less water available for municipal, domestic, aqua, and agricultural and industrial uses.

Water shortages can also be attributed to rainfall variability in the different parts of a region. Meissner *et al.* (2018) report that although parts of the world might receive a sufficient amount of rainfall, South Africa is a semi-arid country, and one of the 30 most dry countries globally. The country receives an annual average rainfall of less than 490 mm-500 mm. This is significantly lower than the world average of 1 020 mm-1 033 mm per year for most countries (Meissner et al., 2018; Rodina, 2016). Of this small amount, only nine percent of the annual rainfall ends up in surface water storage systems (e.g., rivers, lakes, ponds) and five percent is collected as groundwater aquifers, while the rest flows as run-off (Meissner et al., 2018).

To worsen the situation, freshwater supply is threatened by population growth, slow economic development, and land-use changes (Cheng et al., 2018; Twisa et al., 2020). According to Calow et al. (2010), 20 percent of the earth's land surface experienced drought at any one time. However, this number has since increased to 28 percent and is expected to reach a high of 35 percent by the year 2030. Baudoin et al. (2017) argue that extreme weather events, such as droughts, are often triggered by El Nino Southern Oscillation (ENSO). That is, when the warm sea waters move into the eastern tropical and the Pacific Ocean, returning at least once in any ten years. This extreme weather event has detrimental effects. For example, the drought that hit South Africa between 2015-2017 affected the economy and local communities, creating tremendous pressure on the nation's agro-economic system, including increased unemployment and increased debt services for farming enterprises (Baudoin et al., 2017). Moreover, the water supply was affected by dam levels dropping by over 70 percent from their average level. Within this context, resource-poor rural communities suffered the most. For example, results from Nyiwul's (2021) study show that due to climate change, a slight decrease in rainfall leads to a large reduction in river water volumes, threatening water supplies for rural communities that already suffer from limited resources. This, in turn, affects food production and water security.

---

<sup>22</sup> Green water is the water transpired by the plant that comes from rain water stored in soil. Soil is a storage reservoir for the green water that falls from the sky (Clothier, 2010).

Thus, climate change has proven to be a challenge that contributes to rural communities' water insecurity.

## **2.5 Challenges Presented by Limited Access to Safely Managed Water in Rural Contexts**

Rural communities in so-called developing countries continue to lag from accessing safely managed water (Hope et al., 2020). The deprivation of any community from accessing safe and reliable water has detrimental effects on their livelihoods and socioeconomic viability (Komarulzaman, Smits & de Jong, 2017). These challenges impact health and wellbeing, and the socio-economic prospects of communities, households, and individuals. It also fuels gender inequality at both the community and household levels.

### **2.5.1 Water, Health and Wellbeing**

Limited access to safe drinking water, quality sanitation facilities, unhealthy hygiene practices, and improper water management practices can promote water-borne diseases (Emenike et al., 2017). Rural communities face many significant health challenges, such as diarrhoea, and cholera that rural communities (i.e., households and individuals) when they have limited or no access to safely managed water sources and/or are cut out from accessing water services. A recurring theme across studies is the prospect and burden of disease among rural communities because of their marginalisation from essential water services. The most significant challenges to world health have been the prevention of water-related diseases such as the Guinea-worm disease<sup>23</sup> (also known as Dracunculiasis), cholera, typhoid, malaria, hepatitis A and diarrhoea (Tumwine et al., 2002; Mills & Cummin, 2016). The WHO Drinking-Water Fact Sheet, released on 14 June 2019, states that 2.2 billion people in rural communities are without access to safe water sources and use drinking water contaminated with faecal matter. Illnesses from drinking contaminated water are estimated to cause 485 000 deaths each year (WHO, 2019b).

These water-related diseases, while preventable, are often prevalent in remote rural communities where there is no reliable municipal water service delivery and communities rely on often stagnant, largely contaminated water sourced from low streams, ponds, lakes, and

---

<sup>23</sup> Guinea-worm disease is a parasitic infection by the Guinea worm. People become infected when they drink unpurified water that contains water fleas with guinea worm larvae. For more on the Guinea-worm disease, see work by the Centers for Disease Control and Prevention (Grigg, 2019).

others (Dankwa, Fuseini & Dankwah, 2018; Lewis, n. d). For example, annually, over 400 000 people die of diarrhoeal-related illnesses due to drinking contaminated water from unsafe sources (WHO, 2019b). Within this context, scholars argue that limited access to safely managed water supply further diminishes people's dignity, compromises their health, and violates their rights (Armah et al., 2018; Neves-Silva, Martins & Heller, 2018).

Adequate and safe water and sanitation services are essential not only to reduce the enormous burden of diseases such as diarrhoea, respiratory infections, and malnutrition but also for the control and elimination of many neglected tropical diseases. The WHO (2019a) & WHO (2019b) report that 54–65 percent of all deaths due to diarrhoea in low- and middle-income countries are attributable to unsafe drinking water, lack of proper sanitation, and hygiene. A further 829 000 deaths annually are caused by water-borne illnesses. Further, corresponding findings from Prüss-Ustün et al. (2019) show that from the 1.4 million diarrhoeal recorded cases in 2016, over 400 000 led to deaths. Likewise, a similar finding is reported by scholars in the rural areas of Nigeria, where water insecurity drives individuals to use contaminated water sources that spread disease and increase mortality rates (Peter & Umar, 2018). Another prevalent water-related disease reported in the literature is Trachoma (Garn et al., 2018; Gebretnsae et al., 2020; Phiri et al., 2018). This is a chronic and contagious eye disease that causes blindness (Gupta et al., 2017; Oswald et al., 2017; WoldeKidan et al., 2019). Trachoma is a significant public health problem in resource-poor rural communities. Worldwide, 190 million people in 41 countries live in areas endemic for trachoma (WHO, 2019c). The disease is caused by poor access to domestic water supplies and limited access to and use of safe latrines or toilets.

Health problems related to a lack of access to safe water sources affect the socio-economic wellbeing of individuals, households, and communities (Howard et al., 2020; Nadeem et al., 2020; Zhou, Deng & Wu, 2017). According to the WHO (2017b), loss of productivity to water and sanitation-related diseases costs many countries up to 5 percent of their GDP. Health costs associated with water-borne diseases represent more than one-third of poor households' income in Southern Africa (Bradshaw & Steyn, 2001; Hariharan, 2019; WHO Regional Office for Africa, 2019; Odwori, 2020). Furthermore, in global south countries, and in instances where individuals seek healthcare services to treat water-related diseases. Literature reports a 22 percent increase in opportunistic infections and fatalities in rural healthcare facilities (such as clinics) because these facilities do not have reliable and life-saving water needed by patients

(WHO, 2019c). The WHO (2019c) reports that over 21 percent of healthcare facilities in global south countries do not even have access to sanitation services.

Literature also points to psychosocial<sup>24</sup> and mental health-related challenges where water is scarce and in cases where municipalities do not deliver. For example, Workman and Ureksoy's (2017) research measured the psycho-emotional and psychosocial effects of food and water insecurity, also emphasizing that water insecurity was associated with increased anxiety and depression. Psychosocial and psycho-emotional effects were linked to households being forced to live in unclean conditions and having to use water sparingly (Workman & Ureksoy, 2017). Aihara et al. (2015) conducted a quantitative study investigating the effects of a household's water insecurity scale on psychological distress in Nepal and noted that the participants found it stressful to perform household duties. Moreover, the participants reported a loss of opportunity for social interactions resulting from walking long distances to fetch water. Bisung and Elliot (2016) argue that mental health challenges arise from the persistent stressful experiences about water collection and use. The psychosocial health impacts related to water are more than feelings of physical fatigue or inability to carry water. Instead, frustration and stress are also associated with the burden of collecting water, negotiating access to water at both the household and community levels, the cost of purchasing water from vendors, and not having enough water available to use daily (Bisung & Elliot, 2016; Brewis et al., 2019). Several other scholars suggest that limited access to safely managed water causes anger, worry, anxiety, and increased conflict in both households and communities (Stevenson et al., 2012; Stevenson et al., 2016; Wutich & Ragsdale, 2008; Wutich, 2009). What is further disconcerting are reports of physical and sexual assaults during trips to fetch water from sources that are a distance from households (Stevenson et al., 2016). According to Stevenson et al. (2016), the possibility of sexual or physical assault causes fear, panic, and a daily sense of anxiety among those responsible for collecting water. If water access continues to be a recurring challenge, health will inevitably continue to be affected.

---

<sup>24</sup> Psychosocial health refers to individual's perceptions of- and response to social and environmental conditions and status and how they react to their current and anticipated living conditions (Bisung & Elliot, 2016).

### **2.5.2 Water Insecurity as a Socio-economic Challenge**

Water plays a vital role in enhancing social and economic development in rural communities (Everard et al., 2018; Tantoh & Simatele, 2017). For example, water is an important resource for farming activities such as crop production, livestock farming, and other non-farming activities such as manufacturing and construction (Afodu et al., 2019). Yet, many rural communities still do not have safely managed water. Literature suggests that water scarcity disrupts many important activities and threatens the economic stability crucial for rural livelihoods (Adams, Zulu & Ouellette-Kray, 2020; Damania et al., 2017; Kunene, 2018). For rural areas, where most people are dependent on natural-based resources, the lack of reliable access to water can pose a serious threat to the overall quality of life (Merrey et al., 2005; Hishe, Lyimo & Bewket, 2019). Research has further pointed that access to a safely managed water supply is central for addressing some of the world's development problems. Which lies within the broad spectrum of food security, poverty reduction, rural and economic development, human health, and human rights (Chidya, Mulwafu & Banda, 2016; Roekmik, Chua & Baskaran, 2018; Sinyolo, Mudhara & Wale, 2014b; Birkenholtz, 2016). Ncube's (2018) study on the impact of water supply challenges found that smallholder farmers in under-resourced rural communities were unable to purchase irrigation systems. The lack of purchasing power for irrigation systems forced smallholder farmers to depend on municipal water supply for irrigation. However, this was not reliable as water delivery remained unattainable (Ncube, 2018).

The lack of water supply further takes away time spent on productive activities by lengthening water collection times. The average time spent per trip for collecting water in rural communities is estimated to be between 23-60 minutes in both Sub-Saharan African and Asian countries (United Nations, 2010). This suggests that less time is spent on irrigating crops, which in turn reduces crop yield. Empirical studies report that a reduced crop yield harms household food security (Mesa-Jurado et al., 2012; Biggs et al., 2015; Graham, Hirai & Kim, 2016). Inevitably, the lack of water has effects on a community's economic development prospects. For example, local commerce declines, incomes go down, tax revenues decrease, population declines due to lack of employment opportunities. Rural populations decrease dramatically as people migrate to urban areas in search of better opportunities (Global Risk Insights, 2016). Finally, water insecurity undermines rural economic and social livelihoods.

### **2.5.3 Gender and Access to Safely Managed Water**

Gender is a significant issue to unpack where access to safely managed supply is concerned. Buechler & Hanson (2015) reports that women, when compared to men, often have poor or no access to safely managed water supply. Caruso et al. (2015) argue that women are disproportionately affected by poor access to safely managed water supply, despite being the primary water collectors. Moreover, the improvements in global water access still have not proven to benefit women. This is detrimental for rural women since it is them who are expected to collect water and perform activities that require water, such as cooking, cleaning, and taking care of their households (Fisher, 2006; Van Houweling, 2016; Collins et al., 2019). In recognition of women's role regarding water collection, the United Nations (UN) established a Convention of Elimination of all Forms of Discrimination against Women in 1979. This statement declares that all countries shall ensure that women in rural communities enjoy the right to adequate living conditions.

In response, some countries in Latin America and the Caribbean formulated and implemented public policies to assist women's access to land and other natural resources such as water (Bárcena et al., 2017; Gheuens, Nagabhatla & Perera, 2019). However, in some global south countries, including South Africa, this right is yet to materialise (Loftus, 2005). Unfortunately, the issue of access to safely managed water supply in rural communities reveals gender inequalities that cause harm and compromises women's health and wellbeing (United Nations Water, 2018).

Studies report that the average distance women in Africa and Asia walk to collect water is six kilometres (Olusa & Olujimi, 2020; Otera, 2013). The distance travelled raises great concern because women become vulnerable to various crimes, abuse (including gender-based violence), and maltreatment in communities without water services (Soyapi, 2017). For example, where water supply is absent and alternative water sources are a distance away from the household, women face the risk of experiencing physical and sexual assaults on their way to collecting water (Anwar, Sawas & Mustafa, 2020; Graham, 2016).

Caruso et al. (2015) report that water collection exposes women and girls to sexual harassment. In rural India, two adolescent girls were raped and hanged, returning from collecting water from a borehole hand-pump (Caruso et al, 2015). Thus, limited access to water

and sanitation facilities increases the risk of sexual violence and assault against women and girls (Barchi & Winter, 2020; Kayser et al., 2019; Pomells et al., 2018). In one study that examined women's psychosocial distress to water insecurity and distance from water sources in Ethiopia's rural communities, participants expressed a fear of collecting water from rivers and dams due to the risk of sexual assault (Stevenson et al., 2012). Again, ethnographic evidence from a study that examined gender differences in water carrying and water access among women in 44 African countries affirms that women experience sexual assault during water collection (Sorenson, Morssink & Campos., 2011). In a South African study that examined violence experienced by women who collected water for their households, the researchers found that women faced an increased risk of sexual assault (Gibbs et al., 2020; Root, 2020; Wrisdale et al., 2017).

Along with the threat of sexual and physical assault, women have specific hygiene needs, especially during menstruation and pregnancy, which requires easy access to a water source (UN Water, 2018). According to United Nations Department of Economic and Social Affairs [UNDESA] (2014), the basic requirement for a lactating woman engaged in even moderate physical activity is eight litres of clean and safely managed water per day. If there are no water sources near their households, women walk long distances to collect the water. Collecting water is a time-consuming endeavour that reduces time spent on productive activities such as food-gardening, livestock farming, and craftwork, among others (Van Houweling et al., 2012; Zondo, 2017).

Women and girls are generally primary users and collectors of water, especially in developing countries (Geere & Cortobius, 2017; Tong et al., 2017; Sarkar, 2020). Household duties such as cooking, cleaning, washing have often been women's responsibility, and these activities need water (Sorenson et al., 2011). Tong, Fan, and Niu (2017) study in China's rural Wei River basin found that women consume two times more water than men. Women were also found to be the primary users of water for mainly household activities (Tong, Fan & Niu, 2017). This demonstrates that a women's role in the household is most affected by a lack of access to water sources. However, despite the significant role played by women in accessing and using water, they remain side-lined when it comes to water-related decision-making in their households and communities (Adams, Juran & Ajibade, 2018). Sorenson, Morssink, and Campos (2011) conducted a study examining the gender differences in water carrying from 44 participating countries. Findings show that women in developing countries suffer from malnutrition and iron

deficiency, and the energy consumed in fetching water tends to worsen their condition. Additional health concerns are long-term back injuries, neck pain, or other joints resulting from carrying water (Sorenson, Morssink & Campos, 2011).

Access to water becomes more limited if women are employed and have to travel to work. Stuart and Samman's (2017) study in Wukro, Ethiopia, found that women who reached home late after work did not have access to water for days at a time. The lack of water access was due to other household occupants using the water indiscriminately and leaving none for employed women. Yet, even in cases where women stayed home or were not employed, their access to water remains threatened because they might not be able to pay for safely managed water services due to their lack of a regular income and credit (Harris et al., 2017). Therefore, in a resource-poor rural context with limited or no access to safely managed water, women carry a heavy burden in collecting and using water.

## **2.6 Discussion: Towards a Conceptual Framework**

The literature reviewed in this chapter affirms several things. First, while access to safely managed and reliable water is a human right that is due to all, rural communities are left on the margins and are often denied this right. Characterised by poverty and limited resources, rural areas often struggle to access water that is safe, of good quality, in sufficient quantity and obtainable from a reliable source that is close to a household. Several factors are linked to this marginalisation. For example, the lack of reliable water infrastructure, municipal failures, corruption, limited financial resources, a focus on urban development, climate change, and a history of neglect are counted as factors that limit rural areas from accessing safely managed water. Second, given that resource-poor rural communities are water insecure, several health, socio-economic and gender-based challenges are reported in the literature. For example, studies reveal that rural individuals suffer health complications and mental illnesses such as depression, anger and shame. Indeed, when safe water is limited, individuals and households' resort to unsafe sources as an alternative.

The literature reports several, sometimes fatal, illnesses related to the consumption of unsafe and contaminated water. Moreover, the time spent collecting and storing water limits time spent on productive socio-economic activities. This further burden an already over-burdened

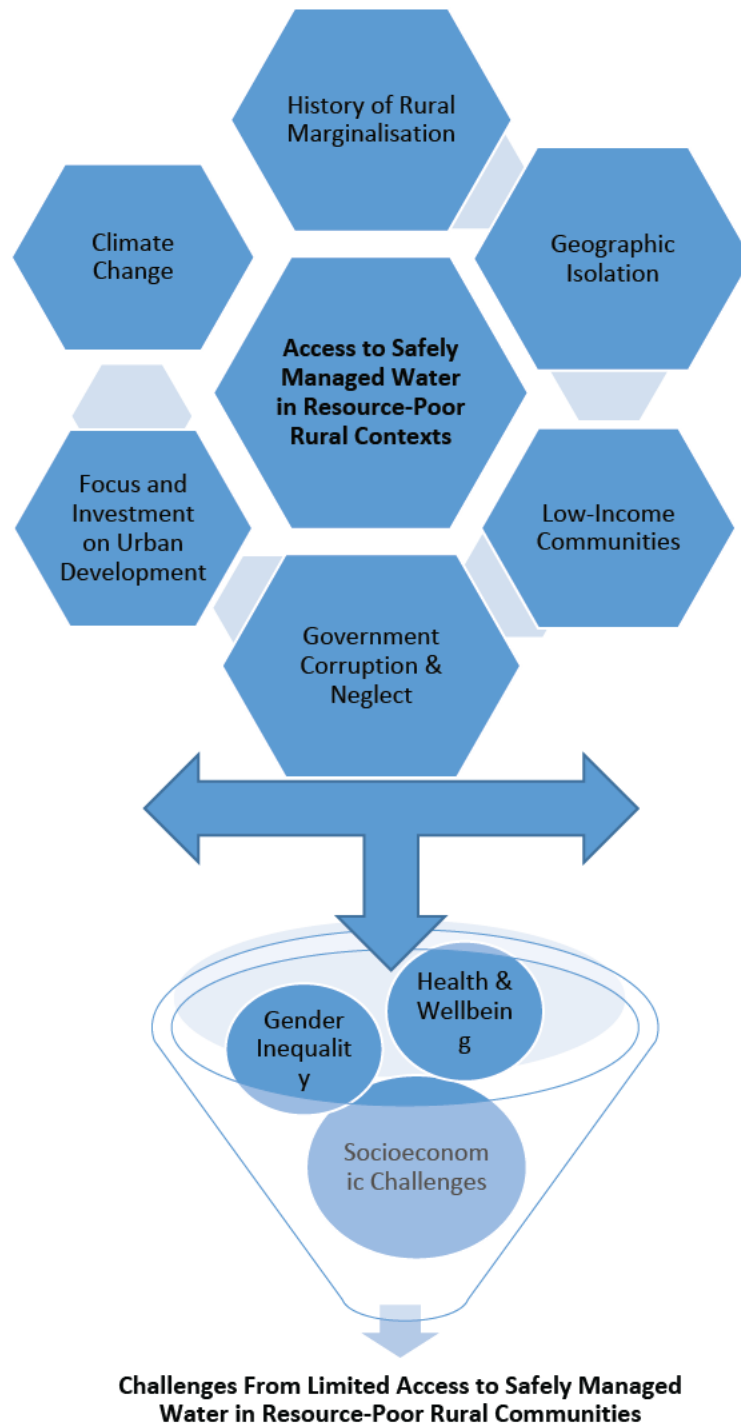
population as they spend more time securing water instead of engaging in income-generating activities. Finally, women carry the heaviest load as water responsibilities, including collecting, cleaning, and using water is often relegated to them. Further sustains and perpetuates existing gender inequalities in rural communities. What is missing from the literature are the voices of rural individuals about their daily experiences and challenges with accessing and using safely managed water. Several studies focus on quantifying rural experiences and provide estimates about the scope and nature of living in water insecure and resource-poor rural areas. Qualitative work has also limited analysis by describing rural experiences from the perspectives of researchers, who often act as a voice for rural dwellers. To extend the literature, studies need to engage individuals in rural areas so that they can describe and analyse, for themselves, their experiences. In other words, studies that seek to amplify the voices of individuals living in resource-poor rural communities about their daily experiences and challenges regarding limited access to safely managed water are still in their infancy. Thus, my study aimed to investigate how adults living in a resource-poor rural community in KZN described their daily challenges about having limited access to safely managed water and whether these challenges were gendered.

### **2.6.1 Conceptual Framework**

Emerging from the literature reviewed in this chapter is a conceptual framework for understanding limited access to safely managed water in resource-poor rural contexts. In particular, the conceptual framework is organised around two questions: *What explains rural communities' limited access to safely managed water services and supply*; and *what challenges does limited access to safely managed water present for resource-poor rural communities?* Figure 2.1 presents the conceptual framework which guided analysis in this study.

First, rural communities have a history of marginalisation and neglect that was, and continues to be, characterised by limited services and resources. The legacy of colonialism and apartheid, particularly in South Africa, has meant that rural areas are both socially and economically isolated from the economic fabric of society. Within this context, they remain sidelined from receiving safe, reliable, and easily accessible water from taps or local standpipes. Indeed, matters are made worse because rural areas are often geographically isolated from urban areas and the economic hubs necessary for socio-economic development. The geographic isolation of rural communities perpetuates the low-income cycle, which fuels rural poverty. With a very

low tax base, rural communities cannot conjure enough resources to aid the socio-economic development necessary for service delivery. Since they are low-income areas, they are limited in turning up the revenue needed to provide growth and job creation.



(Source: Author's conceptual framework in collaboration with supervisor).

**Figure 2. 1:** Limited access to safely managed water in rural contexts framework

Moreover, because rural areas remain poorly resourced and lack basic services, they often do not have the necessary infrastructure for providing safely managed water. Mainly because rural communities are low-income areas that rely mostly on government interventions. Importantly, rural communities, particularly in South Africa, are welfare communities whose livelihoods are mostly dependent on the state and the yearly, albeit low, budgets given to local municipalities. These budgets are overstretched as they need to also provide social welfare benefits in the form of grants (Chinyoka, 2018; Meissner et al., 2018; Weaver et al., 2017).

Corruption, the lack of skills, and political interference at the government/municipal level have slowed rural development; thus, slowing progress in providing safely managed water services. Irregular spending and inflated prices on the municipalities' side further marginalises rural communities from receiving services and resources. The literature reviewed in this chapter revealed the huge amount of money wasted on irregular spending and municipal corruption.

There is also a tendency to focus on urban development; with little or no attention paid to rural development. This is because urban areas are economic hubs and centres of technology, culture, and social transformation. Since urban areas attract many financial investors, they are regarded as a hub for job creation. Thus, individuals migrate from rural to urban areas in search of income-generating opportunities and a better life (Obayelu, Obayelu & Tolorunju, 2020; Lyu et al., 2019). This depletes the human resources necessary for rural development, which means rural areas continue to survive on a low tax base. As noted above, this has implications for rural development as resources are often channeled towards urban development.

Finally, climate change has also had negative implications on how rural communities' access safely managed water. The rivers and dams of which rural communities mostly rely on as their main source of water supply, or the next alternative, dry up due to drought. This presents a significant challenge as the sources of water supply for both household activities as well as productive activities such as crop irrigation, and livestock watering is threatened. Also, climate change leads to compromised water quality in that the increased temperature creates an environment where algae and other organisms grow and thrive thus reducing the water quality (Hamududu & Ngoma, 2020). Further, as Hamududu and Ngoma (2020) argued, increased temperatures and reduced rainfall patterns due to climate change led to low water availability.

Within this context, many challenges arise when rural communities have limited access to safely managed water. First, their health and wellbeing are disrupted since communities rely on unsafe and contaminated water. Several physical and mental illnesses arise from using unsafe water; moreover, these compromises both dignity and livelihood. Second, water insecurity poses a threat to the socio-economic viability of rural communities. Water is an essential human right that is needed for daily sustenance and economic activities. This is more so in rural areas, where livelihoods are mostly reliant on the natural environment (i.e., farming and livestock herding). Water, thus, is a vital resource for aiding wellbeing and supporting economic development activities. Finally, limited access to safely managed water in rural communities reinforces and perpetuates gender inequalities at both the community and household levels. Within this context, women carry the burden of sourcing, collecting, storing, and using water for their household needs. The literature revealed that these responsibilities have implications for women's health, wellbeing, and economic viability.

The study I analyse in this dissertation was at the intersection of human geography, rural geography, rural development, rural livelihoods, and gender. This area of research has received little attention in scholarship, policy, and state intervention/responses. Often, resource-poor rural communities' experiences are muddled up in the politics of national development, which often focuses predominantly on urban areas. As the literature illustrated, the experiences of rural communities are unique, and merit targeted attention. Therefore, taking all of this into cognisance, the study reported in this dissertation was premised on the assumption that rural communities are marginalised from essential resources and services. In particular, they have limited access to safely managed water, which has health, livelihood, socio-economic and gender implications.

In the next chapter, I provide a discussion of the theoretical framework which guided the study's data analysis.

## CHAPTER THREE

# FRAMING LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-POOR RURAL CONTEXTS: TOWARDS A THEORETICAL FRAMEWORK

### 3.1 Introduction

This study examined how adults living in a poorly-resourced rural community described their challenges associated with living in a community with limited access to safely managed water. Specific attention was given to the lack of piped water service delivery at the household and community level. As stated in Chapter One, the study addressed two critical research questions:

- *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?*
- *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?*

In the previous chapter, I reviewed the literature focusing on the limited access to safely managed water and its implications for resource-poor rural communities. The literature reviewed informed the conceptual framework for understanding why resource-poor rural communities experience limited access to safely managed water. The conceptual framework also located challenges associated with rural communities' limited access to safe water.

In this chapter, I outline the theoretical underpinnings of the study. First, I position myself as a researcher, starting with how I became interested in research that focuses on marginalised and resource-poor rural communities. The second section locates the study within the broader context of entitlement theory, outlining the relevance of the theory in analysing the distribution of resources in society on a meta-level. I use this to lead into the third section, which introduces gender socialisation within which the study is located. As I argue, proponents of the gender socialisation framework draw on the assumption that roles and responsibilities are socially constructed; and are assigned to individuals based on cultural beliefs and norms linked to their biological identities as either male or female. Within this context, I argue that women in resource-poor rural communities bear the burden of socio-economic responsibility when access

to safely managed water is limited. Finally, I conclude the chapter with a set of propositions that guided data analysis in the study.

### **3.2 Positioning Myself as a Researcher**

I have long been intrigued by the dynamics that drive the South African basic service delivery sector. In particular, having grown up in a remote resource-poor rural community that did not receive municipal services, I developed a personal interest in the issue of water service delivery. Having engaged with the literature on this topic and given that I studied geography and environmental sciences in the undergraduate programme, and the fact that I also had personal experiences of growing up in a community that had limited access to safely managed water, I started to become aware of the following trends.

Firstly, South Africa is a water-scarce country, which has implications for how this resource is distributed and accessed (Dlamini, 2018). As a result of this scarcity, marginalised and impoverished communities fare worse in terms of delivery and access. Secondly, water scarcity in South Africa is geographically attributed to the semi-arid nature of the country. However, over the years, as I discussed in the previous chapter, water scarcity in South Africa has also been subjected to political and socio-economic factors. For example, during both the colonial and apartheid periods, white South Africans had the economic and political power to access land that was rich in water-providing resources such as rivers and streams. It was mostly this population group that had easier access to the much-needed water supply that other race groups were largely denied (Kloppers & Pienaar, 2014; Worden, 2011). Within this context, a person's geographic location continues, even in the post-apartheid period, to determine if and how they can access water services. For example, when compared to rural areas, communities in urban areas enjoy the benefit of access to safely managed water services (Cole et al., 2018). Likewise, even in urban communities, those located in the middle- to high-income precincts have access to more reliable water services than their low-income comparators (Boakye-Ansah, Schwartz & Zwarteveen, 2019; Karimi, 2016; Memon, Ishaq & Mari, 2020). These disparities and inequalities in accessing water services ignited my curiosity and the need to understand how marginalised communities experienced this form of neglect.

My motivation to conduct this study stemmed from my experience of living in a rural community that was primarily neglected from basic services such as safely managed water

supply. This experience was further heightened during the 2015-2017 drought that plagued South Africa. During that period, even those rural communities that received communal piped water were disconnected from water services and had to find alternative water sources (Achore, Bisung & Kuusaana, 2020; Fielmua, 2020; Fielmua & Dongzagla, 2020). To make matters worse, water trucks/tankers, which were meant to support communities' access to safe water, became an unreliable source because they only brought water once every two or three weeks. A report in *The Mercury* newspaper highlighted the plight of rural communities during the drought period (Nxumalo, 2019). For example, the article noted how community members in the Nkangala rural community in KZN lamented their difficulties in accessing water from water tankers that came infrequently. One striking comment that was made by an elderly member of the community asserted that:

Some of us are old and we can't be running after the water tanker to get water. The tankers do come, but sometimes they come after [many] days. Some were given JoJo tanks<sup>25</sup>, but the water is often not clean and makes children sick" (Nxumalo, 2019, 1).

This period also revealed the presence of nepotism and political influence in service delivery in my community as well as other neighbouring areas. Although there are no media reports available, from a personal standpoint, the water truck only delivered water to households and families that were affiliated with the governing political party; this to the neglect of those families that were not active in politics. In some instances, because my community was under the authority of a traditional leader (i.e., a chief), the water truck would first deliver water to his house. If there was any water remaining, it would then distribute the rest among the community. These experiences are not unique to the community I lived in. For example, researchers report similar experiences in other South African provinces such as the Western Cape (Gagné-Acoulon, 2020). Gagné-Acoulon (2020) reported that political corruption, bribery, and nepotism influenced which communities and households received safe water during the drought.

Moreover, given the prevalence of gender inequality in rural communities, there has also been a notable gender divide in terms of access and use of water in my community (see also, Bidwell, 2020; Kyei, 2019). Often, women stand one behind the other with buckets, drums, and water

---

<sup>25</sup> In South Africa, Jojo tanks are large plastic containers that are installed and placed outside a household. The tanks are used to harvest and store rain water. Since the 2015-2017 drought, Jojo tanks have become an important resource, and a common feature, for low-income households as well as for resource-poor communities (Lebek, Twomey & Krueger, 2020).

containers to collect water. This is true even for the delivery of water by water trucks. For example, in my experience, the truck would often pass me without notice when I stood on the sidewalk to collect water. However, it always stopped for the men in my household, including my younger brother. For me, this experience painted a stark picture of the gender discrimination that is inherent in resource-poor rural communities, a form of discrimination that often goes unchallenged (Dutta, 2020; Prakash et al., 2020).

At a personal level, growing up and living in a water-insecure rural community, where water was often collected from unsafe sources, compromised many aspects of my livelihood. For example, in my household, we were commanded to use water sparingly. Using water sparingly limited personal and household hygiene, which compromised our health. To illustrate, since the frequency of baths I could take was limited, and the amount of water used for bathing and cooking restricted, children in my household developed skin rashes in reaction to the reduced quality of the water we used. Literature highlights that both reduced quality and quantity of water have implications for individual and community health (Usman, Gerber & von Braun, 2019; WHO, 2019b). Indeed, many of us at home had episodes of water-related diarrhoea, among other illnesses. It was through these experiences that my interest was ignited for hearing from individuals from resource-poor rural contexts, who also experience daily life without a reliable and safe source of daily water.

Philosophically, the methodology and design in this study were framed within the broader paradigm of humanistic geography (discussed in Chapter Four). Humanistic geography as a paradigm studies human experiences, their feelings, and emotions in the context of the geographical spaces they occupy (i.e., resource-poor rural areas) (Aitken & Valentine, 2006). Researchers who adopt this paradigm use ‘standpoint’ epistemologies positioned in the experiences, values, and interests of groups that are often marginalised, including rural communities who are excluded from receiving essential water services (McDowell & Sharp, 2014). Moreover, this paradigm is rooted in participatory research that is culturally sensitive and considers research participants as ‘knowers and actors’ in their environment (Abma et al., 2017; Bastian *et al.*, 2016; Chawar et al., 2018). For this reason, I located this study within humanistic geography to help understand the challenges and broader experiences of adults living in a marginalised resource-poor rural community in the context of having limited access to safely managed water. Located within this understanding and drawing from my positionality,

the study's data analysis was informed by two theoretical perspectives: the entitlement theory and the gender socialization framework.

### 3.3 The Entitlement Theory

The entitlement theory was first introduced by American philosopher Robert Nozick, in his 1974 book titled, *Anarchy, State and Utopia*. Nozick intended to use the theory to argue that people and groups have rights, and no one is allowed to violate those rights, no matter their power or authority. Entitlement theory was established as a critique to utilitarianism, which is the notion that an act is right as long as it brings joy to the majority of people, and thus this should be a governing principle (Waldron, 2002; Wutich et al., 2014). Nozick (1974), through his theory, opposed utilitarianism by arguing that imposing costs on individuals for the sake of benefiting many is not ethical. Therefore, he believed that entitlement was more about protecting an individuals' moral rights than doing what would favour social, political, and legal institutions at the cost of individual rights (Waldron, 1989). For example, within the context of this study, the rights of individual community members to access safely managed water precede the rights of communities to water, which is also a constitutional right in South Africa.

To support his argument, Nozick (1974) draws on three tenets of the entitlement theory, *justice in acquisition*, *justice in transfer*, and *justice in rectification*. For the first tenet, he argues that a person who acquires resources under the principle of *justice in acquisition* (obtained in a just manner) is entitled to that particular resource. This means that the conditions in which a person comes to own, for example, property or goods determines whether or not they are entitled to them (Davis, 1976; Moroni, 2018; Rossi & Argenton, 2020). Therefore, if the resource came about by permissible and title-conferring modes of action, then that person will be entitled to it. However, if the resource came about by ways of action that are not permissible (or are permitted but not title-conferring), the person is not entitled to it. For example, during the apartheid era, the white minority of South Africa acquired land and other assets by forcefully taking away from the black inhabitants of the land, thereby denying them access to resources such as water and land. In this regard, the holding of resources took place through an impermissible transfer, and thus, the white minority of the apartheid period was not entitled to it (Mphambukeli, 2019; Selane, 2019).

The second tenet, *justice in transfer*, focuses on an individual acquiring a resource from another person. For example, following the principle of justice, a person who receives property from someone else is then entitled to that property. This is also referred to as the just transfer of holdings. This idea analyses whether or not transferring a particular resource was permissible and fair (Cai, Murtazashvili & Murtazashvili, 2020; Davis, 1976; Goldman, 1976; Ju & Moreno-Ternero, 2018). To illustrate, in the context of rural communities in South Africa, and the context of this study, if an individual buys land from another person without informing or paying the land acquisition fee to the traditional leader (i.e., a chief), then that person is not entitled to that land (Cousins, 2007; Ofori, 2020). However, if the chief was involved during the transfer, then it was just.

The third tenet, *justice in rectification*, focuses on the compensation owed to victims of political or social injustices. Moreover, this third aspect focuses on the ways to deal with past indiscretions and injustices that were done by a government (Davis, 1976; Nozick, 1974; Salahuddin, 2017). Scholars recognise that even in free societies, the historical processes that led to them possessing certain resources were achieved through actions that were not conducted fairly (Jacobs, 2003; Nozick, 1974; Waldron, 2002). The history of the majority of existing resources was obtained by appropriation by way of mass murders, enslavement, fraudulent dealings, and other illicit transfers on behalf of the rich and powerful (Tarantino, 2019).

Any acceptable doctrine will require that only current victims of past injustices have access to claims to rectification compensation (Ringhofer, 2019; Teshome, 2020). For example, within the context of this study, rural communities occupied by the black African population were denied basic services and infrastructure during the apartheid era. Therefore, *justice in rectification* warrants those individuals whose population groups were marginalised to a form of compensation for past injustices that they were subjected to. These might include such things as infrastructure development, basic service delivery, and so on. Within this context, scholars maintain that proper rectification may have to take the form of immediate compensation to people who are likely to be worse off than they would have been if it was not for historical injustices that they were subjected to (Barkan, 2001; Boggenpoel & Slade, 2020; Nozick, 1974; Todes & Turok, 2018).

Analysis in this study is grounded on Nozick's third tenet, *justice in rectification*. Rural communities that accommodated black Africans in South Africa were the subject of deprivation and injustices during the colonial and apartheid periods. These communities were

also deprived of access to basic and essential services that aided livelihoods such as water, electricity, and proper sanitation. Therefore, in South Africa, *justice in rectification* requires making access to safely managed water services a constitutional right for everyone. This gives access to reliable water among communities that were historically deprived of this resource because of their racial identity (Cole et al., 2018; Kidd, 2019; Rodina, 2016). Therefore, the marginalisation of rural communities from accessing basic water services is a violation of their constitutional and human right. To this end, if a community is still not receiving access to safely managed water services in the post-apartheid period, then that community is being denied a right to which they are entitled.

In this study, the entitlement theory was used to analyse the challenges experienced by adults living in a resource-poor rural community that was marginalised during the apartheid period and continues to face neglect and deprivation from basic service delivery. Analysis in this study was further informed by the gender socialisation framework (discussed below). By weaving both the entitlement theory and gender socialisation, I was cognisant that marginalisation and injustice (historical and present) are often gendered, and thus, might likely hit hardest on women (see, for example, Davanzati, 2017; Dichabe, 2017). Therefore, as I show in the chapters that follow, this study further drew on the voices of both women and men living in a resource-poor rural community to examine gendered nuances in the challenges they experienced. In particular, the study elicited the differences in how men and women experienced and communicated about living in a marginalised rural community that did not receive safely managed and reliable water supply.

### **3.4 Gender Socialisation Framework**

The gender socialisation framework posits that gender can be framed as a product of social construction. This means that the preconceived understanding of what it is to be a man or a woman is created and reinforced through interactions with society (Hlalele & Brexa, 2015). Consequently, established social norms help determine behaviours deemed appropriate and desirable for both men and women. Throughout their lives, individuals operate within a social context where they observe and learn about gender roles and stereotypes and adopt their gender identities (Ellemers, 2018; Hentschel, Heilman & Peus, 2019; Hlalele & Brexa, 2015).

Gender socialisation is made up of two concepts, which are *gender* and *socialisation*. West and Zimmerman (2009) define gender as the social dimension of being male or female. To illustrate, the authors refer to a concept called ‘doing gender’ to suggest that gender roles in society are not innate. Rather, individuals are socialised into specific culturally permissive roles based on the anatomy that makes them either female or male (West & Zimmerman, 2009; Schilt & Westbrook, 2009). In other words, gender is a social construct that defines the collection of characteristics and behaviours culturally associated with maleness and femaleness. From birth, girls and boys are thus socialised into specific gender roles that often subordinate and assign girls into low social statuses when compared to boys.

Within this context, scholars who study masculinities have extended the notion of ‘doing gender’ to speak about ‘doing masculinity’. That is, the socially accepted behaviours of men that place them at the top of the social hierarchy and warrants them unmerited power over women (Gelfer, 2016; Narasati, 2019). Meaning that women are considered and treated as inferior to men. In turn, women are often excluded from decision-making processes in their communities and families, and their values are reduced to domestic work (Gomez, Perdiguero & Sanz, 2019; Routray et al., 2017, Williams, 2019). Therefore, gender is understood to be a manifestation of a process that assigns women and men specific roles and responsibilities, thus leading to certain forms of cultural behaviours through social interactions (Basu et al., 2017; Janssen & Busa, 2018; Martinez et al., 2019). Within this setting, society projects behaviours, beliefs, attitudes, roles, and expectations onto the individual according to their biological make-up (Oakley, 2015; Perales, Jarallah & Baxter, 2018). Thus, in several rural communities, because women occupy a low social status, they are assigned roles in their households and communities that disadvantage them (Bieteru, 2019; Carmi, Alsayegh & Zoubi, 2019).

More so, women usually take on the responsibility of conducting unpaid household work, such as cleaning and washing, that requires water (Awang, 2019; Das, Pradhan & Nonhebel, 2019). Thobejane and Florence’s (2018) investigation of the dynamics in the division of labour between married men and women within households in the rural areas of Mpumalanga in South Africa found that even when both men and women were employed full-time, women still conducted a disproportionately higher share of the housework. The authors further argued that men did not see doing housework as a contribution to bettering their lives. Moreover, men reported that doing housework challenged their authority and masculinity (Thobejane & Florence, 2018). In cases where access to reliable water is limited or non-existent, rural

communities are profoundly affected. They cannot carry out their duties, which places an extra burden on women. This leads to conflicts within the household and further intensifies gender inequality (Harris et al., 2017; Pommells et al., 2018).

On the other hand, socialisation is understood to be a process where people adopt certain behaviours that they believe are appropriate for their gender identity and are prescribed by their culture (John et al., 2017; Notshulwana & de Lange, 2019). Through socialisation, people take on beliefs, feelings, and behaviours deemed appropriate to a particular role in their society (Ely & Gleason, 2017; Kennedy & Widener, 2019; Schneider & Bos, 2019). Put together, these concepts (gender and socialisation) merge as a single idea referred to as ‘gender socialisation’ which refers to the socially determined roles, behaviours, and responsibilities imposed on individual males and females by society.

As a framework, gender socialisation highlights the social inequalities that exist between men and women (Mayeza, 2018; Heise et al., 2019). In this study, gender socialisation provided a lens for analysing gender inequalities that arise in rural communities where water services are scarce and access to safely managed water is limited. Therefore, this framework assisted me in analysing the different roles played by men and women in a context where access to safe water was limited. One study from Zambia revealed how women’s roles as caretakers of households assigned them to perform tasks such as collecting water, cooking, and washing clothes (Rajaratnam et al., 2016). Rajaratnam et al. (2016) concluded that these gendered performances stemmed from a culture of gender socialisation of women from early childhood. Indeed, women’s involvement in these tasks restricts their mobility and limits the time they spend on other economic and income-generating activities. Ultimately, gender socialisation restricts women into positions that limit their economic growth and, ultimately, financial independence (Aguene, 2020; Boateng et al., 2021; Sefer, 2020). Given this context, gender socialisation reveals how men and women have been conditioned differently in terms of their interactions with water and the perceived significance water has in their respective lives. Van Aken and De Donato (2017) argue that access to water is characterised by inequalities and is regulated by gender-differentiated roles and responsibilities, further influenced by tradition, religion, customary law, and geography as well as the historical and socio-political context.

### 3.5 Discussion: Towards a Theoretical Framework

This study engaged adults living in a resource-poor rural community to understand the challenges they faced concerning living in an area with limited access to safely managed water services. Data analysis in the study was located within both the entitlement theory and the gender socialisation framework. Using these theories to frame my analysis, in addition to developing a deeper understanding of the challenges faced by rural communities from their perspectives the study examined how adults in eMdubezweni described their challenges about living in a resource-poor rural community that had limited access to safely managed water. The study also explored gendered differences in the challenges described by the participants.

Informed by the research questions posed in the study and linked to the conceptual framework developed from the literature review, two theoretical positions informed this study's data analysis. First, the entitlement theory provided a framework for understanding how limited access to safely managed water in resource-poor rural communities is a result of injustices inherited from a legacy of the apartheid rule. The theory also highlights the failure of the democratic dispensation to rectify the impact of these historically unjust systems. Second, the gender socialisation lens provided a general framework that I used to examine the gender inequalities inherent in how water is accessed and who, between men and women, benefits the most from this access. Moreover, gender socialisation provided a framework for understanding gender differentiations in water use patterns between men and women in rural communities.

To analyse data responding to the two research questions posed in this study, two propositions for data analysis in this dissertation were formulated. The first research question that I sought to address was: *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?* Informed by the entitlement theory, this study's analysis was premised on the assumption that limited access to safely managed and reliable water services in rural communities is linked to a history of past injustices. The analysis assumed that water inaccessibility was also caused by the failure of current systems to rectify these injustices. Moreover, the analysis was further premised on the assumption that the neglect of rural communities from accessing safely managed water is a result of inherited inequities located in resource inequality and the discrimination of black African rural communities. Thus, in this study, the distribution of resources is considered as just if everyone has access to those resources.

The second research question in this study was: *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?* Linked to the gender socialisation framework, analysis was informed by the assumption that gender inequality in resource-poor rural communities plays a significant role in how water is accessed and used by men and women. In this study, gender socialisation also helped me understand how limited access to safe water has bearings on gender relations and skews water-related roles and responsibilities at the household and community levels.

Guided by these propositions, my analysis of the data focused on the challenges experienced and communicated by adults living in a resource-poor rural community with limited access to safely managed water. In particular, I examined how these adults experienced challenges related to accessing water and whether these experiences were gendered. As illustrated in this chapter, the study drew on two theoretical perspectives that provided a form of socio-economic, political, gender, and geographic analysis that helped to frame the study.

### **3.6 Synthesis**

This study examined the challenges experienced and communicated by adults living in a resource-poor rural community with limited access to safe and reliable water. In this chapter, I presented the theoretical framework which formed the basis for data analysis in the study. I opened the chapter with a section that outlined my position as a researcher studying the experiences of marginalised adults living in an equally marginalised rural community. This followed with a section that outlined the two theoretical lenses that informed analysis in the study, namely, the entitlement theory and the gender socialisation framework. Emerging from this chapter are two propositions that were used to guide data analysis in the study. In the next chapter, I outline the research design and methodology used and the research approaches employed for generating data in the study.

## **CHAPTER FOUR**

# **ENGAGING ADULTS FROM A RESOURCE-POOR RURAL COMMUNITY WITHIN THE CONTEXT OF LIMITED ACCESS TO SAFELY MANAGED WATER**

### **4.1 Introduction**

The purpose of this study was to examine how the lack of access to safely managed water impacts the daily lives of adults in eMdubezweni rural community. In Chapter Three, I provided the theoretical framework that guided data analysis in the study. In this chapter, I outlined the methodology and qualitative approach I adopted in the study. In particular, I outlined the use of photovoice as a participatory visual methodology (PVM) to address the research questions posed in the study. The Chapter is structured as follows: the next section outlines the research paradigm used to guide the methodology selected for data generation. This is followed by sections that provide details of the study site and context, the participants and the procedure for their recruitment, data generation processes, and the data analysis strategy that I employed. Finally, I addressed questions about trustworthiness and ethical considerations applied in the study.

### **4.2 Research Paradigm**

This study approached the problem of limited access to safely managed water from a rural geography perspective by drawing focus on a resource-poor rural community. Rural geography is a sub-discipline of human geography<sup>26</sup>, which studies the contemporary social, political, development, and economic phenomena ongoing in rural communities (Woods, 2009). Resulting from the use of a participatory visual approach (i.e., photovoice) as an effort to place people at the centre of geographic enquiry, the study's methodology was guided by the humanistic geography paradigm. The focus of humanistic geography is on people and their socio-economic conditions (Tuan, 1976). As a paradigm, humanistic geography gives a central

---

<sup>26</sup> Human Geography is the study of the interaction between humans and their environment, and how the one influences and affects the other (Fouberg & Murphy, 2020).

and active role to human awareness, human agency, human consciousness, and human creativity. According to Tuan (1976), humanistic geography is a framework for analysing the complexity and ambiguity of relations between people and place (humans and the environment). Tuan further argues that:

Humanistic geography reflects upon geographic phenomena with the ultimate goal of understanding [humans] and [their] condition. It is an attempt at understanding people concerning nature, their geographic location, and their feelings and ideas in regards to the spaces and the place they occupy (1976, p. 266).

The humanistic geography framework influenced all aspects of the research process, including the research questions, the methodology employed, analysis, and the dissertation's write-up. Specifically, the people-centered feature of human geography influenced the use of qualitative research methods. The participatory visual methodology (PVM) employed emphasises human agency in describing their own experiences and the meanings attached to those experiences. The methodology used tools such as photovoice, in-depth interviewing, and focus group discussions (FGD). These participatory approaches were used for understanding the relationship between people, place, and their social issues (Hayball & Pawlowski, 2018; Mitchell et al., 2020).

Humanistic geography offers a lens through which a social phenomenon is understood from the perspectives of those experiencing it. Therefore, it sheds light on human consciousness and agency by using the knowledge they provide (Creswell, 2012; Sapkota, 2017). This paradigm is further associated with, and has its roots in, participatory research, action research, and critical research. While borrowing from both action and critical research, the nature of this study's methodology was primarily influenced by participatory research. In addition to placing participants at the forefront of the data generation and the data analysis process. Participatory research does not only work with participants to improve the practice of researchers but also creates an environment where the participants articulate information that researchers seek to uncover (Abma et al., 2019; Argyris & Schön, 1989).

This study was rooted in participatory research in four ways. First, the study focused on marginalised individuals, namely adults living in a resource-poor rural geographic social context. Second, informed by humanistic geography, the study was particularly mindful of ethical considerations relating to the relationship between me, as a researcher, and the

participants as the researched. Therefore, to avoid research that exploited the participants, the study acknowledged them as producers of knowledge, and as such, attempted to present an accurate account of their lived and subjective experiences through the co-construction of knowledge (Råheim et al., 2016; Wang, 1995). Scholars argue that the process of participatory research involves extensive collaboration between researchers, the participants, and other stakeholders (Abma et al., 2017; Collins, 2018; Schneider & Buser, 2018). This study required consistent communication and feedback between myself and the participants.

