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AN ASSESSMENT OF THE ROLE OF SOCIAL CAPITAL IN COLLABORATIVE ENVIRONMENTAL GOVERNANCE IN TRIBAL COMMUNITIES: THE STUDY OF GUMBI AND ZONDI COMMUNITIES IN KWAZULU NATAL PROVINCE, SOUTH AFRICA

BY
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THESIS
Submitted in fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

GEOGRAPHY AND ENVIRONMENTAL STUDIES

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School of Geography, Archaeology and Environmental Studies

SUPERVISOR: PROF. DANNY SIMATELE
JANUARY 2017

ETHICS CLEARANCE PROTOCOL NUMBER: H15/02/38

DECLARATION 1-PLAGIARISM

I, Regis Musavengane declare that this thesis (data, diagrams, graphs, tables and any other information) is my own original work, except to the extent that has been acknowledged.

This thesis does not contain other persons' writings, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then: their words have been re-written and the general information attributed to them has been referenced. Where their exact words have been used, then their writings have been placed in italics and inside quotation marks, and referenced.

The thesis is being submitted for the award of the degree of Doctor Philosophy (PhD) to the Faculty of Science, School of Geography Archaeology and Environmental Studies (GAES) at the University of Witwatersrand, Johannesburg, South Africa. It has not previously been submitted for examination or award of degree to any other institution of learning.

DECLARATION 2-PUBLICATIONS

I, Regis Musavengane, declare that I personally undertook all the data collection, analysis, development and writing of the manuscripts and articles mentioned below. I wish to commend my co-author, Prof. Danny Simatele, for providing useful advice and comments, as well as editing the manuscripts. Sections of this work have been published or submitted as manuscripts for publication to the following peer reviewed journals:

1. Musavengane, R. and Simatele, D. 2016. Significance of Social Capital in Collaborative Management of Natural Resources in Sub-Saharan Rural Communities: A Qualitative Meta-analysis. **South African Geographical Journal, DOI:** http://dx.doi.org/10.1080/03736245.2016.1231628 (Published). **FREE ACCESS**: http://www.tandfonline.com/doi/full/10.1080/03736245.2016.1231628

2. Musavengane, R. and Simatele, D. Forthcoming. Systemic Resilience Thinking in Environmental Operational Research: A participatory modelling approach for community-based natural resource management in South Africa. **Applied Geography** (Under Review)

3. Musavengane, R. and Simatele, D. 2016. Community-Based Natural Resource Management: the role of social capital in collaborative environmental management of tribal resources in Kwa-Zulu Natal, South Africa. **Development Southern Africa, DOI:** http://dx.doi.org/10.1080/0376835X.2016.1231054 (Published). **FREE ACCESS**: http://www.tandfonline.com/eprint/IBHvy9hiPsiMzcvE4PiP/full

4. Musavengane, R. and Simatele, D. 2016. Social capital and the pursuit of ecotourism as a land-use option in land reformed communities: a study of Kwa-Zulu Natal's tribal areas, South Africa**. African Journal of Hospitality, Tourism & Leisure** http://www.ajhtl.com/uploads/7/1/6/3/7163688/article_31_vol_5__4_.pdf (Published)

Regis Musavengane Signature:  Date: January 2017

As the candidate's supervisor, I certify the above statement and have approved this thesis for submission. I certify that the above statement is correct:

Prof. Danny Simatele **Signature**:  Date: January 2017

DEDICATION

To God Almighty and His Church

And

My parents, Fredrick Muchineripi Musavengane and Axsilia Chitauro; in particular my mother for her tremendous support and inspiration since birth.

A special dedication is given to my wife (Rutendo Rhoda Musavengane) for without her patience, support, love and care, none of this amount of work would have been accomplished. You are and will always remain a paragon of incredible audacity of hope, and the love of my life.

And

My son and daughter

(Christian Tapiwanashe Musavengane and Chantelle Ruvimbo Musavengane)

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Most heartfelt thanks to my family, especially my lovely and cheerful wife, Rutendo Rhoda Musavengane, my son Christian Tapiwanashe Musavengane, and my beautiful daughter Chantelle Ruvimbo Musavengane, for their love, support and patience during my studies. You guys: you rock big time – l love you!!!

Finally my sincere gratitude goes to my Wits family, specifically Colman Dube, Henry Tantoh and Serge Kubanza for their tremendous support during our studies.

ABSTRACT

Political transformations in most developing nations have been accompanied by vast land claims by indigenous communities who were forcibly detached from their traditional land during colonisation and apartheid-like dispensations. In the context of sub-Saharan African countries (including South Africa), the need for land reform has been aggravated by the great scarcity of farmland. However, most of the reclaimed land is in areas pursuing conservation activities. Now, caught between owning the land and pursuing conservation as a land use option to improve livelihood; local communities have tended to form partnerships and collaborations with external stakeholders in managing communally owned natural resources. Collaborative management is perceived as a sustainable route in governing common pool natural resources in re-claimed areas. It is in this regard, that this research aims at establishing the role to which social capital can be instrumental in promoting sustainable governance in co-managed community game reserves in Kwa-Zulu Natal.

This study follows a case study approach, with Zondi and Gumbi communities in Umvoti and uPhongolo Districts of KwaZulu Natal, South Africa respectively being used to obtain empirical evidence. Two basic criteria were taken into consideration in selecting appropriate case study areas to attain the aim of the study. Firstly, whether the area had successfully claimed the land and secondly, if there were collaborative efforts from different stakeholders in managing available common resources. To ensure equal representation, research participants were drawn from households, community leaders, conservation organisations and policy makers from the government.

This study's methodological positionality is interpretive in nature, and its operational framework base is qualitative research. It therefore uses a number of qualitative techniques in an attempt to establish the role of social capital in governing Somkhanda (in Gumbi) and Ngome (in Zondi) Community Game Reserves. For instance, systemic-resilience thinking and socio-ecological learning

approaches were used to analyse the participatory relationship and effects in managing community natural resources in Gumbi and Zondi communities.

It has been revealed in this study that the key to successful collaborative environmental management projects revolves around issues of participation, transparency, reciprocity and effective communication. These elements are important ingredients in building strong social capital. Community social cohesion builds trust between internal and external actors, especially in communities that were once subjected to various forms of segregation and corrupt systems of governance. The presence of trust in managing common pool resources ensures effective stakeholder participation as well as involvement in decision making processes.

Furthermore, the evidence from this study suggests that the frequent exclusion of rural populations from participation in processes with a direct influence on their lives, undermines efforts to pursue Community-Based Ecotourism. More profoundly, the study found that, as an analytical tool, social capital seems to provide a dynamic and holistic explanatory approach to the pursuance of Community-Based Ecotourism in land-claimed communities, compared with the dominant evaluative techniques in the tourism field. Another important practical implication is that social capital can be used to promote the analysis of communities as heterogeneous and evolving, as opposed to the assumptions of their homogeneity and static state. There is a strong possibility that social capital can also address power-relations, social exclusion and inequality, through consideration of both structural and cognitive indicators.