Moreover, the research was conducted with the participants, rather than on the participants. Another pertinent point is that the research involved reciprocity in terms of a bi-directional exchange of information and knowledge between the researcher and the participants. This involved the sharing of the research experience through mutual negotiation of meaning and power (Frankenberg et al., 2019; Ruhanen, Saito & Axelsen, 2021). In this regard, this study responds to Råheim et al.'s (2016) call for research that strives to develop authentic and supportive relationships between the researcher and those identified as marginalised. Finally, the participation of adults from a rural community ensured that I prioritised their experiences and concerns.

### **4.3 Research Design**

This study was primarily concerned with documenting and amplifying the voices and experiences of adults from a resource-poor rural community who had limited access to safely managed water. It was for this reason that I chose a qualitative approach for this study. Rananga and Gumbo (2015) argue that quantitative research is limited because it does not offer rich contextual explanations from the participants' perspective. Therefore, informed by this knowledge, in this study, I adopted a qualitative mode of inquiry.

In this regard, a qualitative approach proved to be a resourceful and relevant approach for producing descriptive and subjective data. The qualitative design of the study relied on the participants' own spoken and written words, and observable behaviour (Taylor, Bogdan & DeVault, 2015). Qualitative research depends on an individual's subjective reality of a social phenomenon (Creswell, 2012; Creswell & Poth, 2016; Moalusi, 2020). Therefore, I located this study within a qualitative research approach because of its ability to provide answers to the 'how and why' questions, rather than those that focus on 'how many'. A vital feature of

qualitative research is its focus on human experiences (Alase, 2017; Lune & Berg, 2016; Merriam & Grenier, 2019). Consequently, within the context of rural communities, they are more likely to face challenges regarding limited access to safely managed water. Thus, the qualitative approach enabled me to unearth a deeper understanding of the research, especially given the complexities and the many dynamics surrounding it. I was particularly interested in the participants' subjectivities, experiences, and voices instead of quantifying them.

#### **4.3.1 Participatory Research**

Participatory research is a type of qualitative research that recognises research participants as more than just subjects of study, but as people who are actively involved in the generation of knowledge about the phenomena being explored (Bergold, 2007; MacDonald, 2012). Participatory research methods, are directed towards planning and conducting the research process with the people whose daily lives and meaningful actions are being studied (Bergold & Thomas, 2012). According to Smit-Perry, Fuller & Stauber (2020), participatory research treats everyone involved in the research process as active and rightful participants. Indeed, Ruff and Harrison (2020) further affirm that participatory research prioritises the genuine participation of the communities of interest as co-investigators, and ensures the relevance of the research for the community's lives.

Participatory research plays a vital role by including the participants in the generation of data, the analysis process, and brings value to the research. The research process shifts from where researchers are purely extracting information from participants to give a voice to those who would, under different circumstances, not be heard. This approach provides a space for the engagement of communities and individuals involved in the research (Budig et al., 2018; Chew, Maheshwari & Somerville, 2019; Wang et al., 2004; Wilson et al., 2007). Participatory research is also praised for reducing the power inequality between the researcher and the community under study (Maclean & Woodward, 2013; Varga-Dobai, 2012). For example, a participatory study by Fletcher-Watson et al. (2019) that aimed at fostering the inclusion of autistic people in autism research found that participatory research creates supportive environments, where the participants occupy an important position in the research process. That is, they become knowledge producers instead of individuals who merely respond to a researcher's questions. Specifically, in the study described above, participatory research developed a culture where autistic people had an active and meaningful role in research through changing the language

used to describe their conditions (Fletcher-Watson et al., 2019). I chose participatory research because it was the most suitable approach for effectively engaging the participants. Participatory research further enabled the participants to express their experiences and perspectives about living in a community with limited access to safely managed water.

#### **4.3.2 Participatory Visual Methodology**

This study used a participatory visual methodology (PVM) to examine the experiences of adults living in a remote rural community, that have limited access to safely managed water. PVM involves the production, organisation, and interpretation of images such as those produced through photovoice (Blackbeard & Lindegger, 2015; Papoulias, 2018). Blackbeard and Lindegger (2015) describe PVM as a methodology for activating research processes set within the participants' socio-economic contexts. The use of images in research is not a new concept. Historically, ethnographers used photographs to supplement their field notes and narratives when documenting indigenous human cultures (Kreinath, 2012; Perera, 2019; Pink, 2006). However, as contemporary researchers argue, using visuals in ethnographic research was not participatory (Pink, 2003; Pink, 2013). Instead, participants were often under the colonial gaze of a researcher. Over time, and with the advent of decolonial research practices, visual approaches in research have taken on a more participatory feature that draws on mechanical tools (such as photovoice) and non-mechanical tools (such as drawing) (Evans et al., 2009; Kessi, 2018; Literat, 2013).

PVM has been used across different types of fields of study including health (Beauchet et al., 2020; Black et al., 2018; Catalani & Minkler, 2010; Petteway, 2019), education (Switzer, 2018; Dlouhá & Pospíšilová, 2018), water and sanitation (Bisung et al., 2015a; Bisung et al., 2015b) and natural resource and ecological studies (Cleland & Wyborn, 2010; Tremblay & Harris, 2018). However, for this study, I draw focus on water and sanitation-related studies. According to Walters et al. (2017), the use of PVM in water and sanitation studies has helped participants improve their understanding of the linkages between water, sanitation, and health. Moreover, using PVM in water-related research has played a role in influencing the provision of sustainable water services in disenfranchised communities (Hirsch et al., 2010; Walters et al., 2017).

PVM has also been used in water governance studies. Fantini's (2017) study explored the use of PVM, and photovoice, in particular, to examine water governance in rural communities. The results found that the PVM methodology contributed to enhanced knowledge about the distribution of water. It was further revealed that PVM brought an understanding of the underlying emotions, values, and concerns associated with water governance. In this light, scholars attest to PVM's potential for linking emotions, values, and concerns to the natural environment specifically the water infrastructure (Fantini, 2017; Keremane & McKay, 2011). Therefore, when PVM is adopted in water-related research, it provides an insightful approach for encouraging a discussion with different stakeholders and those affected by the water governance process (Fantini, 2017; Puri & Sahay, 2003).

In this study, PVM allowed adults affected by the provision of limited water service delivery in their community to voice out their concerns and experiences. In this regard, the PVM methodology allowed participants to share their experiences of living in a community with limited access to safely managed water supply (Smith-Perry, Fuller & Stauber, 2020; Sen & Kansal, 2019). As I have shown in subsequent chapters, the participants produced and used photographs to illustrate their daily living experiences. Likewise, as Levison et al. (2012) argued, PVM exposes inequalities that are dominant in rural communities, thus supporting the participants' reflections about their living conditions. In this study, I used PVM because of its potential for uncovering deep-seated issues relating to rural communities' marginalisation from safely managed water services and for its potential for inspiring reflection (Mitchell, De Lange & Moletsane, 2017; Switzer, 2018).

#### **4.4 Research Site**

The selected research site for this study was a remote resource-poor rural community called eMdubezweni (not its real name), located in the Mpofana Municipality on the outskirts of Mooi River, in the KwaZulu-Natal (KZN) province of South Africa. The site was selected based on the characteristics required for this study such as poor or lack of access, under-resourced and remote. Mpofana Municipality is one of seven local municipalities under the uMgungundlovu

District Municipality<sup>27</sup> (uMgungundlovu District Municipality Integrated Development Plan [UMDM IDP], 2018). The agriculture and textile industries are the core of economic development in the Mpofana municipal area. The agricultural sector is mainly driven by dairy farming, followed by crop production of food such as maize, potatoes, beans, and peas (UMDM IDP, 2018). eMdubezweni is a rural community located in a mountainous area (as shown in Figure 4.1 below). Peng et al. (2018) describe this type of community as ‘islanded’<sup>28</sup> concerning its geographical isolation (see figure 4.1). As a result of the dry nature of the environment with an average temperature of 14.7 °C and 874 mm average rainfall (UMDM IDP, 2018), most households in eMdubezweni engage in livestock farming instead of crop production. The eMdubezweni community practices subsistence farming of goats as a coping strategy since they are more resilient to water shortages (Opiyo et al., 2015). Studies show that goats can sustain themselves in arid, semi-arid, hilly, heavy rainfall, and tribal areas where they can survive on sparse extreme climatic conditions more comfortably than other domestic animal species (Bansod, Atkare & Shambharkar, 2019).

The study site was selected based on two main criteria. First, the research focused on a resource-poor rural community with limited access to safely managed water services. Second, the study area was classified as resource-poor, rural, and remote. During the apartheid period, black South Africans were allocated residence, under the Group Areas Act of 1950, from land designated as whites-only and moved to segregated rural areas (known then as homelands<sup>29</sup>) (Rodney, 2018). To date, rural areas are still characterised by and are associated with poverty, slow or under development, infrastructural problems, and slow or no service delivery, among other challenges (Beegle et al., 2016; Mboumboue & Njomo, 2016). In the post-apartheid period, rural communities consist of self-built settlements, government Redistributive and Development Programme (RDP) housing, and non-arable agricultural land (Beinart & Delius, 2019; Connor, 2015). Likewise, rural communities are situated far from the economic hubs often found in urban areas (Wiggins & Proctor, 2001). The remoteness of eMdubezweni has

---

<sup>27</sup> In South Africa, local municipalities and each municipality is broken into wards. The residents in each ward are represented by a ward councillor. Only people who live in low population areas, like game parks, do not fall under local municipalities. On the other hand, district municipalities are made up of a number of local municipalities that fall into one district, usually between 4 and 6 municipalities. The district municipality has to co-ordinate development and service delivery in the whole district. It has its own administration staff (Pretorius & Schurink, 2007).

<sup>28</sup> In the context of this study, islanded means circled by mountains, remote, and isolated in terms of physical geographic distance (Gillis, Shoup & Sicat, 2001).

<sup>29</sup> Modern day rural areas are those with basic services, social and physical infrastructure and big modern houses (Hemson, Meyer & Maphunye, 2004).

negative implications for communities' access to socio-economic services and livelihoods (Sapkota, 2018). The area is arid with only one source of surface water, which is a community waterhole located in the northern part of the community (see Figure 4.2, below).



**Figure 4. 1:** eMdubezweni surrounded by mountains

**Figure 4. 2:** Cattle resting around a waterhole in eMdubezweni rural community

The community owns the waterhole since the area is also under tribal authority<sup>30</sup>. However, the waterhole is not of drinking quality and can often only be used for cleaning activities. To



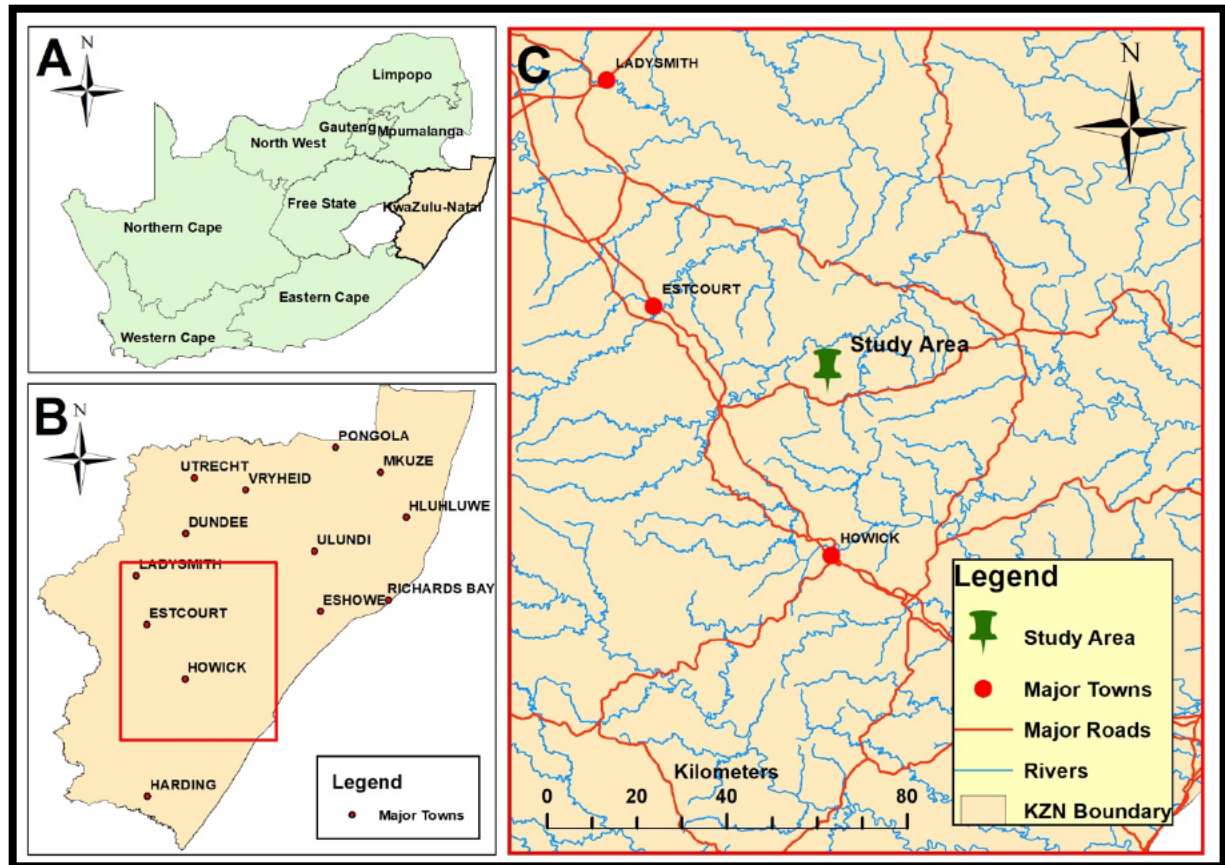
---

<sup>30</sup> Tribal authorities refer to the governing body or person, who came into power either by inheritance such as chieftaincy or by election, that represents the tribe in any political, social or economic decisions such as a chief or a king usually in rural communities (Mwale & Lintonbon, 2020)

remedy this situation, households rely mainly on water from a water truck, and on springs that occasionally flow from the surface. According to Constantine et al. (2017), water trucks, also known as water tankers, are commonly used during water shortages. Water trucks are a means of transporting water from wells or springs to communities with insufficient water infrastructure or experiencing a drought (Du Plessis, 2019; MacAllister et al., 2020). The water truck delivers water infrequently, once a week (four times each month) and sometimes it only comes once after two weeks. Thus, eMdubezweni is permanently reliant on these temporary, often unreliable, water sources for their daily livelihoods and consumption.

#### **4.4.1 Geographic Location and Context of the Study**

As noted above, eMdubezweni is located near the town of Mooi River, which is 68 kilometres north of the KZN provincial capital city of Pietermaritzburg. Specifically, this rural community is situated in the remote inner eastern parts of Mooi River, approximately 12 kilometres from the R622 main road (see below figure 4.3). Humphreys (1985) describes remote communities as those at a significant distance from any essential social services and infrastructure such as tarred roads, health care facilities, urban centres, and economic hubs. The eMdubezweni community is no exception. As noted above, the community lacks tarred road infrastructure and other essential services such as health care facilities and police stations. According to the UMDM IDP (2018), the nearest health care facility is in the town of Mooi River, of which eMdubezweni residents have to travel for 45 kilometres to access health services.



**Figure 4. 3:** Geographic location of eMdubezweni rural community

Similarly, the nearest urban centre is a 45-minute drive on an unmaintained gravel road with potholes and rock boulders. Transport is also a challenge in the community (UMDM IDP, 2018). The transport system operates on a four-hour work schedule. The poor accessibility of transport further has implications for how the community access necessary resources and services. Moreover, there is only one school, a primary school, in the community that operates under a single linear building with three classes designated for grades three, four, and five (UMDM IDP, 2018). Children seeking secondary education (or high school) have to travel for seven kilometres to reach the nearest secondary school.

#### 4.4.2 The Physical Environment and Landscape of the Research Site

eMdubezweni lies 1377 m above sea level. In summer, the climate is warm and temperate, and in winter, there is much less rainfall. The area has an average temperature of 14.5° Celcius throughout the year (UMDM IDP, 2018). The annual rainfall is 837 mm, with June to August being the driest months, with only 11 mm average rainfall. According to Climate-Data.org,

precipitation falls the most in December, with an average of 138 mm. Yet, in 2019, the year in which this research was conducted, the average annual rainfall was 22.1 mm, indicating a very dry year (World Weather Online, 2020).

As mentioned above, the research site was located in a mountainous, semi-arid environment with limited rainfall and prolonged dry seasons. Besides the waterhole, the other nearest water source for members of the eMdubezweni community is the Naneni stream five kilometres from the community (UMDM IDP, 2018). Unfortunately, at the time of data generation for this study, the dams had dried up because of little to no rainfall in the winter months (see Figure 4.4). Previously, the community could rely on two small dams near their village. However, the stream proved to be another non-reliable water source for the community. According to the UMDM IDP (2018), the two dams partially fill up in summer because of the heavy rains.



**Figure 4. 4:** Dried up dam in eMdubezweni rural community

The community also has access to spring water, which is, unfortunately, seasonal, and unreliable. Although the spring water is extracted from groundwater, it is of poor quality, appearing brown and grey with a sharp pungent smell (UMDM IDP, 2018). The eMdubezweni rural community shows a savannah biome characteristic with a grassy ground layer and a distinct top layer of woody plants and trees. According to Pettey (2006), one of the significant

characteristics of the savannah biome is the lack of adequate rainfall, which prevents optimum growth for the upper layer trees. Poor dominance of the lower layer is attributed to livestock grazing. Climatic conditions in the eMdubezweni community classify the area as semi-arid (see Figure 4.5). Semi-arid environments are those with shallow precipitation levels to allow for evapotranspiration but enough to differentiate them from desserts (Shen et al., 2017). Crop production in the area is often limited by water scarcities and uneven rainfall patterns (Zhang et al., 2019).



**Figure 4. 5:** Semi-arid nature of study site

More than 90 percent of the eMdubezweni rural community residents, total population being 478 with 60 total number of households, are pastoralists<sup>31</sup> with livestock ranging from one to 20 per household. Due to limited access to water, both livestock and humans tend to share water sources when available. The sharing of water sources between humans and animals is particularly the case during the drier seasons (UMDM IDP, 2018). Since the community allows its livestock to access the water sources for drinking purposes, water quality becomes compromised from livestock urination, defecation, and contaminants carried on their bodies. Although water scarcity is also a problem in the Mooi River area, it does not occur to the same

---

<sup>31</sup> Pastoralists are livestock farmers, particularly sheep, goats and cattle (Halstead, 1996; Ruvuga *et al.*, 2020).

extent as it does in the semi-arid areas such as that of the study area (Ngasala et al., 2018). It was within this broader socio-economic and geographic context that the participants in this study lived and their experiences were analysed.

#### **4.5 Gaining Access to the Community**

This study was conducted with permission and support from all relevant gatekeepers (an issue I return to in the ethical considerations section below). Gaining access to the eMdubezweni community was a significant component of this study. In any research, gaining access is vital for building rapport with potential informants by engaging with the community's different stakeholders (Johl & Renganathan, 2010; Kondowe & Booyens, 2014; Le Dantec & Fox, 2015). The first step I undertook was to identify a study area that met all the research criteria. Since I had previously worked in the Mooi River area, I had access to, and subsequently called the Mpofana Municipal Offices to schedule a meeting to formally introduce myself and the research I sought to undertake. The meeting was held with the municipality's Community Development Officer, who was the most relevant person to assist me in locating and accessing the community under study. Initially, I introduced myself, the university I was enrolled in, and gave a brief background of the research, including what it would entail and the participants I needed to recruit to meet the study's objectives. I was then advised to contact two potential gatekeepers to gain their permission to approach the participants. The first gatekeeper was the local chief who was the tribal leader of the community, and the second gatekeeper was the ward councillor who served as the elected political leader for the community. I then scheduled a meeting with the ward committee member tasked with the community's traditional affairs and could access the local chief. Unfortunately, due to the chiefs' prior commitments, I was unable to meet him in person. However, with the ward councillor's assistance, the chief received a letter of information about the research and subsequently permitted to conduct the study through a gatekeeper's letter (Appendix D).

Once the chief had granted permission, the ward committee member supported the research in all its phases. In terms of leadership structures in the rural communities of South Africa, the ward councillor is the next line of authority after a chief (Freeman, 2019; Mpungose, 2018; Vengroff, 1975). However, due to the ward councillor's prior commitments, I was referred to a ward committee member who acted *pro tempore* as a ward councillor. In preparation for the research data generation phase, the ward committee member scheduled a meeting with the local

school principal, who permitted me to use the school's premises for some of the research activities, such as FGDs. During the meeting with the school principal, I introduced myself, the institution I was enrolled in, gave an overview of the study, and provided a copy of the ethical clearance letter. The principal offered verbal consent to use one of the school's classrooms to conduct FGDs for the study. Once access was granted, I set out to recruit adult participants in the eMdubezweni community who would provide the knowledge I sought to uncover.

#### **4.6 Study Participants and Recruitment Procedure**

To recruit the adults who participated in this study, I used purposive sampling. Purposive sampling is a non-probability technique that deliberately selects specific informants because of the qualities they possess and are better able to assist with the research (Ames, Glenton & Lewin, 2019; Tongco, 2007; Etikan, Musa & Alkassim, 2016). In this study, purposive sampling was used to recruit adult participants living in a remote resource-poor rural community devoid of water services, thus having limited or no access to safely managed water. The sampling criteria were adults over the age of 18 years<sup>32</sup> who were full-time residents<sup>33</sup> of eMdubezweni and lived there all their lives. I envisioned that being a full-time resident of the community would provide me with rich data about the community's water access challenges. In setting the sampling criteria, I envisioned that adults were more suitable for providing the knowledge I sought to uncover since they had lifelong experiences of living in a community that had limited access to safely managed water services. I also understood that as adults, they were better placed to articulate the issues prevalent in their community. Thereafter, I conducted door-to-door visits to 30 households where I was able to identify 20 participants for the study.

The ward committee member pointed me to the households I could consider for recruiting the participants. Of those houses, I visited 30 households in the community. The rationale for visiting 30 households was to be able to get one participant for the study from each household. Although I required only 20 participants, I visited 30 households was to make provision for any participants that might drop out of the study. When I was allowed entry into each home, I began by introducing myself, the research I aimed to conduct, and the institution I was

---

<sup>32</sup> In the South African context, an adult refers to a person who is 18 years and/or older (Constitution of the Republic of South Africa, 1996)

<sup>33</sup> A full-time resident in a community is a person who spends four to six nights a week in a household within the community (Andereck *et al.*, 2005; Choi & Murray, 2010).

registered under. In some households, no one was willing to participate in the study. In other households, I was told to return after someone identified as the head of the house was back from whatever activity they had gone to do. In total, the participants' recruitment process took over three days. Ultimately, on the third day, I had managed to recruit 20 male and female participants, whom I further provided with a detailed description of the study, its objectives, the methodology to be used, including details about all the data generation activities. Furthermore, each participant was given a letter of information, written in isiZulu (the local language of the area), which further provided details about the study.

Given the nature of the research activities, the depth of the data generated, and the case-oriented analysis, 20 participants were sufficient so as not to compromise the richness of the data (Moser & Korstjens, 2018; Saunders et al., 2017). The study sought to get subjective, rich experiences from participants which a small number of no more than 20 would be able to provide. Likewise, 20 participants were not so small a number that informational redundancy or theory saturation cannot occur (Sim et al., 2018; Vasileiou et al., 2018). Participation in the study was voluntary, and the participants were not paid for their participation. Since the study employed PVM, the participants were provided with camera phones for the duration of the photovoice activity (which is discussed in section 4.8.1.1a below). While the provision of these phones served as an incentive, the participants had to return them after the photovoice activity.

While twenty participants were recruited to participate in the study, only 17 participated in all the data generating activities (photovoice, in-depth interviews, and FGDs). Three participants, who had initially agreed to participate in the study, reported at the last minute that they had other commitments. Therefore, they could not commit to being present on the days we had assigned for generating photovoice, in-depth interviews, and FGD data. Overall, the participants' age ranged from 18 to 43 years. Fifteen of the participants were classified as young people, as per South Africa's Constitution, which considers anyone in the age range 18 to 35 as a youth (The Presidency Republic of South Africa, 2015). The number of young participants in this study was consistent and reflective of the age demographic in eMdubezweni (UMDM IDP, 2018). Young people dominated the social demographic in eMdubezweni and therefore inevitably offered some potential participants. However, I approached the elderly in the community as well but received a reluctance to participate in the study. For these elderly members, they felt the research would have been too time-consuming, and they could not commit to all the research activities. In one household where I recruited a participant, a mother

referred me to her two daughters as prospective informants. According to the mother, her daughters were more likely to effectively capture and communicate their experiences since they collected and used water the most within their household. The male and female ratio did not balance due to an unwillingness of male participants to commit to the research activities.

| Pseudonym     | Age | Sex    | Highest education           | Marital status | Employment Status      | Number of people in the household |
|---------------|-----|--------|-----------------------------|----------------|------------------------|-----------------------------------|
| Nomzamo       | 23  | Female | Grade 12                    | Single         | Unemployed             | 11                                |
| Ntokozo       | 19  | Female | Grade 12                    | Single         | Unemployed             | 8                                 |
| Nomkhosi      | 21  | Female | Grade 12                    | Single         | Unemployed             | 11                                |
| Bandile       | 18  | Male   | Grade 12                    | Single         | Seasonal <sup>34</sup> | 7                                 |
| Nomathamsanqa | 25  | Female | Grade 11                    | Married        | Unemployed             | 7                                 |
| Nompilo       | 27  | Female | NQF 5 (College Certificate) | Single         | Unemployed             | 11                                |
| Fundiswa      | 23  | Female | Grade 12                    | Single         | Unemployed             | 5                                 |
| Mbali         | 24  | Female | Grade 12                    | Widowed        | Unemployed             | 5                                 |
| Nomfusi       | 43  | Female | Grade 9                     | Single         | Self-employed          | 6                                 |
| Sizwe         | 21  | Male   | Grade 12                    | Single         | Unemployed             | 7                                 |
| Sthembiso     | 27  | Male   | Grade 12                    | Married        | Self-employed          | 9                                 |
| Muzi          | 29  | Male   | Grade 12                    | Single         | Seasonal               | 12                                |
| Mawande       | 20  | Male   | Grade 12                    | Single         | Unemployed             | 8                                 |
| Noluvuyo      | 26  | Female | Grade 12                    | Single         | Seasonal               | 8                                 |
| Anitha        | 22  | Female | Grade 12                    | Single         | Unemployed             | 9                                 |
| Mxolisi       | 26  | Male   | Grade 12                    | Single         | Seasonal               | 7                                 |
| Nokulunga     | 18  | Female | Grade 12                    | Single         | Unemployed             | 8                                 |

**Table 4. 1:** Participant Biographical Information with alias names.

<sup>34</sup> Seasonal refers to the occurrence of somethings or phenomenon in accordance to a particular time of the year (Yuan et al., 2020).

Table 4.1 above provides a snapshot of the participants' biographical information in no specific order. In total, the sample consisted of nine female and eight male participants. Of the 17 participants, only one had a tertiary level education, 15 had completed secondary school and obtained their matric (Grade 12), and one completed grade Nine. Two participants were married, one was widowed, and the remaining were single (had never been married). None of the participants were employed full-time at the time of data generation. Two participants were self-employed as informal traders selling snacks to learners at the local primary school and sometimes sold livestock to neighbouring communities. Five participants secured only seasonal employment in the construction or farming sectors in neighbouring commercial farms. The rest of the participants were not employed. As Table 4.1 illustrates, the number of people living in each of the participants' households varied, with some households housing five members and others up to twelve members.

#### **4.6.1 Getting to Know the Participants**

My first encounter with each participant was in their home during the recruitment process. This interaction allowed me to speak to each participant without them travelling to meet me. Most of the participants commented on how young I looked, and I often joked that I was old enough to have grandchildren. I took these light-hearted moments as a form of an ice-breaker. Ice-breaking has been identified as an important step for researchers and participants to feel more comfortable around each other (O'Brien & Dadswell, 2020). I used this opportunity to respond to questions about my research and the institution I was registered under. The participants' questions indicated to me that they were interested in post-secondary school education. Given the community's remoteness and the fact that public transport was often unreliable, I had some participants and community members asking me for lifts to the nearest town during the recruitment process. I used those moments in the car as an opportunity to have informal conversations on the topic under study and to further get to know the participants much better. Moreover, I shared my experiences of living in a rural community with limited access to safely managed water services (as I outlined in Chapter Three) and how this posed a challenge for me in terms of conducting household duties and being restricted in household activities. The sharing of my own experiences provided the participants with relatable content, making it less intimidating for them to participate in the research (Neeley & Cronley, 2004; Nonnecke & Preece, 2003).

## **4.7 Data Generation**

Informed by the humanistic geography paradigm, this study examined the experiences of adults living in a resource-poor rural community that had limited access to safely managed water services, sources, and supply. As mentioned above, the study employed a qualitative research approach and used PVM to generate data. In PVM, participants are involved in the producing and analysing of visual data (Guillemin & Drew, 2010; Kolb, 2008; Nind, 2011). In turn, the participants use these visual outputs to tell personal narratives or to describe their experiences of the issues that are significant to them. Their role as producers of knowledge makes them an essential part of the study. Through their sharing and interpretation of their experiences, researchers begin to understand the phenomena being explored. In this study, PVM involved the use of photovoice as a tool for generating data. FGDs and in-depth one-on-one interviews further supplemented data generated through photovoice.

### **4.7.1 Photovoice**

The first set of data was generated using photovoice. Photovoice is an approach that places cameras in the hands of local people for them to share their social worlds and realities in their ways (Balomenou & Garrod, 2016; Milne & Muir, 2019). Specifically, photovoice entails participants taking photographs of their subjective experiences about a particular topic (Wang, 1995; Mamo & Koenigstorfer (2019). Depending on the researcher's specific plan for analysis, participants then engage in an in-depth interview with the researcher to describe the meaning behind the pictures they took (Edwards & Greeff, 2018).

This approach was pioneered by Wang and Burris (1997) with three goals in mind: 1) to allow people to reflect on their community's strengths and to voice their concerns; 2) to promote knowledge and dialogue about community issues; and, 3) to reach policymakers. Sulton-Brown (2014) and Lucke, Mamo, and Koenigstorfer (2019) describe photovoice as an analysis method that combines photography with grassroots experiences and interpretations to facilitate social action. These authors argue that it interrogates context-based meanings from an insider perspective as a means to generate new insights and knowledge. Therefore, participants are invited to take pictures representing their daily challenges and experiences, for example, in the absence of a safely managed water supply.

Located within qualitative participatory approaches, photovoice draws on research participants' active experiences; both the visual and the verbal (Shaw, 2020; Vellanki & Davesar, 2020; Wang & Burris, 1997). The value of photovoice comes from its potential as an alternative means of representation that gives people a platform for amplifying their voices so that they are heard. This approach has been used in a variety of settings with different groups of people. For example, researchers have used photovoice to engage indigenous communities in an attempt to develop tailored interventions for addressing the injustices they experience (Jull, Giles & Graham, 2017; Miled, 2020). Other scholars have used photovoice to understand women's health and well-being in resource-poor communities (Gentry & Metz, 2017; Scruby et al., 2019). Photovoice has also been a useful tool in understanding gender, sexuality, and relationships among marginalised adult community members. A common finding across all these studies was photovoice's ability to facilitate meaningful and democratic participation among study participants (Moletsane et al., 2009; Walia & Leipert, 2012). Informed by this knowledge, I set out to use photovoice as a PVM to engage the adult participants in this study.

#### **4.7.1.1 Using Photovoice in this Study**

Although there was no set structure for the implementation of photovoice, there was a general framework to help guide the method. One month after meeting with the recruited 17 participants I began the data generation process. To commence with the photovoice data generation phase, I went back to each of the participants' homes on a mutually suitable date we had agreed upon and in no particular order but rather based on their proximity to the main road. I started with the participants who lived furthest away from the main road and worked my way back to make it easier for me when leaving the community.

To begin, as espoused by Harley (2012), I offered basic training on photovoice to each participant. I conducted the photovoice training with each participant in their household before issuing them with a cell phone device that they would use to take pictures. To begin with, I introduced the concept of photovoice to each participant by explaining what it entailed. I also explained the possibility that the approach might take a lengthy period, and thereafter I answered any questions and concerns from the participants. I used the device that was assigned to one of the participants to make the example so that they understood its functions and how to

use it. I presented the devices, showcasing their functions including the off and on buttons, the camera functions, and the file where photographs are saved.

During the training, I invited the participants to practice taking pictures by prompting them with two open-ended questions: 1) *How do you feel when you wake up in the morning and you want to do your washing but there is no water?* and, 2) *What do you do when you need to bath, but there is not enough water?* Before taking pictures, I emphasised the importance of asking for permission should they want to take pictures of people or other identifiable landmarks. I also encouraged the participants to take staged photos that illustrated the narratives they wanted to share with me. In keeping with ethical practices, I asked the participants to practice the '*no face shown*' approach at all times. This approach entails taking pictures that hide people's faces and any markers that could identify them (Wang & Burris, 1997; Treffry-Goatley et al., 2021). I reflect on the ethics of photovoice later in the Chapter. I then decided to issue out one cell phone per household with participants from the same household sharing the device to reduce the risk of the phones being lost. Therefore, I brought eleven camera phones. However, the risk to this was having one person taking most of the pictures while the other has less opportunity to use the device (I reflect on this in the last chapter of this dissertation).

The use of cell phones for data collection has been identified as an enjoyable exercise among the research participants (Barriage & Hicks, 2020; Eddens, Fagan & Collins, 2017; Tyler & Schmitz, 2017). People's dependence and high usage of mobile cell phones made photovoice a more desirable form of data collection which helped attract participation in the study (Hadfield-Hill & Horton 2014). I kept a register for monitoring who received the camera phones and who still needed to be provided with one. As the devices were lent to participants only for the study, they were asked to sign on the participant list next to their names when receiving and returning the device. This ensured that all devices were returned after the data collection period.

#### ***a. Picturing Limited Access to Safely Managed Water in a Rural Context***

On the 2<sup>nd</sup> of October 2019, I handed the cell phone devices to the participants to generate photovoice data for the study. To guide the participants in generating context-specific and appropriate data, I prompted them to: *take four pictures showing your challenges and experiences with living in a community that has limited access to safely managed water services. Then add a short description for each image to explain its meaning.* According to the

HIV and AIDS Education Community of Practice (2011), four pictures are enough to generate useful information about a topic (see also Harley, 2012). Armed with this prompt and the cell phones, I gave participants seven days to think about and capture the sought of pictures they wanted to use to show the challenges they faced in the context of living in a community with limited access to safely managed water. I then reminded the participants about the ethics of photovoice. After taking each picture, the photographs were automatically saved on the device under the 'Gallery' folder.

### ***b. Engaging Participants through a Photovoice Interview***

After seven days, once photographs were taken, I returned to eMdubezweni for one-on-one interviews based on their photovoice activity. For the photovoice interviews, I met up with each participant in their respective homes either individually or in pairs (depending on the number of participants recruited per household). The day before the photovoice interview, I scheduled a time for each participant, designating 30 minutes for the photovoice interview. The interviews happened over two days to cover all the participants equally. I asked each participant to identify a place where they felt comfortable engaging through the interview (Elwood & Martin, 2000; Hallowell & Yugar-Arias, 2016). All the participants opted to be interviewed outside their homes, stating that it would give them privacy and freedom from the distractions that were likely to occur inside their households. We then sat outside, either under a tree on a grass mat or under the sun on small wooden chairs or big rocks. These settings were comfortable for both me and the participants. The process also allowed the participants to talk freely without pressure or intimidation from their family members (Elwood & Martin, 2000; Heinonen, K., 2018; Herzog, 2005; MacDonald & Greggans, 2008).

I took these interviews to be the first step towards data analysis, where the participants described and explained the meanings contained in their pictures (Braun & Clarke, 2006; Wang 1995). According to Hallowell and Yugar-Arias (2016), adding a visual reference guide to the interview helps structure the participants' narrative. While the interviews were not structured, I relied on impromptu questions to probe for a deeper meaning into the issues illustrated in the participants' photovoice images (Overmars-Marx, Thomése & Meininger, 2019). I asked the participants several questions based on the photographs they produced using photovoice. To begin with, I asked them to show me the four photographs they had taken. For each picture, I asked them to describe the content of their photos, explain why they took these particular

pictures, and share the meaning they attached to their pictures. Furthermore, I asked them to explain what was happening in each image, by giving a narrative or story that better presented it. The participants also used this opportunity to explain why they thought their community was marginalised from essential services. Finally, I asked the participants to explain how they felt about using the photovoice approach as a tool for generating data and the potential for engaging the community about social issues.

During the interviews, to encourage the participants to openly share their perspectives about the topic, I asked culturally-sensitive questions such as: "*please tell me more about what this picture represents to you*" and "*how does this affect your daily life?*". The use of these questions has been advocated for by several visual geographers and sociologists who highlight their non-judgmental nature and their ability to make the participants feel safe (Overmars-Marx et al., 2018). During each interview, the participants discussed one photograph at a time and in no particular order. Each photovoice interview took about 30 minutes and was audio-recorded using a voice recorder. After each interview, I saved the audio recordings on my google drive under a folder named 'Photovoice Interviews' and later transferred them onto my USB. All photovoice interviews were conducted in isiZulu, transcribed, and then translated into English for analysis.

Once each of the photovoice interviews was done, I collected the cell phones and asked participants to sign a form confirming that they had returned the devices. After the photovoice engagement, and after studying their pictures and listening to the audio recordings of their descriptions about their photos, I had several questions for the participants to address. To get a fuller picture of their challenges, I went back to eMdubezweni, armed with a set of questions and probes, to engage the participants through one-on-one in-depth interviews and FGDs. I acknowledged that photovoice was the primary data generation method. However, I needed to get rich, in-depth data for my analysis and to draw conclusions. To this end, I invited the participants to engage me through interviews and FGDs. First, I conducted one-on-one in-depth interviews to investigate personal opinions, narratives, and experiences to address existing questions. Second, I invited them to the FGD to gauge collective views about their challenges. I used the photovoice images the participants had produced to facilitate both the interviews and FGDs. I discuss the processes of generating data using these supplementary methods in the following sections.

#### **4.7.2 In-Depth Interviews**

In-depth interviews are face-to-face encounters between the researcher and a research participant. The primary intention is to understand the participants' perspectives about their lives, experiences, or situations expressed in their own words (Cridland et al., 2016; Taylor, Bogdan & DeVault, 2015). In this study, in-depth interviews were useful in getting detailed information about each participants' thoughts and experiences of living in a community with limited access to safely managed water services (Carduff, Kendall & Murray, 2018; Hilgarter & Granig, 2020). My intention to engage the participants through in-depth interviews was to create a safe space for each of them to speak openly about their experiences. The participants' views offered valuable insights into their experiences and perspectives.

In-depth interviews in this research took the structure of a conversation that flowed freely. However, I did have a list of pre-determined open-ended questions that I used as a guide for probing the participants. The questions were written down on my notepad which I also used to jot down my researcher fieldnotes (Pontis, 2018). This structure was used to avoid the pressure of giving perfect answers and allowed for a naturally free flow of information (Taylor et al., 2015). To respond to the research questions that the study aimed to address, I probed around two key areas. Primarily, I asked the participants to describe their experiences and perspectives about living in a rural community that was water-insecure. Next, I invited them to reflect on the gender difference in their experiences. Each in-depth interview was about one hour long, conducted in isiZulu, audio-recorded, transcribed, and translated into English. Although conducted separately, the in-depth interviews served to delve deeper into issues highlighted in the photovoice activity and provided greater insight into the participants' challenges.

#### **4.7.3 Focus Group Discussions**

Focus group discussions are structured conversations between a group of individuals that researchers recruit to discuss and comment on the topic that is the subject of the research (Nyumba et al., 2018; Sim & Waterfield, 2019). This approach usually consists of more than one group session of four to ten participants to ensure adequate coverage of relevant issues (Guest et al., 2017; Nyumba et al., 2018). Historically, studies relating to brand management, product design, advertising campaigns, and promotions often employed FGD to identify potential inquiry areas and establish ways to improve products and services (Elghannam et al.,

2020; Vaportzis et al., 2017). However, over time, researchers in health and medicine and conservation research, among others, have since adopted FGD as a preferred research approach (Nyumba et al., 2018; Folch-Lyon & Trost (1981). Folch-Lyon and Trost (1981) argued that FGD are especially resourceful because they expose underlying attitudes and beliefs about a topic in cases where the knowledge that is already existing is not sufficient for analysis or for concluding the study (Gammie, Hamilton & Gilchrist, 2017). My decision to engage the participants in FGD was influenced by the literature, which suggests that the FGD approach helps unearth attitudes that might not be consciously revealed during individual interviews (Wang, 2006; Wang, 1997). As scholars attest, participants tend to feel more comfortable discussing an issue with a researcher when surrounded by other participants who share similar opinions and experiences (Levinson, 2017; Nyumba, Wilson, Derrick, et al., 2018). Thus, in this study, FGDs were used to gauge participants' collective views and attitudes about the limited access to safely managed water in their community.

#### **4.7.3.1. The Process of Generating Data through the use of FGD**

In total, I held three FGD that consisted of two groups with same-sex participants (i.e., one female group and one male group) and one mixed-sex (i.e., included both male and female participants) group. Informed by existing research that advocates for separate sex FGD, I separated the participants into same-sex groups to reduce the chances of one group of participants feeling intimidated and silenced by others (Hennink, Kaiser & Weber, 2019). Findings from available literature suggest that separating the participants along the lines of sex, gender, age, and other demographics improves their participation in the FGD (Sim & Waterfield, 2019). Furthermore, informed by the second research question posed in this study (*Do men and women in this rural community report different experiences and views about having limited access to safely managed water?*), I constituted a third group made of both male and female participants. I envisioned that this FGD would help me generate data that answers whether or not men and women in eMdubezweni held similar or different views about water access challenges.

On a Tuesday, in late October 2019, I facilitated the first FGD. This was held in a nearby local primary school classroom, where the principal had permitted me to use school facilities. The

first FGD had ten female participants<sup>35</sup>. I had initially invited all the eleven female participants who were recruited for the study. However, one of them asked to be excused from the FGD for health-related reasons. Two hours after completing the first FGD, I constituted a second one comprising of all the six male participants recruited into the study. Due to time constraints, I only returned to facilitate the final FDG a day after the first FGD. The final FGD took place at the same venue, but I had only invited eight participants, made up of four men and four women. For each data generating day, I provided the participants with refreshments (sandwiches, fruits, juice, and water).

In all the FGD, I assumed the role of a facilitator. The process for each FGD unfolded as follows. I arrived early at the venue to set up in preparation for each group. Once all the participants had arrived and settled into the venue, we sat on chairs in a horseshoe arrangement and held a brief discussion about our previous engagements (photovoice and in-depth interviews). Following this, I introduced the participants to an icebreaking activity. The icebreaker activity helped to facilitate a friendly environment within which we could commence our engagement. The icebreaker, in turn, assists in facilitating a comfortable environment for the participants (Norris, 2017; Beheshtian et al., 2020). Once the icebreaker was completed, I thanked everyone for participating in the discussions and asked them to sign a register. I then proceeded to remind everyone of the study's background, its objectives, and the research questions I intended to address. Finally, I reassured them that anything they said in the FGD would be used for research purposes only, and their identities would be protected and not compromised in any way. I re-emphasised the issue of confidentiality among themselves as the participants and between them and me. I then invited them to use pseudonyms for audio recording the FGD. I also asked them to mention their pseudonym each time they talked during the group discussion (Hydén & Bülow, 2003). Finally, I re-read the consent form they had signed as an agreement for their study participation. In particular, I emphasised values such as mutual respect, empathy, and non-judgmental attitudes. This was to ensure that they remembered all ethical considerations that guided the research. The FGD started with the participants being asked to comment on what they thought about water service delivery in their community. Each FGD was transcribed and translated into English. There is a possibility that some meanings may have been lost in translation. For example, I recognised the possibility that the participants' views, narratives, and descriptions might have been lost or

---

<sup>35</sup> The adults who participated in the FGDs were the same 17 who were initially recruited for the study, and who had participated in both the photovoice and in-depth interview phases of data generation.

distorted in the translation process. To mitigate this possibility, I listened to the original audio recording several times and re-read the transcripts to be sure I had captured the participants' narratives as accurately as possible. Moreover, I am a first language isiZulu speaker, and the analysis of transcripts relied heavily on my translation. At the end of each session (photovoice, interviews, and FGD), I thanked the participants for their willingness to participate and engage in the research.

#### **4.8 Data Analysis**

The use of various data sources in the study led to a significantly voluminous amount of data generated. The complete dataset consisted of four sub-sets of data generated from three research methods (photovoice, FGD, and in-depth interviews). To manage a large amount of data, I organised the data by saving them into small and manageable chunks to have easy access. All the data that was generated was digitised and stored electronically. I started by creating folders inside a universal serial bus (USB) device. I labelled each folder according to each of the research methods I had used for generating data (i.e., photovoice, interviews, and FGD) and saved each dataset into its respective folder. I also created a Google Drive file to store all the data as a backup for safekeeping.

To analyse the photovoice data, I employed visual participatory analytical procedures (Mitchell, de Lange & Moletsane, 2017; Mitchell, Mein & McMahon, 2001). To guide my analysis, I recognised that in photovoice analysis, the participants co-create data and provide their analysis (Andress & Purtill, 2020; Wengel, McIntosh & Cockburn-Wooten, 2019). Informed by John Fiske (1994), the analysis of data in this study involved three layers. Fiske argues that the visual product (e.g., the participants' images using photovoice) is the primary text. Second, what the producers (of the visual image) say about their production (either written or spoken descriptions) and how they experienced making them is the production text. Finally, what the audience (those who view the images) says about the visual product and textual data is considered the audience text. As the researcher, I became the audience (Vaismoradi et al., 2016). Thus, this study's analysis was three-layered: the first two layers entailed analysis and interpretation by the participants (for example, in describing their images and speaking about them during the interviews and FGDs). I conducted the third layer through thematic analysis, in which I tried to stay as close as possible to the participants' meaning-making and analysis

(Nowell et al., 2017; Nusbaum et al., 2017). In essence, I created a table for the photovoice visual data, where I organised all the pictures and the participants' descriptions. I split the table into three columns: the first column was for the photographs; the second column was for captions (with the heading: *Why Did You Take This Picture?*); and the third column with the heading: *Why Do You Feel It Was an Important Picture?* I included this data alongside the translated transcripts and used all the data for the thematic analysis process.

#### **4.8.1 Thematic Analysis**

Thematic analysis focuses on identifiable themes or patterns in the data (Castleberry & Nolen, 2018; Nowell, Norris, White, et al., 2017; Vaismoradi et al., 2013). Essentially, the method is used for identifying, analysing, and reporting patterns or themes within the data (Braun & Clarke, 2006). The benefit of thematic analysis is in its flexibility. Its variability in how the framework can be used makes it compatible with different theories such as grounded theory and constructivist theory. Therefore, thematic analysis provides a flexible and valuable research tool, which can potentially provide a rich and detailed, yet complex, account of data (Braun & Clarke, 2006). When conducting thematic analysis, the researcher becomes the instrument for analysis, making judgments about coding, theming, decontextualising, and recontextualising the data (Starks & Trinidad, 2007). Qualitative researchers can demonstrate how data analysis has been conducted by recording, systematising, and disclosing the analysis methods with enough detail to enable the reader to determine whether the process is credible (Hennink et al., 2020; Nowell et al., 2017).

Researchers who are relatively unfamiliar with qualitative methods may find that thematic analysis is easier to grasp and relatively quick to learn, as there are few prescriptions and procedures. Thematic analysis is a valuable method for examining different research participants' perspectives, highlighting similarities and differences, and generating unanticipated insights (Braun & Clarke, 2006, Hansen, 2020; King, 2004). It is also helpful in summarising the key features of large data sets.

In this study, I used thematic analysis to analyse both the visual and textual data described above. Importantly, I understood the usefulness of each theme was not dependent on quantifiable measures but rather on whether or not the theme captured had an essential aspect of the participants' experiences. Since this qualitative study sampled a small group of adults

from one rural community, I was not interested in quantifiable data, but what was important were emerging themes that the data produced. Using thematic analysis in this study, I was guided by Braun and Clarke's (2006) six phases of analysis. Using these phases, I took stock of these authors' suggestion that analysis is not a linear process. Rather, in my analysis, I moved back and forth throughout all six phases and as needed.

To understand both the participants and their experiences, I had to fully immerse myself in the data and make sure I was familiar with it. I did this in various steps. As the primary researcher in this study, I was present at all the data generating engagements with the participants, so I watched the data develop first hand. I organised all the visual data and transcribed and translated the audio recordings and the textual data to engage with it. Finally, I reviewed the data after every data generation activity, which helped me to further familiarise myself with it. This process helped me to understand and become acquainted with not just the data but also some emerging patterns from the data.

I reviewed all the transcripts to search for emerging themes in the data. To organise my data effectively, I had a worksheet with a table that had three columns. The first column was for the rough phrases I extracted from the transcripts, the second column was for the key phrases and words I identified a significant for analysis, and the last column was for the main themes that emerged from the data. As part of the data, I included my field notes. First, I identified and highlighted all the phrases and extracts that related to my research questions. For example, I extracted these phrases from the transcripts:

- *That's just the way it is. We grew up being taught that men can't be hovering around in the kitchen. That's the women's role.*
- *So, it's not because we're unfair on women and so on. It is just how things are, how we were brought up and no one can blame us for that*

By doing a closer reading of the data, the phrases above, for example, became relevant for the analysis of the data, which addresses the second research question: *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?* Therefore, I followed this analysis procedure using the research questions to guide my analysis.

In the next step, I identified and highlighted all the words and phrases that kept emerging from the first column. For example, if the word “*conflict*” or the phrase “*we are neglected*” appeared multiple times, I placed them in the second column. This step was to narrow down the ideas that were emerging from the data. For the third step, I identified key themes that were most prominent in the data taken from the second column phrases. This process helped me to identify the emerging themes from the data. This process entailed identifying and naming themes which enabled me to create an insightful and in-depth narrative of the participants’ experiences from the data generated. I ensured that each emerging theme corresponded accurately with the participants’ descriptions of their experiences by frequently reverting to the confirmation and clarification of the data (Clarke & Braun, 2013).

Finally, I used existing literature, the conceptual framework, and the theoretical framework to guide analysis in this study. I discuss the study findings in the following two chapters (Chapter Five and Six). This process provided a linkage between the analytic narrative and themes extracted from the data. It also provided a comprehensive and trustworthy way of presenting the data by creating a comparative narrative and analysis of the data (Clarke & Braun, 2013).

#### **4.9 Trustworthiness of The Study**

There are no simple methods to limit the likelihood that there will be errors in qualitative research. However, several ways were applied in this study to improve its trustworthiness. Trustworthiness refers to the confidence that the findings are plausible and credible (Kyngäs, Kääriäinen & Elo, 2020; Petty, Thomson & Stew, 2012). This study ensured credibility through data and method triangulation (Abdalla et al., 2018; Flick, 2018; Fusch, Fusch & Ness, 2018). Specifically, I used multiple research tools to generate data that helped to compare patterns across the different sources (Merriam & Grenier, 2019; Moon, 2019). I used three research approaches (photovoice, in-depth interviews, and FGD). Using all three approaches helped with the verification of research findings by providing a way of triangulation and ensuring that the findings were valid (Malaurent & Avison, 2017; Nowell et al., 2017). Further, I spent two to three days a week for four months at the study site. The extended amount of time spent in the study site is considered good practice in qualitative research because it improves trustworthiness in the study (Abdalla et al., 2018). The four months I spent in the community was enough time for me to observe that the participants' narratives and their photovoice

productions were not anomalies but were credible testaments of their experiences. Moreover, spending extended time in the research site resulted in the participants becoming more comfortable being around me. Thus, the participants did not alter their behaviour, which suggests that they shared their real experiences with me.

#### **4.10 Ethical Considerations**

Research involving people must follow ethical guidelines that do ‘least harm’ and ‘more good’ for the participants (Creighton et al., 2018; Guillemin & Gillam, 2004; Kindon, Pain & Kesby, 2000). To conduct ethically sound research and, which protects the lives and rights of the participants, I followed a few steps. First, I sought gatekeeper approval and informed consent from all research stakeholders (Crow et al., 2006; Ruiz-Casares & Thompson, 2016). To gain gatekeeper approval, I approached the eMdubezweni traditional and municipal authorities, who granted written and verbal consent (Appendix B). Armed with the written permission, I then applied and was awarded ethical approval (Appendix A) to pursue this study by the University of KwaZulu-Natal (UKZN) Humanities and Social Sciences Research Ethics Committee (HSSREC) (Ethical Approval Number: 00000337/2019).

To ensure ethical research, the participants received sufficient information about the study to make an informed decision about participating (Heath et al., 2007; Jefford & Moore, 2008; O'Neill, 2003; Kadam, 2017). The consent document that I handed to the participants, which was signed, permitted me to audio-record our engagements and to use the information generated for research purposes. Before consenting to participate in the study, I read the informed consent form to each participant in isiZulu (their first language) (Meetei, 2019). The consent document also emphasised confidentiality and the fact that participation was voluntary. The participants were made aware that they had a right to withdraw from the study at any time they wanted without any ramifications. To ensure confidentiality and to protect the participants' identities, I have anonymised their names throughout this dissertation (Matthew, Barron & Hodson, 2019; Paasche-Orlow, Taylor & Brancati, 2003; Surmiak, 2018). Instead, I have assigned each participant a pseudonym. Since the data generation processes were long and time-consuming for the participants, I provided refreshments throughout our engagements to ensure their comfort.

#### **4.10.1. Ethics of Using Photovoice in the Study**

Research that uses photovoice as a data generating approach requires that the researcher adheres to specific ethical procedures (Sutton-Brown, 2014; Wang & Redwood-Jones, 2001). These procedures seek to protect the dignity and identities of all those involved in the research process and the participants in particular. According to Wang and Burris (2001), multiple ethical issues need to be considered when conducting photovoice research. To ensure that the participants captured ethically sound pictures, I trained them about the ‘no-face-shown’ approach (Clark, 2020). This approach required that human faces and other markers/identifiers associated with the participants were not visible, or at least be concealed in the pictures (Clark, 2020; Mannay, 2020). For those participants who took pictures of children, although those children were their siblings, they asked for consent from parents as well as the children themselves. Fortunately, no faces or identifying features were visible in any of the photovoice pictures.

#### **4.11 Synthesis**

In this chapter, I outlined the methodology employed in the study, and the research approaches used for generating data. I also provided details of the study site and context, the participants, and their recruitment procedure, data generation processes, and the data analysis strategy that I employed. Finally, I addressed the questions about trustworthiness and ethical considerations in the study.

In the next chapter, I present findings in response to the first research question: *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?*

## **CHAPTER FIVE**

### **LIMITED ACCESS TO SAFELY MANAGED WATER AS AN EVERYDAY CHALLENGE IN A RESOURCE-POOR RURAL COMMUNITY**

#### **5.1 Introduction**

The study reported in this dissertation examined how adults living in a rural community with limited access to safely managed water services and supply described and communicated their daily challenges. The study site was a resource-poor rural community in KwaZulu-Natal (KZN), South Africa. In the previous chapter, I described the research design, the methodology employed, and the research approach used for generating data in the study. In this chapter, I present findings in response to the first research question posed: *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?* I present findings that respond to the second research question in the following chapter. In this chapter, I discuss how 17 adults used photovoice to illustrate their experiences about the limited access to safely managed water in their rural community. The primary data source analysed for this chapter involved photovoice. Also, photovoice data was augmented using data generated through one-on-one interviews and focus group discussions (FGD). Data analysis was informed by the entitlement theory. The entitlement theory is premised on the assumption that the marginalisation of rural communities is linked to a history of past injustices that ostracised rural communities, and the failure of current systems to rectify these injustices. Thus, marginalisation from access to safely managed water in rural communities is an inherited injustice located in resource inequality and the discrimination of black rural communities. The findings presented in this chapter are organised around seven main themes: 1) the paradox of the political party t-shirt and access to safely managed water; 2) infrastructural and livelihood neglect; 3) the challenge of collecting water from the water truck; 4) the challenge of collecting and storing water for daily use; 5) sourcing and using water under inhumane conditions; 6) relying on limited water for everyday household use; and, 7) limited access to water disrupts community cohesion.

## **5.2 The Paradox of the Political Party T-Shirt and Access to Safely Managed Water**

In South Africa, around the local and national election periods, politicians and government officials go on campaign trails across the country hoping that they will garner voter support. Notably, the governing African National Congress (ANC) uses this opportunity to distribute food parcels, and ANC marked T-shirts across communities as a strategy to mobilise support among voters (Plaut, 2014). As Plaut (2014) argues, the ANC distributes more T-shirts than any of its political opponents. The author further notes that when ANC politicians visit communities around election time, they leave a trail of yellow T-shirts with the party's slogan 'a better life for all' (Plaut, 2014). This might also reflect the vast spending power of the ANC. Ironically, and of interest to this study, while political T-shirts reach isolated communities around election time, the same efforts diminish once political parties are elected into government.

In this section, I draw on the participants' views to illustrate how politicians lobby in resource-poor rural communities during elections but often neglect these communities in terms of service delivery after the elections. A striking photograph (Figure 5.1 below) produced by Nompilo, a 27-year-old participant, located this argument poignantly. She produced a picture of a woman pushing a wheelbarrow containing three water containers, seemingly on her way back from collecting water at a nearby waterhole. What is striking about this particular picture is that the woman pushing the wheelbarrow is wearing an ANC T-shirt, with the face of its then-president, Jacob Zuma. Noteworthy is the fact that the words 'Vote ANC' are printed on the T-shirt.



**Figure 5. 1:** Woman wearing ANC T-shirt and pushing wheelbarrow with water containers (Nompilo, Female, 27 years, photovoice)

Describing her picture, Nompilo said,

*This picture shows the burden of collecting and carrying water from the water truck to the yard and the house. It shows the physical strength that is sometimes required. This picture is important to show how physically straining and time-consuming it is. As a community, it is like we have been neglected and left to fend for ourselves (Nompilo, Female, 27 years, 9 October 2019).*

She further explained how physically straining water carrying is, which is why she opted to use the wheelbarrow.

*I initially took the wheelbarrow to make it easier for me to carry the containers and buckets. Still, I also realised that using a wheelbarrow makes it easier to collect more than one bucket of water at the same time. I can do more with less time (Nompilo, Female, 27 years, 9 October 2019).*

Geere and Cortobius (2017) affirm Nompilo's report about the physical strain of carrying water. Their study shows that persistent physical pain or movement problems are associated with fetching and carrying heavy water loads. Moreover, these scholars report subsequent physical illnesses such as spinal musculoskeletal disorders and cervical compression syndrome. As

pointed in Chapter Two, this indicates that collecting water is a labour-intensive task that has health implications for people living in resource-poor rural communities.

Concerning Nompilo's photo above, during some of the FGD, the participants shared their frustrations about politicians who come to their community around the election periods and promise to improve the state of water service delivery but quickly disappear after the elections. This was expressed strongly by 24-year-old Lungile, who described her frustration.

*What frustrates us the most are the empty promises. You see, when it is election time, all these politicians are up and down in the community telling us they will bring us water, fix our roads, and all of that. But as soon as the elections are over, they suddenly do not have time to come into the community, let alone bring that water. The only indication that they were ever here are the ANC T-shirts we will all bump into each other wearing (Lungile, female, 24 years, 9 October 2019).*

Other participants supported these sentiments by also sharing their frustration:

*What frustrates people is all the noise one (referring to politicians) makes whilst knowing very well they won't deliver. I would rather they don't even say anything at all. We know we are poor but don't make us stupid (Thobeka, female, 24 years, 9 October 2019).*

*I think mom is the only one who is still hopeful and is always pushing us to vote. As for us, who have grown up in this situation only to be reminded every three to four years that no it shouldn't be like this, there should be more; we no longer go with optimism or don't even bother at all (Nomkhosi, female, 21 years, 16 October 2019).*

Available literature has drawn attention to the fact that in several resource-poor communities, it has become a norm that during election campaigns, political parties hand out T-shirts and food parcels to communities (Brierley & Kramon, 2018; Bruce, 2014; Pilane, 2016). However, since the service delivery needs of communities, such as eMdubezweni, are seldom realised, the T-shirt becomes a reminder of a promise deferred. Indeed, the participants saw no value in these T-shirts since they did not necessarily meet their urgent need for safely managed water. Instead, as Nompilo explained below, the participants used these T-shirts as clothing items to wear when running daily household chores.

*I only look forward to those t-shirts so I can have something to wear around the house when I'm cleaning or something to sleep in (Nompilo, female, 27 years, 9 October 2019)*

In addition to holding a low value for the political party T-shirts, the participants also had low expectations about the provision of safely managed water to their community post-elections. The participants felt that the T-shirts were simply a method that was used by the politicians to manipulate the community into voting political parties into power. This was emphasised during one FGD, where some of the participants suggested that they only lined up to vote to receive T-shirts from political parties.

*During elections, you see us all following each other walking to the school to register to vote, and as soon as we get there, we are given those yellow t-shirts. The campaigners know they need to have those t-shirts. If they don't have them, then what is it that they are there for because they cannot help us with anything else really (Sizwe, male, 21 years, 16 October 2019).*

*I find it disrespectful to a certain extent and very condescending. We are people, and you know and see our needs, but you choose to continuously lie to us and shove us with those ANC T-shirts. I would rather they don't even come at all, and as a community siz'bone senzenjani (see for ourselves what we can do) and not have to beg people who have been put in offices to help us but fail to do that (Mxolisi, male, 26 years, 9 October 2019).*

There was a sense of lingering hopelessness and defeat from the participants. As shown above, Mxolisi settled to “*see for ourselves what we can do*”. These feelings of distrust and hopelessness that anything would ever be done to change their community’s predicament affirm the tenets of entitlement theory. In particular, these findings point to a history of rural neglect and current systems’ failure to rectify such marginalisation. As argued in Chapter Three, this neglect is rooted in resource inequality which historically ostracised black rural communities. Instead, impoverished rural communities are manipulated into participating during elections with the promise of improving their livelihoods. Available literature argues that the value of the t-shirt serves nothing more than manipulating communities into voting (Bruce, 2014). Yet, as Tantoh and Simatele (2017) report, this political canvassing seldom leads to communities receiving basic services such as safely managed water. Over 60 percent of

South Africans in rural communities report municipal neglect in service delivery after the elections (Bruce, 2014).

These findings suggest that the community's participation in the elections yielded no tangible results for their community's development. Instead, the community came to terms with the fact that the government used political party T-shirts as a replacement for service delivery. This neglect, as I show in the sections below, brings several other challenges for rural residents; challenges that impact their livelihoods.

### **5.3 Infrastructural and Livelihood Neglect**

Public infrastructure is the foundation for income-generating activities of a country and is fundamental for socioeconomic development (Rioja, 2013; Palei, 2015). Dinka (2018) argues that, for global south countries, infrastructure development ensures access to services, including access to safely managed water. In this study, the participants revealed significant challenges with some of the water infrastructure that was installed in their community. To demonstrate, 19-year-old Ntokozo produced a photograph (Figure 5.2 below) of a leaking water tank to illustrate the water infrastructure's dire situation at eMdubezweni. According to the producer of this photo, the community had reported the state of water infrastructure to local authorities on several occasions. Further, the participants revealed that they had asked the local municipality numerous times to fix leaking water tanks. However, their requests were ignored and, during data collection, nothing had been done to remedy the state of the community's water infrastructure. Referring to her photograph, Ntokozo highlighted how,

*We've reported to the councillor. He knows the situation in the community. He is very aware of it because he lives here as well, but nothing gets done. Nothing changes (Ntokozo, female, 19 years, 9 October 2019).*



**Figure 5. 2:** Leaking Jojo tank used to service three households (Ntokozo, female, 19 years, photovoice).

Referring to the picture above, another participant, 24-year-old Mbali, made a metaphoric comparison of the leaking water tank to the neglect they experienced.

*This picture clearly shows the wastage of a resource that our community is already lacking. I feel like our health and lives are leaking out because we use water for so many things, and instead of using it for those important activities, it is falling to the ground. This picture illustrates the lack of infrastructure maintenance and neglect in the community by the municipality* (Mbali, female, 24 years, 9 October 2019).

These findings correspond with research by Maziwisa and Lenaghan (2020) in rural Limpopo. These scholars found that rural communities in their study had limited access to safely managed water because of leakages, theft, and poorly maintained infrastructure. In eMdubezweni, just like in the communities studied by Maziwisa and Lenaghan (2020), I found that the community resorted to unsafe water that is collected from the local waterhole (see also, Mothetha, Nkuna & Mema, 2013).

It is disconcerting that the local authorities had been made aware of these grievances by the community of eMdubezweni, yet they remained mum about fixing or even maintaining water infrastructure. As highlighted in both the conceptual framework developed from the literature reviewed and the theoretical framework that guided this study, these findings affirm the neglect of resource-poor rural communities. Mbali emphasised her community's plight poignantly. Her

assertion that “*I feel like our health and lives are leaking out*” demonstrates the state of despair and desperation by the participants. This is telling because it shows how marginalisation has impacted their daily lives and mental health. To suggest that their health and lives were leaking out was to lament the dire need for a remedy in their neglected community.

These findings affirm that local authorities neglect rural water infrastructure. However, the findings further speak to the neglect of people’s health and wellbeing. This sense of isolation and neglect was further expressed by 22-year-old Anitha, who lamented how “*...as a community, it is like we have been neglected and left to fend for ourselves*”. Indeed, some of the participants experienced this neglect as a form of punishment. For example, Anitha further described this neglect as a form of being “*sidelined and punished*”. Moreover, she affirmed the conceptual framework about rural communities being neglected because of their geographic isolation (Bulled, 2017). She shared the following:

*It feels like we are side-lined and punished just because we live far and aren't as rich as other places and are in rural areas* (Anitha, 22 years, female, 9 October 2019).

Another participant, 34-year-old Zandile, concurred these sentiments by locating geographic isolation and neglect by local municipal councillors into her community’s struggle with access to safely managed water.

*I just think we were very unlucky to live in a place so far where not even the councillors care what happens to us even when they experience it themselves.* (Zandile, Female, 34 years, 9 October 2019).

The infrastructural and overall livelihood neglect experienced by the participants was not just at the state level. Still, the community continued to be ignored by its local leaders (i.e., the ward councillor and the local chief). The ignoring of the community’s needs is troubling for two reasons. First, the ward councillor is democratically elected by community members to provide leadership, foresee the successful delivery of services, and provide tailor-made socioeconomic interventions for the livelihood of the community (Vezi, 2016; Thornhill & Dlamini, 2012). In other words, the community had entrusted their lives and wellbeing to their ward councillor, who also acts as the governor for the community’s municipal budget. Second, it is noteworthy that the councillor lived in the community. Therefore, the neglect of the eMdubezweni community was not just happening on his watch, but he also witnessed it every day. These findings illustrate the nature, scope, and depth of government neglect, as suggested in the

conceptual framework (See Chapter Two). Furthermore, as the entitlement theory suggests, the distribution of water resources in South Africa is not justified, since resource-poor rural communities, including eMdubezweni, remain marginalised, neglected, isolated, and ignored.

The participants also highlighted limited water resources. For example, they spoke about how several households were forced to share a single water tank. Regrettably, as shown above, these water infrastructure were often unkempt, making it very difficult for households to share water evenly. According to the participants, the water tanks were donated by local non-profit organisations, hoping that the local municipality would see to their maintenance and care. However, this had not happened, and households were pushed into sharing an already limited resource. Nomathamsanqa, a 25-year-old woman, highlighted this plight by reporting that,

*...its six households all collecting water from this one tank. We all have to run and collect the water in containers and buckets because if we don't, the water is going to leak excessively and be wasted. The households who don't have the small tanks that some households might have or don't have many containers to collect water in are badly affected. Especially because the borehole hand pump does not even work.* (Nomathamsanqa, female, 25 years, 9 October 2019).

Interestingly, Nomathamsanqa was the first participant to speak up about the two-borehole water pumps that were situated in eMdubezweni. These water pumps were installed by the municipality in 2018; however, they had never been maintained. At the time of data collection for this study, the water pumps were broken and did not produce water. Mbali, a 19-year-old participant, captured the only photo (Figure 5.3) that illustrated one of the community's water-pumps; which the residents of eMdubezweni struggled to receive water from.



**Figure 5. 3:** A young woman trying to extract water from a broken water pump (Mbali, female, 19 years, photovoice).

Referring to her photo, Mbali reported that,

*This pump has only worked three times since its installation and, it has been less than a year (installed in 2018). There are only two pumps in the community of which are not reliable, the same as this one. Water will occasionally come out (Mbali, female, 19 years, 9 October 2019).*

Similarly, in a one-on-one interview, 29-year-old Muzi shared Mbali's sentiment and lamented how the water-pump near his house only worked for three months after its installation:

*They installed this borehole water pump last year but it is already not working. I can say that it only worked for three months maximum. We don't even know whether it's because there is no water underground or the pipe itself is just built incorrectly but it failed from the beginning. (Muzi, male, 29 years, 9 October 2019).*

Likewise, 24-year-old Lungile shared Mbali's sentiments and further highlighted the poor state of water service delivery in eMdubezweni.

*This picture is important to show the poor quality of water service delivery that we have to endure. It feels like we are forced to accept whatever standard we are given just because we are poor. (Lungile, female, 24 years, 9 October 2019).*

Affirming available literature, these findings suggest that rural water infrastructure, and rural livelihoods by extensions, are neglected (Chukwuma, 2017; Raimi et al., 2019). It is alarming

that even the infrastructure (in the form of water pumps) provided to eMdubezweni was of low quality. The water pumps were broken within a few months after they were installed. This is concerning as it illustrates the little regard afforded to rural communities by the state and local government structures. My study is not the first to find that water infrastructure in rural areas stops functioning shortly after their installation. In Nigeria, Andres et al. (2018) report that up to 30% of water points installed failed within the first year after installation. These scholars further confirm that poor quality infrastructure is often installed in rural communities. They suggest that it is this poor quality that leads to the quick breakdown and failure of water infrastructure. Therefore, as the findings show, the operation and maintenance of water infrastructure in eMdubezweni were neglected and remained a great challenge for residents. These findings affirm the theoretical framing of this study. For instance, the findings highlight gross inequality that manifests in the unjust neglect of rural communities (Manggat, Zain & Jamaluddin, 2018).

#### **5.4 The Challenge of Collecting Water from the Water Truck**

Water collection and storage are a significant part of accessing water (Daniel et al., 2020; McGuinness et al., 2020). When water is not available through piped connections inside the household or in the yard, residents' resort to collecting and storing it in buckets and/or other containers (UNICEF, 2016). This study's findings suggest that the participants faced several challenges relating to collecting and storing water each day. One of the means to access safe water was through a water truck which infrequently delivered every one or two weeks. However, even with these seemingly accessible means, the participants reported a struggle to get the water mainly due to the truck driver's aloofness. To demonstrate, 18-year-old Nokulunga produced a staged photograph (Figure 5.4) showing the water truck replenishing a water tank. In between the truck and the tank is a man the producer of the photo referred to as the water truck driver (not the real driver).



**Figure 5. 4:** Water truck driver replenishing Jojo tank (Nokulunga, female, 18 years, photovoice)

Referring to the photo above and speaking about the truck driver, 22-year-old Anitha, who was responsible for collecting water for her household, reported that,

*The water truck driver is very unapproachable and rude. Once he is done filling up the tank and you ask if you could fill up your buckets and containers directly from the truck, he refuses and says he is not going to fill up water for everyone up to the very last jug (Anitha, female, 22 years, 9 October 2019).*

This contradicted the purpose of the driver's job, which was to provide water indiscriminately to the community. Indeed, there is documented evidence that water truck drivers tend to be aloof and rude towards the communities they are meant to serve. For example, in Fiji, Reece (2017) reported similar attitudes by water truck drivers. While authorities in Fiji have issued warnings to drivers, in my study, the participants reported that no action had been taken to discipline the truck driver. The participants added that they had reported the driver to public officials, but nothing was done to address their concerns. Nkululeko, a 27-year-old male participant, explained:

*I usually don't care for such things but, I once said it in passing when speaking to the ward councillor and said "ul'hlaza kodwa lomuntu wakho" (the driver you send us is very rude) trying to tell him about the driver's bad customer service, and he just said to me that's how he is and it is sometimes dangerous to bite the hand that feeds you. I knew what he meant, and I left it at that (Nkululeko, male, 27 years, 9 October 2019).*

Nkululeko's testimony above speaks to several things. First, the ward councillor re-victimised community members when they reported poor customer service to him. By suggesting that "*it is dangerous to bite the hand that feeds you*" the councillor was silencing Nkululeko. In other words, community members were expected to comply and not question the quality of service rendered. Second, and tied to the point above, these reports suggest that the ward councillor was of the impression that he had the power to take away service provision if the community complained. This attitude contradicts the constitutional duties of councillors in their respective communities. The councillor's response suggests that he felt the truck driver was doing the community a favour. However, delivering water to the community was the driver's legal and constitutional duty. As such, the expectation was that the community should be grateful for the service they received, no matter the quality. Overall, this suggests that people living in resource-poor communities must not voice their frustrations regarding the quality of services they receive, a form of silencing their voices.

Yet, as the participants reported, the truck driver's attitude was cordial towards influential families in the community. Influential families included that of the local chief and the ward councillor. Therefore, it seems the driver had a bias in favour of people who were considered as authority. In one FGD, 24-year-old Thabane highlighted this.

*Although he is generally a rude person, you'll find him smiling and having more patience with certain people and not others. I don't want to say its favouritism because of social or economic status, but if you saw a man who is usually so bitter and hard to approach or never even get out of the truck when he sees you but is always smiling with the people at the chief's house or the ward councillor, what else would one think? (Thabane, male, 24 years, 9 October 2019).*

These findings further highlight the extent of rural neglect by public officials. The water truck driver was rude and the participants reported that he parked a distance away from their

households. This added a layer of difficulty in quickly accessing water. A photograph (Figure 5.5) produced by Muzi, illustrated the water truck parked a distance away from the community.



**Figure 5. 5:** Water truck and Jojo tank positioned far from households (Muzi, male, 27 years old, photovoice)

Speaking about his picture, Muzi reported the following.

*The truck driver has an aggressive attitude. This picture shows how far the water truck parks from households and one has to carry buckets and containers of water a fair distance to their home. The fear instilled by the truck driver is not an example of good service delivery and governance. The distance from households to where the truck delivers the water shows that the municipality is not very considerate (Muzi, male, 27 years old, 16 October 2019).*

In other instances, the driver had altercations with community members over his unwillingness to practice good customer service when delivering water to the community. In an interview, Nokulunga reported an experience where the truck driver had an altercation with her mother.

*This one time, he had finished loading water onto the Jojo tank, and we were there with my sister wanting to now load buckets and containers with water directly from the truck. He drove away to the next Jojo tank for the other houses. Mom followed him on foot, and when she was halfway there, the truck was done loading and was moving again towards her direction. The driver stopped the truck next to her. They had a verbal*

*altercation about him not being willing to efficiently deliver them water when they need it (Nokulunga, female, 18 years, 9 October 2019).*

The findings in this section highlight the quality of customer water service afforded to eMdubezweni. This section illustrates the plight of impoverished rural residents in their endeavour to access safe water. The participants reported experiences of victimisation by their water truck driver. Further, the findings illustrate municipal officials' inaction in addressing the poor state of water service delivery and the inhumane customer service received by this particular community. The participants experienced a two-layered form of victimisation. The first had to do with the fact that their community was poor, neglected, under-serviced, and received a limited safe water supply. The second form of victimisation had to do with receiving poor customer service and the municipality's unwillingness to address this. As the conceptual framework highlighted, these experiences by the participants are located in a history of rural marginalisation and neglect, where impoverished communities are further pushed to the margins and ostracised from quality services.

### **5.5 The Challenge of Collecting and Storing Water for Daily Use**

Linked to the findings reported above, the participants also reported challenges in collecting and storing water for everyday purposes. Even when they were able to collect water from the water truck, storage became another challenge. For example, the participants lamented on the limited capacity and space to safely store their collected water. An important photograph (Figure 5.6) that Nomzamo produced, illustrated the challenge of storing water in the community under study. The photo showed containers with a household's water supply kept outside because of limited storage space inside the house. Storing water outside added a further burden of insects' contamination, which compromised the quality of water.



**Figure 5. 6:** Buckets and water drums containing a household's water supply (Nomzamo, female, 23 years old, photovoice)

Describing this photo, the producer said the following:

*I took this picture to show how we have to collect and keep water from tanks and other sources. [We keep] containers and buckets outside because there is no space inside [the house]. Sometimes we find water contaminated with small insects. We also have to use water sparingly before the truck comes again. The water storage systems we are currently using are not safe and could have health effects from contamination. The sad thing is that we are aware of the contamination risks, but we have no other option because our houses do not have enough space inside to store the containers (Nomzamo, female, 23 years old, 9 October 2019).*

Furthermore, besides reports about the water truck driver's aloofness, the participants' reported that the water truck was not reliable. This further compromised the community's means to access and store water. For example, on occasions when the truck was reportedly under repairs, residents resorted to using unsafe sources such as the waterhole located a distance from the community. In one interview, 22-year-old Noxolo highlighted this plight:

*When the water truck breaks down, we are in trouble. The truck already only comes once after two weeks, so when we hear that it has broken down, we miss two weeks' worth of water, and we have to resort to getting water from either the waterhole or my brother goes up to the mountain where we sometimes get water from the spring. But it barely comes out or when it does, it is brown in colour (Noxolo, female, 22 years, 16 October 2019).*

In a separate interview, 21-year-old Nomkhosi shared similar sentiments.

*Yeah, when we hear there's a breakdown [from the truck], I quickly grab my younger brother, and we take our containers and buckets straight to the waterhole to collect water. The waterhole is also much farther than the [community's] Jojo tank that we get the water from, so it is physically straining* (Nomkhosi, female, 21 years, 16 October 2019).

To support her sentiments, Nomkhosi had produced a photograph (Figure 5.7, below) of a young woman carrying a bucket full of water on her head. According to her, the photo illustrated the strenuous journey taken to collect water from the waterhole on days when the water truck was allegedly broken. Nomkhosi reported that this daily journey strained her head and back, and she complained of a constant backache.

Nomkhosi's backache gives testament to scholarly reports that carrying water has significant health risks (Adams, Stoler & Adams, 2020; Mushavi et al., 2020). For example, Geere et al. (2018) study in South Africa, Ghana, and Vietnam found that people who carried heavy buckets of water on their heads or with their hands were at a greater risk of reporting either upper-back, hands, or shoulder pains. Indeed, other studies report that the head-loading of water buckets contributed to musculoskeletal problems (Kadota et al., 2020).



**Figure 5. 7:** Young woman coming from collecting water (Nomkhosi, female, 21 years old, photovoice)

Some participants, like 21-year-old Nonjabulo, resigned themselves to this daily duty. She found it easier on her body to use her head instead of her hands to carry the water.

*I even prefer to carry the water on my head because it is easier to walk with the bucket than it is if I'm going to carry it with my hand. I feel like my shoulder is about to fall off when I carry it with one hand. I'm pretty sure there is some health issue with carrying water like this but mom always says to me that they have been doing this since they were young girls and nothing is wrong with them so I shouldn't be dramatic (Nonjabulo, female, 21 years old, 16 October 2019).*

Collecting water every day also delayed other daily activities. In one staged photograph (Figure 5.8) produced by Nonjabulo, a child is seen collecting water from a waterhole. Speaking about this photo, and making special reference to the children who are tasked with collecting water for their households, Nonjabulo said that,

*Time spent on water collection could be spent on homework for school. This is dangerous since education is the most effective tool for escaping poverty. Children collect water for household activities. As much as children should be taught*

*responsibility and do their chores, water collection is physically straining on them as well (Nonjabulo, female, 21 years old, 16 October 2019).*



**Figure 5. 8:** Child fetching water from local borehole (Nonjabulo, female, 21 years old, photovoice)

This was the first-time during data generation that children were mentioned within the context of water-related challenges. Indeed, this suggests that, in eMdubezweni, water collection was the responsibility of both adults and children. According to Geere and Cortobius (2017), close to 60% of children in resource-poor rural communities are involved in water collection and spend up to 11.3 hours per week fetching water. As evidenced by the photo above, the water from the waterhole was of poor quality and unsafe. This means that in contexts where there is limited access to safely managed water, households used unsafe, and possibly contaminated water (Poirot et al., 2020). This was an additional challenge to children in the community.

*Although the quality of water [from the waterhole] is not very good, we still sometimes use it for the children to wash their school uniform because they cannot wait for when it is laundry day which is on Fridays, the day after the truck comes. As a consequence, their school shirts are not as white as they should be, and sometimes after they come from collecting water you see the joints in between their fingers (Nokuthokoza, female, 20 years, 16 October 2019).*

*Children are expected to go to the waterhole every afternoon to collect water to wash their uniforms. They travel long distances from school and want to drink water but cannot because there is none (Nomfusi, female, 35 years, 16 October 2019).*

*The reality is that the water collection by children almost every day after school takes away from the time they could be spending doing their homework. By the time they're done, they are exhausted from the job, bearing in mind that they had to walk from school. It's a true injustice because they did not choose this (Lungile, female, 24 years, 16 October 2019).*

*Sometimes you'd find that the buckets they (children) are carrying are quite bigger than them, surely that has some effect on them. If they don't carry big buckets, they would need to make more trips to the waterhole (Noluvuyo, female, 26 years, 9 October 2019).*

Although this study focused on adults' experiences, these findings on how water access is a challenge for children cannot be ignored. They suggest that limited access to safely managed water impacted both adults and children, which further compromised time spent on educational and other social activities (Addae & Adu, 2020; Sakar, 2020). Levison et al. (2017) has argued that little scholarly attention has been paid to how water fetching impacts children's livelihoods. Therefore, more research is needed to understand children's challenges about living in communities with limited access to safely managed water. However, the focus on children was beyond the scope of my research. Finally, findings in the section draw attention to how water collection and storage presented a daily challenge for the participants, their households, and their community.

## **5.6 Sourcing and Using Water under Inhumane Conditions**

Access to safely managed water does not only allow rural communities to conduct their daily activities; it also helps them to function each day. As argued in Chapter Two, access to clean water from reliable sources, such as piped taps, is essential for human wellbeing and dignity. When this access is limited, communities face the risk of using water under grossly undignified and inhumane conditions. This section draws on the participants' photovoice illustrations and their perspectives regarding sourcing and using water under inhumane conditions in their rural community. For example, eMdubezweni had no piped water taps. The community relied on

either water tanks that were replenished by the water truck or the waterhole. Thus, the community had resolved to connect pipes to the waterhole to draw water for such things as washing laundry and cleaning their households. To demonstrate, Sthembiso produced a staged photograph (Figure 5.9) of a group of children from the community drinking water drawn from the waterhole. What was disheartening about this particular picture was that community members had to drink directly from the pipe (as one of the children in the picture illustrates), and that the water was unsafe. This is not only undignified, but it also has health implications as infections can be passed throughout the community from sharing a single source of water (Furlong et al., 2019; Qureshi, 2017).



**Figure 5.9:** Children drinking water from a pipe connected to a waterhole (Sthembiso, male, 27 years old, photovoice)

Describing his photo, Sthembiso noted that,

*This picture represents the legacy that our children have. It's unfortunate because this is the life they grow up knowing. They do not know that there are taps or piped water connections (Sthembiso, male, 27 years, 16 October 2019).*

Other participants, such a 21-year-old Sizwe and 26-year-old Mxolisi reflected on these inhumane means within which their community sourced and used water.

*...we connect pipes to that waterhole, and that's the water we use to irrigate. If someone wants to build a house, they use that water to make the bricks. We also use the water*

*for drinking, for both us and the livestock. But sometimes, the waterhole itself dries up (Sizwe, male, 21 years, 16 October 2019).*

*You see how dirty the waterhole water is? We collect it just like that. Of course, we boil it before using it, but it depends on what you want to do with it. If the ladies are going to use it to do things around the house, they will boil it, but if it's me just wanting to freshen up my room because I've got a visitor coming, I just add a bit of detergent to it and it's fine but the truth is that the water is filthy and it's a shame that we find ourselves in a position to have to use it (Mxolisi, male, 26 years, 16 October 2019).*

Mxolisi's use of the expression, "*it's a shame that we find ourselves in a position to have to use it*", gives support to the fact that the participants experienced the use of unsafe water as shameful, inhumane, and undignified (see also, Ngure et al., 2014; Mohamed, 2020). Further worrying is that the community had to share their water sources with livestock and other domestic animals. To illustrate, because of limited water and because the waterhole tends to dry up, Nomathamsanqa produced a photograph (Figure 5.10, below) of a calf coming to drink water stored in two buckets. The water was sourced through a pipe connected to the waterhole. According to the participants, this water was collected to run household errands such as cleaning.



**Figure 5. 10:** A calf coming to drink water from a bucket (Nomathamsanqa, female, 25 years old, photovoice)

Speaking about her photograph, Nomathamsanqa reported that,

*We also share alternative water with animals. Most days you find the cattle all laying around the waterhole. They also go in the water to drink. I'm not sure how hygienic or unhygienic that is but if it was supposed to make us sick we would have heard something by now. More than making anyone sick, I think it is just disgusting considering all the parasites that are on the cattle* (Nomathamsanqa, female, 25 years, 9 October 2019).

Nomathamsanqa's choice of the word "*disgusting*" further signifies the inhumane nature of the participants' experiences with accessing water. Sharing a water source with livestock increased their risk of disease. For example, Wardrop et al. (2018) found that livestock was a significant risk factor for the contamination of drinking water at the point of consumption. Yet, Nomathamsanqa seemed to have been oblivious of this fact. According to her, if the water was unhygienic, there would have been reports of illnesses associated with drinking the water. Indeed, even if there were no reports of physical illnesses, using water under these conditions was experienced as shameful and disgusting. Nomathamsanqa's statement above suggests that the participants' experiences with using unsafe water impacted their mental wellbeing. There

was also a sense of empathy for the livestock. Some of the participants articulated the animals' distress and desperation to find drinking water.

*Sometimes we see how thirsty the livestock gets because whenever people are collecting water, it (the livestock) would come next to their containers and buckets and almost knock them over to get the water. Therefore, this would indicate that the livestock is thirsty as it is difficult for them to rely on the waterhole as it sometimes dries up (Linda, male, 29 years, 16 October 2019).*

*We then have a big problem. A huge problem. The livestock dies because they have nothing to drink. We try and give it a bit of the water from the tank, but it's not enough, and they end up dehydrated and die (Sicelo, male, 19 years, 16 October 2019).*

These findings reveal that, in water-scarce communities, residents are forced to share available water sources and supply with their domestic animals. As I highlighted in Chapter Four, livestock was another source of socioeconomic sustainability for the participants. Thus, it is not surprising that the community allowed their livestock to share water sources with them.

Besides the challenge of collecting water from unsafe sources and sharing the water with livestock, the participants also reported using water under inhumane conditions. To illustrate these inhumane conditions, 35-year-old Nomfusi produced two telling photographs. In the first photograph (Figure 5.11) an elderly woman is seen collecting water from a tank. Visible in the picture is the muddy state of the environment immediately around the water tank. To collect water into her bucket, the woman stands on the muddy ground. The tank itself is installed on top of unstable bricks and not directly onto the ground. This highlights the instability and dangerous ways some of the community's water infrastructure was installed.



**Figure 5.11:** Woman standing in mud collecting water from Jojo tank (Nomfusi, female, 35 years old, photovoice)

Speaking about this photo, Nomfusi mentioned that,

*Before beginning with the washing, one has to first collect water for the house. Even if you feel there is enough water, you still collect just an extra bucket or so. Washing for an entire week for so many people requires a lot of water you even want to cry for the water that falls on the ground the way we sometimes struggle for it (Nomfusi, female, 35 years old, 16 October 2019).*

In her second photograph (Figure 5.12), Nomfusi captured the same woman doing her household's laundry. In the photo, not only is the water for her laundry limited, but she also has to do washing in an unclean environment. This is demonstrated by the dirty buckets and the clothes on the ground.



**Figure 5. 12:** Woman doing household's weekly laundry (Nomfusi, female, 35 years old, photovoice)

According to Nomfusi, she took this picture,

*To show that doing laundry is no longer one's personal choice but is dictated by which day the water truck comes if it comes at all. And how much water we manage to collect. This picture is important as it shows that there is a backlog of washing and it piles up. We are not people who have many clothes, so it is important for us to always have clean clothes. There are times when one needs to go into town and because one might not have clean clothes or the desired clothes are not washed, we end up being inconvenienced. Having to use water sparingly, even for important things, is dehumanising. School children also come home and there is no water for them to wash their school uniform and end up going to school with dirty uniforms. This happens especially towards the days when the water truck is due to come (Nomfusi, female, 35 years old, 16 October 2019).*

Nomfusi used the word “*dehumanising*” to describe the community’s experience with using water sparingly. For her, living in a community with limited access to water and experiencing challenges related to this deprivation was regarded as dehumanising. Another related photograph (Figure 5.13) of a woman doing her laundry, and produced by 24-year-old Lungile, also illustrated the dehumanising ways that the community is forced to use water. Fundiswa and Nomusa echoed the sentiment that having limited access to safe water made their lives difficult.

*There are many of us in one household. Usually, a minimum of six people and everyone has their washing. So, when the water truck finally comes, there are piles of dirty clothes for six different people, and the thing is that for young children you are supposed to wash for them daily as they are always getting dirty. So not having reliable access to water truly makes life difficult. Life is not as it should be (Fundiswa, female, 23 years, 16 October 2019).*

*Doing the washing is a nightmare. I hate it because it takes the entire day and one has to use almost six buckets of water to do the washing. How we wash has also become dependent on how sunny it is. When it is sunny, we will do the entire washing that needs to be done, but when it's sunny with a bit of cloud, we wash only the important things such as undergarments and work clothes (Nomusa, female, 43 years, 16 October 2019).*

Both the photograph and Fundiswa's words affirm that rural residents are stripped of their dignity and pushed to find alternative means of surviving with limited water. Their lives are made difficult when they cannot access readily available and safely managed water.



**Figure 5. 13:** Woman doing the washing using grey water (Lungile, female, 24 years old, photovoice)

In other instances, the participants reported that they had to re-use or recycle the water to serve different functions. For example, they would use water for bathing and later use the same water for washing laundry or cleaning their households. In other cases, the participants shared bathing

water in their homes to save this resource. Other means of using water sparingly involved wearing their clothes a couple of times before washing them.

*Sometimes we use the water one was bathing with to do the washing, but it depends on how clean the water is. If the water I was using to bath was already used by someone else, I cannot use it to do the washing because it will have an ugly smell or be too dirty by then (Nokulunga, female, 18 years, 21 October 2019).*

*We end up having to repeat clothes more than twice sometimes, especially in winter when one will be indoors the whole day. But right now, as it is in summer, it is truly difficult because one sweats so we repeat clothes not because we want to but because we have to save water (Nomzamo, female, 23 years, 21 October 2019).*

These findings are in line with existing literature. For example, researchers report that rural communities have opted to use recycled water to do their laundry, for body hygiene, and cleaning (Newcomer et al., 2017). The re-using of water allowed the water-stressed community of eMdubezweni to conserve this resource. Yet, even with these strategies for conserving water, the participants still experienced limited access to safe water as “*very difficult*”. Nomfusi, a 35-year-old woman, highlighted the following:

*Although we try and use water sparingly when doing the washing, it is very difficult. You need to have water to wash and another bucket to rinse. You also need to be careful not to start with dark clothes because they change the colour of the water, so you need to start with bright clothes. Even then it cannot be your reds and oranges because they will also change their colour. So, it has to be the white clothes first, then other bright colours and the last batch will be the dark ones; your blacks and greys. If you make the mistake of starting with the dark colours you are going to need to change the water, and that will just waste it. So, we end up having to put a lot of thought into the washing process, which sometimes feels a little unfair because we have to use water so sparingly. Doing the washing takes longer than it should (Nomfusi, female, 35 years, 16 October 2019).*

These findings illustrate the burden of sourcing and using water under grossly inhumane conditions. It seems that having limited access to safely managed water dictated the lives of the residents of eMdubezweni broadly and the participants in this study more specifically. The

participants spent more time contemplating using water sparingly and spent long periods running simple everyday activities.

### 5.7 Relying on Limited Water for Everyday Household Use

Related to the findings above, the participants reported how limited access to water disrupted their daily activities, including cooking, cleaning, and washing dishes. Using limited water each day further posed a challenge in their households. To illustrate, Bandile captured a photograph (Figure 5.14) of a white bucket with dirty water.



**Figure 5. 14:** Bucket with dirty water used to clean the house (Bandile, male, 18 years old, photovoice)

When I enquired about this particular photo, Bandile reported that he produced it,

*To show how minimal water can have an impact on cleaning activities in the household, especially our traditional houses made from mud which sometimes gets very dusty. If we do not use enough water, we are working backward. We have to skip cleaning days. This picture is important to show the impact on household hygiene and cleanliness because of our lack of access to a reliable water supply. This can have detrimental effects on household health (Bandile, male, 18 years, 16 October 2019).*

In another photograph (Figure 5.15), Nomusa illustrated her household's struggle to prepare food every day because of limited available water at their disposal. In the photo, a woman is

preparing a meal on a makeshift stove. During our one-on-one interview, Nomusa had the following words to say:

*The worse thing is that we struggle not only for food but for water as well and the fact that whether we can make food is reliant on the water is disheartening. We cannot even cook, and now we have to use the little money we have to buy bread and margarine. That doesn't need water. You know, water covers you even when there is no food. You can drink water, and you will be complete. Now with no water, you cannot cook and clean. I sometimes feel like we are living like animals. Even animals sometimes have it better than us (Nomusa, female, 43 years, 21 October 2019).*



**Figure 5. 15:** Woman using limited water to cook (Nomusa, female, 43 years old, photovoice)

Nomusa's very emotive words, "*I sometimes feel like we are living like animals*", reveal the extent of the emotional toil in their lives. To feel like an animal suggests that rural communities occupied a very low social status where they cannot provide resources for themselves. Being denied unlimited access to safely managed water, as Nomusa suggested, challenged their already limited income base. They found themselves having to search for alternative ways of getting food. These finds reveal a trend where the absence of water leads to food insecurity in rural communities. Several scholars have made this link (Boateng et al., 2021; Rosinger & Young, 2020). For example, Boateng et al. (2021) report that a community's lack of access to reliable water is associated with high food insecurity and poverty levels. The lack of access to safely managed water infringes on individual and community rights and freedom. The participants felt that their freedom even to do menial things was taken away from them. For instance, speaking about her photograph (Figure 5.16), which showed a hand pouring very little water into a kettle, 24-year-old Thobeka had the following to say:

*This picture is important to show ukuncikiseleka (being deprived). It is to show that we do not even have the freedom to boil water in a kettle to make a cup of tea or boil water to carry out daily activities like cooking freely (Thobeka, female, 24 years, 16 October 2019).*



**Figure 5. 16:** Limited water available to boil water in a kettle to make tea and cook (Thobeka, female, 24 years old, photovoice)

*Ukuncikisela*, the term used by Thobeka to refer to her picture, is an isiZulu word that loosely translates to someone deliberately denying another person something of value. It is an emotive word that speaks to a sense of anger arising from being deprived of an important resource. Thobeka's choice of this word demonstrates a feeling of anger from being denied the right and freedom to safe and easily accessible water. As Thobeka noted, it was difficult to even make a cup of tea given that water was limited. Thobeka was not the only participant who illustrated the severity of the community's water shortage. In yet another photograph (Figure 5.17), 26-year-old Noluvuyo captured a dish-basin with very little water for washing dishes. During our interview, Noluvuyo described her picture as follows:

*This picture shows the last day before the water truck comes with the water. There's little to no water available for any type of activity to be conducted successfully. This is to show that there is not even enough water to wash and rinse dishes. We have to conduct all cleaning and cooking activities sparingly and in a restrictive manner (Noluvuyo, female, 26 years, 9 October 2019).*



**Figure 5. 17:** Little water available for washing dishes (Noluvuyo, female, 26 years old, photovoice)

Indeed, 18-year-old Nokulunga reiterated these experiences:

*The days closer to when the water truck is scheduled to deliver water are the hardest. On Wednesdays, the water collected for the household is a little over halfway finished. You start conserving the water. You think twice before doing anything. You drink water only if you feel you need to. You can't do the laundry. You only wash the dishes and only the important things like pots and plates. If you can re-use dishes, then you re-use them* (Nokulunga, female, 18 years, 16 October 2019).

Summing up these experiences, 35-year-old Nomfusi emphasised how having limited access to water was not just “*frustrating*”, but also halted their daily functions.

*Ay, this water thing is frustrating. You cannot cook, you cannot clean. The house is dusty, and you can't make a meal. All you can do is feed leftover food* (Nomfusi, female, 35 years, 21 October 2019).

These findings suggest that access to safely managed water must be understood as a necessary condition for quality livelihoods (Neves-Silva, Lopes & Heller, 2020; Jepson et al., 2017). The participants were denied an opportunity to live dignified lives where their human rights and freedoms were protected. Moreover, by being denied easy access to water, the participants lived a form of negotiated livelihood where they had to find alternative means to survive in water-deprived contexts.

## 5.8 Limited Access to Water Disrupts Community Cohesion

The studies reviewed in Chapter Two reported that water scarcity and insecurity were a cause for conflict in resource-poor rural communities (Godinez-Madrigal, Van Cauwenbergh & van der Zaag, 2020; Wolf et al., 2005). Within this context, as Hove et al. (2019) argue, water-related conflict manifests in the form of social unrests and protests that are sometimes fatal. In this study, although the participants produced no photographs to illustrate conflict, I found that limited access to safely managed water caused intra-community conflict which disrupted cohesion. Much of the conflict arose from what the participants experienced as unfair water access behaviours by neighbouring households. Nokuthula, a 26-year-old woman, recalled one such incident:

*There was this one house below ours that used to connect pipes to the tank, and the bad thing is that their pipe would leak all over the road wasting water. So, some of the other neighbours would complain that instead of connecting pipes to the tank, they should just come to collect the water with buckets and containers like everybody else. When someone else would want to collect water from the tank, they would refuse to remove their pipe so denying the rest of us water so that they can get it. They (the neighbours) would even fill up metal tubs and small containers for their goats meanwhile some people had not even collected water to drink. So, we would have to wait till they are finished before we could get a chance to collect water (Nokuthula, female, 26 years, 16 October 2019).*

Other conflicts resulted from the frequency with which certain households accessed water each day from the community's water tanks. For example, the participants reported that other families would frequent the water tank more than once a day. This limited other households' access to water from the tank. Mawande, a 20-year-old man reported:

*Other community members who share the water tank often complain when they go collect water at the tank too often per day, so it's better to go to the tank daily. Still, we barely do that because if we did the water would run out and we would not get any. A little conflict is nothing compared to not having access to water (Mawande, male, 20 years, 9 October).*

Moreover, as 23-year-old Nomzamo reported below, other conflicts occurred because neighbouring households used the community's clean water for their livestock and left little to no water in the tanks for other households.