The findings from this study make several contributions to the body of knowledge. Firstly, they provide a better understanding of social capital variables influencing community participation in conservation activities. This is of use when designing or developing future Collaborative Community-Based Natural Resources Management (CCBNRM) projects. Secondly, from a broader perspective, the study advises policy makers not to ignore related community policies which might impact community participation in CCBNRMs. This is essential in considering the direction of future conservation and rural development policy. Thirdly, they provide a framework for

empowering local people and their communities to enhance participation in CCBNRM. In view of this, a binding conclusion can be made that social capital can be a vehicle through which the accumulation of different forms of capital can be achieved and contribute towards sustainable environmental management.

Key Words: Social Capital, Collaborative Governance, Community-Based Natural Resources Management, Rural Communities, Environmental Management and Land Claim

TABLE OF CONTENTS

Contents

DECLARATION 1-PLAGIARISM ii

DECLARATION 2-PUBLICATIONS iii

DEDICATION iv

ACKNOWLEDGEMENT v

ABSTRACT vi

LIST OF FIGURES xi

LIST OF TABLES xi

LIST OF ABBREVIATIONS AND ACRONYMS xii

CHAPTER ONE 1

FRAME OF REFERENCE 1

1.1 Background Information 1

1.2 Thematic Considerations 3

1.3 Research Questions 7

1.4 Research aim and objectives 7

1.5 Significance of the Research 8

1.6 Description of the Study Area 8

Fig 1.1 Location of study sites: Umzinyathi (Umvoti – Zondi community) and Zululand (uPhongolo – Gumbi community) 10

1.7 Delimitations of the study 11

1.8 Methodological Approach 11

1.9 Study Limitations 22

1.10 Structure of the Study 23

CHAPTER TWO 25

REVIEWING SOCIAL CAPITAL: THE ROLE OF SOCIAL CAPITAL IN SUB-SAHARAN AFRICA 25

ABSTRACT 25

2.1 Introduction 25

2.2 The importance of social capital in Collaborative Community Based Natural Resources Management 27

2.3 Methodological consideration 29

2.4 Meta-Analysis Findings 33

2.5 Discussion and Conclusions 38

CHAPTER THREE 43
METHODOLOGICAL CONSIDERATIONS 43
ABSTRACT 43
3.1 Introduction 43
3.2 Significance of Environmental Operational Research in tribal communities 46
3.3 Methodological consideration 47
3.4 Contextual analysis of Environmental OR participatory methods 51
3.5 Environmental Operational Research in CBNRM in KwaZulu Natal 55
Fig 3.1 Causal flow diagram: causes of lack of participation in community natural resources management 58
Fig 3.2 Causal flow diagram: Consequences of Lack of Participation in Community Natural Resources Management in KZN 62
3.6 Towards 'Systemic-Resilience Thinking' participatory modelling approach in Environmental Operational Research 62
Fig 3.3 Sustainable Community development for EOR through participatory modelling natural resources management 67
3.7 Conclusion 67
CHAPTER FOUR 69
SOCIAL CAPITAL AND COMMUNITY-BASED NATURAL RESOURCES MANAGEMENT IN KWAZULU NATAL, SOUTH AFRICA 69
ABSTRACT 69
4.1 Introduction 69
4.2 Social Capital and Collaborative Community Based Natural Resources Management – a meta-analysis 71
4.3 Methodological consideration 75
4.4 Role of Social Capital in Co-management of Natural Resources in KwaZulu Natal 80
4.5 Discussion 85
4.6 Conclusion 88
CHAPTER FIVE 89
THE ROLE OF SOCIAL CAPITAL IN PURSUING COMMUNITY-BASED ECOTOURISM IN KWAZULU NATAL, SOUTH AFRICA 89
ABSTRACT 89
5.1 INTRODUCTION 89
5.2 Social Capital and Collaborative Community-Based Ecotourism 91
5.3 Methodological consideration 96

Fig 5.1 Somkhanda Game Reserve Map 99
5.5 Results and Discussion 103
5.6 Implications for Sustainable Community-Based Conservation 112
5.7 Conclusion 113
CHAPTER SIX 116
CONCLUSION AND RECOMMENDATIONS 116
6.1 Synthesis and General Conclusions 116
6.2 Recommendations 119
6.3 Future Pointers 121
REFERENCES 123
APPENDIX 135

LIST OF FIGURES

Fig 1.1 Location of study sites: Umzinyathi (Umvoti – Zondi community) and Zululand (uPhongolo – Gumbi community) 10
Fig 3.1 Causal flow diagram: causes of lack of participation in community natural resources management 58
Fig 3.2 Causal flow diagram: Consequences of Lack of Participation in Community Natural Resources Management in KZN 62
Fig 3.3 Sustainable Community development for EOR through participatory modelling natural resources management 67
Fig 5.1 Somkhanda Game Reserve Map 99

LIST OF TABLES

Table 1.1: Systematic Random Sampling: Zondi Community 19
Table 1.2: Summary of chapters 23
Table 2.1 Overview of the studies in the meta-analysis 30
Table 2.2 Factors influencing participation of community members in CBRM in the literature 31
Table 3.1 Application of Systemic-Resilience Thinking in Gumbi and Zondi Communities 63
Table 4.1 Scale Assessment for Social Capital Dimensions in Gumbi and Zondi communities 78

Table 4.2 Listing and Ranking of Important Social Capital Variables Affecting Participation in Gumbi and Zondi CBRM Schemes 81
Table 4.3 Assessment of social capital dimensions in Gumbi and Zondi Communities 84
Table 5.1 Survey Responses to Questions and Social Capital Indicators & Scores 100

LIST OF ABBREVIATIONS AND ACRONYMS

AA	Agroecosystem Analysis
ADMADE	Administrative Management Design for Game Management Areas
AP	Activist Participatory
BOT	Build Operate Transfer
CAMPFIRE	Communal Areas Management Programme For Indigenous
CBRM	Community Based Resource Management
CBNRM	Community Based Natural Resources Management
CCBNRM	Collaborative Community-Based Natural Resource
CBET	Community-Based Ecotourism
CFA	Community Forest Agreement
COR	Community Operational Research
CPA	Community Property Association
ECT	Emvokweni Community Trust
EG	Environmental Governance
EKZNW	Ezemvelo KwaZulu Natal Wildlife
EOR	Environmental Operational Research
FAO	Food and Agriculture Organisation of the United Nations
KZN	KwaZulu Natal Province
KZNHCA	KwaZulu-Natal Hunting and Conservation Association
MWW	Mann Whitney-Wilcoxon
NCLT	Ngome Community Land Trust
NGO	Non-Governmental Organisation

NGR	Ngome Game Reserve
OR	Operational Research
PRA	Participatory Rural Appraisal
PRS	Participatory Resilience-systemics
RPA	Rural Participatory Appraisal
SA	South Africa
SC	Social Capital
SGR	Somkhanda Game Reserve
WCT	Wildlands Conservation Trust
WKNP	Western Kruger National Park
WWF	World Wildlife Fund

CHAPTER ONE

FRAME OF REFERENCE

1.1 Background Information

In the last two decades there has been a re-emergence of numerous Community-Based Natural Resources Management programmes in a quest to address a plethora of environmental challenges to avert threats of devastating public action in the environmental arena in Southern Africa and globally (Cundill *et al*., 2013). This explains the trend towards decentralised, self-regulated and localised environmental management collaboratives (*also known as co-management*) (Muller, 2012:3; Tang and Tang 2009). Borrini-Feyerabend *et al.* (2004) define environmental co-management as a form of partnership in which all stakeholders develop and implement an environmental management agreement. This definition is anchored on the principle that local communities have a role in conservation and management, and that it is vital to partner with the government (Hara, 2003). Co-management organisations may be of different types (for example, a board, a council, a formal or informal association, a trust or fund) and span different levels of authority and responsibility (Borrini-Feyerabend *et al.*, 2004). Most importantly, they all have two main characteristics: *Firstly*, they include at least two parties and *secondly*, they manage a specific territory (Borrini-Feyerabend *et al.*, 2004; Muller, 2012). This study therefore focuses on Gumbi and Zondi rural communities with environmental collaboratives that have these main characteristics.

The existence of various types of environmental co-management organisations facilitated the successful management of natural resources in many communities globally. For example; in Cameroon, an innovative co-management organisation for Waza National Park improved the livelihoods of the community as people benefited more from local tourism (Borrini-Feyerabend *et al.*, 2004). In Scotland, Assynt Crofter's trust was created to co-manage the woodlands, specifically to coordinate and implement woodland management on a wide area. Consequently

livelihoods of community members improved through opportunities created through the woodlands (Jeanrenaud and Jeanrenaud, 1996). However, some of the collaboratives are accused of failing to articulate all social, economic and ecological challenges (Sheppard, *et.al*. 2010). It is with this backdrop that this study will try to find out the reasons behind such failures and the role of social capital in solving the environmental challenges faced in rural communities.

Internationally, environmental organisations have been active for the conservation of nature and natural resources. With the Convention on Biological Diversity, signed in Rio de Janeiro in 1992, these efforts have got a new and global impulse. Nature conservation-oriented NGOs, such as WWF, have successfully operated on national and international scales and have effectively promoted the designation of protected areas in every region of the world. At a closer look, however, it becomes apparent that the protection of nature is tied up with deep conflicts (Xu *et al.,* 2006). In rural areas of developing countries, the establishment of nature reserves often deprives local communities of natural resources that are vital to their livelihood (Dudley, 2008). According to Dudley (2008) under conditions of poverty and land degradation, long-term protection of nature is far from guaranteed. More and more nature conservation organizations and government agencies are searching for ways to combine conservation and community development.

South Africa has therefore followed the trends in forming collaborative partnerships in the environmental arena and other fields (Cundill *et al*., 2013). This was necessitated by the end of the Apartheid regime which ushered a democratic leadership style in South Africa. However, the effects of the damage caused by apartheid are still being felt in the environmental arena especially in areas where people were marginalised (Bennett et.al; 2013). For instance; a study conducted by Bennett, in the rural central Eastern Cape Province concluded that, there are still struggles in the management of common grazing resources as local people are deprived of grazing their domestic animals in other areas (Bennett *et al*., 2010; Kamuti, 2014).

Although there are reports on the success of the environmental collaboratives there have been some reports of failure as well (Muller, 2012). Since South Africa is at the conception stage of development of environmental collaboratives it provides researchers an opportunity to assess the functioning of rural environmental collaboratives (Muller, 2012). In the same vein, Waylen *et al.* (2010) therefore suggests that it is critical to conduct conservation evaluation to understand what factors or features predict success or failure of environmental collaboratives. One of the tools regarded as vital in evaluating and managing natural resources and even the functioning and effectiveness of governance structures is 'social capital' (Tompkins and Eakin, 2012). Although highly contested, social capital can be defined as "*the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit*" (Nahapiet and Ghoshal 1998:243). Since social capital is regarded as a tool that enhances networking in a particular social unit, this study therefore assesses its role in the co-management of natural resources in rural communities within South Africa.

1.2 Thematic Considerations

This study is motivated by two situations in the governance of environmental collaboratives. Firstly, some environmental collaboratives are a reaction to reports and complaints on the exclusion of local people in managing their natural resources (Bennett *et.al*, 2013). Secondly, some have emerged due to various community development motives such as conserving vital ecological and historical features, conserving open space, or maintaining rural values and scenic views in accordance with property rights (Allen *et al*. 2013). In the context of this study, rural communities' involvement is of importance in the governing of environmental collaboratives (Rangan and Lane, 2001; Tang and Tang, 2009; Sheppard *et al.*, 2010:279; Baral, 2012). Environmental collaboratives enhance the sustainable management of a pool of natural resources (such as forest and water) in rural communities through building trust amongst stakeholders which consequently improves livelihoods of rural people (de Jong *et.al*, 2006).

There are various forms of environmental collaboratives and most of them adopt community based approaches that promote the application of local knowledge and revival of the proven historical indigenous cultural practices (Berkes, 1991; Colding and Folke, 2001). These approaches include Community-Based Natural Resources Management (CBNRM) schemes, Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) and others. Despite suggestions made by these initiatives on the importance of incorporating local communities in managing natural resources, little attention has been devoted to enhance the implementation process in the emerging environmental collaboratives operating in a recently modernised and globalised environment system (King, 2007).

Rural communities are mainly encouraged to articulate the diverse environmental challenges in a holistic way that promotes political and social development (Norberg-Hodge, 2000). One of the ways is by resolving collective-action problems and inherent natural resources distribution governance problems. Another way is by developing solutions to their natural resource governance challenges that are compatible with their cultural, social and economic values. Local communities are also encouraged to find ways to gain recognition from external authorities in managing their local resources (Berkes, 1999). Norberg-Hodge (2000:1) asserts that, such steps would set rural communities "*on the road to economic and environmental health, stem the unhealthy tide of urbanisation, and support cultural diversity, thereby lessening ethnic conflict and violence. Shifting towards the local would be far less costly to taxpayers*", than the current globalised path and would be less socially and environmentally disruptive.

Nevertheless, the challenge is to overcome various formidable environmental challenges as not all indigenous communities and environmental collaboratives are equally successful in managing natural resources. For example, some indigenous communities lack proper sustainable governance structures which results in the detrimental depletion of natural resources (Tang and Tang, 2009). On the other hand, King (2007) argues that most of the successful environmental

collaboratives have explicitly defined institutional rules pertaining to; resource boundaries, resource allocation, user rights, conflict resolutions etc. These institutional rules are supported by deep-rooted social values and inherent belief systems. Kasere (2002) is also of the view that in many rural areas in Africa, natural resources are (were) regarded as gifts from gods due to cultural belief systems, therefore communities regard the protection of natural resources as man's obligation. For example, in some cases, routine social sacrifices were done in other cultural systems and this helped in preserving the natural resources (Kasere, 2002). An understanding of various factors (such as culture) that may influence the management of natural resources in rural areas is therefore of paramount importance as it enhances the performance of various environmental collaboratives.