*To this day, there is still a bit of tension between my dad and Bab'Majola (a neighbour) from up the road. Dad says that he has never seen such a selfish man who thinks he's family is the only one that deserves to have water. Even worse, sometimes it's just so his livestock can have something to drink (Nomzamo, female, 23 years, 9 October 2019)*

These findings affirm that limited access to safely managed water is a source of conflict in resource-poor rural communities. They further reveal the nature and extent of these conflicts. Inequalities in terms of accessing safe water from water tanks lead to altercations among community members. These conflicts interrupt social cohesion and community unity, which is the foundation of resource-poor rural communities (Fagan et al., 2019). Quantitative research by Fagan et al. (2019) reports that 70% of surveyed households in their study had experienced an intracommunity conflict seemingly caused by water shortage and limited access to safely managed water (see also, Devoto et al., 2012; Bisung & Eliot, 2016). The findings from my study affirm results from these quantitative studies.

## 5.9 Synthesis

The findings from this reveal a plethora of water-related issues and challenges that the participants from eMdubezweni rural community faced. First, the findings indicate the extent of neglect that this community experienced. As the results illustrate, politicians and other people in government only visited the community during and around elections. Community neglect was disturbing given that these political campaigners did access the community and distributed political party T-shirts during elections. However, post-elections, politicians neglected the community and abandoned their promise and commitment to providing quality services in the community. Therefore, this suggests that rural communities experience neglect and are forgotten immediately after elections. This level of desertion demonstrates historical and current systems' failures to rectify the persistent inequality that has come to signify the South African society. As the study's theoretical framework implied, rural communities have inherited a legacy of exclusion from the national agenda; a legacy rooted in the country's long history of racial, political, and socioeconomic inequality. However, even in the post-democratic

period, it seems the ‘powers-that-be’ have consistently neglected and marginalised rural communities, only to remember their existence during convenient periods such as the elections. In other words, these findings reveal that political parties (and their T-shirts by extension) can reach communities where services are often not delivered adequately.

Second, and tied to government neglect, the findings reveal the extent of water infrastructural and rural livelihood neglect. The participants illustrated the debilitating state of their water infrastructure through the photographs they produced and subsequent group and individual discussions. Reports of leaking water tanks, broken or empty water pumps and a general breakdown of installed water infrastructure dominated some of the data generation sessions. Notably, the participants reported that their local leaders never took measures to address the state of water infrastructure in their community. Instead, the community’s infrastructural needs were neglected. The debilitated infrastructure further limited the participants’ chances of accessing water. As an alternative, they collected and used water from unsafe sources. These actions had implications for the participants’ health and wellbeing, including consistent backaches, headaches, and a sense of hopelessness.

Third, the findings reveal victimisation and bad customer service against the adult participants in this study. Within this context, the participants were victimised in several ways. They experienced neglect for living in a resource-poor rural community, where essential and basic services were hardly available. In instances where services were available, the participants were treated with disdain by the people who were supposed to protect them (i.e., the water truck driver and their ward councillor). Indeed, even when the participants reported bad customer service, no actions were taken to address or stop these behaviours. Instead, as the participants reported, they were forced into silence about their experiences, which further violated their constitutional rights.

Finally, the findings reveal several daily challenges that the participants experienced. These included collecting and storing water (which was often collected from unsafe sources), using water under grossly inhumane conditions, and having limited water to perform daily duties. The participants suggested that their experiences were dehumanising, undignified, and violated their rights and freedom. Having limited access to safely managed water was cited as a cause for conflict among people living in eMdubezweni. Thus, the participants described negative experiences that were located in historical neglect, marginalisation, and the ostracism of rural

communities from essential water services. Further, the findings show the extent to which rural communities, and the people who occupy them, are placed at the bottom of the national basic needs' hierarchy.

According to Nozick's (1974) entitlement theory, human dignity includes the guarantee that people have an equal and just opportunity for receiving sufficient access to basic services. Moreover, the state and its agencies must protect the dignity, wellbeing, and freedoms of their citizens. Likewise, and located within the entitlement theory, the state has the mandate to compensate its people for past violations (i.e., those experienced during apartheid in South Africa) (Maphela & Cloete, 2020; SALII, 2014). Yet, as the findings in this chapter reveal, rural communities are cast aside. The participants felt neglected, with their photographs illustrating a significant burden on their livelihoods and wellbeing. In other words, the community of eMdubezweni experienced what the entitlement theory considers as a violation of their freedom; a violation that is rooted in a legacy of rural isolation from national life. In Chapter Seven, I reflect on both the findings from the study and their implications. In the next chapter, I provide a discussion of findings that addressed the second research question: *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?*

## CHAPTER SIX

### **GENDERED PERSPECTIVES ABOUT CHALLENGES ASSOCIATED WITH LIMITED ACCESS TO SAFELY MANAGED WATER IN A RESOURCE-POOR RURAL COMMUNITY**

#### **6.1 Introduction**

Gender plays a significant role in experiences associated with living in a community with limited access to safely managed water (Gomez, Perdiguerro & Sanz, 2019; Van Houweling, 2016). At the core of these experiences are gender inequality and socialisation. The literature suggests that women are more prone to challenges relating to water insecurity when compared to men (Choudhary et al., 2020; Dickin, Segnestam & Sou Dakouré, 2020). However, not enough literature exists that illustrates the gendered experiences of adults living in a resource-poor rural community with limited access to safely managed water. Therefore, this chapter reports on the perspectives of adult men and women in the eMdubezweni rural community within the context of limited access to water. In particular, the chapter addresses the second research question: *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?* The data analysed in this chapter was generated by using one-on-one interviews and focus group discussions (FDG). Data were analysed using thematic analysis. The discussion of the findings in this chapter is organized around four key themes, namely: 1) men's sentiments about water access and use; 2) ruling patriarchy in the context of limited access to safely managed water; 3) women at the centre of the struggle for access to safely managed water; and, 4) women's compromised health and wellbeing.

#### **6.2 Men's Sentiments about Water Acquisition and Use**

Analysis in this study suggests that the collection (and use) of water in eMdubezweni was largely gendered. Within this context, the male participants reported that collecting water for household use was the women's responsibility. This responsibility was located within cultural and gender norms that reinforced patriarchy and constructed women as domesticated and the primary water collectors (Jeil, Abass & Ganle, 2020). In both the FGD and in-depth interviews,

there was some consensus, particularly among the male participants, that women were responsible for collecting water since they (women) were the ones who conducted most household activities that required water usage. For example, participants such as 29-year-old Muzi supported the idea that women must collect water. He explained water collection as “*umsebenzi wabo (women’s responsibility)*”. A similar sentiment was shared by 21-year-old Sizwe, who suggested that,

*Women are mostly the ones who collect water. I say mostly, but the truth is, it's just them hey. I think women use water the most because they use it in the kitchen, maybe they're washing dishes and cooking. And men mostly use it for their washing and for bathing only. So that's why I think women are responsible for collecting it and using it more, but it's because we also have roles to play in the house. If I asked my sisters to go and herd the cattle, they wouldn't be able to do it. We all have to play our part (Sizwe, male, 21 years, 16 October 2019).*

Muzi agreed with Sizwe’s point by stating the following:

*At home, my sisters are up and down all day; they're cooking, they're cleaning, they're cooking again, bathing themselves, bathing the children. With me, I wake up, bath, and visit my friends, and I stay there the entire day. I come back when I see the truck cause maybe they'll need help taking the containers (carrying the household’s water supply) inside the house. But even when I am home, I know it's not a good thing to collect water, sometimes I will only collect water when my mom calls me by name and says Muzi come and help us (Muzi, male, 29 years, 16 October 2019).*

Further, Mxolisi added that,

*I notice that women use more water than us (men). When my family was away for an entire week because there had been a death at my grandmother's place on my father's side, I was left alone to make sure the house is not left empty. The truck came, and I only collected three buckets for the entire week, whereas when my sisters and mom are here, we collect 14 buckets. It's not even a matter of it that there are more people, but because they just do way more things than we do (Mxolisi, male, 26 years, 16 October 2019).*

These findings are in line with research from the global south. For example, available literature reports that women and girls in several countries spend more hours of their daily time, walking a distance between 6-15 kilometres to transport between 10-15 litres of water daily (Gross, Günther & Schipper, 2018; Jeil, Abass & Ganle, 2020). Likewise, in South Africa, among water-insecure rural communities, Geere, Hunter, and Jagals (2010) report that only three percent of men, compared to 56% of women, collect water for their households. The rest of the 41% are children broadly, and girls in particular who collect water for everyday use. These findings illustrate the extent of gender inequality around water collection in eMdubezweni. Moreover, as Borja-Vega and Grabinsky (2019) argue, these findings highlight how water collection is part of a gendered division of labour agenda in resource-poor rural communities. Within this setting, women are socialised into the water collecting roles from a young age, while men are expected to collect water if and when they want to. In other words, as suggested in Chapter Three, gender socialization plays a significant role in the programming of rural communities' acceptance of water collection as the sole duty of women (Das & Safini, 2018; Meeks, 2018). This was demonstrated by 27-year-old Sthembiso, who cited household chores as the responsibility of women.

*It's usually women because they need to start with the household chores and to cook on time. Not that there's a specific time frame for them to do these things, but there's going to be a bit of conflict if things like cleaning and cooking are not done (Sthembiso, male, 27 years, 9 October 2019).*

Further, the findings reveal that men only collected water under specific conditions. For example, men only chipped in when women in their households were thought to be unfit to collect water. These included instances when women felt ill or when men were alone at home (see also, Islam, 2020; Morse et al., 2020; Mugumya et al., 2017). Mxolisi elaborated:

*I do collect water, but I won't lie and say all the time, usually when I am either home alone, even then, I barely, or when my eldest sister or mom is sick. The younger one barely gets ill, and I can't let her collect on her own. But even then, no one must tell me to do it. It must come from me. Like I said before, everyone has their role to play (Mxolisi, male, 26 years, 9 October 2019).*

Agreeing with Mxolisi's comment, 24-year-old Thobeka stated:

*Ay, it is true. Your brother will only help with water collection if you're sick; otherwise, it's a real mission to get help. One day he flat out told me that period pains are not a reason for him to help me because that would mean he'd have to help me every month. I was so shocked and annoyed. I couldn't even respond* (Thobeka, female, 24 years, 9 October 2019).

Thobeka's comment points to a few things. First, even when a woman was ill, she needed to be in what men considered 'a serious illness' to receive assistance with collecting water. Period pains, in such instances, were therefore not considered a serious condition that merited women to stop collecting water for their households. Second, Thobeka's brother demonstrated a gendered lack of sympathy for his sister's health and wellbeing. The expectation was that Thobeka needed to brave her physical pain to collect water. This further demonstrates the extent of gender socialisation. There was nothing other than a debilitating physical condition that would have motivated Thobeka's brother to assist his sister. Third, and as outlined by the gender socialisation framework, which grounded analysis in this study, Thobeka's brother was 'doing masculinity' (Gelfer, 2016). In other words, his refusal to collect water was a socially acceptable behaviour afforded to him as a man. This implies that he occupied a higher social status (compared to his sister), which warranted his power and the ability to refuse to assist his sister with collecting water (see also, Narasati, 2019). Scholars locate this performance of masculinity within discourses of male cultural pride, and the high-status men occupy in the social hierarchy (Mushavi et al., 2020; Van Houweling, 2015). Thus, men in this study implied that they had a choice to either accept or refuse to collect water for their households. Instead, they only collected water as a service or a form of 'help' offered to women. Carrying the responsibility of collecting water each day would have thus disrupted their masculinity, which constructed water collection as a feminine act that is socially and culturally allocated to women.

Indeed, some male participants shared sentiments that contrasted this performance of masculinity. For example, 18-year-old Bandile suggested that water collection was everyone's responsibility in his household. He explained that:

*It's everyone's responsibility. Although it may seem like it's mostly the women, in this case, it's everyone. At home, when the water truck comes, my sisters and I run to the truck with the buckets and containers. I've heard that the driver doesn't allow some people to load directly from the truck, but he allows us. We load the water into the*

*containers; my sisters put them all together. I then take all of them one or two-by-two to the front of the house where my sisters then put them inside the house* (Bandile, male, 18 years, 9 October 2019).

A few things are noteworthy in Bandile's assertion. First, it suggests that there were men in eMdubezweni who saw the collection of water as everyone's responsibility. Within this lens, a person's biological makeup was not seen as a natural basis for collecting (or not) water. Rather, Bandile defied this narrow stereotypical expectation by opting for a non-gendered role in his household. Second, and tied to the above, Bandile's age could have been a factor in his decision to collect water. These findings suggest that younger men in the community might not have perceived gender as a determinant for roles and responsibilities. However, context does matter in this case. To shed light, Bandile came from a female-headed household, where a single mother raised him and his sisters. This context could imply that Bandile's socialisation was different from those of other men raised by both parents (and especially their fathers). It seems that Bandile's mother did not factor in gender in the rearing and socialisation of her children. Instead, she might have opted for a gender-neutral upbringing of her children.

Yet, Bandile's assertion could also be read as his way of 'performing masculinity'. Indeed, he could have been suggesting that his role in collecting water was how he provided for his family. Bandile was unemployed; thus, collecting water could have been his only means of fulfilling the socially constructed role of 'men as providers' for their families. Work by Motsa and Morejele (2019) affirm this claim. For example, in their study, which explored gender responsibilities among young men who came from female-headed households, the authors found that young men perceived water collection as a means of providing for and taking care of their families. These researchers concluded that the act of collecting water reinforced the young men's masculinity in contexts where they could not provide financial support to their families (similar findings are reported by, Harrison & Michelson, 2019; Kachel, Steffens & Niedlich, 2016; Mfecane, 2018).

Another male participant, 20-year-old Mawande, reported that he too collected water for his household. However, he made the point clear that collecting water was not his responsibility. Mawande insinuated that he only collected water because the water buckets appeared too heavy for his sisters to carry. In other words, he 'helped' to collect the water just to flex his masculine prowess as a show of strength. This means that, for Mawande, collecting water was his way of 'doing masculinity'. He added:

*I usually do collect water at home. But it is not my responsibility. We all have roles in the household, and water collection is not mine. I just do it because those buckets and containers sometimes look very heavy and my sisters look like they're about to faint when carrying them, especially when it's hot outside (Mawande, male, 20 years, 9 October 2019).*

Likewise, 29-year-old Muzi (cited below), conjured the idea that for men, collecting water was done to help the women in their households. Muzi's use of the phrase "*I must help out*" insinuates that he offered his services as a favour, not an obligation.

*You see, there are times when you don't need to be told that haibo siza phela (you need to help out). I must help out. When my sister was about to give birth two months back, I was mainly doing the water collection. So, it's situations like that. Also, not to be offensive but there's a specific time of the month when people (women) will be short-tempered, and when you do even the smallest thing they get mad and start shouting. So, around those times, I help out if I feel like it because I don't like arguing (Muzi, male, 29 years, 9 October 2019).*

Some of the women in this study disagreed with this normalised belief that collecting water was their responsibility. For example, 24-year-old Mbali (cited below) pointed out that collecting water just needed hands and not "*breasts*". Mbali was essentially suggesting that water could and should be collected by anyone, regardless of their biological sex and gender identity. In this instance, being a male was not an impairment that dissuaded one from collecting water. Mbali's comment further illustrates the extent of gendered frustration that women felt about collecting water being cited as their sole responsibility. Her comment also highlights how gender socialisation works to preserve patriarchy which positions men as household decision-makers who can opt out of responsibility. Mbali argued:

*I don't understand why there has to be gender involved. You need hands and not breasts to collect water, so I will never understand why some men feel that it is a woman's responsibility to collect water (Mbali, female, 24 years, 9 October 2019).*

These findings shine a light on gender socialisation and the patriarchal dynamics that exist in resource-poor rural communities. These dynamics reduce women to domestic roles and responsibilities, while men are afforded a choice to participate or not. Alston, Clarke &

Whittenbury (2018) argue that limiting women to only a particular type of work results in masculine hegemony being viewed as normal and natural. This fails to acknowledge women's significant contributions beyond the domestic household context (Van Houweling, 2016; Van Houweling, 2015).

### **6.3 Ruling Patriarchy in the Context of Limited Access to Safely Managed Water**

Beyond men's personal use of water, the analysis revealed that it was challenging to get them involved in the water collection for household purposes. According to the women participants, men only collected and used water for personal, economic or productive purposes. For example, 27-year-old Nompilo suggested that men only collected water for their own needs.

*Men mostly collect water if they want to do their laundry and do their work* (Nompilo, female, 27 years, 16 October 2019).

Another participant, 35-year-old Nomfusi, also highlighted the seemingly 'selfishness' from men when it came to collecting and using water. Nomfusi inferred women's struggle in getting men involved in water collection for household benefits.

*I don't know whether it has to do with a stage of development or the fact that they are men, but my husband's nephews that we stay with do not help with water collection at all. Firstly, they somehow disappear when the truck comes. It's like they forget that everyone needs and uses the water. I look at them walking to the Jojo tank or going to grab an already filled bucket of water when they need to do their washing, and I shake my head. When they must collect water, it is a struggle but when the time comes to herd the cattle they are gone within a second. Ngakhuluma ngaze ngakhathala (eventually I became exhausted with talking to them about this issue)* (Nomfusi, female, 35 years, 9 October 2019).

Research by Ncube (2019) affirms these sentiments by the women in this study. In Ncube's work, men only collected water for their usage and not for their households' benefit. For example, men only collected water for attending to their laundry or sanitation. Available literature suggests that these findings speak to male power and dominance over women; a sense of superiority instilled from a young age through gender socialisation (Altay, 2019; Carter, 2014). Nomfusi's statement that "*Ngakhuluma ngaze ngakhathala*" suggests that she had

addressed this issue several times with her nephews with no success. Her sense of defeat in trying to get her nephews to be proactive speaks to the disregard women face in their households; a form of disrespect that is exercised even by younger men against older women. Her testament further highlights the absence of men from water-related activities.

Patriarchy was also evident in the community's engagement with the water truck driver. For example, the participants reported instances where the truck driver only engaged and listened to men in the community, and neglected women. In other cases, men ensured that there was enough water supply whenever there were ceremonies that involved the community. Men, for example, played an influential role in ensuring that there was enough water during weddings or funerals. The participants illustrated how men could approach both the ward councillor or truck driver to request water delivery for these ceremonies. In female-headed household, the responsibility to communicate with the councillor lay with an older man from the neighbourhood, who acted on behalf of his neighbours. This further illustrates the power of patriarchy in eMdubezweni. No matter their age or whether or not they were related to a particular family, men automatically assumed the role of authority, power, and leadership (Keahey, 2018; Nyaondo, 2020). For example, men negotiated water availability, whereas women collected the water (Ncube, 2019).

*I even see when there is some type of ceremony, if my father or one of my brothers speak to the driver about bringing us water for the event, the message is received very well. However, if it is me, I am told to ask either one of my brothers or my father to come and confirm. It always makes me laugh (Nokulunga, female, 18 years, 16 October 2019).*

*I, myself, don't speak to the driver. It is always my brother. I'm not sure whether it's because he is a man or his position in the ward committee, but we've seen that it is better if he discusses that with the driver (Mbali, female, 24 years, 16 October 2019).*

It is important to note that even though the water truck provided water for particular ceremonies, it remained limited. A patriarchal aspect of these findings has to do with how the truck driver only heeded requests made by the men in the community and ignored requests made by the women. This speaks to the privileging of men and their voices. Gender socialisation in these cases places men in an esteemed position. This suggests that women

remained marginalised in an already marginalised community (Prüss-Ustün et al., 2019; Pomells et al., 2018). Thus, women were marginalised at the macro-level by their respective governments and community leaders on the fact that they lived in a rural area. They further experienced marginalisation at the community and household levels because of their gender identities.

A further probe revealed that water scarcity only became a male concern for their livelihood activities. As 30-year-old Mthembeni explained, a day's plan was disrupted when he woke up to find no water had been collected by the women in his household.

*Sometimes you find that one wakes up with the energy to do work and be productive, only to find that there is not enough water. You immediately lose momentum and feel like your time and energy are wasted because you could, honestly, be doing something productive.* (Sizwe, male, 21 years, 9 October 2019).

These findings reveal a presence of patriarchal dynamics in water access, use, and the community's relationship with this resource. The results reveal that men only collected water when it was beneficial to them. In line with the gender socialisation framework, this also illustrates how men see themselves as figures who do not play an active role in domestic activities. As the findings reveal, their masculinity only allows them to help with water collection when women were either too sick or the buckets women used to collect water seemed too heavy to carry. Indeed, this illustrates how gender roles are prescribed and how this socialisation manifests in ways that discriminate against women. Women play the nurturer's role and conduct activities that enhance their role as homemakers. At the same time, men perform duties, such as speaking on behalf of women, that reinforce their masculinity as providers to or voices for women.

#### **6.4 Women at the Centre of the Struggle for Access to Safely Managed Water**

Analysis in this study further reveals that women in eMdubezweni were positioned at the centre of the struggle for access to safely managed water. For example, in their households, the women participants lamented how they were primarily responsible for ensuring that their homes had water each day. This involved making sure that water containers were constantly available and ready for water collection, and that the water was stored appropriately for household use. In

one FGD with the women participants, Ntombifuthi, cited below, spoke about the water-related responsibilities that were apportioned to her:

*I, as the youngest female at home, am mostly responsible for water collection. I make sure that the empty water containers and buckets are by the doorway or outside next to the house so that when the water truck comes, we quickly run to collect from the water tank and if we are lucky, collect from the truck. But it's my responsibility to make sure that the storage facilities are ready (Ntombifuthi, female, 24 years, 16 October 2019).*

In the same FGD, another participant, 18-year-old Nokulunga, shared similar experiences:

*It's also the same with me. I am the youngest [at home]; although there is only a two-year gap between my brother and me, we were treated like twins when we were younger. Still, when it comes to water collection or doing anything around the house, I'm always leading. I'm not sure whether it's a laziness thing on his (brother's) side or it's because I'm younger; therefore, most household responsibilities fall on me (Nokulunga, female, 18 years old, 16 October 2019).*

It is noteworthy that only women in this study spoke so strongly about their responsibilities around collecting and using water in this water-insecure community. These findings suggest that water collection, storing, and usage were gendered and primarily framed as a feminine role that only women could do. From a gender socialisation perspective, these findings confirm that women in resource-poor rural communities often take on the role of unpaid household work that requires water (Awang, 2019; Das, Pradhan & Nonhebel, 2019). As Thobejane and Florence's (2018) research demonstrates, women, more than men, conduct a disproportionately higher household domestic work share. According to Thobejane and Florence (2018), men often see household work, including water acquisition for their families, as a challenge to their authority and masculinity. Thus, through their gendered socialisation, men often opt for roles perceived as 'appropriate' for their gender identities. In other words, these roles are socially sanctioned and culturally permissive. Therefore, as the tenets of the gender socialisation framework maintain, my study illustrates the social inequalities that exist and are reinforced in rural communities with limited access to safely managed water. Expectedly, these unequal social behaviours manifest through gender inequalities, where women carry the burden associated with limited access to water. Other scholarly work has found similar trends. For example, Jeil, Abass, and Ganle (2020) found that it is often young women's responsibility to secure enough water for their households in impoverished rural areas.

Analysis in this study also revealed that women experienced a sense of frustration and hurt about this gendered trend in both their households and the community. As I continued to probe the women who participated in this study, it was revealed that they felt exploited, overwhelmed, dissatisfied, and reduced to providing service for the men in their households. In one FGD, three women shared their sense of frustration:

*Personally, it hurts me because he doesn't go to the tank and collect the water himself, he'll use the one that I have collected for household and domestic duties. And when that water runs out, I have to be the one who goes to the tank and collects it. He doesn't even take the initiative* (Nomzamo, female, 23 years, 9 October 2019).

*You can't even boycott water collection because it'll be you as the woman who'll suffer the most from lack of access, but it is very frustrating that we always collect water, and the guys refuse. Sometimes I find myself understanding, and on some days, I just feel it is unfair* (Lungile, female, 24 years, 9 October 2019).

*It's very frustrating because we all use the water at the end of the day, and it's not like you collect the water with your breasts. Water is collected with your hands* (Nomkhosi, female, 21 years, 9 October 2019).

These findings reveal the tension which exists in households because of limited water supply. Furthermore, the finds reveal the women's mental state as they navigate their days on limited water, and often gendered acquisition and use of this resource. Moreover, the findings suggest a sense of helplessness in engaging and negotiating for more equal roles and responsibilities with men at the household level. My analysis further points to how the men in eMdubezweni were less concerned about gender equality and the sharing of responsibilities (Mpalanyi Magala, 2015; Naiga, Penker & Hogg, 2015). As the participants cited above explained, men did not even try to take the initiative for collecting water and for using it for the benefit of others in their households. Therefore, these findings suggest that access to the already limited water in eMdubezweni was characterised by inequalities and is regulated by gender-differentiated roles and responsibilities, which are further influenced by culture (Van Aken & De Donato, 2017).

## 6.5 Women's Compromised Health and Wellbeing

The findings suggest that the gendered experiences related to water access challenges compromised women's health and wellbeing in eMdubezweni. These experiences imposed a challenge for both women's physical and psychological health. The participants cited feelings of anxiety and stress due to water insecurity. These emotions were triggered by several factors, including uncertainty about whether or not the water truck will deliver water, or that there would be enough water for their households. Nomusa, a 43-year-old participant, elaborated:

*... The majority of activities that require water are conducted by women, and because of that, one has a lot of anxiety about this water situation. The first type of stress is whether the truck will even get here on time or will it even come. Second, will the water one gets be enough to perform all the household duties effectively because the Jojo we collect from is not just ours alone, we share it with four other households. We cannot collect directly from the truck because the driver sometimes refuses, saying we will finish for other houses (Nomusa, female, 43 years, 9 October 2019).*

Lungile also shared her anxiety by stating that:

*For me, it's the anxiety and frustration of having to collect water from the tanker weekly and then from the bucket or container daily. It would be nice to just get it from a tap. You see when the bucket or container has the very last drops of water, I feel my heart sink at having to go and collect from the tank because you don't even know whether you'll find any water (Lungile, female, 24 years, 9 October 2019).*

Ntokozo also added that:

*On the Wednesday night before the water truck comes on a Thursday morning, we have to make sure that all the containers and buckets are ready. We prepare so much and then there'll be that one Thursday where the water truck doesn't come after you've made sure all the buckets are empty and ready to be filled with new water. It's very disheartening and you feel like life is going in slow motion the entire week after that, you can't even sleep wondering if the truck will have mercy and come any day. My mom now keeps two containers under the sink and doesn't want us to touch them at all. She says they are for such emergency (Ntokozo, female, 19 years, 9 October 2019).*

Available research affirms these findings. For example, Mwangi and Mbwayo (2020) found that anxiety symptoms among women in resource-poor rural communities came from a lack of water and their inability to fulfil domestic chores such as cleaning. Together with the available literature, these findings illustrate the pressure placed on women as primary caregivers and homemakers (Estes, 2019; Pouramin, Nagabhatla & Miletto, 2020; Roaf & de Albuquerque, 2020). Other participants reported how their water-related challenges had exacerbated existing health conditions. For example, 35-year old Nomfusi (cited below), reported how the daily “*up and down with heavy buckets (full of water)*” exacerbated her existing high blood pressure.

*If you're a person with high blood pressure like us, all that up and down with heavy buckets is not good for you. I got it during my last pregnancy it has persisted ever since. After collecting water, I have to sit down and rest for 30 to 45 minutes because I have difficulty breathing, and I feel my heart racing as if it's about to jump out of my body. But I, unfortunately, I have to collect the water because my children are still very young so they cannot collect water. I'm also staying with my in-laws, so it's part of my duties as a wife (Nomfusi, female, 35 years, 16 October 2019).*

Lungile, a 24-year-old participant, referred to how her mother’s illness was made worse by the consistent collecting of water.

*When the water truck comes, we used to all run hysterically to collect the water from the Jojo, and I'd notice that mom would honestly not feel well after we're done collecting. She was even diagnosed with osteoarthritis<sup>36</sup>; I don't even know if I'm saying it correctly. The doctor even told her to stay away from any physical labour. Her biggest concern was her garden because she loved doing it. I guess she wasn't concerned with who will collect water because we are available as girl children (Lungile, female, 24 years, 9 October 2019).*

Available scholarship reports that women in the rural communities of Africa spend around 2 hours a day on a single trip to fetch water (Geere & Cortobius, 2017; Graham, Hirai & Kim, 2016; Vita International, 2016). As argued in Chapter Two, women across studies report long-term physical pain and mental illnesses in communities where water fetching is commonly practised (Pomells et al., 2018; UNICEF, 2016). While it is true that access to limited water

---

<sup>36</sup> Osteoarthritis refers to a joint disorder which results in the loss of cartilage and occurs depending on age, gender, race and geographic location (Samvelyan *et al.*, 2020).

compromises health for both men and women (Bartram & Cairncross, 2010). Still, women collect water at a disproportionately higher rate and are responsible for most household water used. Women are more likely to suffer from physical and psychological illnesses (Brewis, Choudhary & Wutich, 2019; Collins et al., 2019). Indeed, the women in this study gave testament to both forms of illnesses. Carrying water over long-distance trips added a strain on their bodies, which further compromised their health and wellbeing (Aituk, 2019; Jeil et al., 2020).

## **6.6 Synthesis**

Findings from this chapter and the literature reviewed in Chapter Two confirm that women are at the forefront of water-related challenges in water-scarce rural contexts (Graham et al., 2016; UNICEF, 2016; Pomells et al., 2018). Indeed, the findings reveal that men did not see water collection as part of their daily duties. Instead, they believed that women, as the primary users of this resource, should be responsible for water collection. In other words, as argued by Thobejane & Florence (2018), men did not see the acquisition of water for household use as a benefit to their personal lives. When women were unfit to collect water, only then did men assist. These findings demonstrate the nature, scope, and extent of patriarchally-informed gender roles that are socially constructed and reinforced through everyday water-related engagements between men and women.

The findings also illustrate how men in this rural community benefitted from patriarchy. For example, they were positioned as household providers and decision-makers, while women were constructed as domestic assistants to men. These findings, while disheartening, are not surprising. Several studies show that resource-poor rural communities hold steadfastly to traditional and cultural values that uphold gender inequality (Boateng et al., 2021; Cole, 2017; Gambe, 2019). Within this context, the women in this study did not resist or challenge this gendered set-up. It seems both men and women had accepted gender inequality as an unwritten law that governed their community.

An alarming finding was how limited access to safe water compromised women's physical and mental health (Boateng et al., 2018; Caruso et al., 2017; Mushavi et al., 2020). Women in the study reported feelings of anxiety and frustration. They also reported physical pain and

exacerbated existing health conditions (Collins et al., 2019). Yet, given these challenges, women were always expected to perform their duties easily and without complaining. This trend illustrates the toxic nature of gender socialisation in women's lives. From the findings, it seems that this form of socialisation breeds and reinforces patriarchy, which in turn positions women as inferior to men. Moreover, men benefited from this system because they were free of accountability in collecting and using water for household benefits. Thus, the findings reveal how gender socialisation is skewed in favour of men, and to the disregard of women and their contributions to their families' wellbeing.

In sum, the findings are in line with the assumptions which informed analysis in the study. That is, gender inequality in resource-poor rural communities plays a significant role in how water is accessed and used. Moreover, the findings reveal how limited water access disrupted gender relations and skewed roles and responsibilities at both the household and community levels. In the next chapter, I reflect on the findings. I also provide a theoretical and methodological reflection, as well as the study's contribution and implications.

## **CHAPTER SEVEN**

### **LIMITED ACCESS TO SAFELY MANAGED WATER IN RESOURCE-POOR RURAL CONTEXTS: REFLECTIONS, IMPLICATIONS, AND CONCLUSIONS**

#### **7.1 Introduction**

My interest in pursuing this research stemmed largely from personal experiences of growing up and living in a rural community with limited access to safely managed water (see Chapter Three). Moreover, during the 2015 drought in South Africa, my community went through a prolonged period of water scarcity. To make matters worse, the water truck we depended on for clean water began to deliver water infrequently, which further added strain and exacerbated my household and community's struggle to access safely managed water. As I mentioned in previous chapters, the rural community I come from is resource-poor and has limited access to basic services. Given these challenges and a lingering sense of marginalisation, I began to wonder how rural communities such as mine were devastated by this neglect. During the height of the drought, I became curious about water service delivery in resource-poor rural communities. This curiosity, in turn, sparked an interest to understand how such communities experienced and were challenged by having limited access to safely managed water. However, I could only locate a limited number of studies on adults' experiences and how they were challenged by limited access to safe water in resource-poor rural communities (Hargrove et al., 2020; Majuru, Suhrcke, & Hunter, 2018; Stoler et al., 2021). Moreover, my review of the literature did not yield any studies that aimed to amplify the voices of those most struggling to access safely managed water (Wrisdale et al., 2017). Instead, researchers across studies analysed and conveyed these challenges on behalf of rural adults. I found this to be a limiting form of representation. I thus wanted to explore how research could humanise and amplify the voices of marginalised rural adults in a context where they had limited access to safely managed water.

Across the literature, scholars agree that rural communities are marginalised and receive very little in terms of basic services (Mabizela & Matsiliza, 2020; Ndebele & Lavhelani, 2017; Nkomo, 2017), and infrastructure (Sewell et al., 2019; Sewell & Desai, 2016). Indeed, they further remain neglected from receiving safely managed water that is acquired from a reliable

source located within or closer to their households (Bonsor et al., 2018). The literature points to several factors responsible for rural communities' marginalisation from safely managed water services. These include municipal-level financial constraints, lack of a skilled human resource, corruption and nepotism, and poor water infrastructure maintenance (Auriacombe & Ukwandu, 2020; Amis, Zinyengere & Cassim, 2017). Unfortunately, adults in resource-poor rural communities are left to find alternative water sources that are often unsafe. These sources, in turn, compromise their daily livelihoods, dignity, and social relations.

My study set out to gain insight into how adults from a resource-poor rural community experienced the daily challenges associated with having limited access to safely managed water. Thus, this study examined how adults living in a resource-poor rural community described their daily challenges of living in a community that had limited access to safely managed water services and sources. In particular, through this research, I explored how living in such a community impacted individuals' daily activities and livelihoods, and whether or not these experiences were gendered. I approached this study armed with the following research questions:

- *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?*
- *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?*

This study was located within the humanistic geography paradigm (Larsen & Harrington, 2019). It used participatory visual methodology (PVM), which is concerned with engaging participants through the creation of visual data that exposes their social issues (Mitchell, De Lange & Moletsane, 2017). In particular, the study used photovoice as a primary source of data generation. Photovoice is an approach within the broader PVM, which hands cameras to research participants so that they might capture meaningful photographs to document their experiences (D'warte, 2020; Wang, 2005). The use of photovoice has been described as an effective way of engaging research participants and for challenging the power dynamics inherent between researchers and the participants (Mitchell, De Lange & Moletsane, 2017). This approach has also been lauded for its resourcefulness for amplifying the voices of marginalised populations so that they might tell their own stories; a phenomenon that Mitchell (2011) calls 'the excavating of silenced voices'. In other words, photovoice works as a culturally

appropriate tool for representation, engagement, and knowledge production (Banyard et al., 2020; du Plessis & Ahmed, 2020; O'Donovan et al., 2020). As illustrated in Chapter Five, the power of this approach lies in the fact that the participants drive the data generation process, and they are empowered to share meaningful stories about their social issues, using the photographs they have produced as a point of reference. Within these parameters, I set out to examine how adults living in a resource-poor rural community experienced and communicated about their challenges about having limited access to safely managed water.

To address the research questions posed in this study, I recruited 17 adults who lived in a resource-poor rural community with limited access to safely managed water. The community was located in a remote rural area near Mooi River, in the KwaZulu-Natal (KZN) Midlands, South Africa. To generate data to address the two research questions, I used photovoice as a visual method. Linked to photovoice, and to make sense of the participants' visual expressions, I engaged the participants in one-on-one interviews and focus group discussions (FGD). Data analysis was informed by Nozick's (1974) entitlement theory and the gender socialisation framework. Two propositions linked to the two critical research questions were formulated (I reflect on these below).

## **7.2 Methodological and Theoretical Reflection**

This study was premised on the notion that rural communities have a history of marginalisation and neglect that continues to be characterised by limited services and access to resources (Nyawo & Mashau, 2019; Sewell et al., 2019). Moreover, in South Africa, colonial and apartheid legacies continue to render rural areas socially and economically side-lined from national life. Likewise, because of their geographic isolation, rural areas tend to be marginalised from socioeconomic development necessary for progress. The literature reviewed in this dissertation suggests that living in a resource-poor rural community limits individuals' access to safely managed water. Certainly, because of this limitation, several livelihood-related challenges manifest (Aleixo et al., 2019; Gondo & Kolawole, 2020). To understand these challenges, the literature suggests that research must provide rural participants with tools for amplifying their voice, engage them as hubs of knowledge about their experiences, and create spaces for communicating about those experiences (Greene, Burke & McKenna, 2018).

To understand these experiences, my study was located within two theoretical lenses: Nozick's (1974) entitlement theory and the gender socialisation framework. Research positioned within the entitlement theory analyses human experiences from a point of view of a history of marginalisation and the current systems' failure to address these issues. The theory exposes issues that are often taken for granted, or as if they are natural by design; thus, meriting no attention. Therefore, the entitlement theory seeks to uncover individual and collective human rights infringements and requires that historical violations be addressed. On the other hand, the gender socialisation framework highlights the social inequalities that exist between women and men. As such, it sheds light on the socially constructed roles and responsibilities assumed by individuals based on their anatomical development. Put together, the theoretical lenses in the study provided a framework for a deeper understanding of the challenges faced by marginalised populations in their resource-poor environmental settings. This study further highlights the need to understand how adults' livelihoods in poor rural communities are challenged in contexts where they have limited access to safely managed water. First, informed by the entitlement theory, I sought to encourage the participants to identify, reflect on, and communicate how access to limited safely managed water negatively impacted their daily lives. Second, informed by the gender socialisation framework, I sought to encourage the participants to reflect on how gender played a significant role in how they experienced the challenges of having limited access to safe water.

Informed by the theoretical framework adopted in the study, two propositions that guided the analysis were developed. Linked to the first research question posed (*How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?*), the first proposition was that limited access to safely managed water in rural communities is linked to a history of past injustices that marginalised rural areas, and the failure of current systems to rectify these injustices. Moreover, the proposition suggested that the neglect of rural communities from accessing safely managed water is a result of inherited injustices located in resource inequality and the discrimination of rural communities. Analysis located within the entitlement theory helped to reveal the marginalisation and desperate state of the community and the households (including the participants) in the study. For example, using this theory, I found that the community received very little to no basic services. Rather, the community was made to feel like the municipality was rendering them a favour and not a duty owed to the community whenever services were delivered. The limited access to safe water was analysed as a violation of the community's human and constitutional rights. As the

entitlement theory suggests, equal access to safe water for all, despite one's ability to pay or not, is a right that is due to everyone (Soyapi, 2017; Neto & Camkin, 2020; Reniko & Kolawole, 2020). Moreover, given South Africa's apartheid history, the entitlement theory was useful in revealing how current systems continue to neglect resource-poor rural communities.

Notwithstanding these theoretical successes, the entitlement theory fell short of offering interventions and ways to make current government systems accountable for providing essential services to the community I studied. The theory did not address the issue of limited access to safe water from a micro-level vantage point. In this regard, what happens at the household level, including how individuals can address their neglect, is largely missing from the tenets of this theory. Nonetheless, the theory helped tease out important issues for me to understand the nature and extent of rural neglect and marginalisation that shaped the lives of the adults who participated in this study.

Linked to the second research question (*Do men and women in this rural community report different experiences and views about having limited access to safely managed water?*), the second proposition was that men and women are affected differently by limited access to safely managed water. The proposition suggested that women are affected more than men since they are positioned as the primary collectors and users of water in rural communities. By being constructed as the primary users of water, women are often expected to be at the forefront of water collection and storage. On the other hand, men are often excused from these responsibilities. Gender socialisation was a significant lens for analysing gendered patterns and experiences with the challenges that ensue because of limited access to safely managed water in a resource-poor rural community. Gender socialisation was also useful for unpacking the gendered nuances hidden in the everyday experiences of both men and women in the community I studied. This framework unveiled the underlying patriarchal systems that exist concerning accessing and using water. In essence, gender socialisation provided me with a deeper understanding of how both men and women are socialised into specific roles and duties at both the household and community levels. These roles, as the findings revealed, drove the inequalities that existed in the community.

There were notable limitations in locating analysis within the gender socialisation framework. For example, gender socialisation only analysed gendered inequality from a household and community level. It fails to acknowledge the systemic, historical, and structural factors that

render women exposed to exploitation, while men enjoy freedoms and rights. If gender inequality was analysed from the point of view of social structure theory, findings would have addressed broader macro-level issues such as poverty, lack of access to marketable skills, and education that render women inferior to men (Risman, 2004). Nonetheless, the gender socialisation framework was useful for grounding the nature and extent of gender inequalities that are prevalent in rural communities with limited access to safely managed water.

In this study, photovoice was used to assist the participants to safely explore and reflect on how limited access to safely managed water caused daily challenges for them at both household and community levels. FGD and individual interviews augmented data generated through photovoice. There were some notable successes in using photovoice, combined with FGD and interviews, to examine how adults experienced and communicated about their challenges. For example, using photovoice, the participants were invited to take pictures that illustrated their daily experiences and challenges concerning the study's topic. Photovoice was, therefore, resourceful in assisting the participants to reflect on these experiences and thus, helped them to not only reveal their challenges through images but also to speak about such challenges. Before they participated in this research, the participants were aware that they were water-insecure and relied largely on limited water provided by their municipality through a water truck. Yet, with this awareness, they had not taken the time to reflect on how being water-insecure impacted their lives daily. Using photovoice, the participants began to identify underlying issues they had previously not considered. For example, engaging through photovoice helped the participants to start seeing their experiences and how they posed a challenge in their lives. Before the commencement of this research, these challenges were taken for granted as if they were normal. It was only after reflecting on their visual artefacts that the participants became aware of the nuances inherent in their experiences; nuances that were previously hidden in plain sight.

Tremblay and Harris (2018) support the notion that visual-based engagements foster new ways of relating to issues about water and its related infrastructure. In this study, using photovoice, the participants were granted a unique opportunity to have a deeper engagement, knowledge, and understanding of the complexities of living in a water-scarce community (Bhaktha, 2020). In line with studies that have used a similar approach, this research allowed the participants to define and articulate their challenges in ways they saw fit (Smith-Perry, Fuller & Stauber, 2020). Recognising that adults living in rural areas could produce contextual knowledge about

their lives and use it for making meaning, I heeded the call from visual geographers to engage marginalised populations in photovoice (Mayoux & Chamber, 2005; Mitchell, De Lange, & Moletsane, 2017). Using photovoice in this manner served the purpose of amplifying their voices. However, photovoice moved further to facilitate the participants' agency in communicating about their lived day-to-day experiences. The use of photovoice also allowed the participants to decide which elements of their challenges they wanted to discuss me as a researcher (Ngidi & Moletsane, 2019). Migliorini and Rania (2017) support the idea that when the participants use photovoice, they stand at the forefront of knowledge production, as they photograph what they feel best represents their experiences.

Photovoice also presented various limitations in this research. For example, while the participants were able to capture contextual photos that represented their plight, it was sometimes difficult for them to articulate these experiences in spoken language. To provide meaning to their photos, I had to use interviews and FGD to probe further (Mitchell, Billiot & Lechuga-Peña, 2020). Moreover, the process of capturing photos through photovoice was lengthy and time-consuming for the participants, which took away time for other productive activities in their households. This potentially influenced the kind of pictures they captured to catch up on time lost (Mitchell, Billiot & Lechuga-Peña, 2020). Finally, since I asked the participants to take only four pictures, this might have limited the scope of the challenges they presented. Given another opportunity, I would ask the participants to capture as many pictures as they saw fit to tell meaningful stories about their experiences. Despite these various challenges, photovoice helped the participants to think through their experiences and how these experiences posed a daily challenge in their lives.

By using photovoice, the study was qualitative in its design. Qualitative research seeks to record and analyse individual or group experiences by providing rich and contextual data. My intention was not to provide a generalised or quantified analysis of the participants' experiences. Rather, the study wanted to provide rich insights into the experiences and realities of the adults who participated in the study. Through the participants' use of the photos they produced, and the meanings they inferred during FGD and interviews, their voices were elicited and heard by myself as a researcher. They used this opportunity to narrate their own experiences, which minimised the chances of me imposing my own beliefs, experiences, attitudes, and conclusions (Dowhaniuk, Ojok & McKune, 2021; Rahman, 2017). Likewise, the study design allowed me to approach the research and analysis using a variety of sources. For

example, photovoice and the description attached to the photos were corroborated by FGD and one-on-one interviews. This was important because it allowed the participants to interpret their photovoice data. Focus group discussions were important for soliciting collective views about the limited access to water, while the interviews provided individual experiences and challenges. Importantly, drawing from these various sources (i.e., photovoice, interviews, and FGD) complemented each other to give data and methods triangulation. This helped to increase confidence in the findings. Indeed, as scholars attest, methodological triangulation provides a more detailed and comprehensive analysis of the participants' experiences and their perspectives (Flick, 2018; Vogl, Schmidt & Zartler, 2019).

In the study, there were a few concerns about the methodological approach I adopted. First, data collection was time-intensive. To address this concern, from the beginning of the research, I was transparent with the participants about the lengthy nature of the activities involved in the research. This allowed them to make an informed decision about participating in the study. While the participants showed interest in participating in the study and using photovoice, I noticed during the same-sex FGDs that men tended to dominate the discussions. Women in these groups seemed reserved and shy. To remedy the situation, I invited the participants into separate group discussions that were formed according to the participants' biological sex. This made it easier for the women to start speaking about their gendered challenges and how being a woman in the context of living in a water-scarce rural community altered their lives. Likewise, since the data generated was voluminous, the data analysis process was complex and lengthy; involving several steps as I have detailed in Chapter Four. As a start, I relied heavily on the participants' interpretations of their images and the meanings they attached to these images. This made it easier for me to approach the study with my thematic analysis, but also minimised the chances of assigning my meaning to their experiences.

In this study, I only recruited 17 participants. Thus, the findings are not a representation of the experiences of all adults in rural communities. As I suggested above, the intention was not to generalise the findings and analysis. Rather, I was looking for an information-rich and participatory engagement with the participants. This was important because, according to Malterud, Siersma, and Guassora (2016), a small sample supports a deep case-oriented analysis. I used the purposive sampling method to select the participants based on the characteristics that the study required concerning the research aim (Rich et al., 2020). The study focused on adults living in a resource-poor rural community with limited access to safely

managed water. Therefore, participants had to be 18 years or older, and be full-time residents of the selected community. These participants provided me with rich textual data that was important for answering the research questions posed in the study. For this reason, in this dissertation, I have provided in-depth analysis to draw conclusions and implications from the findings.

Despite these limitations, research that uses photovoice holds a promise for consciousness-building and social change. Indeed, participating in this study and using photovoice to generate knowledge, the participants began to be aware of their water situation. They began to imagine workable solutions to address their water deprivation (an issue beyond the scope of this study). Using photovoice, in particular, provided a safe space in which the participants reflected on their plight, and on how these experiences shaped their individual lives and relations with each other (particularly in terms of gender relations). Consequently, this study contributes to the scholarship on rural community' experiences and challenges around limited access to safely managed water.

### **7.3 Reflecting on the Findings**

The findings suggest that adults from the rural community in this study experienced significant challenges due to their limited access to safely managed water services and supply. A key finding from the analysis was that this rural community continues to be neglected from essential services such as safe water. What was also noteworthy was the fact that the community was characterised by infrastructural neglect and aloofness from those tasked to provide safe water to the community. Strikingly, the community's leadership, which included a chief and a ward councillor, treated the community as a charity case. These leaders expected the community to be grateful for the minor services they were rendered. However, as the participants highlighted, the water they received from the municipality and delivered through a water truck was infrequent, often too little to sustain livelihoods, and had no reliable storage facilities. Moreover, the participants received bad service from the truck driver himself. The participants experienced several challenges that bordered on their health, livelihoods, and wellbeing. What was also striking was that the fact that the experiences they described tended to be gendered, which further added an extra layer of challenges at the households and community levels. Experiencing daily life with very little to no safe water left the participants

feeling hopeless, discouraged, and not human. The community's agency to address these challenges was further limited by their geographical isolation. The participants had thus resigned themselves to living under inhumane and unhygienic conditions. The findings highlighted the nature and extent of the water-related challenges in this community. However, the key findings were centred on the marginalisation of rural livelihoods from national development, and the gendered differences in how the participants articulated and experienced the challenges related to limited access to safely managed water.