Due to the interaction of cultural communities with the outside world, these institutional values and beliefs are often challenged (de Jong *et.al*, 2006). Although the challenges faced are camouflaged differently the consequences faced by environmental collaboratives or indigenous communities are still the same. For example when outsiders arrive in a community and start to claim ownership of resources, it consequently affects the traditional allocation rules and eventually weakens the control of resources. On the other hand, if the community integrates much with the outside world, local people's reliance on the resources may diminish creating bad working relationship or cooperation with other players within the collaboratives.

It is widely recorded in the literature that most of the tribal areas in South Africa and other African nations are occupied by previously marginalised people who were forced out of their land during the Apartheid and colonial era (Anderson and Grove, 1987; Beinart and McGregor, 2003; King, 2007). These regimes marked the beginning of intervention of external actors in Africa who romanticized the African landscape and its people and acquired power (King, 2007). It is not yet proven if this has influences on the current successes or failures of environmental collaboratives. The issue of marginalisation of people might be the reason why there are deep concerns about restitution and

nationalisation of natural resources for better community livelihood in sub-Saharan Africa and other parts of the continent (King, 2007).

Environmental collaborative popularity is largely attributed to their impact on human livelihoods while conserving natural resources. However, the concern is on the genuineness and willingness of international or external organisations to participate or collaborate with local people in managing local natural resources. These concerns parallel other researches that question the assumptions on the homogeneity of communities where environment collaboratives function in (McShane & Newby, 2004; Songorwa, 1999).Such conceptualisation fails to acknowledge the differences among communities for the effectiveness of collaborative governance.

Concerns over the partnering of tribal communities in managing natural resources demonstrate the need to rigorously study how cultural and social differences shape the future and effectiveness of environmental collaboratives. This is further necessitated by rising critiques on the effectiveness of social and cultural factors in the conservation of natural resources. Although literature shows the role and importance of communities in nature conservation, less attention has been paid to empirically examine the social networks that impact governance of environmental collaboratives. In view of this observation, **the study investigated the extent to which social capital can be instrumental in promoting sustainable governance in environmental collaboratives in Kwa-Zulu Natal.**

Social capital is regarded as one of the assets vital for the survival and development of communities. Some of the essential assets that communities rely on include physical capital such as natural resources, financial capital such as cash or investments and political assets which provide communities with important connections to pursue their activities. Social capital refers to interpersonal networks, Blewit, defines it as "*a term we can use to denote those relationships by which groups and individuals identify, communicate, network, build trust, enter into dialogue, resolve conflicts, and solve problems and realise*

collective and individual potential as agents of sustainable development" (Blewit, 2008:78).

1.3 Research Questions

In view of the above argument, the following research questions were used to guide the research process:

i. What factors contribute to effective environmental collaborative management schemes in Gumbi and Zondi tribal communities in Kwazulu Natal Province (KZN)?
ii. In what ways do external factors such as information flow and connections influence traditional conservation practices in Gumbi and Zondi tribal communities in KZN?
iii. In what ways does social capital enhances environmental collaborative management in rural areas; specifically in Gumbi and Zondi communities?
iv. What are the implications of the findings of this study in a wider context, particularly in sub-Saharan Africa?

1.4 Research aim and objectives

The research aims to investigate the factors that influence the success and failure of environmental collaboratives located in the rural areas, specifically in Gumbi and Zondi communities. The study further finds out the role of social capital in enhancing management of the environmental collaboratives. To achieve this aim, the following objectives were set out to**:**

i. Empirically examine the successes and failures of environmental collaboratives in Gumbi and Zondi communities in KZN Province.
ii. Analyse and suggest factors that promote the establishment and efficient functioning of environmental collaboratives in Gumbi and Zondi multi-cultural societies.
iii. Examine how vital cultural knowledge can be gathered and used in environmental collaboratives in rural tribal areas specifically in Gumbi and Zondi communities in KZN.

iv. Establish a model that encourages adaptation and promotes networking in multi-cultural rural communities to enhance environmental collaboration.

v. Establish a model that can combine social, economic, physical and cultural factors (*social capital*) to shape sub-Saharan environmental collaboratives in rural tribal areas.

1.5 Significance of the Research

In light of the above, this study is significant in the area of environmental collaborative management mainly in three ways:

Firstly, it seeks to produce information that could be used to promote effective management of natural resources in multi-cultural communities. Natural resources are a vital physical capital in most rural communities and without proper management of these resources communities risk losing a significant part of their livelihoods. *Secondly*, the study improves social networking in environmental collaboratives. Natural resources alone do not answer all community needs but effective networking enhances the utilisation of these resources in a sustainable manner. *Thirdly*, it provides tools that can be used by government and other environmental organisations to identify areas where social capital investment is needed. The following section provides a description of the study area.

1.6 Description of the Study Area

This section provides a description of case study communities used in this study. It gives justification for the selection of Zondi and Gumbi communities in Kwazulu Natal Province (KZN), South Africa and more importantly puts into perspective the research context.

Gumbi Community: is located in the uPhongolo District Municipality in Northern KwaZulu Natal Province, South Africa (See Fig 1.1). The Gumbi people who were forcibly removed from their land in the 1960s were restored to their large piece of land under the Land Reform Process in 2005. The Gumbi is the main tribe that

resides in Gumbi community and is now the proud owners of the land that was previously settled by white game farmers. After being restored to their land, the Gumbi people decided to keep large portions of the land under conservation and created a consolidated game reserve, *Somkhanda Game Reserve*; that can be used as a vehicle to economic and social development in the community. As such, partnerships have been formed with the Wildlands Conservation Trust (WCT), Wildlife ACT Fund and the World Wildlife Fund (WWF). The established collaboratives necessitated skills development projects that would ensure that Somkhanda is sustained as well as the community members themselves. It is vital to note that Somkhanda Game Reserve is the first community owned wildlife reserve to be created from land reform (Dugmore, 2013). The reserve spans 16 000 hectares of land, and is situated within the Key Biodiversity Area in the Maputaland-Pondoland-Albany Global Biodiversity Hotspot (WWF, 2013). These areas are regarded as significant for biodiversity conservation.

Zondi community: is part of Umzinyathi District Municipality under Umvoti Local Municipality, north of Greytown in KwaZulu Natal (See Fig 1.1). It is mainly inhabited by the Zondi tribe, who received their land under the land redistribution process in 1996. The community established a game reserve that spans, 4 300 hectares; *Ngome Game Reserve*. The Game Reserve is situated approximately one and a half hours from Pietermaritzburg. It was previously named Bhambatha's Kraal and renamed to Ngome Game Reserve to reflect its transformation from private to community ownership. Prior to the name Bhambatha's Kraal, the labour tenants of the Zondi tribe occupied the two labour farms (Aaangelen and Olivefontein) that were then converted to game farming in 1974 and 1982 respectively.

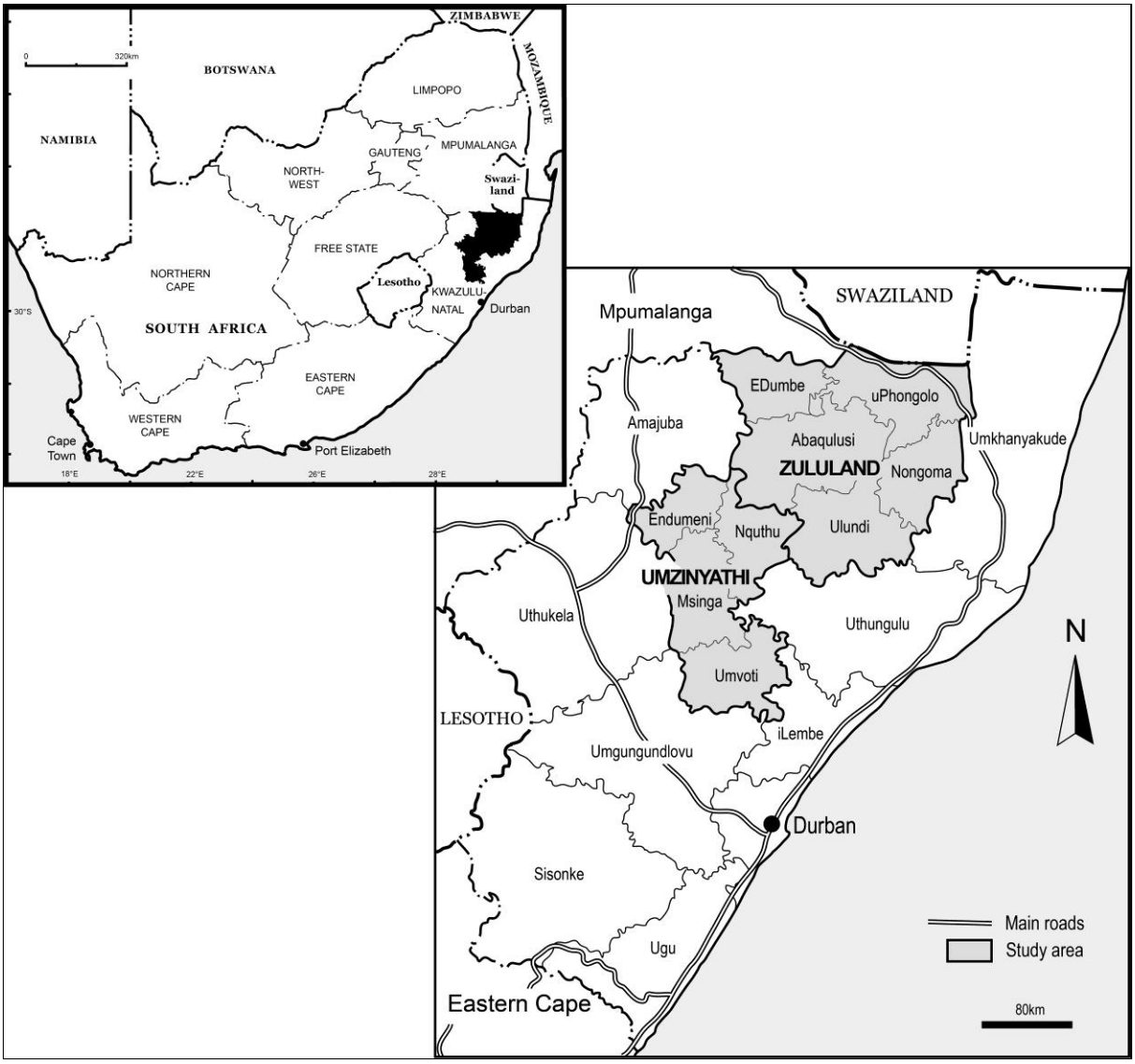

Fig 1.1 Location of study sites: Umzinyathi (Umvoti – Zondi community) and Zululand (uPhongolo – Gumbi community)
Source: Cartographic Unit, Geography Department, University of the Witwatersrand.

Ngome Game Reserve is managed by the Ngome Community Land Trust (NCLT) in partnership with Ezemvelo-KZN Wildlife (EKZNW) and KwaZulu-Natal Hunting and Conservation Association (KZNHCA). The NCLT was established in 2004 as a reaction to the corruption and money laundering allegations of the previous trust (Ngubane and Brooks, 2013). These allegations led to lack of trust in the Ngome Game Reserve project. Since then, it is reported that the community members lack confidence in the management and operations of the reserve (Ngome, 2012). These allegations culminated into poor management of Ngome Game Reserve and derailed progress in attaining the intended goals of

being a benchmark project of other rural communities in South Africa as once suggested by Dr. Andrew Venter, CEO of Wildlands Conservation Trust which was involved in the negotiations of setting up the Ngome Game Reserve (Wildlands, 2007). This study therefore did a comparative analysis on the factors that led to the current status of Ngome Community Game Reserve with those of Somkhanda Community Game Reserve.

1.7 Delimitations of the study

The study is delimited in two ways:

i. Firstly, this study focused on assessing the role of social capital in collaborative environmental governance in Zondi and Gumbi communities located in KwaZulu Natal Province of South Africa (See Fig 1.1). The study did not articulate political issues surrounding land reform programme.

ii. Secondly, the study only focused on tribal rural communities. It did not attempt to assess the role of social capital in conservation initiatives in urban areas. The results obtained might therefore not be entirely suitable for use in urban area conservation programmes.

1.8 Methodological Approach

This section is dedicated to a discussion on the methodological consideration applied in this study. It discusses research techniques employed during fieldwork and reasons for using those methods. In order to chronologically outline the methodology, the section is divided into three subsections. Firstly, philosophical underpinnings behind the study will be outlined as they form the foundation or premises of the study. Secondly, research design will commence by recapping the aim and objectives of the study. Thereafter; study population, study sample population and data collection methods will be discussed to complete research design techniques. Finally, a conclusion will be drawn from the discussion.

1.8.1 Philosophical Underpinnings

As this research is mainly qualitative in nature, it is vital to first clarify philosophical underpinnings followed in the study. According to Ritchie, *et al.* (2013), in a qualitative research there is no single accepted way of obtaining data. Similarly, Denzin and Lincoln (2011:6) note that, qualitative research "*has no theory or paradigm that is distinctively its own….Nor does it have a distinct set of methods or practices that are entirely its own".* With this in mind, how the researcher proceeded with the study depended upon a range of factors. Firstly; his *ontology,* which includes beliefs about the social nature of the environment influenced the way he conducted the research process. Secondly; *epistemology*, which entails the nature of knowledge and how it can be acquired, influenced the gathering of data on the role of social capital in collaborative environmental governance in Zondi and Gumbi rural communities in KZN.