### **7.3.1 The Marginalisation of Rural Livelihoods from National Development**

In this sub-section, I reflect on the key findings that addressed the first research question *How do adults living in a resource-poor rural community describe their experiences of having limited access to safely managed water?* The overall finding points to the marginalisation of rural livelihoods from the practice of national development. As the literature reviewed for this study highlighted, rural communities tend to be excluded from national development in terms of provision of basic services such as water, electricity, refuse removal, and infrastructure development (Tshishonga, 2019; Wrisdale et al., 2017). The findings add testament to the national neglect of rural communities. South Africa is decorated with several policies and programmes whose mission is to provide equitable development in service delivery across the nation and without marginalising any individual or population group (Benatar, Sullivan & Brown, 2018; Todes & Turok, 2018). For example, as highlighted in previous chapters and as an attempt to provide access to safe water, DWS introduced the Free Basic Water (FBW) Policy. In writing, this policy commands the provision of safe water for every low-income household in the country. Accordingly, the policy directs that these households must get at least 25 litres of free water per day this is because the 25 litres is expressed as per capita per day; thus the daily household allocation is higher. Yet, as the findings reported in Chapter Five revealed, the community I studied did not benefit from this policy. Instead, the water truck delivered water that was insufficient for carrying all their domestic and productive duties (Farrar, 2014; Mehta, 2014; Mosdell, 2006). Further disconcerting is that once the water supplied by the truck was depleted, households had to find alternative sources of water; alternatives that crippled their dignity and caused health-related problems (Szabo, 2015).

Moreover, the Water Services Authorities (WSA) have a mandate from DWS to provide access to a basic level of water service (defined as 25 litres per person per day for the purpose of this

study although there are more criteria that define it other than quantity) to everyone, including poor households who cannot pay for these services. The provision of water would be an ideal situation, particularly when considering the high poverty level in the rural communities of South Africa (Hutton & Chase., 2016). However, several rural communities in the country continue to experience challenges around access to safely managed water (Mothetha, Nkuna & Mema, 2013). The literature reviewed in this study relieved that there tends to be a preference for urban development across countries (Cheng, Liu & Zhou, 2019). Prioritising urban development over rural is true even for South Africa (Manggat, Zain & Jamaluddin, 2018; Mlambo, 2018).

In terms of national development, rural areas are featured in critical policies and programmes. However, as the findings and the literature highlighted, they continue to face significant marginalisation when it comes to the actual practice of development. In the context of this study, rural marginalisation was made evident by the fact that eMdubezweni remained in isolation and received little to no basic services, including safe water. Furthermore, as the participants noted, and drawing from the findings, it seems that rural communities are both excluded and under-represented in decision-making about their livelihoods. The participants revealed gross neglect and a form of systemic exclusion from exercising their voices to articulate their needs. Scholars have lamented how rural communities are often spoken for and excluded from policy-making, and decisions about their livelihoods. The exclusion of rural communities was revealed in how the participants were never asked about the quantity of water they needed each day. Rather, the municipality delivered the water without consulting members of eMdubezweni.

The findings suggest that rural communities are marginalised from water due to the financial and infrastructural burden of delivering the service caused by the community's location. Rural communities are particularly located in areas that are relatively inaccessible and costly to deliver services. The low access to basic services is largely due to the segregation nature of the South African society; a form of spatial inequality that was inherited from the country's apartheid past. Moreover, eMdubezweni did not have proper infrastructure, such as piped water connections. The government is then expected to rectify past injustices through the practical implementation of policies and programmes to ensure reliable water access to rural communities. Yet, as the findings show, this is still forthcoming for communities such as eMdubezweni.

### 7.3.2 Gendered Differences in Experiencing and Articulating Water-Related Challenges

In this sub-section, I reflect on key findings that addressed the second research question: *Do men and women in this rural community report different experiences and views about having limited access to safely managed water?* The findings point to gendered differences in how both the women and men in this study experienced and articulated the challenges they faced with living in a resource-poor rural community that had limited access to safely managed water. Notably, using the photovoice images they produced, women tended to illustrate their challenges more poignantly. For example, they portrayed themselves as the sole individuals responsible for acquiring and storing water. Linked to this idea, women in the study cited gender inequality that is compounded by sociocultural hierarchies, and unequal gender norms (Adams, Juran & Ajibade, 2018; Hoolohan et al., 2021). These factors are often taught and reinforced through gender socialisation that tends to attribute a higher social status and power to men (Solbes-Canales, Valverde-Montesino & Herranz-Hernández, 2020). Also, the women illustrated a sense of helplessness in addressing their challenges. These challenges were made complicated because eMdubezweni is a highly patriarchal community led by both a male chief and a male ward councillor. While the women attempted to address these inequalities several times, their attempts were often met with silence or disregard by the men in and around their community.

On the other hand, the images produced by men also featured women collecting, carrying, storing, and using water. It is noteworthy that the only pictures that featured men had the truck driver. The absence of men in the images was telling. First, it reveals how men do not see themselves as responsible for these so-called domestic roles. While I gave them a unique opportunity to use photovoice to narrate their experiences, the men only located women at the centre of their pictures and the narratives that ensued. Thus, in the photovoice images, there is a significant absence of men. Across the images produced by both the men and women participants, women (and sometimes children) were illustrated as domesticated subjects reared into domestic labour. Women were featured dramatically and even in inhumane conditions while they attempted to acquire and use water sparingly. Men had a choice to either engage in these activities or not; often opting for the latter. In subsequent discussions around these gendered trends, it was revealed that men only collected water for self-serving purposes, such as when they wanted to bath or engage in personal income-generating activities. On the other side, women were expected, and on several occasions, forced to acquire and use water for the

benefit of everyone in their households. They were also expected to remain silent and conduct these duties without questioning and with due diligence.

It is alarming that the men in this study, and some women to an extent, believed that collecting water was a woman's role and responsibility. Women were cited as the primary water consumers, especially when they performed domestic duties such as washing laundry and preparing meals. Men's lack of engagement in water-related issues was demonstrated in how men were not featured in images and narratives around limited access to water. In instances where men were mentioned, they were cited as decision-makers and individuals tasked with negotiating with the community's leaders and the water truck driver. When it came to collecting and storing water, men only offered support under strict and critical conditions, such as when a woman in their household fell ill and could not fulfil domestic duties. Men were not as vocal as women were about water access challenges in the focus group discussions. This lack of deliberation suggests that men did not feel obligated to participate in various discussions because access to water was not something that challenged them. Rather, they often had easy access because women carried the duty of ensuring that there was always water available.

What explains these gendered trends in the findings? First, available literature suggests that gender socialisation and the community's dominant gender norms meant that women are expected to carry domestic duties without questioning these responsibilities (Heise et al., 2019; Karasi, 2018). Within the context of unequal gender norms in their households and community, women are expected to be submissive and silent on important issues, including those that reduce them to men's domestic servants (Sikweyiya et al., 2020). If they do not adhere to these expected gender roles, they get socially censured and sanctioned (Patel et al., 2021). In contrast, men are socialised to be assertive and authoritative over women (Mensah, 2021; Rajan & Krishnan, 2002). As the women in this study pointed out, men received attention, and their voices were often heard when they approached the community's leadership and the water truck driver. Water was delivered in large quantities when men requested such services from authorities. Yet, women were pushed away or even told to bring a male figure from their household.

Emerging from these findings is how gender plays a significant role in how participants experienced life in a rural context with limited access to water. Gender is thus understood as a barrier to how and when women get to access safely managed water. Linked to gender socialisation, the women did not envision any possibility where men would take responsibility

in the water agenda. From the gender socialisation theoretical perspective, because of gender roles and the attitudes imprinted in their minds, men did not feel they needed to participate in water issues unless it directly affected them and their livelihood. These findings provide a picture that outlines a gendered, socioeconomic and cultural pattern of who gets to collect, store and use water and who has a leeway from these responsibilities. The findings further suggest that women in this resource-poor rural community with limited access to water bear the heavy brunt of ensuring safe water is constantly available and is adequate for household use. Because rural communities remain geographically isolated from national development, these trends and actions often go unnoticed and unchallenged.

#### **7.4 Contributions of the Study**

Addressing the two research questions posed, this dissertation makes both scholarly and methodological contributions to scholarship. As I have argued throughout this dissertation, while the nature and extent of neglect of rural communities are well-documented and the literature on how and why these communities face marginalisation is abundant, scholarship that examines the particular challenges experienced by adults concerning their limited access to safely managed water is still in its infancy. Thus, my study adds to the research scholarship on the challenges experienced by adults in resource-poor rural communities in the context of limited access to safely managed water. By using photovoice to generate data, the study makes a methodological contribution. The use of photovoice was particularly resourceful in excavating the challenging experiences that were hidden in plain sight. Photovoice provided a tool for the participants to voice their concerns and their daily struggles in situations where they received limited safe and reliable water. The findings have implications for adults and communities in similar contexts.

Second, the findings suggest that adults in the community I studied experienced and understood their challenges in particular ways. Their experiences were significantly influenced and shaped by their rural socio-geographic location, their positions in their families, their community context, and the socioeconomic and cultural factors in their community. Significantly, their experiences were gendered, with the women recognising and highlighting the burden they carried with regards to accessing, storing, and using water under immensely challenging conditions. Men in the study were not featured in these experiences. Instead, even their

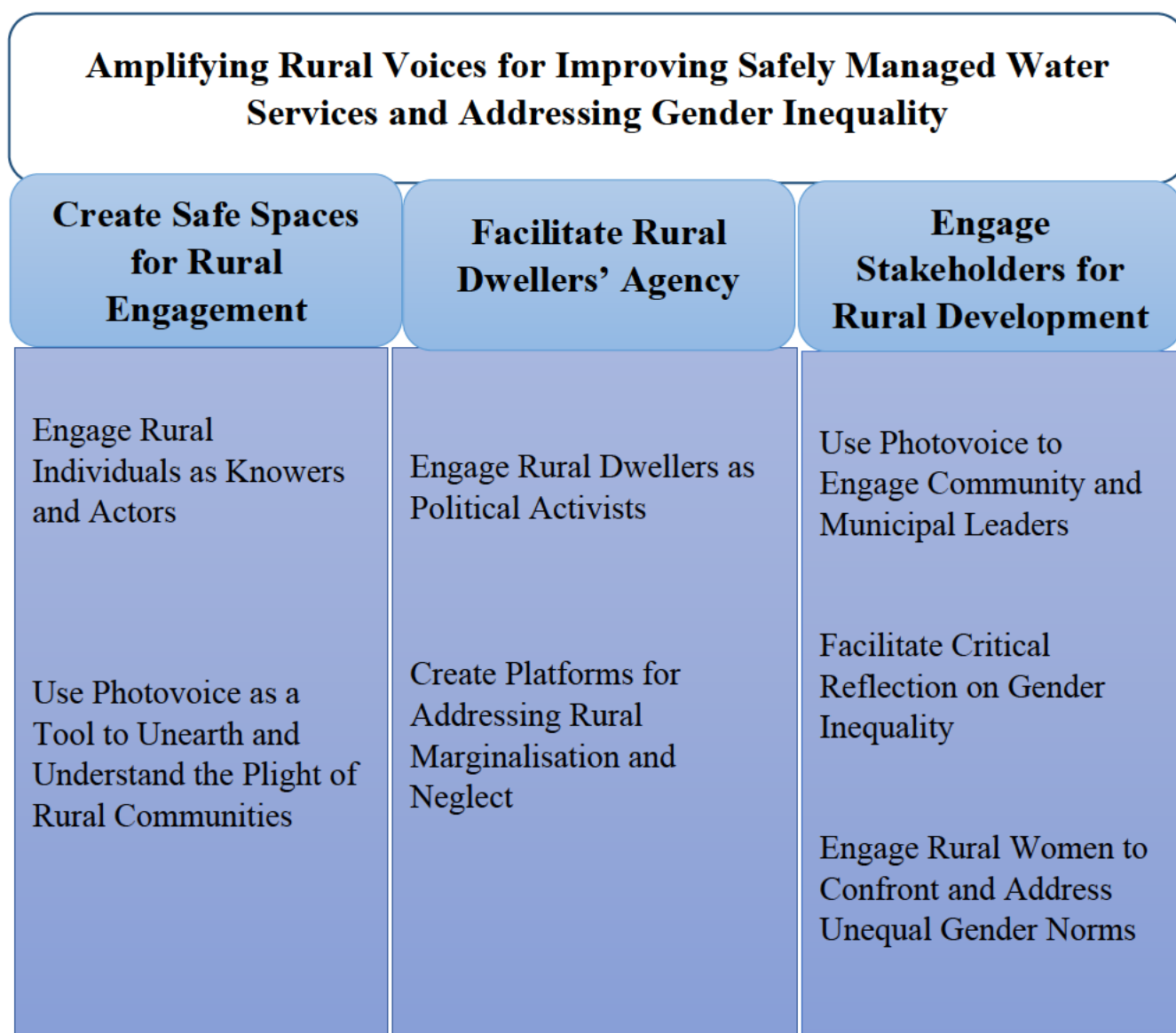
photographs and narratives portrayed the domestic roles and responsibilities around access to water as a women's problem. Influenced by the prevailing unequal gender norms in their community, the men distanced themselves from these challenges and opted to locate themselves as the superior gender, which occupied a high social status. Thus, to tease out these experiences, the study used photovoice to identify the underlying factors and develop an in-depth understanding of the challenges experienced by these adults about having limited access to safely managed water. In tandem, the conceptual framework developed in Chapter Two suggested several significant issues, which in combination extends understandings about how and why rural communities in similar contexts continue to be marginalised from accessing safely managed water. Moreover, the conceptual framework provided an understanding of how this form of rural marginalisation shaped, influenced, and impacted the daily livelihoods and relations among adult rural dwellers.

This dissertation proposes a framework for amplifying rural voices for improving safely managed water services. First, the framework argues for the creation of safe spaces within which rural communities can be engaged as knowers of both their community issues and the experiences inherent in their daily lives. Such an engagement must also acknowledge that those who live in rural communities are active actors/participants in their communities' everyday activities. As such, they are better placed to inform decision-making, which will provide tailored interventions to address their marginalisation from safely managed water. The sociocultural factors that shape their lives need to be exposed and addressed. For example, using such tools as photovoice, interventions must understand the influence of geographic remoteness and the prevailing gender norms in rural communities from the perspectives of the adults who live in these communities. Informed by the understanding of geographic influence, photovoice might also be used to examine the roles that individuals, households, and the community might play in addressing their marginalisation from accessing safely managed water.

Second, the framework proposes that research should facilitate agency among rural residents. To achieve this goal, efforts must be made to engage rural adults as political activists who will be at the forefront of voicing their grievances. Since those who live in these communities are best positioned to understand and communicate their experiences, research and interventions must facilitate their agency in addressing rural marginalisation and neglect. Such interventions

might include public forums for voicing issues and where each individual is allowed an opportunity to share in the decision-making.

Third, premised on the notion that photovoice holds promise for social change, the framework proposed argues that photovoice might have been effective in unearthing the challenges experienced by the participants. For example, photovoice could help participants illustrate and talk about their experiences and extend their knowledge about their marginalisation. The scope of this study did not influence social change in which the participants' experiences could be addressed. To influence social change, as well as to address marginalisation, and the prevailing unequal gender norms among rural communities, interventions, and research need to engage stakeholders for rural development, which includes quality service delivery. Using photovoice, stakeholder engagement could involve critical reflections, forums, and debates with the community and municipal leaders. Such a platform could facilitate critical discussions on gender inequality and how it impacts largely on the lives of women in rural communities. Supporting this idea, scholars who have used photovoice to engage rural participants have found that this approach is resourceful in assisting women in communicating prevailing issues that affect their livelihoods (Dehaan et al., 2020; Jenkins & Boudewijn, 2020). Within the context of the findings in this study, these engagements could involve women's activism and engagement to confront and address unequal gender norms. Figure 7.1 illustrates.



**Figure 7. 1:** Amplifying Rural Voices for Improving Safe Water Services and Addressing Gender Inequality

This dissertation also makes a methodological contribution to the scholarship about the use of photovoice in engaging adults in rural communities to communicate their challenges about living in a resource-poor community with limited access to safely managed water services. The processes involved in this research and the findings demonstrate how photovoice is a valuable research tool for engaging marginalised, and often hard to reach communities. There is also an element of humanism in that the participants were afforded a unique opportunity to ground their issues using the images they produced. The engagement of marginalised communities also required using safe spaces that the participants choose to analyse and communicate about their experiences freely. Yet, as I discovered, research of this nature requires long and sustained

engagements in which rapport and relationships of trust between and amongst the researcher and the participants might be nurtured.

## **7.5 Implications of the study**

The findings and conclusions drawn in this study have several implications. First, the findings have implications for research that targets adults in resource-poor and geographically remote communities such as those who participated in this study. To illustrate, the study was premised on the notion that rural communities have a history of marginalisation and neglect that continues to be characterised by limited services and access to resources. Furthermore, the colonial and apartheid legacies in South Africa still render rural communities as social underclass areas that are often excluded from national development practices. Geographically isolated rural areas tend to receive little to no intervention in terms of services. The findings in this study suggest that the overall macro/institutional contexts, prevailing/dominant cultures, ideologies about rurality, and gender in which members of rural communities operate limits rural dwellers' participation. To fully participate, as the framework developed above suggests, safe spaces, agency, and democratic engagement with stakeholders must be facilitated. Safe spaces are envisioned to encourage the free expression of their experiences to analyse for themselves their needs.

Second, the scope of this study fell short of engaging critical stakeholders and achieving overall social change. The study intended to unearth rural experiences around limited access to safely managed water. Thus, although it holds potential, research of this nature will not go a long way in addressing the prevailing socioeconomic dynamics that render rural communities marginalised from essential water services. Thus, the findings have implications for engaging and allowing full participation in the decision-making process by all rural stakeholders (i.e., traditional leadership, municipal leadership, service providers, and rural members). Full participation entails the active involvement in decision-making and policy-making practices that shape the fabric of the community and household livelihoods. Participation can only be realised if democratic spaces of expression and platforms for amplifying the voices of those marginalised (such as those who participated in this study) are created. Notably, full participation will be realised if the voices of members of rural communities are listened to and heard.

Third, the findings revealed that rural communities, and women, in particular, are often excluded from decision-making processes. Therefore, in collaboration with its leadership, the community could create opportunities for its members to be meaningfully represented in key structures such as community committees and municipal meetings. This collaboration could involve the election of community representatives and water committees who will act as representatives in key engagements. Inclusion might ensure that the community's perspectives are meaningfully represented and heard in various decision-making structures.

Finally, the findings have implications for future research. For example, the results show how the participants used photovoice as a tool for illustrating and communicating their challenges, including the socioeconomic, geographic, and cultural ecologies that rendered them marginalised. There is a need for research and interventions that seek to transform rural livelihood and provide tailored development programming that members of rural communities might lead within this understanding. Future research is also needed to explore the role that individuals, households, and communities could play in addressing their marginalisation, developing their agency, and working towards practical rural development in geographically isolated areas.

## **7.6 Conclusion**

In 2015, South Africa experienced a severe drought that caused great devastation in terms of agriculture and overall water access in rural communities (Baudoin et al., 2017). Water restrictions were imposed on communities, and water was then only accessible through water tanks or at specified times of the day. These restrictions went on for two years without any significant change. In my particular community, the piped water supply was completely cut off, and water trucks became the primary source of safe water. As mentioned in previous chapters, water trucks delivered safe water infrequently, and sometimes they did not show up at all. These experiences made me reflect on the plight of rural communities that received little to no access to safely managed water. My primary concern was that several communities had poor road infrastructure, among other forms of neglect, which water trucks sometimes struggled to reach. Furthermore, because of the low economic status of rural communities, it became difficult to purchase water from water vendors. Thus, many families, including mine, survived on the water acquired from unsafe sources, such as streams and ponds that frequently

had poor water quality (Achore, Bisung & Kuusaana, 2020; Raimi et al., 2019). With this context in mind, I then set out to examine how adults living in a resource-poor rural community in KZN described their challenges about living in a community that had limited access to safely managed water services and sources.

The decision to use the photovoice as a tool for generating data was based on my desire to amplify the voices of those living in resource-poor rural contexts. Photovoice, in particular, provided a safe tool and platform where the participants could engage on issues that affected them. Although the participants did not get an opportunity to engage with the local municipality through no fault of their own, the process was still empowering. They became aware of the extent of their water-related issues. In this regard, the participants' perspectives were of value for addressing the research questions posed and for understanding how limited access to safe water shaped their daily lives.

As I conclude this dissertation, I am now cognisant of the fact that rural communities are severely marginalised from essential services that usher wellbeing. Although some may argue that rural communities are not a priority because of the low economic potential, reliable access to water service might be the very source that unlocks the rural economy. Whether rural communities contribute to the economy or not, they deserve to have access to safe water by being human. Access to safely managed water is their human and constitutional right. The most effective way of ensuring that the needs of rural communities are met is by involving them in both the decision-making and implementation processes. By doing so, inclusive and effective rural development could be ensured; a practice that places those who live in rural communities at the forefront of their development.

## REFERENCES

- Abdalla, M. M., Oliveira, L. G. L., Azevedo, C. E. F., & Gonzalez, R. K. (2018). Quality in qualitative organizational research: Types of triangulation as a methodological alternative. *Administração: ensino e pesquisa*, 19(1), 66-98.
- Abdullahi, A., & Sa'idu Idris, A. A. (2020). Inventory of Rural Domestic Water Supply Points in Gombe State, Nigeria. *International Journal of Science and Research*. 9(3), 1444-1449.
- Abma, T. A., Cook, T., Rämngård, M., Kleba, E., Harris, J., & Wallerstein, N. (2017). Social impact of participatory health research: collaborative non-linear processes of knowledge mobilization. *Educational action research*, 25(4), 489-505.
- Abma, T., Banks, S., Cook, T., Dias, S., Madsen, W., Springett, J., & Wright, M. T. (2019). Making the Case: The Arguments for Participatory Research. In *Participatory Research for Health and Social Well-Being*, 1-22, Springer, Cham.
- Abma, T.A., Cook, T., Rämngård, M., Kleba, E., Harris, J., & Wallerstein, N. (2017). Social impact of participatory health research: collaborative non-linear processes of knowledge mobilization. *Educational action research*, 25(4), 489-505.
- Acey, C., Kisiangani, J., Ronoh, P., Delaire, C., Makena, E., Norman, G...& Peletz, R. (2019). Cross-subsidies for improved sanitation in low income settlements: Assessing the willingness to pay of water utility customers in Kenyan cities. *World Development*, 115, 160-177.
- Achore, M., Bisung, E., & Kuusaana, E. D. (2020). Coping with water insecurity at the household level: A synthesis of qualitative evidence. *International Journal of Hygiene and Environmental Health*, 230, 113598.
- Adams, E. A., & Smiley, S. L. (2018, November). Urban-rural water access inequalities in Malawi: implications for monitoring the Sustainable Development Goals. Oxford, UK: Blackwell Publishing Ltd. In *Natural Resources Forum*, 42 (4), 217-226.
- Adams, E. A., Juran, L., & Ajibade, I. (2018). 'Spaces of Exclusion' in community water governance: A Feminist Political Ecology of gender and participation in Malawi's Urban Water User Associations. *Geoforum*, 95, 133-142.
- Adams, E.A. & Smiley, S.L. (2018). Urban-rural water access inequalities in Malawi: implications for monitoring the Sustainable Development Goals. In *Natural Resources Forum*. 42(4), 217-226). Oxford, UK: Blackwell Publishing Ltd.
- Adams, E.A., Stoler, J., & Adams, Y. (2020). Water insecurity and urban poverty in the Global South: Implications for health and human biology. *American Journal of Human Biology*, 32(1), 1-12.
- Adams, E.A., Zulu, L., & Ouellette-Kray, Q. (2020). Community water governance for urban water security in the Global South: Status, lessons, and prospects. *Wiley Interdisciplinary Reviews: Water*, 7(5), p.e1466.
- Addae, E.A., & Adu, D. (2020). Investigating Water Poverty in sub-Sahara Africa: Addressing the Potentials for Water Resources Management, and Policy Implications. *International Journal*

*of Scientific Research in Computer Science, Engineering and Information Technology*, 6(6), 57-64.

- Adeoti, O., & Fati, B.O. (2020). Barriers to extending piped water distribution networks: The case of Ekiti State, Nigeria. *Utilities Policy*, 63, p.100983..
- Adeyeye, K., Gibberd, J., & Chakwizira, J. (2020). Water marginality in rural and peri-urban communities. *Journal of Cleaner Production*, 273, 1-16.
- Adnew Degefu, M., Assen, M., Satyal, P., & Budds, J. (2020). Villagization and access to water resources in the Middle Awash Valley of Ethiopia: implications for climate change adaptation. *Climate and Development*, 12(10), 899-910.
- Adu-Ampong, E.A., Novelli, M., & Ribeiro, M.A. (2020). Tourism in Africa—continental issues and regional contexts. *Routledge Handbook of Tourism in Africa*, 3.
- Afodu, O. J., Afolami, C. A., Akinboye, O. E., Ndubuisi-Ogbonna, L. C., Ayo-Bello, T. A., Shobo, B. A., & Ogunnowo, D. M. (2019). Livelihood diversification and it's determinants on rice farming households in Ogun State, Nigeria. *African Journal of Agricultural Research*, 14(35), 2104-2111.
- Aguene, I. N. (2020). The Role of Women in Rural Development in Enugu State, Nigeria. *International Journal of Sustainable Development & World Policy*, 9(2), 135-153.
- Aiga, H., & Umenai, T. (2003). Standardisation of the definition of access to safe water. *The Lancet*, 361(9375), 2156.
- Aihara, Y., Shrestha, S., Kazama, F., & Nishida, K. (2015). Validation of household water insecurity scale in urban Nepal. *Water Policy*, 17(6), 1019-1032.
- Aitken, S., & Valentine, G. (2006). Ways of knowing and ways of doing geographic research. *Approaches to human geography*, 1-12.
- Aituk, E. (2019). *Experiences of girls involved in domestic water collection and transportation in Ngwale parish Pallisa district* (Doctoral dissertation, The Makerere University). Retrieved from <http://196.43.133.114/bitstream/handle/10570/7950/Aituk-CHUSS-Masters.pdf?sequence=3&isAllowed=y>
- Akinboade, O. A., Mokwena, M. P., & Kinack, E. C. (2013). Understanding citizens' participation in service delivery protests in South Africa's Sedibeng district municipality. *International Journal of Social Economics*, 40(5), 458-478.
- Akinyemi, B. E., Mushunje, A., & Fashogbon, A. E. (2018). Factors explaining household payment for potable water in South Africa. *Cogent Social Sciences*, 4(1), 1-16.
- Akokuwebe, M. E., & Adekanbi, D. M. (2017). Corruption in the health sector and implications for service delivery in Oyo State public hospitals. *Ilorin J Sociol*, 9(1), 200-217.
- Al'Afghani, M.M., Kohlitz, J., & Willetts, J. (2019). Not built to last: Improving legal and institutional arrangements for community-based water and sanitation service delivery in Indonesia. *Water Altern*, 12, 285-303.

- Alaerts, G.J. (2019). Financing for Water—Water for Financing: A Global Review of Policy and Practice. *Sustainability*, 11(3), p.821.
- Alase, A. (2017). The interpretative phenomenological analysis (IPA): A guide to a good qualitative research approach. *International Journal of Education & Literacy Studies*, 5(2), 9-19.
- Aleixo, B., Pena, J. L., Heller, L., & Rezende, S. (2019). Infrastructure is a necessary but insufficient condition to eliminate inequalities in access to water: Research of a rural community intervention in Northeast Brazil. *Science of the Total Environment*, 652, 1445-1455.
- Alston, M., Clarke, J., & Whittenbury, K. (2017). Gender relations, livelihood strategies, water policies and structural adjustment in the Australian dairy industry. *Sociologia Ruralis*, 57, 752-768.
- Altay, S. (2019). Patriarchy and Women's Subordination: A Theoretical Analysis. *Şarkiyat*, 11(1), 417-427.
- Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis: a worked example from a synthesis on parental perceptions of vaccination communication. *BMC medical research methodology*, 19(1), 1-9.
- Amis, M., Zinyengere, N., & Cassim, A. (2017, August). Exploring opportunities for domestic-local investment in water and sanitation services. Challenges and constraints. Water Research Commission. Retrieved from [https://www.fsmttoolbox.com/assets/pdf/224\\_-\\_TT\\_725-17.pdf](https://www.fsmttoolbox.com/assets/pdf/224_-_TT_725-17.pdf)
- Andereck, K.L., Valentine, K.M., Knopf, R.C., & Vogt, C.A. (2005). Residents' perceptions of community tourism impacts. *Annals of tourism research*, 32(4), 1056-1076.
- Andress, L., & Purtill, M. P. (2020). Shifting the gaze of the physician from the body to the body in a place: A qualitative analysis of a community-based photovoice approach to teaching place-health concepts to medical students. *PloS one*, 15(2), 1-15.
- Angel, J., & Loftus, A. (2019). With-against-and-beyond the human right to water. *Geoforum*, 98, 206-213.
- Angier, K. (2017). In search of historical consciousness: An investigation into young South Africans' knowledge and understanding of their national histories. *London Review of Education*, 15(2), 155-173.
- Angoua, E. L. E., Dongo, K., Templeton, M. R., Zinsstag, J., & Bonfoh, B. (2018). Barriers to access improved water and sanitation in poor peri-urban settlements of Abidjan, Côte d'Ivoire. *PloS one*, 13(8), 1-13
- Anwar, N. H., Sawas, A., & Mustafa, D. (2020). 'Without water, there is no life': Negotiating everyday risks and gendered insecurities in Karachi's informal settlements. *Urban Studies*, 57(6), 1320-1337.
- Argyris, C., & Schön, D.A. (1989). Participatory action research and action science compared: A commentary. *American behavioral scientist*, 32(5), 612-623.
- Armah, F. A., Ekumah, B., Yawson, D. O., Odoi, J. O., Afitiri, A. R., & Nyieku, F. E. (2018). Access to improved water and sanitation in sub-Saharan Africa in a quarter century. *Heliyon*, 4(11), 1-32.

- Armah, F. A., Ekumah, B., Yawson, D. O., Odoi, J. O., Afitiri, A. R., & Nyieku, F. E. (2018). Access to improved water and sanitation in sub-Saharan Africa in a quarter century. *Heliyon*, 4(11), 1-32.
- Arrow, K. J. (1978). Nozick's entitlement theory of justice. *Philosophia*, 7(2), 265-279.
- Auriacombe, C., & Ukwandu, D. (2020). The sustainability of the water privatization policy framework from 1994 until 2015 in South Africa. (Master's thesis). The University of Johannesburg. Retrieved from <https://ujcontent.uj.ac.za/vital/access/services/Download/uj:40478/SOURCE1>
- Awang, M.N. (2019). Study of Gender Injustice Based on Women's Role as Mother, Wife and Household in The District of Amabi Oefeto, Kupang District. *Health Notions*, 3(11), 447-452.
- Aziz, F., El Achaby, M., Ouazzani, N., El-Kharraz, J., & Mandi, L. (2020). Rainwater Harvesting: A Challenging Strategy to Relieve Water Scarcity in Rural Areas. In *Smart Village Technology*, 267-290, Springer, Cham.
- Babamiri, A.S., Pishvae, M.S., & Mirzamohammadi, S. (2020). The analysis of financially sustainable management strategies of urban water distribution network under increasing block tariff structure: A system dynamics approach. *Sustainable Cities and Society*, 60, 1-18.
- Badou, D. F., Dieckrüger, B., Kapangaziwiri, E., Mbaye, M. L., Yira, Y., Lawin, E. A., ... & Afouda, A. (2018). Modelling blue and green water availability under climate change in the Beninese Basin of the Niger River Basin, West Africa. *Hydrological Processes*, 32(16), 2526-2542.
- Baker, K. K., Story, W. T., Walser-Kuntz, E., & Zimmerman, M. B. (2018). Impact of social capital, harassment of women and girls, and water and sanitation access on premature birth and low infant birth weight in India. *PloS one*, 13(10), 1-18.
- Balomenou, N., & Garrod, B. (2016). A review of participant-generated image methods in the social sciences. *Journal of Mixed Methods Research*, 10(4), 335-351.
- Bansod, J., Atkare, V., G, A., & Shambharkar, A. (2019). Studies on bdy measurement and productive performance of goat in Sadak Arjuni Tahsil of Gondia District. *Scientific Journal Impact Factor*. 29(1), 117-120.
- Banyard, V., Edwards, K., Herrington, R., Hopfauf, S., Simon, B., & Shroll, L. (2020). Using photovoice to understand and amplify youth voices to prevent sexual and relationship violence. *Journal of community psychology*, 1-21.
- Bárcena, A., Cimoli, M., García-Buchaca, R., & Pérez, R. (Ed.). (2017). *Gender equality plans in Latin America and the Caribbean: Road maps for development*. Comisión Económica para América Latina y el Caribe. Retrieved from [https://www.cepal.org/sites/default/files/publication/files/41015/S1801211\\_en.pdf](https://www.cepal.org/sites/default/files/publication/files/41015/S1801211_en.pdf)
- Barchi, F., & Winter, S. C. (2020). Non-partner violence in Sub-Saharan Africa and the built environment: A multicountry analysis of the effects of sanitation, water access, and urban settings. *Violence against women*, 26(10), 1101-1119.
- Barde, J. A. (2017). What determines access to piped water in rural areas? Evidence from small-scale supply systems in rural Brazil. *World development*, 95, 88-110.

- Barkan, E. (2001). *The guilt of nations: Restitution and negotiating historical injustices*. JHU Press.
- Barlow, M. (2015). *Our right to water*. Council of Canadians.
- Barriage, S., & Hicks, A. (2020). Mobile apps for visual research: Affordances and challenges for participant-generated photography. *Library & Information Science Research*, 42(3), 101033.
- Bartram, J., & Cairncross, S. (2010). Hygiene, sanitation, and water: forgotten foundations of health. *PLoS Med*, 7(11), 1-9.
- Bastian, M., Jones, O., Moore, N., & Roe, E. (Eds.). (2016). *Participatory research in more-than-human worlds*. Taylor & Francis.
- Basu, S., Zuo, X., Lou, C., Acharya, R., & Lundgren, R. (2017). Learning to be gendered: Gender socialization in early adolescence among urban poor in Delhi, India, and Shanghai, China. *Journal of Adolescent Health*, 61(4), S24-S29.
- Baudoin, M. A., Vogel, C., Nortje, K., & Naik, M. (2017). Living with drought in South Africa: lessons learnt from the recent El Niño drought period. *International journal of disaster risk reduction*, 23, 128-137.
- Beauchet, O., Bastien, T., Mittelman, M., Hayashi, Y., & Ho, A. H. Y. (2020). Participatory art-based activity, community-dwelling older adults and changes in health condition: Results from a pre-post intervention, single-arm, prospective and longitudinal study. *Maturitas*, 134, 8-14.
- Beegle, K., Christiaensen, L., Dabalen, A., & Gaddis, I. (2016). *Poverty in a rising Africa*. The World Bank.
- Beheshtian, N., Kaipainen, K., Kähkönen, K., & Ahtinen, A. (2020, January). Color game: a collaborative social robotic game for icebreaking; towards the design of robotic ambiances as part of smart building services. In *Proceedings of the 23rd International Conference on Academic Mindtrek*. 10-19. Retrieved from [https://dl.acm.org/doi/pdf/10.1145/3377290.3377292?casa\\_token=09okItrwy\\_cAAAAA:d4tcA3HkhSE3hY6Fn3MO8hpXTRITuWuwuAo9OxzXFC3fMFlfJOHoiUqqrzGHpIT9dwI\\_10N1Kvs5g](https://dl.acm.org/doi/pdf/10.1145/3377290.3377292?casa_token=09okItrwy_cAAAAA:d4tcA3HkhSE3hY6Fn3MO8hpXTRITuWuwuAo9OxzXFC3fMFlfJOHoiUqqrzGHpIT9dwI_10N1Kvs5g)
- Beinart, W., & Delius, P. (2019, December). Next steps towards land reform. *Centre for Development and Enterprise*. Retrieved from <https://media.africaportal.org/documents/Next-Steps-towards-Land-Reform-CDE.pdf>
- Benatar, S., Sullivan, T., & Brown, A. (2018). Why equity in health and in access to health care are elusive: Insights from Canada and South Africa. *Global public health*, 13(11), 1533-1557.
- Bergold, J., & Thomas, S. (2012). Participatory research methods: A methodological approach in motion. *Historical Social Research/Historische Sozialforschung*, 191-222.
- Bidwell, N. J. (2020, June). Women and the Sustainability of Rural Community Networks in the Global South. In *Proceedings of the 2020 International Conference on Information and Communication Technologies and Development*, 1-13. Retrieved from [https://dl.acm.org/doi/pdf/10.1145/3392561.3394649?casa\\_token=EKi-SsBXRcwAAAAA:uxZm\\_TU5No1umX8P4kqJk0DfdVblWGXa0jPQ8C2sKxWmLw\\_bl2rw9a18EgYVufgzIbTTuKxbQbeESQ3b](https://dl.acm.org/doi/pdf/10.1145/3392561.3394649?casa_token=EKi-SsBXRcwAAAAA:uxZm_TU5No1umX8P4kqJk0DfdVblWGXa0jPQ8C2sKxWmLw_bl2rw9a18EgYVufgzIbTTuKxbQbeESQ3b)

- Bieteru, A.N. (2019). Gendered Power Relations and Household Decision Making in Rural Ghana. A study of Zambo in the Lawra District of the Upper West Region of Ghana (Master's Thesis). Brock University. Retrieved from [https://dr.library.brocku.ca/bitstream/handle/10464/14239/Brock\\_Bieteru\\_Anella\\_2019?sequence=1&isAllowed=y&sequence=1&isAllowed=y](https://dr.library.brocku.ca/bitstream/handle/10464/14239/Brock_Bieteru_Anella_2019?sequence=1&isAllowed=y&sequence=1&isAllowed=y)
- Biggs, E. M., Bruce, E., Boruff, B., Duncan, J. M., Horsley, J., Pauli, N., ... & Imanari, Y. (2015). Sustainable development and the water–energy–food nexus: A perspective on livelihoods. *Environmental Science & Policy*, 54, 389-397.
- Birkenholtz, T. (2016). Dispossessing irrigators: Water grabbing, supply-side growth and farmer resistance in India. *Geoforum*, 69, 94-105.
- Bisung, E., & Elliott, S. J. (2016). 'Everyone is exhausted and frustrated': exploring psychosocial impacts of the lack of access to safe water and adequate sanitation in Usoma, Kenya. *Journal of Water, Sanitation and Hygiene for Development*, 6(2), 205-214.
- Bisung, E., & Elliott, S.J. (2018). Improvement in access to safe water, household water insecurity, and time savings: A cross-sectional retrospective study in Kenya. *Social Science & Medicine*, 200, 1-8.
- Bisung, E., Elliott, S.J., Abudho, B., Karanja, D.M., & Schuster-Wallace, C.J. (2015a). Using photovoice as a community based participatory research tool for changing water, sanitation, and hygiene behaviours in Usoma, Kenya. *BioMed research international*.
- Bisung, E., Elliott, S.J., Abudho, B., Schuster-Wallace, C.J., & Karanja, D.M. (2015b). Dreaming of toilets: Using photovoice to explore knowledge, attitudes and practices around water–health linkages in rural Kenya. *Health & place*, 31, 208-215.
- Black, G.F., Davies, A., Iskander, D., & Chambers, M. (2018). Reflections on the ethics of participatory visual methods to engage communities in global health research. *Global Bioethics*, 29(1), 22-38.
- Blackbeard, D., & Lindegger, G. (2015). The value of participatory visual methods in young masculinity research. *Procedia-Social and Behavioral Sciences*, 165, 85-93.
- Boakye-Ansah, A.S., Schwartz, K., & Zwarteveen, M. (2019). From rowdy cartels to organized ones? The transfer of power in urban water supply in Kenya. *The European Journal of Development Research*, 31(5), 1246-1262.
- Boateng, G. O., Collins, S. M., Mbullo, P., Wekesa, P., Onono, M., Neilands, T. B., & Young, S. L. (2018). A novel household water insecurity scale: Procedures and psychometric analysis among postpartum women in western Kenya. *PloS one*, 13(6), 1-28.
- Boateng, J. S., Banham, V., Kosi, I., & Ayentimi, D. T. (2021). Socialisation and women's participation in governance: exploring important themes from Ghana. *International Journal of Gender Studies in Developing Societies*, 4(1), 75-94.
- Boggenpoel, Z. Z., & Slade, B. (2020). Where is property? Some thoughts on the theoretical implications of Daniels v Scribante. *Constitutional Court Review*, 10(1), 379-399.

- Boinet, A. (2020, March 16). "Water in Crisis/es?" - 2020 Water, Hygiene and Sanitation Barometer, 6th Edition - Inventory of Access to a Vital Resource, Challenges & Solutions. Solidarities International. Retrieved from [https://reliefweb.int/sites/reliefweb.int/files/resources/solidarites\\_2020\\_water-hygiene-barometer.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/solidarites_2020_water-hygiene-barometer.pdf)
- Bond, P. (2014). Constitutionalism as a barrier to the resolution of widespread community rebellions in South Africa. *Politikon*, 41(3), 461-482.
- Bonsor, H., MacDonald, A., Casey, V., Carter, R., & Wilson, P. (2018). The need for a standard approach to assessing the functionality of rural community water supplies. *Hydrogeology journal*, 26(2), 367-370.
- Borja-Vega, G &., Grabinsky, J. (2019, June 26). Gender and water collection responsibilities – A snapshot of Latin America. *The Water Blog*. Retrieved from <https://blogs.worldbank.org/water/gender-and-water-collection-responsibilities-snapshot-latin-america>
- Bosworth, G., & Venhorst, V. (2018). Economic linkages between urban and rural regions—what’s in it for the rural?. *Regional Studies*, 52(8), 1075-1085.
- Botha, J. H. (2020). *Exploring Management Practices of Water Resources and Infrastructure at Local Government Level as a Threat to Water Security in South Africa* (Master’s Thesis). Stellenbosch University. Retrieved from [https://scholar.sun.ac.za/bitstream/handle/10019.1/109196/botha\\_exploring\\_2020.pdf?sequence=1](https://scholar.sun.ac.za/bitstream/handle/10019.1/109196/botha_exploring_2020.pdf?sequence=1)
- Bradshaw, D., & Steyn, K. (2001). Poverty and chronic diseases in South Africa. *Tygerberg, South Africa: Burden of Diseases Research Unit*, 123.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Breakfast, N., Bradshaw, G., & Nomarwayi, T. (2019). Violent service delivery protests in post-apartheid South Africa, 1994–2017-a conflict resolution perspective. *African Journal of Public Affairs*, 11(1), 106-126.
- Brewis, A., Choudhary, N., & Wutich, A. (2019). Household water insecurity may influence common mental disorders directly and indirectly through multiple pathways: Evidence from Haiti. *Social Science & Medicine*, 238, 1-10.
- Brewis, A., Workman, C., Wutich, A., Jepson, W., Young, S., Household Water Insecurity Experiences—Research Coordination Network (HWISE-RCN), ... & Zinab, H. (2020). Household water insecurity is strongly associated with food insecurity: evidence from 27 sites in low-and middle-income countries. *American Journal of Human Biology*, 32(1), 1-13.
- Brinkerhoff, D.W., Wetterberg, A., & Wibbels, E. (2018). Distance, services, and citizen perceptions of the state in rural Africa. *Governance*, 31(1), 103-124.
- Brown, C., Neves-Silva, P., & Heller, L. (2016). The human right to water and sanitation: a new perspective for public policies. *Ciencia & saude coletiva*, 21, 661-670.

- Brown, G., & Donovan, S. (2014). Measuring change in place values for environmental and natural resource planning using public participation GIS (PPGIS): results and challenges for longitudinal research. *Society & Natural Resources*, 27(1), 36-54.
- Brown, H. (2016). *Pay-to-Play Politics: How Money Defines the American Democracy: How Money Defines the American Democracy*. ABC-CLIO.
- Bruce, D. (2014). Control, discipline and punish?: Addressing corruption in South Africa. *South African Crime Quarterly*, 48, 49-62.
- Budig, K., Diez, J., Conde, P., Sastre, M., Hernán, M., & Franco, M. (2018). Photovoice and empowerment: evaluating the transformative potential of a participatory action research project. *BMC public health*, 18(1), 1-9.
- Buechler, S., & Hanson, A. M. S. (Eds.). (2015). *A political ecology of women, water and global environmental change*. Routledge.
- Bulled, N. (2017). The effects of water insecurity and emotional distress on civic action for improved water infrastructure in rural South Africa. *Medical anthropology quarterly*, 31(1), 133-154.
- Cai, M., Murtazashvili, I., & Murtazashvili, J. (2020). The politics of land property rights. *Journal of Institutional Economics*, 16(2), 151-167.
- Calow, R. C., MacDonald, A. M., Nicol, A. L., & Robins, N. S. (2010). Ground water security and drought in Africa: linking availability, access, and demand. *Groundwater*, 48(2), 246-256.
- Carduff, E., Kendall, M., & Murray, S. A. (2018). Living and dying with metastatic bowel cancer: Serial in-depth interviews with patients. *European journal of cancer care*, 27(1), 1-8.
- Carmi, N., Alsayegh, M., & Zoubi, M. (2019). Empowering women in water diplomacy: A basic mapping of the challenges in Palestine, Lebanon and Jordan. *Journal of hydrology*, 569, 330-346.
- Carrard, N., Madden, B., Chong, J., Grant, M., Nghiêm, T. P., Bui, L. H., ... & Willetts, J. (2019). Are piped water services reaching poor households? Empirical evidence from rural Viet Nam. *Water research*, 153, 239-250.
- Carter, M. J. (2014). Gender socialization and identity theory. *Social Sciences*, 3(2), 242-263.
- Carter, R. C., & Ross, I. A. N. (2016). Beyond 'functionality' of handpump-supplied rural water services in developing countries. *Waterlines*, 94-110.
- Caruso, B. A., Clasen, T., Yount, K. M., Cooper, H. L., Hadley, C., & Haardörfer, R. (2017). Assessing women's negative sanitation experiences and concerns: The development of a novel sanitation insecurity measure. *International journal of environmental research and public health*, 14(7), 755.
- Caruso, B. A., Sevilimedu, V., Fung, I. C. H., Patkar, A., & Baker, K. K. (2015). Gender disparities in water, sanitation, and global health. *The Lancet*, 386(9994), 650-651.
- Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds?. *Currents in Pharmacy Teaching and Learning*, 10(6), 807-815.