Ontology is concerned with the balance between nature of reality and what is there to know about the world (Ritchie, *et al.,* 2013). The researcher subscribes to critical or transcendental realism school of thought also known as subtle realism (Robson, 2002; Bhaskar, 1978; Blaikie, 2007). The school asserts that, reality consists of three levels. Firstly, the empirical domain, which is made up of experiences that emanate from human senses. Secondly, the actual domain that exists regardless of whether it is observed or not. Thirdly the real domain that refers to underlying processes and mechanisms (Ritchie, *et al.,* 2013). This means that ontologically, the researcher sees reality as something that independently exists from those who observe it but is only accessible through the perceptions and interpretations of individuals. The researcher acknowledges the critical importance of participants' own interpretations of the issues of social capital in collaborative environmental governance. He also believes that their varying vantage points yielded different types of understanding of social capital in both Gumbi and Zondi communities. The researcher's own position is that external reality in itself is diverse and multifaceted and it was the aim of this research to capture that reality in all its complexity and depth.

Moreover, interpretivism shaped the way the researcher knows and learns about the world on issues of social capital. Interpretivism therefore, formed the basis of

the researcher's knowledge on its role in collaborative environmental governance. The researcher's position within the broadly interpretivism frame was reflected in practices which emphasised the importance of understanding people's perspectives on how social capital affects their lives. This implies that, both inductive and deductive approaches were of essence in this study. At the preliminary stage of the study, he used existing literature in planning and developing research designs and fieldwork tools. Thereafter, in the field and early data analysis, he focused much on understanding and exploring data received from participants. The data reflected participants' views and experiences on the co-governance of natural resources within Gumbi and Zondi communities. Then towards the end of data analysis, the findings were reflected against other existing social capital theories or knowledge on collaborative environmental governance. Strong data interpretation was the foundation for the development of the new model which combines; social, economic, physical and cultural factors (*social capital*) in shaping sub-Saharan environmental collaboratives in rural areas. Based on the accounts of participants, he therefore aimed to map the full range of their opinion and experiences. In cases, "*where interpretations move beyond the explicit descriptions and accounts provided by individual participants – drawing on researcher's interpretations or on wider theories – great importance is placed on ensuring that it is clear how more abstract interpretations relate to the data provided by study participants*" (Ritchie *et al.,* 2013:22).

Although the researcher's societal upbringing feeds into his belief system on how communities should manage natural resources; he held a position of 'empathetic neutrality' when he conducted the research. This position entails that; the researcher was neutral and non-judgmental during the research process. The researcher achieved this by making his assumptions, biases and values transparent. This means that he strove to avoid obvious, conscious or systematic bias and was neutral during data collection and the interpretation process. However, there was a probability that, this aspiration might not have been fully attained – thus, the entire research process was influenced by the researcher and there was no completely 'neutral or objective' knowledge. In this context, the

researcher aimed to be reflexive about his role and effect of his beliefs and behaviour during the fieldwork in Gumbi and Zondi communities.

In the same vein of obtaining objective and unbiased data, the researcher followed the **positivism approach** as a scientific method. The approach states that knowledge is produced through senses based on careful observation (Willis, 2007). In the context of this study, careful observation of the role of social capital in collaborative environmental governance will be essential. With positivism, regularities and constant conjunctions of social capital were identified. Furthermore, reality was not affected by the research process; facts and values were separate, objective and value free (Willis, 2007).

Informed by the above philosophies, both *case study* and *ethnographic* qualitative research designs were used in this study. *Ethnographic research* involves the information collected from certain cultural groups believed to be well knowledgeable in particular cultural issues of a certain tribe (Strydom *et al.,* 2005). In addition, a *case study* was of essence since two communities were researched on, to find out the reasons for the success or failure of environmental collaboratives in tribal areas and how social capital can be an effective and efficient governance tool in such cases. The case study further assisted the researcher in undertaking a comparative analysis of the results between Somkhanda and Ngome Game Reserve in Gumbi and Zondi communities respectively.

1.8.2 Research Design

It is important for the researcher to set his research techniques prior to commencement of the actual study as it guides the process of data collection and analysis. In order to obtain answers to the research questions, there should be a clearly outlined plan which is well structured; a concept that Cooper and Schindler (2003) termed a research design. Cooper and Schindler (2003) described research design as a full research programme which constitutes data collection process is essential in the research process. The literature review and philosophical underpinnings above played a crucial role in assisting the researcher to choose the best research techniques for this study.

1.8.2.1 Study Population

In this sub-section an overview of population demographics in Gumbi and Zondi communities will be highlighted.

i. *Gumbi Community Population*: Gumbi community is located in Uphongolo Municipality with an average number of 6.76 persons per household. The community is found in Ward 1 which has a total population of 10 608 people. Comprising the population are 4 374 Males and 6231 Females (Stats, SA, 2014). The Gumbi community has approximately 2109 population and 312 households. Gumbi community has 5 districts – Zonyama, Cotlands, Hlambinyathi, Bethal and Candover. The number of households per district is not captured by Stats SA.

ii. *Zondi Community Population*: Zondi community is located in Umzinyathi Municipality with an average number of 4.4 persons per household. The community is within Umvoti's Ward 8. The ward has an estimated population of about 8 756 people which constitutes 3 751 Males and 5 005 Females (Stats SA, 2014). The Zondi community has 2421 people, which means that; it has 415 household (2421 ÷ 4.4).

1.8.3 Study Sample population

For a sampling unit to be relevant, it must constitute certain attributes which are significant to the research problem (Strydom *et al*., 2005). This subsection will start by revealing subjects of the study and rationale for their selection. Then, sample calculations will follow together with the selection process of households.

1.8.3.1 Characteristics of Subjects of study:

Since this study focused on assessing the role of social capital in co-management of game reserves in tribal rural communities, the target population comprised of:

a) Policy makers who are leaders of environmental collaboratives; such as, local government officials, project coordinators and managers.

b) Relevant organisations such as the Wildlands Conservation Trust (WCT) and the KwaZulu-Natal Hunting & Conservation Association (KZNHCA). These are selected on the basis that, they have worked with Zondi and Gumbi communities in establishing and managing game reserves.
c) Community leaders such as chiefs and Headman will be part of the sample as they are community leaders who authorizes all activities specifically community conservation projects.
d) Community Trusts - Ngome Community Land Trust (NCLT), Emvokweni Community Trust (ECT)
e) Households were requested to respond and share their thinking, perceptions and understanding on the effects of collaborative management of resources within their communities.

A sample was then selected as discussed in subsequent sub-section.

1.8.3.2 **Supporting Organisations sampling**:

Judgemental sampling technique, a form of non-probability sampling was used to select samples of experienced participants in both Zondi and Gumbi communities. Wildlands Conservation Trust (WCT), Wildlife ACT Fund and the Emvokweni Community Trust (ECT) are some of the elements selected for Gumbi community based on judgmental or purposive and snowball sampling. In Zondi community, elements comprises of; Ngome Community Land Trust (NCLT), Ezemvelo-KZN Wildlife (EKZNW), KwaZulu-Natal Hunting & Conservation Association (KZNHCA) and Wildlands Conservation Trust. The following techniques were used:

i. Firstly, ***purposive sampling*** helped to obtain data from experienced people, who were (or are) involved in the formation and functioning of community conservation initiatives in Zondi and Gumbi communities.
ii. Secondly, ***snowball sampling*** technique was employed in *approaching* individual persons who are either working or involved in the Game Reserves project and other related community projects for interviewing. The researcher chose this method because it is regarded as one of the best methods in

undertaking community research where it involves approaching households or individuals and enhances chances of collecting adequate data (Strydom *et al.*, 2005).

1.8.3.3 Zondi Household community sampling:

The researcher targeted households in the *Zondi community* which is located in the Umvoti's municipality, ward 8. The ward has an estimated population of about 8 756 people which constitutes 3 751 Males and 5 005 Females (Stats SA, 2014). The average number of people per household in Umvoti municipality its 4.4, therefore Umvoti's ward 8 has approximately 1990 households (Umvoti Municipality IDP, 2011-2012). The Zondi community has approximately a population of 2421 people and 415 households. Taking into consideration the available finance to visit the spatially spaced households, a total of 23 households were chosen as representative sample.

1.8.3.4 Gumbi community sampling:

The average number of people per household in uPongolo municipality is 6.76. Gumbi community settles in ward 1 with an estimated population of 10 608 which constitutes 4 374 Males and 6231 Females. UPongolo's Ward 1 has therefore, approximately 1 569 households (Stats SA, 2014). The Gumbi community has approximately 2109 population and 312 households. Taking into consideration the available finance to visit the spatially spaced households, a total of 30 households were chosen as representative sample.

The question now is '***so how did I select households in the actual field'***? ***Systematic random sampling*** technique was used to approach households. Unlike urban areas where dwellings are systematically arranged in clusters or blocks, rural households do not follow similar patterns. Some rural households many be isolated from others. During fieldwork, the researcher first familiarised himself with the area although he has some knowledge of existing patterns of Gumbi and Zondi communities. Household surveys were conducted following:

1. Major roads and small trails/path
2. Rivers and streams

3. Household clusters/concentrated around business centres.

To ensure that there was equal selection of elements without bias the researcher determined the starting point in each ward. The systematic random process ensured that, even the most isolated households stand an equal chance of being selected. One main advantage of this method in selection of targets is its simplicity and robustness (Avin and Krishnamachiri, 2009; Muzeza, 2013).

The following steps were followed to select houses during data collection:

a) Calculate sampling interval for Gumbi and Zondi communities. This enabled the researcher to select the basic sampling unit (**BSU**).
b) Randomly choose a number between 1 and the calculated sampling unit.
c) Starting at number 1 of households in the survey area, the researcher then counted the BSUs until he get to the one with the number he picked randomly. This was the first BSU in the sample.
d) To choose the second BSU, the researcher added the sampling interval to the number of the 1st BSU.
e) Subsequent, households (**HH**) were selected using the same criteria in (d).

Below is a sample systematic random sampling for the two communities:

Zondi Community

Step1: Sampling Interval (SI) = total number of BSU in the population/sample size

- SI = 415/23 = **18**

Step 2: Randomly picked number 2

Step 3: Since the researcher picked number 2, he counted the number of households and the ones which came 1st were the first BSU in the sample.

Step 4: To choose the 2nd BSU = 2 (household number 2) **+** 18 (Sampling Interval) which results in **20**. Therefore, after coming out of BSU 2, the researcher kept walking and counting BSUs he gets to number 20 and this was the 2nd BSU.

Step 5: Repeat the process till all elements were met (see Table 1.1 below).

Table 1.1: Systematic Random Sampling: Zondi Community

HH Rank	Calculations	Total	HH Number
1st household	2	2	2
2nd household	2+18	20	20
3rd household	18+18	36	36
4th household	36+18	54	54
5th household	54+18	72	72
6th household	72+18	90	90
7th household	90+18	108	108
8th household	108+18	126	126
9th household	126+18	144	144
10th household	Etc.	Etc.	Etc.

Gumbi Community

Step1: Sampling Interval (SI) = total number of BSU in the population/sample size

- SI = 312/30 = **10**

Step 2: Randomly picked number **2**

Step 3: Since the researcher randomly picked number 2, he counted the number of households and the ones which came 1st were the first BSU in the sample.

Step 4: To choose the 2nd BSU = 2 (household number 2) **+** 10 (Sampling Interval) which results in 12. Therefore, after coming out of BSU 2, the researcher kept walking and counting BSUs he gets to number 12 and this was the 2nd BSU.

Step 5: Repeated the process till all elements were met (see table 1.1 above for Zondi calculations – the concept is the same).

1.8.4 Data Collection methods

This sub-section outlines the concepts and measurement of variables used in the study. Thereafter, data collection techniques employed will be discussed. Finally, ethical consideration for the study is highlighted as the study involved human beings.

1.8.4.1 Conceptualization and measurement

According to Strydom *et al.* (2005), it is significant to measure variables in the theoretical framework as it helps to find answers to the research questions in the study. This study measured the possible factors that contributed to the success or failure (*attribute*) of environmental schemes (*object*) in Gumbi and Zondi communities. Since the study has multidimensional concepts on the success or failure of environmental schemes in Gumbi and Zondi communities; the researcher will infer achievement by measuring factors such as information flow and social, physical and cultural connections. The dimensions and elements of the concepts in the study were used in developing the questionnaires (see Appendix). Social capital dimensions were the main determinants in the development of data collection tools (See Table 4.3 for details).

1.8.4.2 Data Collection Tools

In line with the mixed methods approach, this study used mixed data collection methods. The researcher used the following methods during the research process:

i. *Focus group discussions*: Focus group discussions tend to gather more, in-depth and valid data in communities such as rural areas where this study was undertaken (Silverman, 2010).

ii. *Structured and unstructured interviews*: Strydom et al. (2005) views interviews as vital in collecting data that might have been left in the questionnaire. To enhance reliability of this study, both structured and unstructured interviews were used to gather in-depth information.

iii. *Actual field observation*: The researcher also used observation technique in gathering data. This involves the use of checklist and photographs in gathering data on the practices/projects of collaboratives. Muzeza (2013) regard pictorial photographs as essential in capturing and understanding what happens in the environments where people inhabit (communities) – see Appendix.

iv. *Structured questionnaires*: Questionnaires were distributed to community members and other stakeholders in environmental collaboratives. Respondents were given enough time to respond to the questionnaire as Brace (2004) views that it increases objectivity and accuracy in answering the questions.

1.8.4.3 *Data Analysis:*

Collected data was analysed objectively and the researcher analysed possible explanatory variables to explain the variations, due to the comparative nature of the study of two case studies – Zondi and Gumbi communities. Analysing the data objectively will ensure full explanation of any possible variations (Muzeza, 2013).

1.8.4.4 *Mixed approach: Advantages and Disadvantages*

The multi-disciplinary nature of this study determined the need to use mixed approach, which Leedy and Ormrod (2005) argued that this facilitate the ultimate goal of research to lead to conclusions from a body of data and discover what was unknown. As such, this study was able to give explanations, descriptions and discussed issues from the experiences of the affected communities for clear understanding of the Somkhanda and Ngome Game Reserves.