- Catalani, C., & Minkler, M. (2010). Photovoice: A review of the literature in health and public health. *Health education & behavior*, 37(3), 424-451.
- Cetrulo, T. B., Ferreira, D. F., Marques, R. C., & Malheiros, T. F. (2020). Water utilities performance analysis in developing countries: On an adequate model for universal access. *Journal of environmental management*, 268, 1-9.
- Chauke, K. R. (2016). *Municipal revenue collection function: A comparative study on the efficiency and effectiveness of Tshwane Metropolitan Municipality and the South African Revenue Service* (Doctoral dissertation, The University of Limpopo). Retrieved from [http://ulspace.ul.ac.za/bitstream/handle/10386/1528/chauke\\_kr\\_2016.pdf?sequence=1&isAllowed=y](http://ulspace.ul.ac.za/bitstream/handle/10386/1528/chauke_kr_2016.pdf?sequence=1&isAllowed=y)
- Chawar, E., Deszcz-Tryhubczak, J., Kowalska, K., Maniakowska, O., Marecki, M., Palczyńska, M., Pszczółowski, E., & Sikora, D. (2018). Children's Voices in the Polish Canon Wars: Participatory Research in Action. *International Research in Children's Literature*, 11(2), 111-131.
- Cheng, M., Liu, Y., & Zhou, Y. (2019). Measuring the symbiotic development of rural housing and industry: a case study of Fuping County in the Taihang Mountains in China. *Land Use Policy*, 82, 307-316.
- Cheng, X., Chen, L., Sun, R., & Kong, P. (2018). Land use changes and socio-economic development strongly deteriorate river ecosystem health in one of the largest basins in China. *Science of the Total Environment*, 616, 376-385.
- Chew, M., Maheshwari, B., & Somerville, M. (2019). Photovoice for understanding groundwater management issues and challenges of villagers in Rajasthan, India. *Groundwater for Sustainable Development*, 8, 134-143.
- Chidya, R. C., Mulwafu, W. O., & Banda, S. C. (2016). Water supply dynamics and quality of alternative water sources in low-income areas of Lilongwe City, Malawi. *Physics and Chemistry of the Earth, Parts A/B/C*, 93, 63-75.
- Chima, G.N. (2018). Community Participation as Strategy to Ensure Sustainability of Rural Water Supply Projects. *FUPRE Journal of Scientific and Industrial Research (FJSIR)*, 2(1), 109-118.
- Chinyoka, I. (2018). *How and why do states provide for children? Comparing social grants for families with children in Southern Africa* (Doctoral dissertation, The University of Cape Town). Retrieved from <https://open.uct.ac.za/handle/11427/29300>.
- Choi, H.C., & Murray, I. (2010). Resident attitudes toward sustainable community tourism. *Journal of Sustainable Tourism*, 18(4), 575-594.
- Choudhary, N., Brewis, A., Wutich, A., & Udas, P. B. (2020). Sub-optimal household water access is associated with greater risk of intimate partner violence against women: evidence from Nepal. *Journal of Water and Health*, 18(4), 579-594.
- Christmas, W. I. (2017). *Self-ownership and original appropriation: an essay on the historical entitlement theory of justice*. (Doctorate dissertation, The University of Manchester). Retrieved from [https://www.research.manchester.ac.uk/portal/files/184633986/FULL\\_TEXT.PDF](https://www.research.manchester.ac.uk/portal/files/184633986/FULL_TEXT.PDF)

- Chukwuma, O. M. (2017). Patterns and problems of domestic water supply to rural communities in Enugu State, Nigeria. *Journal of Agricultural Extension and Rural Development*, 9(8), 172-184.
- Clark, A. (2020). Visual ethics beyond the crossroads. *The Sage handbook of visual research methods*, 462-493.
- Clark, G.L. (2017). Financial intermediation, infrastructure investment and regional growth. *Area Development and Policy*, 2(3), 217-236.
- Clarke, V., & Braun, V. (2013). Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. *The psychologist*, 26(2).
- Cleland, D., & Wyborn, C. (2010). A reflective lens: applying critical systems thinking and visual methods to ecohealth research. *EcoHealth*, 7(4), 414-424.
- Climate Data.org. (2020, May). Mooi River Climate. Retrieved from <https://en.climate-data.org/africa/south-africa/kwazulu-natal/mooirivier-26825/>
- Clothier, B. (2010, August). Green, blue and grey waters: Minimising the footprint using soil physics. In *19th World Congress of Soil Science, Soil Solutions for a Changing World*. 1-6.
- Cole, M.J., Bailey, R.M., Cullis, J.D., & New, M.G. (2018). Spatial inequality in water access and water use in South Africa. *Water Policy*, 20(1), 37-52.
- Cole, S. (2017). Water worries: An intersectional feminist political ecology of tourism and water in Labuan Bajo, Indonesia. *Annals of Tourism Research*, 67, 14-24.
- Collins, S. E., Clifasefi, S. L., Stanton, J., Straits, K. J., Gil-Kashiwabara, E., Rodriguez Espinosa, P., ... & Wallerstein, N. (2018). Community-based participatory research (CBPR): Towards equitable involvement of community in psychology research. *American Psychologist*, 73(7), 884.
- Collins, S. M., Mbullo Owuor, P., Miller, J. D., Boateng, G. O., Wekesa, P., Onono, M., & Young, S. L. (2019). 'I know how stressful it is to lack water!' Exploring the lived experiences of household water insecurity among pregnant and postpartum women in western Kenya. *Global public health*, 14(5), 649-662.
- Connor, R. (2015). *The United Nations world water development report 2015: water for a sustainable world*, 1. UNESCO publishing.
- Constantine, K., Massoud, M., Alameddine, I., & El-Fadel, M. (2017). The role of the water tankers market in water stressed semi-arid urban areas: Implications on water quality and economic burden. *Journal of environmental management*, 188, 85-94.
- Constitution of the Republic of South Africa. (1996). Chapter 2: Bill of Rights. Retrieved from [https://www.gov.za/documents/constitution/chapter-2-bill-rights?gclid=Cj0KCQjwirz3BRD\\_ARIsAImf7LOH-aU--fJUewKXMVSPKxCkxnoIPaNTRVxCrZLt-po12M2XATZX6wUaAgPiEALw\\_wcB](https://www.gov.za/documents/constitution/chapter-2-bill-rights?gclid=Cj0KCQjwirz3BRD_ARIsAImf7LOH-aU--fJUewKXMVSPKxCkxnoIPaNTRVxCrZLt-po12M2XATZX6wUaAgPiEALw_wcB)
- Corbett, M. (2016). Rural futures: Development, aspirations, mobilities, place, and education. *Peabody Journal of Education*, 91(2), 270-282.

- Cousins, B. (2007). More than socially embedded: The distinctive character of 'communal tenure' regimes in South Africa and its implications for land policy. *Journal of Agrarian Change*, 7(3), 281-315.
- Creighton, G., Oliffe, J. L., Ferlatte, O., Bottorff, J., Broom, A., & Jenkins, E. K. (2018). Photovoice ethics: Critical reflections from men's mental health research. *Qualitative Health Research*, 28(3), 446-455.
- Cresswell, T. (2012). *Geographic thought: a critical introduction*. John Wiley & Sons.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Cridland, E. K., Phillipson, L., Brennan-Horley, C., & Swaffer, K. (2016). Reflections and recommendations for conducting in-depth interviews with people with dementia. *Qualitative Health Research*, 26(13), 1774-1786.
- Crow, G., Wiles, R., Heath, S., & Charles, V. (2006). Research ethics and data quality: The implications of informed consent. *International Journal of Social Research Methodology*, 9(2), 83-95.
- D'warte, J. (2020). Facilitating agency and engagement: Visual methodologies and pedagogical interventions for working with culturally and linguistically diverse young people. *Language Teaching Research*, 1-27.
- Damania, R., Desbureaux, S., Hyland, M., Islam, A., Rodella, A. S., Russ, J., & Zaveri, E. (2017). *Uncharted waters: The new economics of water scarcity and variability*. World Bank Publications.
- Daniel, D., Diener, A., van de Vossenberg, J., Bhatta, M., & Marks, S.J. (2020). Assessing drinking water quality at the point of collection and within household storage Containers in the Hilly Rural Areas of mid and far-Western Nepal. *International journal of environmental research and public health*, 17(7), 1-14.
- Dankwa, R.A., Fuseini, O.I., & Dankwah, A.A. (2018). Government Regulations on Rural Water Safety-Ghana. *Journal of Resources Development and Management*, 50, 55-72.
- Das, D., & Safini, H. (2018). Water insecurity in urban India: Looking through a gendered lens on everyday urban living. *Environment and Urbanization ASIA*, 9(2), 178-197.
- Das, K., Pradhan, G., & Nonhebel, S. (2019). Human energy and time spent by women using cooking energy systems: A case study of Nepal. *Energy*, 182, 493-501.
- Davanzati, G.F. (2017). *Capabilities, entitlements, and occupational gaps: three essays on gender discrimination in the South of Italy* (Doctoral dissertation, The University of Salento). Retrieved from [https://www.researchgate.net/profile/Paola\\_De\\_Pascali/publication/327285090\\_Capabilities\\_entitlements\\_and\\_occupational\\_gaps\\_three\\_essays\\_on\\_gender\\_discrimination\\_in\\_the\\_South\\_of\\_Italy/links/5b86955e299b1d5a72f894a/Capabilities-entitlements-and-occupational-gaps-three-essays-on-gender-discrimination-in-the-South-of-Italy.pdf](https://www.researchgate.net/profile/Paola_De_Pascali/publication/327285090_Capabilities_entitlements_and_occupational_gaps_three_essays_on_gender_discrimination_in_the_South_of_Italy/links/5b86955e299b1d5a72f894a/Capabilities-entitlements-and-occupational-gaps-three-essays-on-gender-discrimination-in-the-South-of-Italy.pdf)

- Davids, Y. D., Keulder, C., Lamb, G., Pereira, J., & Spilker, D. (2002). *Measuring democracy and human rights in Southern Africa*. 18. Nordic Africa Institute.
- Davis, C. L., Camp, R. A., & Coleman, K. M. (2004). The influence of party systems on citizens' perceptions of corruption and electoral response in Latin America. *Comparative Political Studies*, 37(6), 677-703.
- Davis, L. (1976). Comments on Nozick's entitlement theory. *The Journal of Philosophy*, 73(21), 836-844.
- De Juan, A., & Wegner, E. (2019). Social inequality, state-centered grievances, and protest: Evidence from South Africa. *Journal of Conflict Resolution*, 63(1), 31-58.
- De Kadt, D., & Lieberman, E.S. (2020). Nuanced accountability: Voter responses to service delivery in southern Africa. *British Journal of Political Science*, 50(1), 185-215.
- DeHaan, R., Hambly Odame, H., Thevathasan, N., & Nissanka, S. P. (2020). Local Knowledge and Perspectives of Change in Homegardens: A Photovoice Study in Kandy District, Sri Lanka. *Sustainability*, 12(17), 6866.
- Denby, K., Movik, S., Mehta, L., & van Koppen, B. (2016). The 'trickle down' of IWRM: A case study of local-level realities in the Inkomati Water Management Area, South Africa. *Water Alternatives*, 9(3), 473-492.
- Department of Water and Sanitation. (2017, January 24). Water and Sanitation: Statistics South Africa Analysis; Water and Sanitation Infrastructure; Auditor-General performance audit. Retrieved from <https://pmg.org.za/committee-meeting/23868/>
- Department of Water and Sanitation. (2018, May 24). Strategic Overview of the Water Sector in South Africa 2018/ Retrieved from [http://www.dwa.gov.za/downloads/WS/Macro\\_Planning\\_Products/STRATEGIC%20OVERVIEW%20OF%20WATER%20SERVICES/2018\\_May\\_A6\\_SOWSSA\\_HQ.pdf](http://www.dwa.gov.za/downloads/WS/Macro_Planning_Products/STRATEGIC%20OVERVIEW%20OF%20WATER%20SERVICES/2018_May_A6_SOWSSA_HQ.pdf)
- Devoto, F., Duflo, E., Dupas, P., Parienté, W., & Pons, V. (2012). Happiness on tap: Piped water adoption in urban Morocco. *American Economic Journal: Economic Policy*, 4(4), 68-99.
- Diabah, G., & Amfo, N. A. A. (2018). To dance or not to dance masculinities in Akan proverbs and their implications for contemporary societies. *Ghana Journal of Linguistics*, 7(2), 179-198.
- Dichabe, D. (2017). *Eradicating the patriarchal state: promoting women's socio-economic rights and achieving gender equity in the economic participation of women in South Africa (1994-2017)* (Doctoral dissertation, The University of the Free State). Retrieved from <https://scholar.ufs.ac.za/bitstream/handle/11660/7855/DichabeD.pdf?sequence=1&isAllowed=y>
- Dickin, S., Segnestam, L., & Sou Dakouré, M. (2020). Women's vulnerability to climate-related risks to household water security in Centre-East, Burkina Faso. *Climate and Development*, 1-11.
- Ding, Y., Hayes, M. J., & Widhalm, M. (2011). Measuring economic impacts of drought: a review and discussion. *Disaster Prevention and Management: An International Journal*.

- Dinka, M. O. (2018). Safe drinking water: concepts, benefits, principles and standards. *Water Challenges of an Urbanizing World, IntechOpen, London*, 163-181.
- Dixon, C. (2015). *Rural development in the third world*. Routledge.
- Djurfeldt, A.A. (2018). Assets, Gender, and Rural Livelihoods. *Agriculture, Diversification, and Gender in Rural Africa-Longitudinal Perspectives from Six Countries*.
- Dlamini, S.H. (2018). *Assessing the capacity of municipalities for water provision within a rural context: a case study of uMkhanyakude District Municipality, KwaZulu-Natal, South Africa* (Doctoral dissertation, The University of KwaZulu-Natal). Retrieved from [https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/17340/Dlamini\\_Sinenkhosi\\_Hlalanithi\\_2018.pdf?sequence=1&isAllowed=y](https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/17340/Dlamini_Sinenkhosi_Hlalanithi_2018.pdf?sequence=1&isAllowed=y)
- Dlouhá, J., & Pospíšilová, M. (2018). Education for Sustainable Development Goals in public debate: The importance of participatory research in reflecting and supporting the consultation process in developing a vision for Czech education. *Journal of Cleaner Production*, 172, 4314-4327.
- Dos Santos, S., Adams, E. A., Neville, G., Wada, Y., De Sherbinin, A., Bernhardt, E. M., & Adamo, S. B. (2017). Urban growth and water access in sub-Saharan Africa: Progress, challenges, and emerging research directions. *Science of the Total Environment*, 607, 497-508.
- Dowhaniuk, N., Ojok, S., & McKune, S. L. (2021). Setting a research agenda to improve community health: An inclusive mixed-methods approach in Northern Uganda. *Plos one*, 16(1), 1-25.
- Du Plessis, A. (2017). *Freshwater Challenges of South Africa and Its Upper Vaal River*. Berlin, Germany: Springer.
- Du Plessis, A., & Ahmed, L. (2020). Exploring the Anticipated Career Aspirations of Youth in a Rural Secondary School: A Visual Participatory Approach. *Educational Research for Social Change*, 9(2), 47-64.
- Du Plessis, A., 2019. Water as a Source of Conflict and Global Risk. In *Water as an Inescapable Risk* (pp. 115-143). Springer, Cham.
- Dugard, J. (2008). Rights, regulation and resistance: the Phiri water campaign. *South African Journal on Human Rights*, 24(3), 593-611.
- Dutta, M. (2020). Culture and Social Change Communication. In *Communication, Culture and Social Change* (pp. 101-191). Palgrave Macmillan, Cham.
- Ecclestone, K., & Goodley, D. (2016). Political and educational springboard or straitjacket? Theorising post/human subjects in an age of vulnerability. *Discourse: Studies in the Cultural Politics of Education*, 37(2), 175-188.
- Eddens, K. S., Fagan, J. M., & Collins, T. (2017). An interactive, mobile-based tool for personal social network data collection and visualization among a geographically isolated and socioeconomically disadvantaged population: early-stage feasibility study with qualitative user feedback. *JMIR research protocols*, 6(6), 1-18.

- Edwards, L. B., & Greeff, L. E. (2018). Evidence-based feedback about emotional cancer challenges experienced in South Africa: A qualitative analysis of 316 photovoice interviews. *Global public health*, 13(10), 1409-1421.
- Elghannam, A., Mesias, F. J., Escribano, M., Fouad, L., Horrillo, A., & Escribano, A. J. (2020). Consumers' perspectives on alternative short food supply chains based on social media: A focus group study in Spain. *Foods*, 9(1), 1-13.
- Ellemers, N. (2018). Gender stereotypes. *Annual review of psychology*, 69, 275-298.
- Ellison, D., Morris, C. E., Locatelli, B., Sheil, D., Cohen, J., Murdiyarso, D., ... & Sullivan, C. A. (2017). Trees, forests and water: Cool insights for a hot world. *Global Environmental Change*, 43, 51-61.
- Elwood, S.A., & Martin, D.G. (2000). "Placing" interviews: location and scales of power in qualitative research. *The professional geographer*, 52(4), 649-657.
- Ely, R., & Gleason, J.B. (2017). Socialization across contexts. *The handbook of child language*, 251-276.
- Emenike, C. P., Tenebe, I. T., Omole, D. O., Ngene, B. U., Oniemayin, B. I., Maxwell, O., & Onoka, B. I. (2017). Accessing safe drinking water in sub-Saharan Africa: Issues and challenges in South-West Nigeria. *Sustainable cities and society*, 30, 263-272.
- Enqvist, J.P., & Ziervogel, G. (2019). Water governance and justice in Cape Town: An overview. *Wiley Interdisciplinary Reviews: Water*, 6(4), p.e1354.
- Estes, R.J. (2019). Women and Development: From Homemakers to Nation Builders. In *the Social Progress of Nations Revisited, 1970–2020* (pp. 123-149). Springer, Cham.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4.
- Evans, M., Hole, R., Berg, L.D., Hutchinson, P., & Sookraj, D. (2009). Common insights, differing methodologies: Toward a fusion of indigenous methodologies, participatory action research, and white studies in an urban aboriginal research agenda. *Qualitative inquiry*, 15(5), 893-910.
- Everard, M., Gupta, N., Chapagain, P.S., Shrestha, B.B., Preston, G., & Tiwari, P. (2018). Can control of invasive vegetation improve water and rural livelihood security in Nepal?. *Ecosystem services*, 32, 125-133.
- Ezebilo, E. E., Odhuno, F., & Kavan, P. (2019). The perceived impact of public sector corruption on economic performance of micro, small, and medium enterprises in a developing country. *Economies*, 7(3), 89.
- Fagan, G. (2019). Rural households' access to water resources under climate impacts based on field evidence in Tigray Region, Ethiopia. *African Journal of Environmental Science & Technology*, 1(6), 228-240.
- Fantini, E. (2017). Picturing waters: a review of Photovoice and similar participatory visual research on water governance. *Wiley Interdisciplinary Reviews: Water*, 4(5), 1-16.

- Farquhar, C., & Das, R. (1999). Are focus groups suitable for 'sensitive' topics. *Developing focus group research: Politics, theory and practice*, 47-63.
- Farrar, L. J. (2014). *The free basic water policy of South Africa: an evaluation of its implementation* (Master's thesis, University of Cape Town). Retrieved from [https://open.uct.ac.za/bitstream/handle/11427/13198/thesis\\_ebe\\_2014\\_farrar\\_lj.pdf?sequence=1&isAllowed=y](https://open.uct.ac.za/bitstream/handle/11427/13198/thesis_ebe_2014_farrar_lj.pdf?sequence=1&isAllowed=y)
- Farrell, K. (2017). The rapid urban growth triad: a new conceptual framework for examining the urban transition in developing countries. *Sustainability*, 9(8), 1407.
- Fielmua, N. (2020). Myth and reality of community ownership and control of community-managed piped water systems in Ghana. *Journal of Water, Sanitation and Hygiene for Development*, 10(4), 841-850.
- Fielmua, N., & Dongzagla, A. (2020). Independent water pricing of small town water systems in Ghana. *Heliyon*, 6(6), 1-9.
- Fisher, J. (2006). For her it's the big Issue: Putting Women at the Centre of Water Supply, Sanitation and Hygiene. *Evidence Report, Water Supply and Sanitation Collaborative Council, Geneva*. Retrieved from [https://genderinsite.net/sites/default/files/wsscc\\_for\\_her\\_its\\_the\\_big\\_issue\\_evidence\\_report\\_2006\\_en.pdf](https://genderinsite.net/sites/default/files/wsscc_for_her_its_the_big_issue_evidence_report_2006_en.pdf)
- Fiske, J. (1994). Audiencing: Cultural practice and cultural studies. *Handbook of qualitative research*, 189-198.
- Fletcher-Watson, S., Adams, J., Brook, K., Charman, T., Crane, L., Cusack, J., ... & Pellicano, E. (2019). Making the future together: Shaping autism research through meaningful participation. *Autism*, 23(4), 943-953.
- Flick, U. (2018). Triangulation in data collection. *The SAGE handbook of qualitative data collection*, 527-544.
- Folch-Lyon, E., & Trost, J. F. (1981). Conducting focus group sessions. *Studies in family planning*, 443-449.
- Foster, T., Willetts, J., Lane, M., Thomson, P., Katuva, J., & Hope, R. (2018). Risk factors associated with rural water supply failure: A 30-year retrospective study of handpumps on the south coast of Kenya. *Science of the Total Environment*, 626, 156-164.
- Fouberg, E. H., & Murphy, A. B. (2020). *Human geography: people, place, and culture*. John Wiley & Sons.
- Francis, D., & Webster, E. (2019). Poverty and inequality in South Africa: critical reflections. *Development Southern Africa*, 36(6), 788-802.
- Frankenberg, S. J., Taguchi, H. L., Gerholm, T., Bodén, L., Kallioinen, P., Kjällander, S., ... & Tonér, S. (2019). Bidirectional collaborations in an intervention randomized controlled trial performed in the Swedish early childhood education context. *Journal of Cognition and Development*, 20(2), 182-202.

- Freeman, R. (2019). The role of the councillor and the work of meeting. *Local Government Studies*, 1-19.
- Fuente, D., Allaire, M., Jeuland, M., & Whittington, D. (2020). Forecasts of mortality and economic losses from poor water and sanitation in sub-Saharan Africa. *PloS one*, 15(3), 1-24.
- Furlong, C., Jegatheesan, J., Currell, M., Iyer-Raniga, U., Khan, T., & Ball, A.S. (2019). Is the global public willing to drink recycled water? A review for researchers and practitioners. *Utilities Policy*, 56, 53-61.
- Fusch, P., Fusch, G. E., & Ness, L. R. (2018). Denzin's paradigm shift: Revisiting triangulation in qualitative research. *Journal of social change*, 10(1), 2.
- Gagné-Acoulon, S. (2020, March 17). Corruption fuels water shortage in South Africa. *Organised Crime and Corruption Reporting Project*. Retrieved from <https://www.occrp.org/en/daily/11832-report-corruption-fuels-water-shortage-in-south-africa>
- Gambe, T. R. (2019). The gender dimensions of water poverty: exploring water shortages in Chitungwiza. *Journal of Poverty*, 23(2), 105-122.
- Gammie, E., Hamilton, S., & Gilchrist, V. (2017). Focus group discussions. *The Routledge Companion to Qualitative Accounting Research Methods*, Taylor & Francis, New York, NY, 372-386.
- Garn, J. V., Boisson, S., Willis, R., Bakhtiari, A., Al-Khatib, T., Amer, K., ... & Freeman, M. C. (2018). Sanitation and water supply coverage thresholds associated with active trachoma: modeling cross-sectional data from 13 countries. *PLoS neglected tropical diseases*, 12(1), 1-20.
- Gebretnsae, H., Mamo, N., Teklemariam, T., Fenta, K., Gebrehiwet, T., Berhe, A., Gebreselasie, F., & Demoz, K. (2020). Knowledge, Attitudes, and Practices about Trachoma in Rural Communities of Tigray Region, Northern Ethiopia: Implications for Prevention and Control. *Journal of Environmental and Public Health*, 1-8.
- Geere, J. A. L., Hunter, P. R., & Jagals, P. (2010). Domestic water carrying and its implications for health: a review and mixed methods pilot study in Limpopo Province, South Africa. *Environmental Health*, 9(1), 1-13.
- Geere, J. A., Bartram, J., Bates, L., Danquah, L., Evans, B., Fisher, M. B., ... & Hunter, P. R. (2018). Carrying water may be a major contributor to disability from musculoskeletal disorders in low income countries: a cross-sectional survey in South Africa, Ghana and Vietnam. *Journal of global health*, 8(1), 1-14
- Geere, J.A., & Cortobius, M. (2017). Who carries the weight of water? Fetching water in rural and urban areas and the implications for water security. *Water Alternatives*, 10(2), 513-540.
- Gelfer, J. (2016). *Numen, old men: Contemporary masculine spiritualities and the problem of patriarchy*. Routledge.
- Gentry, J., & Metz, B. (2017). Adjusting Photovoice for Marginalized Indigenous Women: Eliciting Ch'orti'Maya Women's Perspectives on Health in Guatemala. *Human Organization*, 76(3), 251.

- Gesellschaft fur International Zusammenarbeit. (2019). Access to Water and Sanitation in Sub-Saharan Africa: Review of Sector Reforms and Investments, Key Findings to Inform Future Support to Sector Development. Retrieved from [https://www.oecd.org/water/GIZ\\_2018\\_Access\\_Study\\_Part%20I\\_Synthesis\\_Report.pdf](https://www.oecd.org/water/GIZ_2018_Access_Study_Part%20I_Synthesis_Report.pdf)
- Gheuens, J., Nagabhatla, N., & Perera, E. D. P. (2019). Disaster-risk, water security challenges and strategies in Small Island Developing States (SIDS). *Water*, 11(4), 637.
- Gibbs, A., Reddy, T., Khanyile, D., & Cawood, C. (2020). Non-partner sexual violence experience and toilet type amongst young (18–24) women in South Africa: A population-based cross-sectional analysis. *Global public health*, 1-7.
- Gillis, M., Shoup, C., & Sicat, G. P. (2001). *World development report 2000/2001-attacking poverty*. The World Bank.
- Gleick, P. H. (2000). A look at twenty-first century water resources development. *Water international*, 25(1), 127-138.
- Global Risk Insights. (2016). The economic implications of global water scarcity. Retrieved from <https://globalriskinsights.com/2016/12/economic-cost-global-water-scarcity/>
- Godinez-Madrigal, J., Van Cauwenbergh, N., & van der Zaag, P. (2020). Unraveling intractable water conflicts: the entanglement of science and politics in decision-making on large hydraulic infrastructure. *Hydrology and Earth System Sciences*, 24(10), 4903-4921.
- Goldman, A. H. (1976). The entitlement theory of distributive justice. *The Journal of Philosophy*, 73(21), 823-835.
- Gomez, M., Perdiguero, J., & Sanz, A. (2019). Socioeconomic factors affecting water access in rural areas of low and middle income countries. *Water*, 11(2), 1-21.
- Gondo, R., & Kolawole, O. D. (2020). Institutional factors engendering dissonance between customary and statutory institutions in water access in the Okavango Delta, Botswana. *Sustainable Water Resources Management*, 6(6), 1-13.
- Government of South Africa. (1996, December 18). Constitution of the Republic of South Africa, 1996 - Chapter 2: Bill of Rights. Retrieved from <https://www.gov.za/sites/default/files/images/a108-96.pdf>.
- Gradín, C. (2019). Occupational segregation by race in South Africa after apartheid. *Review of Development Economics*, 23(2), 553-576.
- Graham, J. P., Hirai, M., & Kim, S. S. (2016). An analysis of water collection labor among women and children in 24 sub-Saharan African countries. *PloS one*, 11(6), 1-14.
- Grant, M., Soeters, S., Bunthoeun, I. V., & Willetts, J. (2019). Rural Piped-Water Enterprises in Cambodia: A Pathway to Women's Empowerment?. *Water*, 11(12), 1-18.
- Gray, L., Guzman, P., Glowa, K. M., & Drevno, A. G. (2014). Can home gardens scale up into movements for social change? The role of home gardens in providing food security and community change in San Jose, California. *Local Environment*, 19(2), 187-203.

- Greene, S., Burke, K. J., & McKenna, M. K. (2018). A review of research connecting digital storytelling, photovoice, and civic engagement. *Review of Educational Research*, 88(6), 844-878.
- Grigg, N. S. (2019). Water–Health Nexus: Modeling the Pathways and Barriers to Water-Related Diseases. *Water Resources Management*, 33(1), 319-335.
- Grigg, N.S. (2019). Global water infrastructure: state of the art review. *International Journal of Water Resources Development*, 35(2), 181-205.
- Griggs, D., Stafford-Smith, M., Gaffney, O., Rockström, J., Öhman, M. C., Shyamsundar, P., ... & Noble, I. (2013). Sustainable development goals for people and planet. *Nature*, 495(7441), 305-307.
- Grönwall, J., & Danert, K. (2020). Regarding groundwater and drinking water access through a human rights lens: self-supply as a norm. *Water*, 12(2), 1-21.
- Gross, E., Günther, I., & Schipper, Y. (2018). Women are walking and waiting for water: The time value of public water supply. *Economic development and cultural change*, 66(3), 489-517.
- Guest, G., Namey, E., Taylor, J., Eley, N., & McKenna, K. (2017). Comparing focus groups and individual interviews: findings from a randomized study. *International Journal of Social Research Methodology*, 20(6), 693-708.
- Guillemin, M., & Drew, S. (2010). Questions of process in participant-generated visual methodologies. *Visual studies*, 25(2), 175-188.
- Guillemin, M., & Gillam, L. (2004). Ethics, reflexivity, and “ethically important moments” in research. *Qualitative inquiry*, 10(2), 261-280.
- Gukurume, S. (2012). Protracted struggles for basic social services and amenities in Zimbabwe’s informal settlements. *International Journal of Politics and Good Governance*, 3(3.3), 1-16.
- Guoqing, Z. (2020). How to Justify Principles of Justice. *Yearbook for Eastern and Western Philosophy*, 2019(4), 163-192.
- Gupta, V., Gupta, N., Senjam, S., & Vashist, P. (2017). Trachoma. In *Neglected Tropical Diseases-South Asia* (pp. 219-244). Springer, Cham.
- Gwaka, L. T., May, J., & Tucker, W. (2018). Towards low-cost community networks in rural communities: The impact of context using the case study of Beitbridge, Zimbabwe. *The Electronic Journal of Information Systems in Developing Countries*, 84(3), 1-11.
- Hadfield-Hill, S., & Horton, J. (2014). Children's experiences of participating in research: emotional moments together? *Children's geographies*, 12(2), 135-153.
- Hall, R. P., Van Koppen, B., & Van Houweling, E. (2014). The human right to water: the importance of domestic and productive water rights. *Science and engineering ethics*, 20(4), 849-868.
- Hallowell, M. R., & Yugar-Arias, I. F. (2016). Exploring fundamental causes of safety challenges faced by Hispanic construction workers in the US using photovoice. *Safety science*, 82, 199-211.

- Halstead, P. (1996). Pastoralism or household herding? Problems of scale and specialization in early Greek animal husbandry. *World Archaeology*, 28(1), 20-42.
- Hamududu, B.H., & Ngoma, H. (2020). Impacts of climate change on water resources availability in Zambia: implications for irrigation development. *Environment, Development and Sustainability*, 22(4), 2817-2838.
- Hargrove, W. L., Holguin, N., Tippin, C. L., & Heyman, J. H. (2020). The soft path to water: A conservation-based approach to improved water access and sanitation for rural communities. *Journal of Soil and Water Conservation*, 75(2), 38A-44A.
- Hariharan, R. (2019). An economic analysis of housing environment and health status of rural households in Sivaganga district of Tamil Nadu. *Indian Journal of Economics and Development*, 7(4), 1-8
- Harley, A. (2012). Picturing reality: Power, ethics, and politics in using photovoice. *International Journal of Qualitative Methods*, 11(4), 320-339.
- Harper, S. (1987). A humanistic approach to the study of rural populations. *Journal of Rural Studies*, 3(4), 309-319.
- Harris, L., Kleiber, D., Goldin, J., Darkwah, A., & Morinville, C. (2017). Intersections of gender and water: comparative approaches to everyday gendered negotiations of water access in underserved areas of Accra, Ghana and Cape Town, South Africa. *Journal of Gender Studies*, 26(5), 561-582.
- Harrison, B. F., & Michelson, M. R. (2019). Gender, masculinity threat, and support for transgender rights: An experimental study. *Sex Roles*, 80(1-2), 63-75.
- Hayball, F. Z., & Pawlowski, C. S. (2018). Using participatory approaches with children to better understand their physical activity behaviour. *Health education journal*, 77(5), 542-554.
- Heath, S., Charles, V., Crow, G., & Wiles, R. (2007). Informed consent, gatekeepers and go-betweens: negotiating consent in child and youth-orientated institutions. *British Educational Research Journal*, 33(3), 403-417.
- Heinonen, K. (2018). Conducting home interviews—possible to learn and deepen understanding on some practical and ethical issues. *Nur Primary Care*, 2(1), 1-8.
- Heise, L., Greene, M. E., Opper, N., Stavropoulou, M., Harper, C., Nascimento, M., ... & Gupta, G. R. (2019). Gender inequality and restrictive gender norms: framing the challenges to health. *The Lancet*, 393(10189), 2440-2454.
- Hemson, D., Meyer, M., & Maphunye, K. (2004). Rural development: The provision of basic infrastructure services. *Human sciences research council*. Retrieved from [http://repository.hsrc.ac.za/bitstream/handle/20.500.11910/8215/2396\\_Hemson\\_RuralDevelopmentPositionPaper.pdf?sequence=1&isAllowed=y](http://repository.hsrc.ac.za/bitstream/handle/20.500.11910/8215/2396_Hemson_RuralDevelopmentPositionPaper.pdf?sequence=1&isAllowed=y)
- Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research. *Qualitative health research*, 29(10), 1483-1496.

- Hentschel, T., Heilman, M. E., & Peus, C. V. (2019). The multiple dimensions of gender stereotypes: A current look at men's and women's characterizations of others and themselves. *Frontiers in psychology*, 10, 11.
- Herrera-Pantoja, M., & Hiscock, K. M. (2015). Projected impacts of climate change on water availability indicators in a semi-arid region of central Mexico. *Environmental Science & Policy*, 54, 81-89.
- Herzog, H. (2005). On home turf: Interview location and its social meaning. *Qualitative sociology*, 28(1), 25-47.
- Hilgarter, K., & Granig, P. (2020). Public perception of autonomous vehicles: a qualitative study based on interviews after riding an autonomous shuttle. *Transportation research part F: traffic psychology and behaviour*, 72, 226-243.
- Hirsch, D., Abrami, G., Giordano, R., Liersch, S., Matin, N., & Schlüter, M. (2010). Participatory research for adaptive water management in a transition country—a case study from Uzbekistan. *Ecology and Society*, 15(3), 1-23
- Hishe, S., Lyimo, J., & Bewket, W. (2019). Impacts of soil and water conservation intervention on rural livelihoods in the Middle Suluh Valley, Tigray Region, northern Ethiopia. *Environment, Development and Sustainability*, 21(6), 2641-2665.
- Hlalele, D., & Brexa, J. (2015). Challenging the narrative of gender socialisation: Digital storytelling as an engaged methodology for the empowerment of girls and young women. *Agenda*, 29(3), 79-88.
- Hofstetter, M., Bolding, A., & van Koppen, B. (2020). Addressing failed water infrastructure delivery through increased accountability and end-user agency: The case of the sekhukhune district, South Africa. *Water Alternatives*, 13(3), 843-863.
- Holt-Jensen, A. (2018). *Geography: history and concepts*. Sage.
- Hommes, L., & Boelens, R. (2017). Urbanizing rural waters: Rural-urban water transfers and the reconfiguration of hydrosocial territories in Lima. *Political Geography*, 57, 71-80.
- Hoolohan, C., Amankwaa, G., Browne, A. L., Clear, A., Holstead, K., Machen, R., ... & Ward, S. (2021). Resocializing digital water transformations: Outlining social science perspectives on the digital water journey. *Wiley Interdisciplinary Reviews: Water*, 1-17.
- Hope, R., Thomson, P., Koehler, J., & Foster, T. (2020). Rethinking the economics of rural water in Africa. *Oxford Review of Economic Policy*, 36(1), 171-190.
- Hoque, A.K.M. & Worku, Z., 2005. The cholera epidemic of 2000/2001 in Kwazulu-Natal: implications for health promotion and education. *Health SA Gesondheid*, 10(4), 66-74.
- Hoque, S. F., Hope, R., Arif, S. T., Akhter, T., Naz, M., & Salehin, M. (2019). A social-ecological analysis of drinking water risks in coastal Bangladesh. *Science of the Total Environment*, 679, 23-34.
- Horsley, J., Prout, S., Tonts, M., & Ali, S.H. (2015). Sustainable livelihoods and indicators for regional development in mining economies. *The Extractive Industries and Society*, 2(2), 368-380.

- Hove, J., D'Ambruso, L., Mabetha, D., Van Der Merwe, M., Byass, P., Kahn, K., ... & Twine, R. (2019). 'Water is life': developing community participation for clean water in rural South Africa. *BMJ global health*, 4(3), e001377.
- Howard, G., Bartram, J., Williams, A., Overbo, A., Geere, J. A., & World Health Organization. (2020). *Domestic water quantity, service level and health*. World Health Organization.
- Humphreys, E., van der Kerk, A., & Fonseca, C. (2018). Public finance for water infrastructure development and its practical challenges for small towns. *Water Policy*, 20(S1), 100-111.
- Humphreys, J. S. (1985). A political economy approach to the allocation of health care resources: the case of remote areas of Queensland. *Australian Geographical Studies*, 23(2), 222-242.
- Hutchings, P., Franceys, R., Smits, S., & Mekala, S. (2017). *Community management of rural water supply: Case studies of success from India*. Taylor & Francis.
- Hutton, G., & Chase, C. (2016). The knowledge base for achieving the sustainable development goal targets on water supply, sanitation and hygiene. *International journal of environmental research and public health*, 13(6), 536.
- Hydén, L.C., & Bülow, P.H. (2003). Who's talking: drawing conclusions from focus groups—some methodological considerations. *Int. J. Social Research Methodology*, 6(4), 305-321.
- Islam, M.R. (2020). Water Access in Changing Climate in Bangladesh: A Study of Social Impacts on Women Who Manage Household Water. *Bandung*, 7(1), 107-129.
- Izvorski, I., Coulibaly, S., & Doumbia, D. (2018). Reinvigorating Growth in Resource-Rich Sub-Saharan Africa. The World Bank. Retrieved from <https://africaoilandpower.com/wp-content/uploads/2018/10/5-9-2018-17-9-2-SSAGrowthforweb.pdf>
- Jacobs, N.J. (2003). *Environment, power, and injustice: A South African history*. Cambridge University Press.
- Jankielsohn, R. (2012). Defining hydropolitics: the politics of water in South Africa. *Journal for Contemporary History*, 37(1), 123-141.
- Janssen, A., & Busa, S. (2018). Gender dysphoria in childhood and adolescence. *Complex Disorders in Pediatric Psychiatry*, 1-10.
- Jefford, M., & Moore, R. (2008). Improvement of informed consent and the quality of consent documents. *The lancet oncology*, 9(5), 485-493.
- Jeil, E. B., Abass, K., & Ganle, J. K. (2020). "We are free when water is available": gendered livelihood implications of sporadic water supply in Northern Ghana. *Local Environment*, 25(4), 320-335.
- Jenkins, K., & Boudewijn, I. (2020, September). Negotiating access, ethics and agendas: Using participatory photography with women anti-mining activists in Peru. In *Women's Studies International Forum*. 82, 1-10. Pergamon.

- Jepson, W. E., Wutich, A., Collins, S. M., Boateng, G. O., & Young, S. L. (2017). Progress in household water insecurity metrics: a cross-disciplinary approach. *Wiley Interdisciplinary Reviews: Water*, 4(3), 1-21.
- Johl, S.K., & Renganathan, S. (2010). Strategies for gaining access in doing fieldwork: Reflection of two researchers. *Electronic Journal of Business Research Methods*, 8(1), p.42.
- John, N. A., Stoebenau, K., Ritter, S., Edmeades, J., Balvin, N., & United Nations International Children's Emergency Fund. (2017). Gender socialization during adolescence in low-and middle-income countries: Conceptualization, influences and outcomes. Retrieved from <http://repositorio.minedu.gob.pe/handle/20.500.12799/5318>
- Johnson, A. (2017). Water and Sanitation: Statistics SA analysis; Water & Sanitation Infrastructure: Auditor-General performance audit. Retrieved from <https://pmg.org.za/committee-meeting/23868/>.
- Joshi, A. (2013). Do they work? Assessing the impact of transparency and accountability initiatives in service delivery. *Development Policy Review*, 31, 29-48.
- Joshua, J. (2017). *China's Economic Growth: Towards Sustainable Economic Development and Social Justice: Volume II: The Impact of Economic Policies on the Quality of Life*. Springer.
- Ju, B. G., & Moreno-Ternero, J. D. (2018). Entitlement theory of justice and end-state fairness in the allocation of goods. *Economics & Philosophy*, 34(3), 317-341.
- Jull, J., Giles, A., & Graham, I. D. (2017). Community-based participatory research and integrated knowledge translation: advancing the co-creation of knowledge. *Implementation Science*, 12(1), 1-9.
- Jung, C., & Shapiro, I. (1995). South Africa's negotiated transition: Democracy, opposition, and the new constitutional order. *Politics & Society*, 23(3), 269-308.
- Kachel, S., Steffens, M. C., & Niedlich, C. (2016). Traditional masculinity and femininity: Validation of a new scale assessing gender roles. *Frontiers in psychology*, 7, 956.
- Kadam, R.A. (2017). Informed consent process: A step further towards making it meaningful! *Perspectives in clinical research*, 8(3), 107.
- Kadota, J.L., McCoy, S.I., Bates, M.N., Mnyippembe, A., Njau, P.F., Prata, N., & Harris-Adamson, C. (2020). The impact of heavy load carrying on musculoskeletal pain and disability among women in Shinyanga Region, Tanzania. *Annals of global health*, 86(1).
- Kahinda, J. M. M., Taigbenu, A. E., & Boroto, J. R. (2007). Domestic rainwater harvesting to improve water supply in rural South Africa. *Physics and Chemistry of the Earth, Parts a/b/c*, 32(15-18), 1050-1057.
- Kane, J. (2017). Less Water, More Risk: Exploring National and Local Water Use Patterns in the US. Retrieved from [https://www.think-asia.org/bitstream/handle/11540/7894/metro\\_20171018\\_lesswatermorerisk\\_joe-kane.pdf?sequence=1](https://www.think-asia.org/bitstream/handle/11540/7894/metro_20171018_lesswatermorerisk_joe-kane.pdf?sequence=1)

- Karasi, Y. (2018). *Challenges faced by rural-women entrepreneurs in Vhembe District: the moderation role of gender socialisation* (Doctoral dissertation, The University of Venda ). Retrieved from <https://univendspace.univen.ac.za/bitstream/handle/11602/1103/Dissertation%20-%20%20Karasi%2c%20y.-.pdf?sequence=1&isAllowed=y>
- Karimi, A. N. (2016). *Assessment of the quality of water service delivery in Peri urban Kenya: case study of Githurai Nairobi* (Doctoral dissertation, The University of Dar es Salaam). Retrieved from <http://41.86.178.5:8080/xmlui/handle/123456789/13744>.
- Karodia, A. M., & Khan, S. (2015). South Africa enters a water crisis: management, agriculture, public health considerations and government ineptitude are some of the causes for this grave dilemma. *Asian Journal of Agricultural Extension, Economics & Sociology*, 1-18.
- Karunanathan, M. (2019). Can the human right to water disrupt neoliberal water policies in the era of corporate policy-making? *Geoforum*, 98, 244-253.
- Kayser, G. L., Rao, N., Jose, R., & Raj, A. (2019). Water, sanitation and hygiene: measuring gender equality and empowerment. *Bulletin of the World Health Organization*, 97(6), 438-440
- Keahey, J. (2018). Gendered livelihoods and social change in post-apartheid South Africa. *Gender, Place & Culture*, 25(4), 525-546.
- Kemerink, J. S., Ahlers, R., & Van der Zaag, P. (2011). Contested water rights in post-apartheid South Africa: The struggle for water at catchment level. *Water SA*, 37(4), 585-594.
- Kennedy, F.A., & Widener, S.K. (2019). Socialization mechanisms and goal congruence. *Accounting, Organizations and Society*, 76, 32-49.
- Keremane, G.B., & McKay, J. (2011). Using PhotoStory to capture irrigators' emotions about water policy and sustainable development objectives: A case study in rural Australia. *Action Research*, 9(4), 405-425.
- Kessi, S. (2018). Photovoice as a narrative tool for decolonization: black women and LGBT student experiences at UCT. *South African Journal of Higher Education*, 32(3), 101-117.
- Khalfani, A. K., & Zuberi, T. (2001). Racial classification and the modern census in South Africa, 1911–1996. *Race and society*, 4(2), 161-176.
- Kheswa, S. S. (2019). *Investigating the social impact of water shortage on the livelihoods of rural settlements: the case study of KwaNonzila in Mkhambathini Municipality* (Doctoral dissertation, The University of KwaZulu-Natal). Retrieved from [https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/17587/Kheswa\\_Sthembiso\\_2019.pdf?sequence=1&isAllowed=y](https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/17587/Kheswa_Sthembiso_2019.pdf?sequence=1&isAllowed=y)
- Kidd, M. (2019). Realisation of the right to water: lessons from South Africa. In *Research Handbook on Law, Environment and the Global South*. Edward Elgar Publishing. Retrieved from <https://www.elgaronline.com/view/edcoll/9781784717452/9781784717452.00030.xml>.
- Kindon, S., Pain, R., & Kesby, M. (Eds.). (2007). *Participatory action research approaches and methods: Connecting people, participation and place*, 22. Routledge.

- Klingelhöfer, H. E., Erasmus, L. J., & Mayo, S. K. (2015). Financial planning in metropolitan municipalities—lessons for South Africa from selected countries. *Journal of Public Affairs*, 15(4), 364-376.
- Kloppers, H.J., & Pienaar, G.J. (2014). The historical context of land reform in South Africa and early policies. *Potchefstroom Electronic Law Journal/Potchefstroomse Elektroniese Regsblad*, 17(2), 676-706.
- Koehler, J. (2018). Exploring policy perceptions and responsibility of devolved decision-making for water service delivery in Kenya's 47 county governments. *Geoforum*, 92, 68-80.
- Koelble, T. A., & LiPuma, E. (2010). Institutional obstacles to service delivery in South Africa. *Social Dynamics*, 36(3), 565-589.
- Kolb, B. (2008, September). Involving, sharing, analysing—Potential of the participatory photo interview. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*. 9(3), 1-25
- Komarulzaman, A., Smits, J., & de Jong, E. (2017). Clean water, sanitation and diarrhoea in Indonesia: Effects of household and community factors. *Global public health*, 12(9), 1141-1155.
- Konapala, G., Mishra, A.K., Wada, Y., & Mann, M.E. (2020). Climate change will affect global water availability through compounding changes in seasonal precipitation and evaporation. *Nature communications*, 11(1), 1-10.
- Kondowe, C., & Booyens, M. (2014). A student's experience of gaining access for qualitative research. *Social Work*, 50(1), 146-152.
- Kosec, K., & Wantchekon, L. (2020). Can information improve rural governance and service delivery?. *World Development*, 125, 1-13.
- Kreinath, J. (2012). Discursive formation, ethnographic encounter, photographic evidence: The centenary of Durkheim's Basic Forms of Religious Life and the anthropological study of Australian Aboriginal religion in his time. *Visual Anthropology*, 25(5), 367-420.
- Kulinkina, A. V., Kosinski, K. C., Liss, A., Adjei, M. N., Ayamgah, G. A., Webb, P., ... & Naumova, E. N. (2016). Piped water consumption in Ghana: A case study of temporal and spatial patterns of clean water demand relative to alternative water sources in rural small towns. *Science of the Total Environment*, 559, 291-301.
- Kunene, T.R.M. (2018). *Rural water resources: an exploration of access, usage, characteristics and implications for rural households at Ivuna Nongoma Kwazulu-Natal* (Doctoral dissertation, The University of KwaZulu-Natal). Retrieved from [https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/16864/Kunene Tholakele Rose-Mary\\_2018.pdf?sequence=1&isAllowed=y](https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/16864/Kunene%20Tholakele%20Rose-Mary_2018.pdf?sequence=1&isAllowed=y)
- Kyei, S. (2019). Empowering rural women for gender equality in Ashanti region of Ghana through programmes and projects. *International Journal of Scientific and Research Publications*, 9(1), 830-840.
- Kyngäs, H., Kääriäinen, M., & Elo, S. (2020). The Trustworthiness of Content Analysis. In *The Application of Content Analysis in Nursing Science Research* (pp. 41-48). Springer, Cham.

- Larsen, T., & Harrington, J. (2019). Learning progressions, paradigms, and geographic thinking in the Anthropocene. *Review of International Geographical Education Online*, 9(3), 542-556.
- Lawal, G. (2007). Corruption and development in Africa: challenges for political and economic change. *Humanity and social sciences Journal*, 2(1), 1-7.
- Le Dantec, C.A., & Fox, S. (2015, February). Strangers at the gate: Gaining access, building rapport, and co-constructing community-based research. In *Proceedings of the 18th ACM conference on computer supported cooperative work & social computing*, 1348-1358.
- Le Pere, G. (2017). Ubuntu as foreign policy: The ambiguities of South Africa's brand image and identity. *Strategic Review for Southern Africa*, 39(1), 93.
- Lebek, K., Twomey, M., & Krueger, T. (2020). Municipal failure, unequal access and conflicts over water—a hydro-social perspective on water insecurity of rural households in KwaZulu-Natal, South Africa. *Water Alternatives*, 14(1), 271-292.
- Levengood, J. M., Hörman, A., Hänninen, M. L., & O'Brien, K. (2018). Water Security in a Changing World. *Beyond One Health: From Recognition to Results*, 91-115.
- Levinson, M. (2017). When participants don't wish to participate in participatory action research, and when others participate on their behalf: The representation of communities by real and faux participants. *The Urban Review*, 49(3), 382-399.
- Levison, M., Elliott, S., Schuster-Wallace, C., & Karanja, D. (2012). Using mixed methods to visualize the water-health nexus: identifying problems, searching for solutions. *African Geographical Review*, 31(2), 183-199.
- Lewis, C. (2020). Universal Access and Service in South Africa. In *Regulating Telecommunications in South Africa*. (pp. 65-125). Palgrave Macmillan, Cham.
- Lewis, L. (n. d). Rural and urban water issues in Africa. Retrieved from <https://thewaterproject.org/water-crisis/water-in-crisis-rural-urban-africa>
- Li, P., & Wu, J. (2019). Drinking water quality and public health. *Exposure and Health*, 11(2), 73-79.
- Libey, A., Adank, M., & Thomas, E. (2020). Who pays for water? Comparing life cycle costs of water services among several low, medium and high-income utilities. *World Development*, 136, 1-13
- Literat, I. (2013). “A pencil for your thoughts”: Participatory drawing as a visual research method with children and youth. *International Journal of Qualitative Methods*, 12(1), 84-98.
- Loftus, A. (2005). Free water as commodity: The paradoxes of Durban's water service transformations. *The age of commodity: Water privatization in southern Africa*, 189-203.

- Lucke, S., Mamo, E., & Koenigstorfer, J. (2019). Exploring the meaning of growing food in community gardens to South African township residents: A photovoice study. *Health & place*, 55, 165-176.
- Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social sciences*. Pearson.
- Lyu, H., Dong, Z., Roobavannan, M., Kandasamy, J., & Pande, S. (2019). Rural unemployment pushes migrants to urban areas in Jiangsu Province, China. *Palgrave Communications*, 5(1), 1-12.
- Mabizela, H., & Matsiliza, N. S. (2020). Uncovering the gaps in the provision of services in the rural Okhahlamba Municipality of KwaZulu-Natal province. *Africa's Public Service Delivery & Performance Review*, 8(1), 1-9.
- MacAllister, D.J., MacDonald, A.M., Kebede, S., Godfrey, S., & Calow, R. (2020). Comparative performance of rural water supplies during drought. *Nature communications*, 11(1), 1-13.
- MacDonald, C. (2012). Understanding participatory action research: A qualitative research methodology option. *The Canadian Journal of Action Research*, 13(2), 34-50.
- MacDonald, K., & Greggans, A. (2008). Dealing with chaos and complexity: The reality of interviewing children and families in their own homes. *Journal of Clinical Nursing*, 17(23), 3123-3130.
- Machado, A.V., dos Santos, J.A., Alves, L., & Quindeler, N.D.S. (2019). Contributions of Organizational levels in community management models of water supply in rural communities: Cases from Brazil and Ecuador. *Water*, 11(3), 1-17.
- Mackenzie, N. and S. Knipe (2006). "Research dilemmas: Paradigms, methods and methodology." *Issues in educational research* 16(2): 193-205.
- Maclean, K. & Woodward, E. (2013). Photovoice Evaluated: An Appropriate Visual Methodology for A boriginal Water Resource Research. *Geographical Research*, 51(1), 94-105.
- Madi, T.C. (2016). *Service delivery and equitable distribution of water and sanitation services in the Newcastle Local Municipality* (Doctoral dissertation, The University of the Free State). Retrieved from <https://scholar.ufs.ac.za/bitstream/handle/11660/4068/MadiTC.pdf?sequence=1&isAllowed=y>
- Mafunisa, M. J. (2007). Corruption and service delivery in the public service: the case of Limpopo province. *Journal of Public Administration*, 42(3), 260-270.
- Maimuna, M., & Kidombo, H. (2017). Factors influencing performance of water projects in arid and semi-arid areas: A case of Ewaso Ng'iro North borehole projects, Isiolo County, Kenya. *International Academic Journal of Information Sciences and Project Management*, 2(1), 217-238.
- Majuru, B., Jagals, P., & Hunter, P. R. (2012). Assessing rural small community water supply in Limpopo, South Africa: Water service benchmarks and reliability. *Science of the Total Environment*, 435, 479-486.

- Majuru, B., Suhrcke, M., & Hunter, P. R. (2018). Reliability of water supplies in low and middle-income countries: a structured review of definitions and assessment criteria. *Journal of Water, Sanitation and Hygiene for Development*, 8(2), 142-164.
- Makaya, E., Rohse, M., Day, R., Vogel, C., Mehta, L., McEwen, L., ... & Van Loon, A. F. (2020). Water governance challenges in rural South Africa: exploring institutional coordination in drought management. *Water policy*, 22(4), 519-540.
- Malaurent, J., & Avison, D. (2017). Reflexivity: A third essential 'R' to enhance interpretive field studies. *Information & Management*, 54(7), 920-933.
- Maleka, M. R. (2020). The impact of infrastructure on foreign direct investment inflow. (Master's Dissertation). Johannesburg: University of Johannesburg. Retrieved from <https://ujcontent.uj.ac.za/vital/access/services/Download/uj:34935/SOURCE1>.
- Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by information power. *Qualitative health research*, 26(13), 1753-1760.
- Makwetu, K. (2020, July 1). Auditor-general releases municipal audit results under the theme-"not much to go around, yet not the right hands at the till". Retrieved from [https://www.gov.za/sites/default/files/gcis\\_documents/2020MFMA.pdf](https://www.gov.za/sites/default/files/gcis_documents/2020MFMA.pdf).
- Mangai, M.S. (2017). *An alternative solution to service delivery problems in developing countries* (Doctoral dissertation, The Radboud University Nijmegen ). Retrieved from <https://repository.ubn.ru.nl/bitstream/handle/2066/179291/179291.pdf>
- Manggat, I., Zain, R., & Jamaluddin, Z. (2018). The impact of infrastructure development on rural communities: A literature review. *International Journal of Academic Research in Business and Social Sciences*, 8(1), 647-658.
- Mannay, D. (2020). Creative Methods: Anonymity, Visibility, and Ethical Re-representation. *Handbook of Research Ethics and Scientific Integrity*, 493-507.
- Manzo, L. C., & de Carvalho, L. P. (2020). The Role of Qualitative Approaches to Place Attachment Research. *Place Attachment: Advances in Theory, Methods and Applications*, 1-30.
- Maphela, B., & Cloete, F. (2020). Johannesburg's implementation of the National Water Act, 1998 in Soweto, South Africa. *Development Southern Africa*, 37(4), 535-552.
- Marks, S. J., Clair-Caliot, G., Taing, L., Bamwenda, J. T., Kanyesigye, C., Rwendeire, N. E., ... & Ferrero, G. (2020). Water supply and sanitation services in small towns in rural-urban transition zones: The case of Bushenyi-Ishaka Municipality, Uganda. *npj Clean Water*, 3(1), 1-9.
- Marks, S. J., Kumpel, E., Guo, J., Bartram, J., & Davis, J. (2018). Pathways to sustainability: A fuzzy-set qualitative comparative analysis of rural water supply programs. *Journal of Cleaner Production*, 205, 789-798.
- Martínez-Santos, P. (2017). Does 91% of the world's population really have "sustainable access to safe drinking water?" *International Journal of Water Resources Development*, 33(4), 514-533.

- Martinez, M. A., Osornio, A., Halim, M. L. D., & Zosuls, K. M. (2019). Gender: Awareness, identity, and stereotyping. *Encyclopedia of Infant and Early Child Development*, 1-12.
- Masipa, T. S. (2018). The relationship between foreign direct investment and economic growth in South Africa: Vector error correction analysis. *Acta Commercii*, 18(1), 1-8.
- Masuku, M. M., & Jili, N. N. (2019). Public service delivery in South Africa: The political influence at local government level. *Journal of Public Affairs*, 19(4), 1-7.
- Masuku, M.M., & Jili, N.N. (2019). Public service delivery in South Africa: The political influence at local government level. *Journal of Public Affairs*, 19(4), 1-7.
- Matthew, L., Barron, I., & Hodson, A. (2019). Participatory action research: confidentiality and attitudes of victimized young people unknown to child protection agencies. *International journal on child maltreatment: research, policy and practice*, 2(1-2), 79-97.
- Mayeza, E. (2018). 'It's not right for boys to play with dolls': young children constructing and policing gender during 'free play' in a South African classroom. *Discourse: Studies in the Cultural Politics of Education*, 39(4), 590-602.
- Mayoux, L., & R. Chambers. (2005). Reversing the paradigm: quantification, participatory methods and pro-poor impact assessment. *Journal of international development*, 17(2), 271-298.
- Maziwisa, M. R., & Lenaghan, P. (2020). Rethinking the right to water in rural Limpopo. *African Human Rights Law Journal*, 20(1), 233-260.
- Mboubou, E., & Njomo, D. (2016). Potential contribution of renewables to the improvement of living conditions of poor rural households in developing countries: Cameroon's case study. *Renewable and Sustainable Energy Reviews*, 61, 266-279.
- McDowell, L., & Sharp, J. P. (Eds.). (2014). *A feminist glossary of human geography*. Routledge.
- McGuinness, S.L., O'Toole, J., Barker, S.F., Forbes, A.B., Boving, T.B., Giriyan, A., Patil, K., D'Souza, F., Vhaval, R., Cheng, A.C., & Leder, K. (2020). Household water storage management, hygiene practices, and associated drinking water quality in rural India. *Environmental science & technology*, 54(8), 4963-4973.
- McPeak, J.G., Doss, C. and Little, P.D., 2011. *Risk and social change in an African rural economy: livelihoods in pastoralist communities*. Routledge.
- Meeks, R. (2018). Property rights and water access: evidence from land titling in rural Peru. *World Development*, 102, 345-357.
- Meeks, R. C. (2017). Water works the economic impact of water infrastructure. *Journal of Human Resources*, 52(4), 1119-1153.
- Meetei, A.T. (2019). Informed Consent Form in Local Language: Challenges and Issues in a Multilingual Study Design among Migrants. *Language in India*, 19(1), 39-43
- Mehrotra, S. (2006). Governance and basic social services: ensuring accountability in service delivery through deep democratic decentralization. *Journal of International Development: The Journal of the Development Studies Association*, 18(2), 263-283.

- Mehta, L. (2014). Water and human development. *World development*, 59, 59-69.
- Meissner, R., Steyn, M., Moyo, E., Shadung, J., Masangane, W., Nohayi, N., & Jacobs-Mata, I. (2018). South African local government perceptions of the state of water security. *Environmental Science & Policy*, 87, 112-127.
- Mekonnen, M. M., & Hoekstra, A. Y. (2016). Four billion people facing severe water scarcity. *Science advances*, 2(2), 1-6.
- Memon, J.A., Ishaq, J., & Mari, F.M. (2020). Public Demand for Improved Urban Water Supply Services in Multan. *IBT Journal of Business Studies (JBS)*, 16(1), 171-192
- Mensah, E. O. (2021). To be a Man is Not a Day's Job: The Discursive Construction of Hegemonic Masculinity by Rural Youth in Nigeria. *Gender Issues*, 1-23.
- Merrey, D.J., Drechsel, P., de Vries, F.P., & Sally, H. (2005). Integrating "livelihoods" into integrated water resources management: taking the integration paradigm to its logical next step for developing countries. *Regional Environmental Change*, 5(4), 197-204.
- Merriam, S. B., & Grenier, R. S. (Eds.). (2019). *Qualitative research in practice: Examples for discussion and analysis*. John Wiley & Sons.
- Mesa-Jurado, M. A., Martin-Ortega, J., Ruto, E., & Berbel, J. (2012). The economic value of guaranteed water supply for irrigation under scarcity conditions. *Agricultural water management*, 113, 10-18.
- Mfecane, S. (2018). Towards African-centred theories of masculinity. *Social Dynamics*, 44(2), 291-305.
- Migliorini, L., & Rania, N. (2017). A qualitative method to "make visible" the world of intercultural relationships: the photovoice in social psychology. *Qualitative research in Psychology*, 14(2), 131-145.
- Miled, N. (2020, July). Can the displaced speak? Muslim refugee girls negotiating identity, home and belonging through Photovoice. In *Women's Studies International Forum* (81, p. 1-12). Pergamon.
- Miller, M., Cronk, R., Klug, T., Kelly, E. R., Behnke, N., & Bartram, J. (2019). External support programs to improve rural drinking water service sustainability: A systematic review. *Science of the total environment*, 670, 717-731.
- Mills, J, E., & Cummin, O. (2016, June). The impact of water, sanitation and hygiene on key health and social outcomes: review of evidence. Retrieved from [https://www.unicef.org/wash/files/The\\_Impact\\_of\\_WASH\\_on\\_Key\\_Social\\_and\\_Health\\_Outcomes\\_Review\\_of\\_Evidence.pdf](https://www.unicef.org/wash/files/The_Impact_of_WASH_on_Key_Social_and_Health_Outcomes_Review_of_Evidence.pdf)
- Milne, E. J., & Muir, R. (2019). Photovoice: A Critical. *The SAGE handbook of visual research methods*, 282.
- Mishra, R., & Dubey, S. (2015). Fresh Water Availability and it's Global Challenge. *International Journal of Engineering Science Invention Research & Development*, 2, 351-407.

- Misra, S., & Kingdom, B. (2019). *Citywide Inclusive Water Supply: Adopting Off-Grid Solutions to Achieve the SDGs*. World Bank.
- Mitchell, C. (2011). *Doing visual research*. Sage.
- Mitchell, C., De Lange, N., & Moletsane, R. (2017). Chapter 1. Introduction: A framework for Social Change Through Participatory Visual Methods. In *Participatory visual methodologies: Social change, community and policy*. (pp. 1-18). Sage,
- Mitchell, C., Moletsane, R., MacEntee, K., & de Lange, N. (2020). Participatory Visual Methodologies in Self-Study for Social Justice Teaching: A Reflexive Eye. *International Handbook of Self-Study of Teaching and Teacher Education Practices*, 683-712.
- Mitchell, C., Moletsane, R., MacEntee, K., & de Lange, N. (2020). Participatory Visual Methodologies in Self-Study for Social Justice Teaching: A Reflexive Eye. *International Handbook of Self-Study of Teaching and Teacher Education Practices*, 683-712.
- Mitchell, F. M., Billiot, S., & Lechuga-Peña, S. (2020). Utilizing Photovoice to Support Indigenous Accounts of Environmental Change and Injustice. *Genealogy*, 4(2), 51.
- Mitchell, V.G., Mein, R.G, & McMahon, T.A. (2001). Modelling the urban water cycle. *Environmental modelling & software*, 16(7), 615-629.
- Mlambo, V. (2018). An overview of rural-urban migration in South Africa: its causes and implications. *Archives of Business Research*, 6(4), 63-70.
- Moalusi, K. (2020). Numbers conceal the intricacies in categorising qualitative research in organisational studies: What lies beneath the surface? *SA Journal of Industrial Psychology*, 46(1), 1-12.
- Mohamed, A. (2020). Bovine tuberculosis at the human–livestock–wildlife interface and its control through one health approach in the Ethiopian Somali pastoralists: A review. *One Health*, 9, 1-5.
- Moletsane, R., Mitchell, C., de Lange, N., Stuart, J., Buthelezi, T., & Taylor, M. (2009). What can a woman do with a camera? Turning the female gaze on poverty and HIV and AIDS in rural South Africa. *International Journal of Qualitative Studies in Education*, 22(3), 315-331.
- Molina, E., Carella, L., Pacheco, A., Cruces, G., & Gasparini, L. (2017). Community monitoring interventions to curb corruption and increase access and quality in service delivery: a systematic review. *Journal of Development Effectiveness*, 9(4), 462-499.
- Moon, M. D. (2019). Triangulation: A method to increase validity, reliability, and legitimization in clinical research. *Journal of Emergency Nursing*, 45(1), 103-105.
- Moroni, S. (2018). Property as a human right and property as a special title. Rediscussing private ownership of land. *Land Use Policy*, 70, 273-280.
- Morse, T., Luwe, K., Lungu, K., Chiwaula, L., Mulwafu, W., Buck, L., Harlow, R., Fagan, G.H., & McGuigan, K. (2020). A transdisciplinary methodology for introducing solar water disinfection to rural communities in Malawi-Formative research findings. *Integrated environmental assessment and management*, 16(6), 871-884.

- Mosdell, T. (2006). Free basic services: The evolution and impact of free basic water policy in South Africa. *Democracy and delivery: urban policy in South Africa*, 283-301.
- Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, 24(1), 9-18.
- Mothetha, M., Nkuna, Z., & Mema, V. (2013, July 16-18). The challenges of rural water supply: a case study of rural areas in Limpopo Province. Paper presented at Third Southern African regional YWP conference, Stellenbosch, Western Cape, South Africa. Retrieved from [https://researchspace.csir.co.za/dspace/bitstream/handle/10204/7593/Mothetha\\_2013.pdf?sequence=1&isAllowed=y](https://researchspace.csir.co.za/dspace/bitstream/handle/10204/7593/Mothetha_2013.pdf?sequence=1&isAllowed=y)
- Motsa, N. D., & Morojele, P. J. (2019). Vulnerable masculinities: Implications of gender socialisation in three rural Swazi primary schools. *South African Journal of Childhood Education*, 9(1), 1-11.
- Moumouni, N., Pounyala, O. A., & Dapola, D. E. C. (2020). Accessibility to the drinking water sources in Burkina Faso: the case study of Toessin and Bonogo villages. *Geografia-Malaysian Journal of Society and Space*, 16(2), 14-28.
- Mpalanyi Magala, J. (2015). Community Water Management in Rural Uganda: A Woman's Predicament. *wH2O: The Journal of Gender and Water*, 4(1), 15-18.
- Mphambukeli, T.N. (2019). Social justice in planning: access to adequate drinking water and contested belonging in emerging communities of Mangaung in post-apartheid South Africa. *African Renaissance*, 16, 51-69.
- Mpungose, M.S.C. (2018). *Assessing the role of traditional leaders and ward councilors in promoting community development in Umlalazi municipality* (Doctoral dissertation, The University of Zululand). Retrieved from <http://uzspace.unizulu.ac.za/xmlui/bitstream/handle/10530/1842/Assessing%20the%20role%20of%20traditional%20leaders%20and%20ward%20councilors%20in%20promoting%20community%20development%20in%20Umlalazi%20municipality.pdf?sequence=1>
- Muchadenyika, D. (2017). Civil society, social accountability and service delivery in Zimbabwe. *Development policy review*, 35, 178-195.
- Mugumya, F., Asaba, R.B., Kamya, I.R., & Asingwire, N. (2017). Children and domestic water collection in Uganda: Exploring policy and intervention options that promote child protection. In *Child abuse and neglect in Uganda* (pp. 95-112). Springer, Cham.
- Mulenga, K. (2017). *Challenges of water management at local government municipal level in the Eastern Cape of South Africa* (Doctoral dissertation, The University of Witwatersrand). Retrieved from <https://core.ac.uk/download/pdf/188776322.pdf>
- Muller, M. (2008). Free basic water—a sustainable instrument for a sustainable future in South Africa. *Environment and Urbanization*, 20(1), 67-87.
- Munanura, S. (2019). *Investigating Causes of Unreliability of Water Supply and Inadequate Sanitation Facilities in Kitgum Municipality* (Doctoral dissertation, The Makerere University). Retrieved from <http://makir.mak.ac.ug/bitstream/handle/10570/7399/Munanura-cobams-mpim.pdf?sequence=1&isAllowed=y>

- Munzhedzi, P.H. (2016). South African public sector procurement and corruption: Inseparable twins? *Journal of Transport and Supply Chain Management*, 10(1), 1-8.
- Mushavi, R. C., Burns, B. F., Kakuhikire, B., Owembabazi, M., Vořechovská, D., McDonough, A. Q., ... & Tsai, A. C. (2020). “When you have no water, it means you have no peace”: A mixed-methods, whole-population study of water insecurity and depression in rural Uganda. *Social Science & Medicine*, 245, 112561.
- Mwabi, J. K., Adeyemo, F. E., Mahlangu, T. O., Mamba, B. B., Brouckaert, B. M., Swartz, C. D., ... & Momba, M. N. B. (2011). Household water treatment systems: a solution to the production of safe drinking water by the low-income communities of Southern Africa. *Physics and Chemistry of the Earth, Parts A/B/C*, 36(14-15), 1120-1128.
- Mwale, K. P., & Lintonbon, J. (2020). Heritage, identity and the politics of representation in tribal spaces: an examination of architectural approaches in Mochudi, Botswana and Moruleng, South Africa. *International Journal of Heritage Studies*, 26(3), 281-298.
- Mwangi, G. K., & Mbwayo, A. (2020). Improving the Quality of Life of Women Living with Anxiety in Northern Kenya: Psychoeducation Treatment. *Psychology*, 10(6), 240-254.
- Nadeem, A.M., Rafique, M.Z., Bakhsh, K., Makhdom, M.S.A., & Huang, S. (2020). Impact of socio-economic and water access conditions on life satisfaction of rural farmers in Faisalabad district of Pakistan. *Water Policy*, 22(4), 686-701.
- Naiga, R., Penker, M., & Hogl, K. (2015). Challenging pathways to safe water access in rural Uganda: From supply to demand-driven water governance. *International Journal of the Commons*, 9(1), 238-260.
- Narasati, R.N. (2019). The Causes and Effects of Women's Superiority Towards Men As Seen In Aristophanes' Lysistrata. *KREDO: Journal Ilmiah Bahasa dan Sastra*, 3(1), 17-35.
- Nastiti, A. (2017). Beyond Access. The multifaceted water supply in urban and peri-urban areas of Bandung and Jakarta, Indonesia. Radboud University Nijmegen. Retrieved from <https://repository.ubn.ru.nl/bitstream/handle/2066/175602/175602.pdf>
- Ncube, B. (2018). Constraints to smallholder agricultural production in the Western Cape, South Africa. *Physics and Chemistry of the Earth, Parts A/B/C*, 106, 89-96.
- Ndebele, C., & Lavhelani, P. N. (2017). Local government and quality service delivery: an evaluation of municipal service delivery in a local municipality in Limpopo Province. *Journal of Public Administration*, 52(2), 340-356.
- Neeley, S.M., & Cronley, M.L. (2004). When research participants don't tell it like it is pinpointing the effects of social desirability bias using self vs. indirect-questioning. *Advances in Consumer Research*, 31(1), 432-434.
- Nelson-Núñez, J., & Pizzi, E. (2018). Governance & water progress for the rural poor. *Global Governance: A Review of Multilateralism and International Organizations*, 24(4), 575-593.
- Neto, S., & Camkin, J. (2020). What rights and whose responsibilities in water? Revisiting the purpose and reassessing the value of water services tariffs. *Utilities Policy*, 63, 1-12.

- Netshipale, L. L. (2016). *Water services delivery in Mukondeni Village in Limpopo Province, South Africa* (Doctoral dissertation, The University of Limpopo). Retrieved from <http://196.21.218.27/handle/10386/1481>
- Neves-Silva, P., Lopes, J. A. D. O., & Heller, L. (2020). The right to water: Impact on the quality of life of rural workers in a settlement of the Landless Workers Movement, Brazil. *PloS one*, 15(7), 1-13.
- Neves-Silva, P., Martins, G. I., & Heller, L. (2018). "We only have access as a favor, don't we?" The perception of homeless population on the human rights to water and sanitation. *Cadernos de saude publica*, 34, 1-10.
- Newcomer, E., Boyd, C., Nyirenda, L., Opong, E., Marquez, S., & Holm, R. (2017). Reducing the burden of rural water supply through greywater reuse: a case study from northern Malawi. *Water Science and Technology: Water Supply*, 17(4), 1088-1096.
- Ngasala, T. M., Masten, S. J., Phanikumar, M. S., & Mwita, E. J. (2018). Analysis of water security and source preferences in rural Tanzania. *Journal of Water, Sanitation and Hygiene for Development*, 8(3), 439-448.
- Ngidi, N. D., & Moletsane, R. (2019). Using photovoice to engage orphans to explore sexual violence in and around a township secondary school in South Africa. *Sex Education*, 19(4), 501-517.
- Ngure, F. M., Reid, B. M., Humphrey, J. H., Mbuya, M. N., Peltó, G., & Stoltzfus, R. J. (2014). Water, sanitation, and hygiene (WASH), environmental enteropathy, nutrition, and early child development: making the links. *Annals of the New York Academy of Sciences*, 1308(1), 118-128.
- Ngure, F., Gelli, A., Becquey, E., Ganaba, R., Headey, D., Huybregts, L., Pedehombga, A., Sanou, A., Traore, A., Zongo, F., & Zongrone, A. (2019). Exposure to livestock feces and water quality, sanitation, and hygiene (wash) conditions among caregivers and young children: Formative research in rural Burkina Faso. *The American journal of tropical medicine and hygiene*, 100(4), 998-1004.
- Nind, M. (2011). Participatory data analysis: a step too far? *Qualitative Research*, 11(4), 349-363.
- Nkabane, N. P. (2019). *An analysis of revenue management in water and sanitation in Harry Gwala and Ugu water services authorities* (Doctoral dissertation, The University of KwaZulu-Natal). Retrieved from [https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/19189/Nkabane\\_%20Nobuhle\\_Pamela\\_2019.pdf?sequence=1&isAllowed=y](https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/19189/Nkabane_%20Nobuhle_Pamela_2019.pdf?sequence=1&isAllowed=y)
- Nkomo, S. (2017). Public Service Delivery in South Africa: Councillors and Citizens Critical Links in Overcoming Persistent Inequities. Afrobarometer Policy Paper,4. Retrieved from [https://media.africaportal.org/documents/ab\\_policypaperno42\\_local\\_service\\_delivery\\_in\\_southafrica.pdf](https://media.africaportal.org/documents/ab_policypaperno42_local_service_delivery_in_southafrica.pdf)
- Nnadozie, R. C. (2013). *Access to Basic Services in Post-apartheid South Africa: What Has Changed? Measuring on a Relative Basis*. African Development Bank Group, Statistical Department.
- Nnadozie, R.C. (2011). Access to adequate water in post-apartheid South African provinces: an overview of numerical trends. *Water SA*, 37(3),339-348.

- Noble, M., & Wright, G. (2013). Using indicators of multiple deprivation to demonstrate the spatial legacy of apartheid in South Africa. *Social Indicators Research*, 112(1), 187-201.
- Nonnecke, B., & Preece, J. (2003). Silent participants: Getting to know lurkers better. In *From usenet to CoWebs* (pp. 110-132). Springer, London.
- Noring, L. (2019). Public asset corporation: A new vehicle for urban regeneration and infrastructure finance. *Cities*, 88, 125-135.
- Norris, J. (2017). *Playbuilding as qualitative research: A participatory arts-based approach*. Routledge.
- Notshulwana, R., & de Lange, N. (2019). "I'm me and that is enough": Reconfiguring the family photo album to explore gender constructions with Foundation Phase preservice teachers. *Teaching and Teacher Education*, 82, 106-116.
- Nouri, H., Stokvis, B., Borujeni, S.C., Galindo, A., Brugnach, M., Blatchford, M.L., Alaghmand, S., & Hoekstra, A.Y. (2020). Reduce blue water scarcity and increase nutritional and economic water productivity through changing the cropping pattern in a catchment. *Journal of Hydrology*, 588, p.125086.
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods*, 16(1), 1-13.
- Nowicki, S., Koehler, J., & Charles, K.J. (2020). Including water quality monitoring in rural water services: why safe water requires challenging the quantity versus quality dichotomy. *npj Clean Water*, 3(1), 1-9.
- Nozick, R. (1974). *Anarchy, state, and utopia* (Vol. 5038). New York: Basic Books.
- Nussbaum, M. (2003). Capabilities as fundamental entitlements: Sen and social justice. *Feminist economics*, 9(2-3), 33-59.
- Nxumalo, S. (2019, September 16). Adams Mission residents without water for 12 years. *The Mercury*. Retrieved from <https://www.iol.co.za/mercury/news/adams-mission-residents-without-water-for-12-years-33076493>.
- Nyaondo, R. A. (2020). *Women's Pathways to Political Leadership in Kenya: Institutional and Cultural Factors Impacting Women's Political Leadership in County Level Government* (Doctoral dissertation, The University of Massachusetts Boston). Retrieved from <https://search.proquest.com/docview/2416882196?pq-origsite=gscholar&fromopenview=true>
- Nyawo, J. C., & Mashau, P. (2019). The Development of the Rural Roads Network for Sustainable Livelihoods in South African Local Municipalities. *Gender & Behaviour*, 17(1), 12553-12568.
- Nyiwul, L. (2021). Climate change adaptation and inequality in Africa: Case of water, energy and food insecurity. *Journal of Cleaner Production*, 278, 1-11.
- Nyumba, T., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and evolution*, 9(1), 20-32.

- O'Neill, O. (2003). Some limits of informed consent. *Journal of medical ethics*, 29(1), 4-7.
- O'Reilly, K. (2010). Combining sanitation and women's participation in water supply: an example from Rajasthan. *Development in Practice*, 20(1), 45-56.
- O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring “the remote” and “the rural”: Open defecation and latrine use in Uttarakhand, India. *World Development*, 93, 193-205.
- O'Brien, N., & Dadswell, A. (2020). Reflections on a participatory research project exploring bullying and school self-exclusion: power dynamics, practicalities and partnership working. *Pastoral Care in Education*, 38(3), 208-229.
- O'Donovan, J., Thompson, A., Stiles, C., Opintan, J.A., Kabali, K., Willis, I., Mutimba, M.E., Nalweyiso, E., Mugabi, H., Kateete, D.P., & Ameniko, M. (2020). Participatory approaches, local stakeholders and cultural relevance facilitate an impactful community-based project in Uganda. *Health promotion international*, 35(6), 1353-1368.
- Oakley, A., (2015). *Sex, gender and society*. Ashgate Publishing, Ltd.
- Obayelu, A.E., Obayelu, O.A., & Tolorunju, E.T. (2020). Rural–Urban Labor Migration and Youth Employment: Investigating the Relevance of Nigeria’s Agricultural Sector in Employment Generation. In *the Palgrave Handbook of Agricultural and Rural Development in Africa*, 341-365.
- Odwori, E.O. (2020). Factors determining households’ willingness to pay for improved water supply services In Nzoia River Basin, Kenya. *International Journal of Innovative Research and Advanced Studies (IJIRAS)*, 7(7), 165-176. Retrieved from [http://www.ijiras.com/2020/Vol\\_7-Issue\\_7/paper\\_22.pdf](http://www.ijiras.com/2020/Vol_7-Issue_7/paper_22.pdf)
- Office of the United Nations High Commissioner for Human Rights. (n.d). Convention on the Elimination of All Forms of Discrimination against Women New York, 18 December 1979. Retrieved from <https://www.ohchr.org/documents/professionalinterest/cedaw.pdf>
- Office of the United Nations High Commissioner of Human Rights. (2010). The Right to Water. Fact Sheet Number 35. Retrieved from <https://www.ohchr.org/documents/publications/factsheet35en.pdf>
- Ofori, A.S., 2020. *The Land of the Chiefs and the Land of the State—What happens after an acquisition in Ghana?* (Doctoral dissertation, The Trinity College Dublin). Retrieved from [http://www.tara.tcd.ie/bitstream/handle/2262/91856/AOFORI\\_PHD\\_THESIS\\_FINAL\\_SUBMISSION%20II.pdf?sequence=1](http://www.tara.tcd.ie/bitstream/handle/2262/91856/AOFORI_PHD_THESIS_FINAL_SUBMISSION%20II.pdf?sequence=1)
- Ogueri, E.I., Mgbada, J.U., & Ogueri, I. (2017). Sustainability of Infrastructural Development Projects by Oil and Gas Multinationals in Niger Delta, Nigeria: The Case of Water Projects in the OML 58 Communities of Total Exploration and Production Operations. *OIDA International Journal of Sustainable Development*, 10(11), 77-90.
- Okin, S. M. (1989). *Justice, gender, and the family*. 171. New York: Basic books.
- Oliveira, C.M.D. (2017). Sustainable access to safe drinking water: fundamental human right in the international and national scene. *Revista Ambiente & Água*, 12(6), 985-1000.

- Olusa, A. O., & Olujimi, J. B. (2020). Women empowerment: a veritable tool for sustainable urban water development. *Women empowerment*, 41.
- Omar, Y. Y., Parker, A., Smith, J. A., & Pollard, S. J. (2017). Risk management for drinking water safety in low-and-middle income countries-cultural influences on water safety plan (WSP) implementation in urban water utilities. *Science of the Total Environment*, 576, 895-906.
- Onda, K., LoBuglio, J., & Bartram, J. (2012). Global access to safe water: accounting for water quality and the resulting impact on MDG progress. *International journal of environmental research and public health*, 9(3), 880-894.
- Opiyo, F., Wasonga, O., Nyangito, M., Schilling, J., & Munang, R. (2015). Drought adaptation and coping strategies among the Turkana pastoralists of northern Kenya. *International Journal of Disaster Risk Science*, 6(3), 295-309.
- Oswald, W.E., Stewart, A.E., Kramer, M.R., Endeshaw, T., Zerihun, M., Melak, B., Sata, E., Gessese, D., Teferi, T., Tadesse, Z., & Guadie, B. (2017). Active trachoma and community use of sanitation, Ethiopia. *Bulletin of the World Health Organization*, 95(4), 250-260
- Otero, M. (2013, September 26). Six kilometers a day. *United States Agency for International*. Retrieved from <https://www.usaid.gov/global-waters/may-2011/six-kilometers-day>
- Overmars-Marx, T., Thomése, F., & Meininger, H. (2019). Neighbourhood social inclusion from the perspective of people with intellectual disabilities: Relevant themes identified with the use of photovoice. *Journal of Applied Research in Intellectual Disabilities*, 32(1), 82-93.
- Owen, D.L. (2020). *Global Water Funding: Innovation and efficiency as enablers for safe, secure and affordable supplies*. Springer Nature.
- Paasche-Orlow, M.K., Taylor, H.A., & Brancati, F.L. (2003). Readability standards for informed-consent forms as compared with actual readability. *New England journal of medicine*, 348(8), 721-726.
- Palei, T. (2015). Assessing the impact of infrastructure on economic growth and global competitiveness. *Procedia Economics and Finance*, 23, 168-175.
- Papoulias, C. (2018). Showing the unsayable: Participatory visual approaches and the constitution of 'Patient Experience' in healthcare quality improvement. *Health Care Analysis*, 26(2), 171-188.
- Patel, T., Romani, L., Oberoi, P., & Ramasamy, C. (2021). Gender role encapsulation as resistance to patriarchy: Women politicians' work and gender equality in India. *Organization*, 1-19.
- Peano, I. (2019). Gender, Utopias and the Savage Slot: The Role of Anthropology in the (De) Construction of a Concept. *Ethics in Progress*, 10(1), 112-128.
- Peng, J., Ma, J., Liu, Q., Liu, Y., Li, Y., & Yue, Y. (2018). Spatial-temporal change of land surface temperature across 285 cities in China: An urban-rural contrast perspective. *Science of the Total Environment*, 635, 487-497.
- Perales, F., Jarallah, Y., & Baxter, J. (2018). Men's and women's gender-role attitudes across the transition to parenthood: Accounting for child's gender. *Social Forces*, 97(1), 251-276.

- Perera, S. (2019). Photography and the Ethnographic Method. In *Oxford Research Encyclopedia of Education*.
- Perret, S. R. (2002). Water policies and smallholding irrigation schemes in South Africa: A history and new institutional challenges. *Water policy*, 4(3), 283-300.
- Peter, A.K., & Umar, U. (2018). Combating diarrhoea in Nigeria: the way forward. *Journal of Microbiology and Experimentation*, 6(4), 191-197.
- Peters, K., & Oldfield, S. (2005). The paradox of 'free basic water' and cost recovery in Grabouw: increasing household debt and municipal financial loss. In *Urban Forum*, 16 (4), 313-335.
- Petteway, R.J. (2019). Intergenerational photovoice perspectives of place and health in public housing: participatory coding, theming, and mapping in/of the "Structure Struggle". *Health & place*, 60, 1-18.
- Petty, R. P. (2006). *Hartbeespoortdam Butterfly Conservancy: an ecological splurge* (Doctoral dissertation, The University of Pretoria). Retrieved from <https://repository.up.ac.za/bitstream/handle/2263/25067/06back.pdf?sequence=10>
- Petty, N. J., Thomson, O. P., & Stew, G. (2012). Ready for a paradigm shift? Part 2: Introducing qualitative research methodologies and methods. *Manual therapy*, 17(5), 378-384.
- Philo, C. (1992). Neglected rural geographies: a review. *Journal of rural studies*, 8(2), 193-207.
- Phiri, I., Manangazira, P., Macleod, C. K., Mduluza, T., Dhobbie, T., Chaora, S. G., ... & Global Trachoma Mapping Project. (2018). The burden of and risk factors for trachoma in selected districts of Zimbabwe: results of 16 population-based prevalence surveys. *Ophthalmic epidemiology*, 25(sup1), 181-191.
- Pierce, G., Chow, N., & DeShazo, J. R. (2020). The case for state-level drinking water affordability programs: Conceptual and empirical evidence from California. *Utilities Policy*, 63, 101006.
- Pilane, P. (2016, May 16). Voters condemn food parcels during election campaigns. Mail and Guardian. Retrieved from <https://mg.co.za/article/2016-05-23-00-voters-condemn-food-parcels-during-election-campaigns/>
- Pilusa, K.K.L., & Kanyane, M.H. (2020). Water Services Authorities Capacity in Providing Access to Water and Sanitation in Limpopo Province, South Africa. *International Journal of Innovative Science and Research Technology*. 5(6), 1586-1597. Retrieved from <https://ijisrt.com/assets/upload/files/IJISRT20JUN741.pdf>
- Pink, S. (2003). Interdisciplinary agendas in visual research: re-situating visual anthropology. *Visual studies*, 18(2), 179-192.
- Pink, S. (2006). *The future of visual anthropology: Engaging the senses*. Taylor & Francis.
- Pink, S. (2013). *Doing visual ethnography*. Sage.
- Plaut, M. (2014). South Africa: how the ANC wins elections. *Review of African Political Economy*, 41(142), 634-644.

- Poirot, E., Som, S.V., Wieringa, F.T., Treglown, S., Berger, J., & Laillou, A. (2020). Water quality for young children in Cambodia—High contamination at collection and consumption level. *Maternal & Child Nutrition*, 16, 1-9.
- Pommells, M., Schuster-Wallace, C., Watt, S., & Mulawa, Z. (2018). Gender violence as a water, sanitation, and hygiene risk: uncovering violence against women and girls as it pertains to poor WaSH access. *Violence against women*, 24(15), 1851-1862.
- Pontis, S. (2018). *Making sense of field research: a practical guide for information designers*. Routledge.
- Potter, R., & Unwin, T. (Eds.). (2017). *The Geography of urban-rural interaction in developing countries: essays for Alan B. Mountjoy* (Vol. 7). Routledge.
- Pouramin, P., Nagabhatla, N., & Miletto, M. (2020). A Systematic Review of Water and Gender Interlinkages: Assessing the Intersection with Health. *Frontiers in Water*, 2, 1-25.
- Prakash, A., Singh, S., Goodrich, C. G., & Janakarajan, S. (Eds.). (2020). *Water resources policies in South Asia*. Taylor & Francis.
- Pretorius, D., & Schurink, W. (2007). Enhancing service delivery in local government: the case of a district municipality. *SA journal of human resource management*, 5(3), 19-29.
- Price, H. D., Adams, E. A., Nkwanda, P. D., Mkandawire, T. W., & Quilliam, R. S. (2021). Daily changes in household water access and quality in urban slums undermine global safe water monitoring programmes. *International Journal of Hygiene and Environmental Health*, 231, 1-8
- Prosper, B. (2020). Political Ecology of Water Resource Governance in Ghana: Towards Sustainable Pathway for Decentralization and Participatory Water Supply in Rural Communities of the Savannah Region. *International Journal of Political Science and Development*, 8(6), 252-279
- Prüss-Ustün, A., Wolf, J., Bartram, J., Clasen, T., Cumming, O., Freeman, M. C., ... & Johnston, R. (2019). Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: an updated analysis with a focus on low-and middle-income countries. *International journal of hygiene and environmental health*, 222(5), 765-777.
- Prüss-Ustün, A., Wolf, J., Bartram, J., Clasen, T., Cumming, O., Freeman, M. C., ... & Johnston, R. (2019). Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: an updated analysis with a focus on low-and middle-income countries. *International journal of hygiene and environmental health*, 222(5), 765-777.
- Puri, S.K., & Sahay, S. (2003). Participation through communicative action: A case study of GIS for addressing land/water development in India. *Information Technology for Development*, 10(3), 179-199.
- Qureshi, W. A. (2017). The Emerging Human Right to Water in International and Domestic Law. *U. Denv. Water L. Rev.*, 21, 137-168.
- Råheim, M., Magnussen, L. H., Sekse, R. J. T., Lunde, Å., Jacobsen, T., & Blystad, A. (2016). Researcher–researched relationship in qualitative research: Shifts in positions and researcher

- vulnerability. *International journal of qualitative studies on health and well-being*, 11(1), 1-13.
- Råheim, M., Magnussen, L. H., Sekse, R. J. T., Lunde, Å., Jacobsen, T., & Blystad, A. (2016). Researcher–researched relationship in qualitative research: Shifts in positions and researcher vulnerability. *International journal of qualitative studies on health and well-being*, 11(1), 1-12.
- Rahman, M. S. (2017). The advantages and disadvantages of using qualitative and quantitative approaches and methods in language “testing and assessment” research: A literature review. *Journal of Education and Learning*, 6(1), 102-112.
- Raimi, M., Ayibatobira, A. A., Anu, B., Odipe, O. E., & Deinkuro, N. S. (2019). 'Digging Deeper' Evidence on Water Crisis and Its Solution in Nigeria for Bayelsa State: A Study of Current Scenario. *Int J Hydro*, 3(4), 244-257.
- Rajan, S., & Krishnan, V. R. (2002). Impact of gender on influence, power and authoritarianism. *Women in Management Review*, 17 (5), 197- 206.
- Rajaratnam, S., Cole, S.M., Longley, C., Kruijssen, F., & Sarapura, S. (2016). Gender inequalities in access to and benefits derived from the natural fishery in the Barotse Floodplain, Zambia, Southern Africa. *Asian Fisheries Society*, 49-71.
- Rakolobe, M. (2019). Politicised public service and corruption in Lesotho. *The Strategic Review for Southern Africa*, 41(1), 1-20.
- Rananga, H. T., & Gumbo, J. R. (2015). Willingness to pay for water services in two communities of Mutale Local Municipality, South Africa: A case study. *Journal of Human Ecology*, 49(3), 231-243.
- Rautanen, S.L., & White, P. (2018). Portrait of a successful small-town water service provider in Nepal's changing landscape. *Water Policy*, 20(S1), 84-99.
- Reddy, P. S. (2016). The politics of service delivery in South Africa: The local government sphere in context. *TD: The Journal for Transdisciplinary Research in Southern Africa*, 12(1), 1-8.
- Reece, L. (2017, October 21). Fiji Village: Water Authority dealing with rude truck drivers carting water to people. Retrieved from <https://fijivillage.com/a/Water-Authority-dealing-with-rude-truck-drivers-carting-water-to-people-rk529s/>
- Reniko, G., & Kolawole, O. D. (2020). ‘They don’t read metres, they only bring bills’: Issues surrounding the installation of prepaid water metres in Karoi town, Zimbabwe. *South African Geographical Journal*, 102(3), 356-371.
- Rich, K., Murray, K., Smith, H., & Jelbart, N. (2020). Interprofessional practice in health: A qualitative study in psychologists, exercise physiologists, and dietitians. *Journal of Interprofessional Care*, 1-9.
- Ringhofer, A.(2019). *Rethinking rectificatory measures with regard to “historical” injustices in South Africa* (Doctoral dissertation, The Karl-Franzens-Universität Graz). Retrieved from <https://unipub.uni-graz.at/obvugrhs/content/titleinfo/4526664/full.pdf>

- Rioja, F. (2013). What is the value of Infrastructure Maintenance? A Survey. *Infrastructure and Land Policies*, 13, 347-365.
- Risman, B. J. (2004). Gender as a social structure: Theory wrestling with activism. *Gender & society*, 18(4), 429-450.
- Ritchie, H., & Roser, M. (2019, November). Urbanization. *Our world in data*. Retrieved from <https://ourworldindata.org/urbanization>
- Rizvi, F. A. (1998). Some thoughts on contemporary theories of social justice. In *Action research on practice* (pp. 47-56). Routledge.
- Roaf, V., & de Albuquerque, C. (2020). Practice Note: Why We Started Talking About Menstruation—Looking Back (and Looking Forward) with the UN Special Rapporteur on the Human Rights to Water and Sanitation. *The Palgrave Handbook of Critical Menstruation Studies*, 475-483.
- Robinson, J., Harrison, P., Shen, J. & Wu, F. (2020). Financing urban development, three business models: Johannesburg, Shanghai and London. *Progress in Planning*, 1-42.
- Rodina, L. (2016). Human right to water in Khayelitsha, South Africa—Lessons from a ‘lived experiences’ perspective. *Geoforum*, 72(2016), 58-66.
- Rodina, L., & Harris, L. M. (2016). Water Services, Lived Citizenship, and Notions of the State in Marginalised Urban Spaces: The case of Khayelitsha, South Africa. *Water Alternatives*, 9(2).
- Rodríguez-Pose, A., & Hardy, D. (2015). Addressing poverty and inequality in the rural economy from a global perspective. *Applied Geography*, 61, 11-23.
- Rodriguez, L. (2019, October 7). Four Factors Driving the Water & Sanitation Crisis in Africa. Global Citizen. Retrieved from <https://www.globalcitizen.org/en/content/water-and-sanitation-crisis-sub-saharan-africa/>
- Roekmik, R. A. K., Chua, L. H., & Baskaran, K. (2018). Analysing piped water service provider performance based on consumer perceptions. *Utilities Policy*, 55, 79-89.
- Root, R. (2020, October 22). When the price of water is sexual assault. *Devex*. Retrieved from <https://www.devex.com/news/when-the-price-of-water-is-sexual-assault-98307>
- Rosinger, A. Y., & Young, S. L. (2020). In-home tap water consumption trends changed among US children, but not adults, between 2007 and 2016. *Water Resources Research*, 56(7), e2020WR027657.
- Rossi, E., & Argenton, C. (2020). *Property, Legitimacy, Ideology: A Reality Check*. Netherlands. Retrieved from <https://doi.org/10.1086/710781>
- Routray, P., Torondel, B., Clasen, T., & Schmidt, W.P. (2017). Women's role in sanitation decision making in rural coastal Odisha, India. *PloS one*, 12(5), 1-17.
- Ruff, S. C., & Harrison, K. (2020). “Ask Me What I Want”: Community-based participatory research to explore transition-age foster Youth’s use of support services. *Children and Youth Services Review*, 108, 1-9.

- Ruhanen, L., Saito, N., & Axelsen, M. (2021). Knowledge co-creation: The role of tourism consultants. *Annals of Tourism Research*, 87, 1-11.
- Ruiz-Casares, M., & Thompson, J. (2016). Obtaining meaningful informed consent: Preliminary results of a study to develop visual informed consent forms with children. *Children's Geographies*, 14(1), 35-45.
- Ruvuga, P.R., Wredle, E., Mwakaje, A., Selemani, I.S., Sangeda, A.Z., Nyberg, G., & Kronqvist, C. (2020). Indigenous Rangeland and Livestock Management Among Pastoralists and Agro-pastoralists in Miombo Woodlands, Eastern Tanzania. *Rangeland Ecology & Management*, 73(2), 313-320.
- Sahle, E. N., Galvin, M., Pierce, B., & Todd, K. (2019). The UN's Human Right to Water in the Context of New Water Governance Regimes in South Africa and Tanzania. In *Human Rights in Africa*. (pp. 285-330). Palgrave Macmillan, New York.
- Salahuddin, A. (2018). Robert Nozick's Entitlement Theory of Justice, Libertarian Rights and the Minimal State: A Critical Evaluation. *Journal of Civil & Legal Sciences*, 7(1), 1-5.
- Sambo, D.C., Senzanje, A., & Dhavu, K. (2018). Using network analysis to analyse the complex interaction of factors causing the failure of small-scale water infrastructure (SWI) in the rural areas of South Africa. *Water SA*, 44(3), 348-357.
- Samsuni, S., Mulyono, S., Wiarsih, W., & Kusumawardani, L.H. (2019). Photovoice interactive media improves the personal hygiene of teenage students at pesantren school in Tangerang. *Enfermeria clinica*, 29, 681-686.
- Samvelyan, H. J., Hughes, D., Stevens, C., & Staines, K. A. (2020). Models of osteoarthritis: relevance and new insights. *Calcified tissue international*, 1-14.
- Sapkota, K. (2017). Humanistic Geography: How it blends with human geography through methodology. *Geographical Journal of Nepal*, 10, 121-140.
- Sarkar, A. (2020). Everyday practices of poor urban women to access water: Lived realities from a Nairobi slum. *African Studies*, 79(2), 212-231.
- Sarkar, A. (2020). Everyday practices of poor urban women to access water: Lived realities from a Nairobi slum. *African Studies*, 79(2), 212-231.
- Sato, C. (2019). Opportunities and Constraints for Black Farming in a Former South African Homeland: A Case Study of the Mooi River Irrigation Scheme, Msinga, KwaZulu-Natal, South Africa. *African Study Monographs, Supply*. 57, 147-174.
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*, 52(4), 1893-1907.
- Schilt, K., & Westbrook, L. (2009). Doing Gender, Doing Heteronormativity: "Gender Normals," Transgender People, and the Social Maintenance of Heterosexuality. *Gender & society*, 23(4), 440-464.

- Schneider, M.C., & Bos, A.L. (2019). The application of social role theory to the study of gender in politics. *Political Psychology*, 40, 173-213.
- Scrubby, L. S., Rona, H. A., Leipert, B. D., Mair, H. L., & Snow, W. M. (2019). Exploring Social Support, Sport Participation and Rural Women's Health using Photovoice: The Manitoba Experience. *Canadian Journal of Nursing Research*, 51(4), 233-244.
- Sefer, B. K. (2020). A gender-and class-sensitive explanatory model for rural women entrepreneurship in Turkey. *International Journal of Gender and Entrepreneurship*. 191-210.
- Selane, C. B. D. (2019). *A Legal Analysis of Expropriation of Land without Compensation in South Africa* (Doctoral dissertation, The University of Limpopo). Retrieved from [http://ulspace.ul.ac.za/bitstream/handle/10386/3044/selane\\_cbd\\_2019.pdf?sequence=1](http://ulspace.ul.ac.za/bitstream/handle/10386/3044/selane_cbd_2019.pdf?sequence=1)
- Sen, S. M., & Kansal, A. (2019). Achieving water security in rural Indian Himalayas: a participatory account of challenges and potential solutions. *Journal of environmental management*, 245, 398-408.
- Sepuru, M.R. (2018). *Internal Auditors and Service Delivery in South African Local Government: a Limpopo Province Perspective* (Doctoral dissertation, The University of Pretoria). Retrieved from [https://repository.up.ac.za/bitstream/handle/2263/65857/Sepuru\\_Internal\\_2017.pdf?sequence=1](https://repository.up.ac.za/bitstream/handle/2263/65857/Sepuru_Internal_2017.pdf?sequence=1)
- Serur, A.B. (2020). Modeling blue and green water resources availability at the basin and sub-basin level under changing climate in the Weyb River basin in Ethiopia. *Scientific African*, 7, 1-10.
- Sewell, S. J., Desai, S. A., Mutsaa, E., & Lottering, R. T. (2019). A comparative study of community perceptions regarding the role of roads as a poverty alleviation strategy in rural areas. *Journal of rural studies*, 71, 73-84.
- Sewell, S.J., & Desai, S. (2016). The Impacts of Undeveloped Roads on the Livelihoods of Rural Women. *Review of Social Sciences*, 1(8), 15-29.
- Shaw, P. A. (2020). Photo-elicitation and photo-voice: using visual methodological tools to engage with younger children's voices about inclusion in education. *International Journal of Research & Method in Education*, 1-15.
- Shen, H., Leblanc, M., Frappart, F., Seoane, L., O'grady, D., Olivoso, A., & Tweed, S. (2017). A comparative study of GRACE with continental evapotranspiration estimates in Australian semi-arid and arid basins: Sensitivity to climate variability and extremes. *Water*, 9(9), 1-19.
- Shikwambane, P. (2017). *Realisation of the right of water of rural communities through affirmative action on water service delivery in South Africa* (Doctoral dissertation, The University of Venda). Retrieved from <https://univendspace.univen.ac.za/bitstream/handle/11602/712/Dissertation-%20Shikwambane%2C%20p.-.pdf?sequence=1&isAllowed=y>.
- Shoba, S. (2020, December 16). Andries Tatane: Ten years later, nothing has changed in Ficksburg. Daily Maverick. Retrieved from <https://www.dailymaverick.co.za/article/2020-12-16-andries-tatane-ten-years-later-nothing-has-changed-in-ficksburg/>

- Sikweyiya, Y., Addo-Lartey, A. A., Alangea, D. O., Dako-Gyeke, P., Chirwa, E. D., Coker-Appiah, D., ... & Jewkes, R. (2020). Patriarchy and gender-inequitable attitudes as drivers of intimate partner violence against women in the central region of Ghana. *BMC public health*, 20, 1-11.
- Sim, J., & Waterfield, J. (2019). Focus group methodology: some ethical challenges. *Quality & Quantity*, 53(6), 3003-3022.
- Sim, J., Saunders, B., Waterfield, J., & Kingstone, T. (2018). Can sample size in qualitative research be determined a priori?. *International Journal of Social Research Methodology*, 21(5), 619-634.
- Sindane, J. (2020). *Has democracy helped or harmed South Africa's fight against poverty and inequality?* (Master's Thesis). University of Johannesburg. Retrieved from <https://ujcontent.uj.ac.za/vital/access/services/Download/uj:40294/SOURCE1>.
- Sinyolo, S., Mudhara, M., & Wale, E. (2014a). The impact of smallholder irrigation on household welfare: The case of Tugela Ferry irrigation scheme in KwaZulu-Natal, South Africa. *Water SA*, 40(1), 145-156.
- Sinyolo, S., Mudhara, M., & Wale, E. (2014b). Water security and rural household food security: Empirical evidence from the Mzinyathi district in South Africa. *Food Security*, 6(4), 483-499.
- Sithole, S. L., & Mathonsi, N. S. (2015). Local governance service delivery issues during Apartheid and post-Apartheid South Africa. *Africa's Public Service Delivery & Performance Review*, 3(3), 5-30.
- Smiley, S. L. (2013). Complexities of water access in Dar es Salaam, Tanzania. *Applied Geography*, 41, 132-138.
- Smith-Perry, D. J., Fuller, C. H., & Stauber, C. (2020). Participatory research in Northwest Atlanta's Proctor Creek Watershed: Using photovoice to explore environmental health risks at the water's edge. *Health & Place*, 66, 1-12.
- Smith, S. J. (1984). Practicing humanistic geography. *Annals of the Association of American Geographers*, 74(3), 353-374.
- Snowball, J., Collins, A., & Tarentaal, D. (2017). Transformation and job creation in the cultural and creative industries in South Africa. *Cultural Trends*, 26(4), 295-309.
- Solbes-Canales, I., Valverde-Montesino, S., & Herranz-Hernández, P. (2020). Socialization of gender stereotypes related to attributes and professions among young Spanish school-aged children. *Frontiers in psychology*, 11, 1-16.
- Somanje, A. N., Mohan, G., Lopes, J., Mensah, A., Gordon, C., Zhou, X., ... & Takeuchi, K. (2020). Challenges and potential solutions for sustainable urban-rural linkages in a Ghanaian context. *Sustainability*, 12(2), 1-19.
- Sorenson, S. B., Morssink, C., & Campos, P. A. (2011). Safe access to safe water in low income countries: water fetching in current times. *Social science & medicine*, 72(9), 1522-1526.
- South African History Online. (2020a, April). The Politics Behind Water. Retrieved from <https://www.sahistory.org.za/article/politics-behind-water>.

- South African History Online. (2020b, February). The Union of South Africa 1910. Retrieved from <https://www.sahistory.org.za/article/union-south-africa-1910>.
- South African History Online. (2020c, October). National Party (NP). Retrieved from <https://www.sahistory.org.za/article/national-party-np>.
- South African History Online. (2021a, March). The Natives Land Act of 1913. Retrieved from <https://www.sahistory.org.za/article/natives-land-act-1913>.
- South African History Online. (2021b, March). The Group Areas Act of 1950. Retrieved from <https://www.sahistory.org.za/article/group-areas-act-1950>.
- Southern African Legal Information Institute. (2014, September 2). National Water Act. Retrieved from [http://www.saflii.org/za/legis/consol\\_act/nwa1998161.pdf](http://www.saflii.org/za/legis/consol_act/nwa1998161.pdf)
- Soyapi, C. B. (2017). Water security and the right to water in Southern Africa: An overview. *Potchefstroom Electronic Law Journal/Potchefstroomse Elektroniese Regsblad*, 20(1), 1-26.
- Starks, H., & Brown Trinidad, S. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative health research*, 17(10), 1372-1380.
- Stevenson, E. G. J., Ambelu, A., Caruso, B. A., Tesfaye, Y., & Freeman, M. C. (2016). Community water improvement, household water insecurity, and women's psychological distress: an intervention and control study in Ethiopia. *PloS one*, 11(4), 1-13.
- Stevenson, E. G., Greene, L. E., Maes, K. C., Ambelu, A., Tesfaye, Y. A., Rheingans, R., & Hadley, C. (2012). Water insecurity in 3 dimensions: an anthropological perspective on water and women's psychosocial distress in Ethiopia. *Social science & medicine*, 75(2), 392-400.
- Stoler, J., Miller, J. D., Brewis, A., Freeman, M. C., Harris, L. M., Jepson, W., ... & Tutu, R. (2021). Household Water Insecurity Will Complicate the Ongoing COVID-19 Response: Evidence from 29 Sites in 23 Low-and Middle-Income Countries. *International Journal of Hygiene and Environmental Health*, 1-14.
- Strosnider, H., Kennedy, C., Monti, M., & Yip, F. (2017). Rural and urban differences in air quality, 2008–2012, and community drinking water quality, 2010–2015—United States. *MMWR Surveillance Summaries*, 66(13), 1-10.
- Stuart, E., & Samman, E. (2017, October). Defining 'leave no one behind'. *ODI Briefing Note*. London: Overseas Development Institute. Retrieved from <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11809.pdf>
- Surmiak, A.D. (2018). Confidentiality in qualitative research involving vulnerable participants: Researchers' perspectives. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 9(3). Retrieved from <https://www.qualitative-research.net/index.php/fqs/article/view/3099/4268>
- Sutton-Brown, C.A. (2014). Photovoice: A methodological guide. *Photography and Culture*, 7(2), 169-185.

- Switzer, S. (2018). What's in an image?: Towards a critical and interdisciplinary reading of participatory visual methods. In *Creating social change through creativity*. Palgrave Macmillan, Cham, 189-207.
- Szabo, A. (2015). The Value of Free Water: Analysing South Africa's Free Basic Water Policy. *Econometrica*, 83(5), 1913-1961.
- Tantoh, H.B., & McKay, T.J. (2020). Rural self-empowerment: The case of small water supply management in Northwest, Cameroon. *GeoJournal*, 85(1), 159-171.
- Tantoh, H.B., & Simatele, D. (2017). Community-based water resource management in North-west Cameroon: The role of potable water supply in community development. *South African Geographical Journal*, 99(2), 166-183.
- Tarantino, R. (2019). South African Water Rights and the Legacies of Apartheid. In BSU Honors Program Theses and Projects. Retrieved from [https://vc.bridgew.edu/cgi/viewcontent.cgi?article=1402&context=honors\\_proj](https://vc.bridgew.edu/cgi/viewcontent.cgi?article=1402&context=honors_proj)
- Taylor, S. J., Bogdan, R., & DeVault, M. (2015). *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.
- Tempelhoff, J. (2017.) The Water Act, No. 54 of 1956 and the first phase of apartheid in South Africa (1948–1960). *Water History*, 9(2), 189-213.
- Teshome, R. G. (2020). Provision of Remedies for Violation of Economic, Social and Cultural Rights: A Comparative Study of the United Nations, Inter-American and African Human Rights Systems. *African Journal of International and Comparative Law*, 28(2), 298-318.
- The Presidency Republic of South Africa. (2015, April). National Youth Policy 2015-2020. Retrieved from <http://www.thepresidency.gov.za/download/file/fid/58>
- Thobejane, T.D., & Florence, S.B. (2018). Exploring gender division of labour within households: a case of Schoemansdal Village, Nkomazi local municipality, Mpumalanga Province, South Africa. *AFFRIKA Journal of Politics, Economics and Society*, 8(2), 67-80.
- Thomas, M.L., Channon, A.A., Bain, R.E., Nyamai, M., & Wright, J.A. (2020). Household-reported availability of drinking water in Africa: A systematic review. *Water*, 12(9), 1-28.
- Thornhill, C., & Dlamini, K. (2012). Councillor's role in service delivery: The case of Ekurhuleni Metropolitan Municipality. *African Journal of Public Affairs*. 5(3), 36-53.
- Tivavone, B. (2018). *Implications of municipal service consumer debts on service delivery in rural municipalities: A case study of municipalities in Vhembe District, Limpopo Province South Africa* (Doctoral dissertation, The University of Venda). Retrieved from <https://univendspace.univen.ac.za/bitstream/handle/11602/1173/Dissertation%20-%20Tivavone%2c%20b.-.pdf?sequence=1&isAllowed=y>
- Tjebana, M.P., & Rachidi, M.F. (2018, July 4-6). Challenges Faced by Sekhukhune District Municipality in Limpopo Province in Terms of Spending Municipal Infrastructure Grant Funds. International Conference on Public Administration and Development Alternatives, Stellenbosch University, Saldahna Bay, South Africa. Retrieved from <http://ulspace.ul.ac.za/handle/10386/2240>

- Todes, A., & Turok, I. (2018). Spatial inequalities and policies in South Africa: Place-based or people-centred? *Progress in Planning*, 123, 1-31.
- Tomaz, P., Jepson, W., & Santos, J.D.O. (2020). Urban Household Water Insecurity from the Margins: Perspectives from Northeast Brazil. *The Professional Geographer*, 72(4), 481-498.
- Tong, Y., Fan, L., & Niu, H. (2017). Water conservation awareness and practices in households receiving improved water supply: A gender-based analysis. *Journal of Cleaner Production*, 141, 947-955.
- Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and applications*, 5, 147-158.
- Tongco, M.D.C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and applications*, 5, 147-158.
- Tortajada, C. (2016). Policy dimensions of development and financing of water infrastructure: The cases of China and India. *Environmental Science & Policy*, 64, 177-187.
- Tortajada, C., & Biswas, A. K. (2018). Achieving universal access to clean water and sanitation in an era of water scarcity: strengthening contributions from academia. *Current opinion in environmental sustainability*, 34, 21-25.
- Treffry-Goatley, A., Moletsane, R., de Oliveira, T., Seeley, J., & Lessells, R. (2021). Using the Emanuel Framework to Explore the Ethical Issues Raised in a Participatory Visual Research Project in Rural South Africa. *Journal of Empirical Research on Human Research Ethics*, 1556264620987034.
- Tremblay, C., & Harris, L. (2018). Critical video engagements: Empathy, subjectivity and changing narratives of water resources through participatory video. *Geoforum*, 90, 174-182.
- Truslove, J. P., VM Miller, A., Mannix, N., Nhlema, M., Rivett, M. O., Coulson, A. B., ... & Kalin, R. M. (2019). Understanding the functionality and burden on decentralised rural water supply: Influence of Millennium Development Goal 7c coverage targets. *Water*, 11(3), 1-18.
- Tshishonga, N. S. (2020). Rural Development and the Struggle for Land Reform in Post-Apartheid South Africa. In *African Perspectives on Reshaping Rural Development*, (pp. 95-117), IGI Global.
- Tuan, Y. F. (1976). Humanistic geography. *Annals of the Association of American geographers*, 66(2), 266-276.
- Tucker, J., MacDonald, A., Coulter, L., & Calow, R. C. (2014). Household water use, poverty and seasonality: Wealth effects, labour constraints, and minimal consumption in Ethiopia. *Water Resources and Rural Development*, 3, 27-47.
- Tumwine, J. K., Thompson, J., Katua-Katua, M., Mujwajuzi, M., Johnstone, N., Wood, E., & Porras, I. (2002). Diarrhoea and effects of different water sources, sanitation and hygiene behaviour in East Africa. *Tropical Medicine & International Health*, 7(9), 750-756.

- Twisa, S., Mwabumba, M., Kurian, M., & Buchroithner, M. F. (2020). Impact of Land-Use/Land-Cover Change on Drinking Water Ecosystem Services in Wami River Basin, Tanzania. *Resources*, 9(4), 1-18.
- Tyler, K. A., & Schmitz, R. M. (2017). Using cell phones for data collection: Benefits, outcomes, and intervention possibilities with homeless youth. *Children and youth services review*, 76, 59-64.
- uMgungundlovu District Municipality. (2018, April). uMgungundlovu District Municipality Integrated Development Plan. Retrieved from [file:///C:/Users/213510449/Downloads/Comprehensive\\_IDP\\_2018%20Final%20\(2\).pdf](file:///C:/Users/213510449/Downloads/Comprehensive_IDP_2018%20Final%20(2).pdf)
- United Nations Department of Economic and Social Affairs. (2014, May 29). The human right to water and sanitation. Retrieved from [https://www.un.org/waterforlifedecade/human\\_right\\_to\\_water.shtml](https://www.un.org/waterforlifedecade/human_right_to_water.shtml)
- United Nations Development Programme. (2019). Sustainable Development Goals. Retrieved from [http://www.za.undp.org/content/south\\_africa/en/home/sustainable-development-goals/goal-6-clean-water-and-sanitation.html](http://www.za.undp.org/content/south_africa/en/home/sustainable-development-goals/goal-6-clean-water-and-sanitation.html).
- United Nations International Children's Emergency Fund & World Health Organisation. (2015a). Progress on Sanitation and Drinking Water – 2015 update and MDG assessment. Retrieved from [http://www.unicef.org/publications/files/Progress\\_on\\_Sanitation\\_and\\_Drinking\\_Water\\_2015\\_Update.pdf](http://www.unicef.org/publications/files/Progress_on_Sanitation_and_Drinking_Water_2015_Update.pdf)
- United Nations International Children's Emergency Fund & World Health Organization. (2015b). Joint Water Supply Sanitation Monitoring Programme: Progress on sanitation and drinking water: 2015 update and MDG assessment. Retrieved from <https://www.unicef.org/media/files/JMPreport2012.pdf>
- United Nations International Children's Emergency Fund. (2016). United Nations International Children's Emergency Fund: Collecting water is often a colossal waste of time for women and girls. Retrieved from <https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls>.
- United Nations Water. (2018). Sustainable Development Goal 6 Synthesis Report 2018 on Water and Sanitation. Retrieved from [https://sustainabledevelopment.un.org/content/documents/19901SDG6\\_SR2018\\_web\\_3.pdf](https://sustainabledevelopment.un.org/content/documents/19901SDG6_SR2018_web_3.pdf)
- Usman, M.A., Gerber, N., & von Braun, J. (2019). The impact of drinking water quality and sanitation on child health: Evidence from rural Ethiopia. *The Journal of Development Studies*, 55(10), 2193-2211.
- Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice*, 6(5), 100-110.
- Van Aken, M., & De Donato, A. (2018). Gender and Water in the Middle East. Local and Global Realities. Springer, Cham. In *Water Security Across the Gender Divide*. 61-82.
- Van Heerden, H., Burger, M., Coetsee, M. P. A., Mahlangu, N. B., & Naudé, K. (2015, August 6-10). The current infrastructure conditions and the problems relating to it: focusing on Rietkol, Delmas, Mpumalanga, South Africa. Paper presented at the 3rd Global Virtual Conference.

Retrieved from  
[https://repository.up.ac.za/bitstream/handle/2263/50446/VanHeerden\\_Current\\_2015.pdf?sequence=1](https://repository.up.ac.za/bitstream/handle/2263/50446/VanHeerden_Current_2015.pdf?sequence=1)

- Van Houtven, G.L., Pattanayak, S.K., Usmani, F., & Yang, J.C. (2017). What are households willing to pay for improved water access? Results from a meta-analysis. *Ecological Economics*, 136, 126-135.
- Van Houweling, E. (2016). "A good wife brings her husband bath water": Gender roles and water practices in Nampula, Mozambique. *Society & natural resources*, 29(9), 1065-1078.
- Van Houweling, E., Hall, R. P., Diop, A. S., Davis, J., & Seiss, M. (2012). The Role of Productive Water Use in Women's Livelihoods: Evidence from Rural Senegal. *Water Alternatives*, 5(3), 658-677.
- Van Koppen, B., Hofstetter, M., Nesamvuni, A.E., & Chiluwe, Q. (2020). Integrated management of multiple water sources for multiple uses: rural communities in Limpopo Province, South Africa. *Water SA*, 46(1), 1-11.
- Vaportzis, E., Giatsi Clausen, M., & Gow, A. J. (2017). Older adults' perceptions of technology and barriers to interacting with tablet computers: a focus group study. *Frontiers in psychology*, 8, 1-11.
- Varga-Dobai, K. (2012). The Relationship of Researcher and Participant in Qualitative Inquiry: From. *Qualitative Report*, 17, 1-17.
- Varghese, D., Rainey, J., Montague, K., Bartindale, T., Olivier, P., & Baillie Smith, M. (2020, April 25-30). Utilizing Participant Voice in Volunteer Training. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1-14. Retrieved from <https://dl.acm.org/doi/pdf/10.1145/3313831.3376208>
- Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC medical research methodology*, 18(1), 1-18.
- Veetil, A. V., & Mishra, A. K. (2016). Water security assessment using blue and green water footprint concepts. *Journal of Hydrology*, 542, 589-602.
- Vellanki, V., & Davesar, U. (2020). (Re) imagining visual research beyond photovoice: Methodological explorations with a young photographer. *Review of Education, Pedagogy, and Cultural Studies*, 42(3), 217-239.
- Vengroff, R. (1975). Traditional political structures in the contemporary context: the chieftaincy in the Kweneng. *African Studies*, 34(1), 39-56.
- Verheye, W. (2009). Soils of arid and semi-arid areas. *Verheye W. Land Use, Land Cover and Soil Science*, 7, 67-95.
- Vezi, N.C. (2016). *The role of democratically elected councilors and traditional leaders in service delivery: the case of Ubuhlebezwe municipality* (Doctoral dissertation, The University of KwaZulu-Natal). Retrieved from

[https://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/15326/Vezi\\_Nkosiyezwe\\_C\\_2016.pdf?sequence=1&isAllowed=y](https://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/15326/Vezi_Nkosiyezwe_C_2016.pdf?sequence=1&isAllowed=y)

- Vita International. (2016, August 30). Women and girls spend 200 million hours a day collecting water. Retrieved from <http://www.vitainternational.media/en/article/2016/08/30/women-and-girls-spend-200-million-hours-a-day-collecting-water/519/>
- Vitale Brovarone, E., & Cotella, G. (2020). Improving Rural Accessibility: A Multilayer Approach. *Sustainability*, 12(7), 1-20.
- Vogl, S., Schmidt, E. M., & Zartler, U. (2019). Triangulating perspectives: ontology and epistemology in the analysis of qualitative multiple perspective interviews. *International Journal of Social Research Methodology*, 22(6), 611-624.
- Voorberg, W., Bekkers, V., Timeus, K., Tonurist, P., & Tummers, L. (2017). Changing public service delivery: learning in co-creation. *Policy and Society*, 36(2), 178-194.
- Vyas-Doorgapersad, S., Tshombe, L. M., & Ababio, E. P. (Eds.). (2017). *Public administration in Africa: Performance and challenges*. Routledge.
- Waldron, J. (1989). The rule of law in contemporary liberal theory. *Ratio Juris*, 2(1), 79-96.
- Waldron, J. (2002). Redressing historic injustice. *The University of Toronto Law Journal*, 52(1), 135-160.
- Walia, S., & Liepert, B. (2012). Perceived facilitators and barriers to physical activity for rural youth: an exploratory study using photovoice. *Rural and Remote Health*, 12(1842), 1-13.
- Walters, J. P., & Chinowsky, P. S. (2016). Planning rural water services in Nicaragua: A systems-based analysis of impact factors using graphical modeling. *Environmental Science & Policy*, 57, 93-100.
- Wang, C. C. (2006). Youth participation in photovoice as a strategy for community change. *Journal of community practice*, 14(1-2), 147-161.
- Wang, C., & Burris, M.A. (1997). Photovoice: Concept, methodology, and use for participatory needs assessment. *Health education & behavior*, 24(3), 369-387.
- Wang, C.C., & Redwood-Jones, Y.A. (2001). Photovoice ethics: Perspectives from Flint photovoice. *Health education & behavior*, 28(5), 560-572.
- Wang, C.C., Morrel-Samuels, S., Hutchison, P.M., Bell, L., & Pestronk, R.M. (2004). Flint photovoice: Community building among youths, adults, and policymakers. *American journal of public health*, 94(6), 911-913.
- Wardrop, N.A., Hill, A.G., Dzodzomenyo, M., Aryeetey, G., & Wright, J.A. (2018). Livestock ownership and microbial contamination of drinking-water: Evidence from nationally representative household surveys in Ghana, Nepal and Bangladesh. *International journal of hygiene and environmental health*, 221(1), 33-40.
- Water.org. (n. d). The water crisis. Retrieved from <https://water.org/our-impact/water-crisis/>

- Weaver, M.J.T., O’Keeffe, J., Hamer, N., & Palmer, C.G. (2017). Water service delivery challenges in a small South African municipality: Identifying and exploring key elements and relationships in a complex social-ecological system. *Water SA*, 43(3), 398-408.
- Weber, S. (2019). Participatory visual research with displaced persons: ‘Listening’ to post-conflict experiences through the visual. *Journal of Refugee Studies*, 32(3), 417-435.
- Webster, E. (2017). Marikana and beyond: new dynamics in strikes in South Africa. *Global Labour Journal*, 8(2), 139-158.
- Weeks, J. (2017). *Sex, politics and society: The regulation of sexuality since 1800*. Routledge.
- Wengel, Y., McIntosh, A., & Cockburn-Wooten, C. (2019). Co-creating knowledge in tourism research using the Ketso method. *Tourism Recreation Research*, 44(3), 311-322.
- Wessels, M., Veldwisch, G.J., Kujawa, K., & Delcarme, B. (2019). Upsetting the apple cart? Export fruit production, water pollution and social unrest in the Elgin Valley, South Africa. *Water international*, 44(2), 188-205.
- West, C., & Zimmerman, D.H., 2009. Accounting for doing gender. *Gender & society*, 23(1), 112-122.
- Whaley, L., & Cleaver, F. (2017). Can ‘functionality’ save the community management model of rural water supply? *Water resources and rural development*, 9, 56-66.
- Wiggins, S., & Proctor, S. (2001). How special are rural areas? The economic implications of location for rural development. *Development policy review*, 19(4), 427-436.
- Wijesiri, B., Deilami, K., McGree, J., & Goonetilleke, A. (2018). Use of surrogate indicators for the evaluation of potential health risks due to poor urban water quality: A Bayesian Network approach. *Environmental Pollution*, 233, 655-661.
- Williams, L.B. (2019). *Development, demography, and family decision-making: The status of women in rural Java*. Routledge.
- Wilson, N., Dasho, S., Martin, A.C., Wallerstein, N., Wang, C.C., & Minkler, M. (2007). Engaging young adolescents in social action through photovoice: The youth empowerment strategies (YES!) project. *The Journal of Early Adolescence*, 27(2), 241-261.
- Winkler, I.T. (2019). The human right to water. In *Research Handbook on International Water Law*. Edward Elgar Publishing.
- Winter, J. C., Darmstadt, G. L., & Davis, J. (2021). The role of piped water supplies in advancing health, economic development, and gender equality in rural communities. *Social Science & Medicine*, 270, 1-11.
- WoldeKidan, E., Daka, D., Legesse, D., Laelago, T., & Betebo, B. (2019). Prevalence of active trachoma and associated factors among children aged 1 to 9 years in rural communities of Lemo district, southern Ethiopia: community based cross sectional study. *BMC infectious diseases*, 19(1), 1-8.

- Wolf, A. T., Kramer, A., Carius, A., & Dabelko, G. D. (2005). Managing water conflict and cooperation. *State of the World 2005: redefining global security*, 80-95.
- Woods, M. (2009). Rural geography: blurring boundaries and making connections. *Progress in Human geography*, 33(6), 849-858.
- Worden, N. (2011). *The making of modern South Africa: Conquest, apartheid, democracy*. John Wiley & Sons.
- Workman, C.L., & Ureksoy, H. (2017). Water insecurity in a syndemic context: Understanding the psycho-emotional stress of water insecurity in Lesotho, Africa. *Social Science & Medicine*, 179, 52-60.
- World Atlas. (2018, February 14). What Percentage of the Earth's Water Is Drinkable? Retrieved from <https://www.worldatlas.com/articles/what-percentage-of-the-earth-s-water-is-drinkable.html>
- World Bank. (2018, March). Overcoming poverty and inequality in South Africa. An assessment of drivers, constraints and opportunities. Retrieved from <http://documents1.worldbank.org/curated/en/530481521735906534/pdf/124521-REV-OUO-South-Africa-Poverty-and-Inequality-Assessment-Report-2018-FINAL-WEB.pdf>
- World Bank. (2021). High and Dry: Climate Change, Water, and the Economy. Retrieved from <https://www.worldbank.org/en/topic/water/publication/high-and-dry-climate-change-water-and-the-economy>
- World Health Organisation (2018, February 17). Fact Sheet: Drinking Water. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/drinking-water>
- World Health Organisation Newsroom. (2019). Drinking Water Key Facts. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/drinking-water>.
- World Health Organisation Regional Office for Africa. (2019). A Heavy Burden: The Productivity Cost of Illness in Africa. Available <https://www.afro.who.int/sites/default/files/2019-03/Productivity%20cost%20of%20illness%202019-03-21.pdf>
- World Health Organisation. (2017a). 2.1 billion people lack safe drinking water at home, more than twice as many lack safe sanitation. Retrieved from <https://www.who.int/news/item/12-07-2017-2-1-billion-people-lack-safe-drinking-water-at-home-more-than-twice-as-many-lack-safe-sanitation>.
- World Health Organisation. (2017b). Schistosomiasis (bilharzia) Fact Sheet. Retrieved from <https://www.afro.who.int/health-topics/schistosomiasis-bilharzia>
- World Health Organisation. (2019a). Progress on household drinking water, sanitation and hygiene. Retrieved from [https://www.who.int/water\\_sanitation\\_health/publications/jmp-2019-full-report.pdf?ua=1](https://www.who.int/water_sanitation_health/publications/jmp-2019-full-report.pdf?ua=1).
- World Health Organisation. (2019b). Unsafe drinking water, sanitation and waste management. Retrieved from <https://www.who.int/sustainable-development/cities/health-risks/water-sanitation/en/>

- World Health Organisation. (2019c) Drinking-water Fact sheet. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/drinking-water>
- World Health Organisation. (2019d). Safer water, better health. Retrieved from <https://apps.who.int/iris/bitstream/handle/10665/329905/9789241516891-eng.pdf>
- World Health Organisation. (n.d). Drinking water. 21-32. Retrieved from [https://www.who.int/water\\_sanitation\\_health/monitoring/water.pdf](https://www.who.int/water_sanitation_health/monitoring/water.pdf)
- World Weather Online. (2020, May). Mooi River Monthly Climate Averages. Retrieved from <https://www.worldweatheronline.com/mooi-river-weather-averages/kwazulu-natal/za.aspx>
- Wrisdale, L., Mokoena, M. M., Mudau, L. S., & Geere, J. A. (2017). Factors that impact on access to water and sanitation for older adults and people with disability in rural South Africa: An occupational justice perspective. *Journal of Occupational Science*, 24(3), 259-279.
- Wutich, A. (2009). Intrahousehold disparities in women and men's experiences of water insecurity and emotional distress in urban Bolivia. *Medical anthropology quarterly*, 23(4), 436-454.
- Wutich, A., & Ragsdale, K. (2008). Water insecurity and emotional distress: coping with supply, access, and seasonal variability of water in a Bolivian squatter settlement. *Social science & medicine*, 67(12), 2116-2125.
- Wutich, A., Brewis, A., Logan, A. L., Maes, K., Armelagos, G., Piperata, B. A., ... & Brewis, A. (2014). Food, water, and scarcity: toward a broader anthropology of resource insecurity. *Current Anthropology*, 55(4), 444-468.
- Wutich, A., Budds, J., Eichelberger, L., Geere, J., Harris, L. M., Horney, J. A., ... & Young, S. L. (2017). Advancing methods for research on household water insecurity: Studying entitlements and capabilities, socio-cultural dynamics, and political processes, institutions and governance. *Water Security*, 2, 1-10.
- Yang, H., Bain, R., Bartram, J., Gundry, S., Pedley, S., & Wright, J. (2013). Water safety and inequality in access to drinking-water between rich and poor households. *Environmental science & technology*, 47(3), 1222-1230.
- Yerema, C.T., Wakamatsu, M., Islam, M., Hiroki, F., Managi, S., & Zhang, B. (2020). Differences in Water Policy Efficacy across South African Water Management Areas. *Ecological Economics*, 175, 1-11.
- Young, S. L., Boateng, G. O., Jamaluddine, Z., Miller, J. D., Frongillo, E. A., Neilands, T. B., ... & Stoler, J. (2019). The Household Water Insecurity Experiences (HWISE) Scale: Development and validation of a household water insecurity measure for low-income and middle-income countries. *BMJ Global Health*, 4(5), 1-11.
- Yuan, H. Y., Liang, J., Lin, P. S., Sucipto, K., Tsegaye, M. M., Wen, T. H., ... & Pfeiffer, D. (2020). The effects of seasonal climate variability on dengue annual incidence in Hong Kong: A modelling study. *Scientific reports*, 10(1), 1-10.
- Zhang, Y., Tang, C., Ye, A., Zheng, T., Nie, X., Tu, A., Zhu, H., & Zhang, S. (2020). Impacts of Climate and Land-Use Change on Blue and Green Water: A Case Study of the Upper Ganjiang River Basin, China. *Water*, 12(10), 1-18.

- Zhang, Z., Yu, K., Siddique, K. H., & Nan, Z. (2019). Phenology and sowing time affect water use in four warm-season annual grasses under a semi-arid environment. *Agricultural and Forest Meteorology*, 269, 257-269.
- Zhou, Q., Deng, X., & Wu, F. (2017). Impacts of water scarcity on socio-economic development: A case study of Gaotai County, China. *Physics and Chemistry of the Earth, Parts A/B/C*, 101, 204-213.
- Zondo, N. M. (2017). *Self-help economic empowerment amongst women in Blaauwbosch, KwaZulu-Natal* (Doctoral dissertation, The University of KwaZulu-Natal). Retrieved from [https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/16305/Zondo\\_Nonkululeko\\_Melody\\_2017.pdf?sequence=1&isAllowed=y](https://ukzn-dspace.ukzn.ac.za/bitstream/handle/10413/16305/Zondo_Nonkululeko_Melody_2017.pdf?sequence=1&isAllowed=y)

# APPENDICES

## APPENDIX A

### LETTER OF ETHICAL CLEARANCE AND APPROVAL



27 September 2019

Miss Onenkosi Simile Mkize (213510449)  
School of Agricultural, Earth & Environmental Sciences  
Pietermaritzburg Campus

Dear Miss Mkize,

**Protocol reference number:** HSSREC/00000337/2019

**Project title:** Challenges of access to improved water sources in rural communities: Experiences revealed through a photovoice study in eMdubezweni, KwaZulu-Natal

#### Approval Notification – Expedited Application

This letter serves to notify you that your application received on 27 August 2019 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**

**Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.**

This approval is valid for one year from 27 September 2019.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

Yours sincerely,

Dr Rosemary Sibanda (Chair)

/ms

---

Humanities & Social Sciences Research Ethics Committee  
Dr Rosemary Sibanda (Chair)  
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building  
Postal Address: Private Bag X54001, Durban 4000  
Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

INSPIRING GREATNESS

## **APPENDIX B**

### **EXAMPLE OF CONSENT FORM GIVEN TO THE PARTICIPANTS**

#### **INFORMATION SHEET AND CONSENT TO PARTICIPATE IN RESEARCH**

##### **Who are we?**

Good day, my name is \_\_\_\_\_. I am a (researcher/fieldworker) at the University of KwaZulu-Natal, Pietermaritzburg Campus. Today, I am inviting you to consider participating in a study that involves participatory research methods. The title this research is Challenges of access to improved water sources in rural communities: Experiences revealed through a photovoice study in eMdubezweni, KwaZulu-Natal.

##### **What are we doing?**

The aim of the study is to examine how adults living in an under-resourced rural area in KZN describe their experiences in relation to a lack of access to improved water sources in their community. We also want to assess the potential of participatory visual methods to engage participants in social and political issues such as water service delivery in their community. The information that you provide will be used for scholarly research only. The findings will be analysed and used towards compiling a thesis for a Master of Science degree in Geography.

##### **Participation and study procedures**

The study is expected to enrol 20 participants in total which will be split into three groups of eight or nine for each research activity. Your participation is strictly voluntary. If you decide not to be in this study there will be no consequences or penalties for you. Even if you decide to participate, you can leave at any time. You have the right to say no to any study activities or to decide not to answer any researcher's questions at any time.

In order to participate in this study, the researchers are required to get permission (consent) from you. If you decide to participate in the study, the researcher will invite to participate in a semi-structure interview and a photovoice activity. It will involve the following procedures: a one-on-one interview with the researcher with regards to personal household access to water services, taking of pictures relevant to the research topic which will further be explained in the briefing and taken on a separate day, and a discussion on the pictures taken. The duration of your participation if you choose to enroll and remain in the study is expected to be 90 minutes

for the focus group discussion and 30-45 minutes for the photovoice in-depth interview. There are no correct or incorrect answers.

We hope that the study will create the following benefits; promote engagement in community social issues and create agency amongst its members to address water service delivery issues.

### **Confidentiality**

Your views in this interview will be presented anonymously. Neither your name nor identity will be disclosed in any form in the study. The record as well as other items associated with the interviews will be held in a password-protected file accessible only to myself and my supervisors. After a period of 5 years, in line with the rules of the university, it will be disposed by shredding and burning.

### **Funding Sources**

The study is funded by Moses Kotane Institute (MKI).

### **Risks**

There may be risks and stresses of participating in this study that we do not know about now. If you feel embarrassed, worried or anxious about a particular question please do not answer. Please tell the researcher that a question has made you feel uncomfortable.

### **Benefits**

There are no direct benefits from participating in this study. However, it is possible that you or others may benefit from the information acquired in this study.

### **Costs/Reimbursements**

There is no cost for you for participating in this study. Only refreshments will be provided.

### **Further information**

In the event of any problems or concerns/questions you may contact the researcher at [mkizesimile@gmail.com/213510449@stu.ukzn.ac.za](mailto:mkizesimile@gmail.com/213510449@stu.ukzn.ac.za) or 0833906035; or Ms Phumelele Ximba of the UKZN Humanities & Social Sciences Research Ethics Committee by email at [ximbap@ukzn.ac.za](mailto:ximbap@ukzn.ac.za) or telephone 0312603587, alternatively 031260455, email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za).

## **CONSENT**

I \_\_\_\_\_ (name) have read this form or had it read to me. I have been informed about the study title and objectives.

I understand the purpose and procedures of the study.

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

### **Additional consent, where applicable**

I hereby provide consent to:

Audio-record my interview / focus group discussion YES / NO

Use of my photographs for research purposes YES / NO

\_\_\_\_\_

**Signature of Participant**

\_\_\_\_\_

**Date**

## APPENDIX C

### EXAMPLE OF TRANSLATED PHOTOGRAPH CONSENT FORM GIVEN TO THE PARTICIPANTS

Singobani

Sanibonanani, ngingu\_\_\_\_\_ (phecelezi fieldworker/researchers name). Ngingumufundi waseNyuvesi yaKwaZulu-Natal. Namhlanje besizocela ukuba ubeyingxeny yocwanigo. Isihloko salolucwanigo sithi *Challenge of access to improved water sources in rural communities: Experiences revealed through a photovoice study in eMdubezweni, KwaZulu-Natal*.

**Senzani**

Senza ucwaningo mayelana nokunga bikhona kwezinhlelo zokuthi kube namanzi aphepheli futhi atholakala empompini futhi ngokwanele kulendawo. Sizama ukuthola ulwazi nokuqonda okungcono ngokuphatheka komuphakathi esimeni sokun gabikhona kwamanzi kanye nezindlela zokuwathola amanzi mihlayonke. Imiphumela esizoyithola kulolucwaningo izoya ekuhlenganiseni incwad yeziq eziphezulu ukuzo ekutholeni imfundo ephakeme.

**Ukubamba kwakho iqhaza**

Sicela ukubuza ukuthi uyavuma ukuba yingxeny yengxoxo ezohlanganisa nabanye abantu ezobe ixoxa ngolwazi kanye nemibono yakhe mayelana nobunzima enihlangabezana nabo uma sikhuluma ngamanzi. Uma uvuma sizoku cela ubeyingxeny yengxoxo ezothatha imizuzu engamashumi ayisishagalolunye. Ngesikhathi sengxoxo sizobe sithatha izithombe zezinto ezifika kithi uma sicabanga ngokunga thembeki kokuba khona kwamanzi sobe sesithola ithuba loku zichaza lezizithombe ngamunyen gamunye. Lolucwaningo lulindeleka ukuthi lube nabantu abayishumi nesithupha abazoba yingxeny kepha bazohlukaniswa babe amaqembu amabili lakukhona abantu abayisishaga lombili iqembu lilinye.

Sicela uqonde ukuthi ukubamba kwakho iqhaza kulolucwaningo kungu kuzithandela kwakho, lokhu kuchaza ukuthi awuphoqelekile ukuba yingxeny kulolucwaningo. Iisinqumo sokumamba noma sokungabambi iqhaza kulolucwaningo singesakho wedwa. Uma ukhetha ukungaqqubeki, ngeke ujezeswe futhi ngeke kube nazinhlawulo. Uma uvuma ukubamba iqhaza, ungayeka noma yinini futhi ungazise ukuthi awusathandi ukuqhubeka.

**Ubumfihlo**

Yonke imininingwane ekuvezayo nemibono yakho angeke ize ivezwe futhi izogcinwa kwikhabathe lamafayile elikhiwayo. Iminingwane nemibono izogcinwa kwifayele evalelwe ngezinombolo ezaziwa umcwaningi kanye nomphathi wakhe kuphela. Amarekhodi okubamba kwakho iqhaza angabhekwa abantu abamele ukuqinisekisa ukuthi ucwaningo lwenziwe ngendlela efanele. Emuva yokugcinwa iminyaka emihlanu wonke amarhekhodi ocwaningo azobe esayashiswa.

### **Abaxhasi**

Lolucwaningo luxhaswe yinhlangano ebizwa ngeMoses Kontane Institute.

### **Ubungozi/ Ukunga phathekikahle**

Ubungozi obungase bubekhona kulolucwaningo njengamanje abukho. Kepha mawuzizwa ungakhululekile ukuphendula umubuzo, unelungelo loku ngawuphenduli.

### **Izinzuzo**

Azikho izinzuzo ezisheshayo eziza kuwe ngoku bamba iqhaza kulolucwaningo.

### **Izindleko/ izinkokhelo**

Akukho zindleko kuwe ngokubamba kwakho iqhaza kulolucwaningo. ngesikhathi sengxoxo.

### **Ongathintana naye uma ungaphathekanga kahle futhi uneminye imibuzo**

Uma uhlangabezana nenkinga noma unemibuzo ungaxhumana nomcwaningi ngocingo ku0833906035 noma kwi email ku[mkizesimile@gmail.com](mailto:mkizesimile@gmail.com). Ungathintana futhi noMs Phumelele Ximba ophuma kwiKomidi elibhekelele ubulungiswa laseNyusvesi yaKwaZulu-Natal eHummanities and Social Sciences Research Ethics Committee ku [ximbap@ukzn.ac.za](mailto:ximbap@ukzn.ac.za) noma [hssrec@ukzn.ac.za](mailto:hssrec@ukzn.ac.za) noma umshayele ucingo ku0312603587.

**Imvumo**

Mina \_\_\_\_\_ (igama) ngiyavuma ukuba ngilifundile noma ngiyifundelwe lelifom. Ngiphinde ngaziswa kabanzi ukuthi lulocwaningo lukhuluma ngani.

Ngiyayi qonda imigomo nemibandelo yalolucwaningo.

Nginikeziwe ithuba lokubuza imibuzo ngalolucwaningo ngaphinde ngaphenduleka ngendlela enganelisayo.

Ngiyavuma ukuthi ukubamba iqhaza kwami kulolucwaningo kungokuzi khethela kwami futhi ngivumelekile ukuyeka uma ngingathandi ukuqhubeka.

**Esinye isivumelwane**

Ngiyavuma ukuba ngirhikhodwe/ukuba yingxenye yengxoxo : YEBO/CHA

Ngiyavuma ukuba kusentshenziswe izithombe zami kulolucwaningo : YEBO/CHA

---

**Sayina**

---

**Usuku lwanamhlanje**

## APPENDIX D

### GATE KEEPER'S LETTER



29 April 2019

#### REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Dear, Tribal Council

My name is Onenkosi Simile Mkize. I am a student at the University of KwaZulu-Natal, Pietermaritzburg Campus, under the College of Agriculture, Engineering and Science. The research I wish to conduct for my Masters dissertation titled, *Challenges of water service delivery and access to improved water sources: Experiences revealed through a photovoice study in eMdubezweni rural community, KwaZulu-Natal*. The aim of the study is to examine how adults living in an under-resourced rural area in KZN describe their experiences in relation to a lack of improved water sources and access in their community.

I hereby request permission to conduct my research in your area and to work with residents of this community affected by this phenomenon.

If you require any further information, please contact me 0833906035/ [mkizesimile@gmail.com](mailto:mkizesimile@gmail.com). Alternatively, you can contact Ms Phumelele Ximba of the UKZN Humanities & Social Sciences Research Ethics Committee by email at [ximbap@ukzn.ac.za](mailto:ximbap@ukzn.ac.za)/[HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za) or telephone on 0312603587.

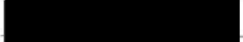
Thank you for your time and consideration on this matter.

Yours sincerely,

Onenkosi Simile Mkize

Permission granted to conduct study (YES/NO)

Name: Muzi Nkomo (Tribal Leader/Gatekeeper)

Signature: 

Date: 02/05/2019

**APPENDIX E**

**MUNICIPALITY INVITATION TO EMDUBEZWENI RURAL  
COMMUNITY**

**Invitation to Sit in on Research Focus Group Discussion**

To Whom It May Concern

My name is Onenkosi Simile Mkize. I am a student at the University of KwaZulu-Natal (UKZN) Pietermaritzburg Campus pursuing a Masters in Human Geography. My research topic is *Challenges in access to improved water sources in rural communities: Experiences revealed through photovoice study in eMdubezweni, KwaZulu-Natal*. The main aim of this study is to examine how adults living in an under-resourced rural community in KZN describe their experiences in relation to a lack of improved water sources and access in their community. The study employs three research tools, namely; photovoice (the use of photographs to voice out participant's experiences and views), focus group discussions and in-depth interviews. As part of the research, one of the objectives is to assess how photovoice might help facilitate participant engagement and raise awareness in issues around access to improved water sources. Therefore, we appreciate your presence in the discussion as participants share their experiences to give policy makers and implementers an opportunity to hear the views of those affected by policies.

**Date: 9 October 2019, Wednesday.**

**Time: 8:30 am for 9:00 am to 12:00 pm**

**Venue: Hlanzini Primary School, Ward Four (4), eMdubezweni, Mpofana Municipality.**

*Please note that this invitation is strictly for research purposes. The study is in no collaboration or alliance with any political party nor is it funded by any.*

Contact details:

**Cell phone number: 083 390 6035**

**Email: [mkizesimile@gmail.com](mailto:mkizesimile@gmail.com)**

**Alternative email: [213510449@stu.ukzn.ac.za](mailto:213510449@stu.ukzn.ac.za)**

Thank you for your time and we hope to see you there!

## **APPENDIX F**

### **FOCUS GROUP DISCUSSION AND IN-DEPTH INTERVIEW GUIDE**

This tool is designed to facilitate a discussion around the study objectives relating to a lack of water access and service delivery. The discussion will be initiated through having each participant explain why they took the particular picture.

#### **Picture selection interview (Wang, 2005):**

- What do you see happening in the photo?
- What is really happening in the photo?
- How does this relate to your life?
- Why do you feel this problem exists?
- How could this image educate the community?
- What can be done about this issue?

#### **Focus Group Discussion:**

**Research goal: Experiences, challenges and perceptions of lack of water access and service delivery:**

- What are the challenges you face as a result of lack of access to improved water sources and service delivery?
  - Does anyone have similar experiences?
- How does a lack of access to improved water sources and service delivery make you feel?
  - Does anyone have the same feelings or feel differently?
- What would you consider to be access to improved water sources and service delivery?
  - Please explain your answer
- What are your coping strategies to deal with lack of access to improved water sources to carry out day to day activities effectively?
  - Why have you opted for these particularly?
- Which sources of water do you primarily rely on?
- Do you ever feel any psychosocial distress from the reality of lack of access to improved water sources?

- If yes, please explain it to us
- What initiative have you taken to try and address improved water access issues in your community?
  - If yes, have they been effective?
    - Why and what was the result?
- Do you rely on a single source for water or multiple sources?
- Do you think your spatial location attributes to your lack of water access?
- Do you feel like the lack of piped water connections prevents you from partaking in income-generating activities?
- Is the water you receive from the water tanker sufficient for carrying out household activities?
- Do water scarcities affect your livelihood activities, e.g. no water to mix cement or no water to cook vetkoek?
- Do you find yourself having to cut back on water use?

**Research goal: Gender disparities in access to improved water sources.**

- Do you think men and women have equal access to water services?
  - If not, why?
  - Does this affect either gender?
    - If so, how?
- Do you think men and women have similar uses for water?
  - If not, why?
  - Does this affect either gender?
    - If so, how?
- Do you think men and women are affected similarly by a lack of water service delivery?
  - If not, why?
  - Does this have an effect on either gender?
    - If so, how?
  - Have you been negatively affected as a result of your gender?
    - If yes, how?
- Does either gender receive hostility from families and/neighbours because of limited water, and duties are not carried out because of a lack of access to water?

- What activities do you feel you miss out on when spending time collecting water? Does it affect your daily schedule?
- Do you find yourself worried or stressed about water running out?

**Research goal: Photovoice as a tool to facilitate engagement in water service delivery issues**

- What intervention do you feel could be useful in addressing gender inequalities in water access and service delivery, if they exist?
- Do you feel the discussions about this issue might help address water access and service delivery?
  - If yes, how?
- Do you feel the participatory visual methods allowed for effective engagement with water access and service delivery issues in your community?
  - If yes, why?

## **APPENDIX G**

### **PHOTOVOICE PROMPTS**

1. Take 4 (four) pictures each to show what the challenges of not having access to reliable water sources look like for you.
2. Each person is asked to take a maximum of four (4) photographs of which they will select four (4) to write a brief description (1 or 2 sentences) of what they see. Participants will use their photos to create poster narratives. Each poster will be accompanied by a curatorial statement. Writing material, pen and notebook, will be provided.
3. Instruction to Participants: Before taking a picture of someone or a place, please ask for consent from the individual(s) or property owner. Please ensure not to show people's faces or any feature that makes any person recognizable/identifiable.
4. Please ensure you take clear and visible (lighting and angle) photographs.

## APPENDICE H

### TURNITIN ORIGINALITY REPORT

#### Turnitin Originality Report

Processed on: 06-Apr-2021 11:00 AM CAT

ID: 1551755542

Word Count: 54314

Submitted: 1

Onenkosi Mkize Dissertation By  
Onenkosi Mkize

2% match (student papers  
from 04-May-2020)

Class: Doctoral Thesis

Assignment: PhD Thesis

Paper ID: [1315672296](#)

| Similarity Index |  | Similarity by Source |    |
|------------------|--|----------------------|----|
| 4%               |  | Internet Sources:    | 1% |
|                  |  | Publications:        | 1% |
|                  |  | Student Papers:      | 2% |

< 1% match (publications)

[Anna Libey, Marieke Adank, Evan Thomas. "Who pays for water? Comparing life cycle costs of water services among several low, medium and high-income utilities", World Development, 2020](#)

< 1% match (publications)

["Handbook of Climate Change Resilience", Springer Science and Business Media LLC, 2020](#)

< 1% match ()

<https://researchspace.ukzn.ac.za/handle/10413/18188>

< 1% match (Internet from 10-Jun-2020)

<https://accountabilitynow.org.za/water-law-constitution/>

< 1% match (student papers from 01-Sep-2016)

[Submitted to University of KwaZulu-Natal on 2016-09-01](#)