It is important to highlight that there exist abundant literature that demonstrate a long-standing debate on whether one should rely on one approach or both. Lincoln and Guba (1985) argued that the two approaches (qualitative and quantitative) are incompatible. However, Reichadt and Cook (1997) put forward that each model is best suited to certain research questions. In many instances, a combination of the two approaches is most viable. In line with the mixed approach used in this study, Hussey (1997) buttresses this argument by advancing that it is possible for a qualitative paradigm to produce quantitative data and vice-versa. As noted by Patton (1990) and Bryman (1988), the nature and content of the research determines the use and application of the approaches. Thus, this influenced the choice of the two methodologies. Further to that, Berg (1989); and Goertz and LeCompt (1984) concur with the idea to use the two methodologies because a combination of the two approaches offer considerable benefits since the strengths of one method counter the weaknesses of the other approach. Based on these arguments, the researcher adopted the two methods, infused them in data collection, and applied the concurrency

approach in the presentation, analysis and discussion of findings. This would spur the reader to keep tracking the issues.

Clearly, the use of a mixed method has many advantages. It is argued that it allows researchers to gain a richer and contextual understanding of the phenomenon (Gray, 2009). More conveniently, they help one to analyse concrete cases in local particularity (Flick, 2006). In addition to that the approaches also help researchers to capture perceptions, views, actions, practices and the worldviews of stakeholders using a number of ways and techniques to capture generally complex issues, which Gray (2009) says are embedded in local contexts and should be investigated as such. To counterbalance information gaps in the research process, concurrency had the advantage of immediacy in revalidation of some of the issues arising during the research and enabled the bridging of the same gaps while complementing other techniques of data gathering.

1.9 Study Limitations

- Since a small sample was used in the study the results cannot be generalised to the entire rural communities in Africa although the methodologies used in this study can be replicated in future studies in the same context.

- The study only focused on tribal rural communities, it did not attempt to assess the role of social capital in conservation initiatives in urban areas. Thus, the results obtained might not be applicable in urban areas.

- Literacy level of the research participants was a challenge during the study as many people find it difficult to read the questionnaire in English or IsiZulu during the survey. To counter this limitation, an assistant researcher was employed to assist in reading the questionnaire and oral interviews. The assistant researcher was trained prior to field work.

- There was limited finance to conduct the research. The researcher did not obtain research funding from any institution. He therefore used his personal money during fieldwork.

1.10 Structure of the Study

This thesis is by publication, meaning that each chapter is based on the published article or is still under review (and in press). The first chapter is a frame of reference which starts with the introduction, the thematic consideration, the research aim and objectives, the justification and significance of the study. It also presents the methodology and the structure of the study. The second chapter is a literature review. It presents the paper that was published based on social capital in natural resources management in sub-Saharan Africa. It reviews existing literature in community social capital in the context of natural resources management from the global and regional (Southern Africa) perspectives. The third chapter presents the methodology used in the study. It focuses on the application of systemic-resilience thinking as a methodological imperative to enhance participation in natural resources management in Gumbi and Zondi communities in KwaZulu Natal. It improves the approaches to Environmental Operational Research in sub-Saharan Africa and globally. The fourth chapter presents results of the study. It examines the role of social capital dimensions in co-managing natural resources in game reserves located in Gumbi and Zondi communities, KwaZulu Natal, South Africa. The fifth chapter also presents the results of the study. It empowers local communities in pursuing ecotourism as a land-use option in land reformed communities of KwaZulu Natal. The sixth chapter provides an overall synthesis of the study results and draws conclusions followed by recommendations. Pointers of future research in community natural resources are also highlighted in this final chapter. Table 1.2 gives a summary of the critical issues that one expects from each chapter:

Table 1.2: Summary of chapters

Chapter Overview	Summary of issues covered
Chapter 1: Introduction. Introduction; overview; organization of chapters study background; study aim and objectives; study questions; the research problem, significance of the study, study geographical definitions and socio-ecological history of communities.	This contextualizes the study aim and objectives, the problem and its background, the research questions and the relevance of the study.
Chapter 2: Reviewing Social Capital. Social capital concept explained	Theoretical underpinnings of social capital in natural resources management are outlined.

Chapter 3: Methodological approaches in environmental operational research.	Examination of environmental management approaches. Development and application of systemic-resilience thinking approach in Environmental Operational Research.
Chapter 4: Social capital in natural resources management.	Concurrent presentation of findings, analysis and discussion on the role of social capital in managing natural resources in KZN.
Chapter 5: Ecotourism – a product of social capital.	Concurrent presentation of findings, analysis and discussion of ecotourism as a product of social capital in rural communities.
Chapter 6: Overall conclusions.	Synthesis, general conclusions, recommendations and future pointers

Source: Developed based on the chapters in the thesis.

CHAPTER TWO

REVIEWING SOCIAL CAPITAL: THE ROLE OF SOCIAL CAPITAL IN SUB-SAHARAN AFRICA[1]

ABSTRACT

Social capital is regarded as a critical asset for attaining common goals that may otherwise be unattainable in community-based schemes. A better understanding of social capital dimensions influencing stakeholder participation in collaborative management of natural resources is vital to help policy makers design programmes that would be more attractive to participants. This paper explores the role of community participation in natural resources management. It specifically examines the extent to which social capital can be instrumental in enhancing collaborative management of community conservation schemes in sub-Saharan Africa. We adopted a systematic review of the literature on the role of participation in CBNRM, which then forms the basis of a qualitative meta-analysis. The meta-analysis reveals several key social capital variables important for stakeholder participation in community based resource management schemes including; fairness of rules, dispute resolution procedures, inclusivity, sociability and open dialogue.

KEY WORDS: Collaborative environmental management, Community-based natural resources, Social capital, Stakeholder participation and Qualitative meta-analysis

2.1 Introduction

Community-Based Natural Resources Management (CBNRM) has been criticised as a programme that is largely driven by initiatives that are exogenous to local communities and often times promotes the agenda of external actors (Spires *et al*., 2014). Thus, there is now increased attention given to CBNRM programmes that are co-management driven in nature, and which seek the participation of all stakeholders in decision making (Cundill *et al*., 2013; Sessin-Dilascio, 2015). Co-management refers to a "*suite of resource management systems that seek to engage*

[1]This chapter is based on: Musavengane, R. and Simatele, D. 2016. Significance of Social Capital in Collaborative Management of Natural Resources in Sub-Saharan Rural Communities: A Qualitative Meta-analysis. **South African Geographical Journal, DOI:** http://dx.doi.org/10.1080/03736245.2016.1231628 (Published)

local communities and resource users within a nested hierarchy of governance" (McClenachan *et al*., 2015:26).

In efforts to address rapidly changing and uncertain environmental and social changes in communities that operate CBNRM schemes; conservation organisations and community groups need to overcome barriers to collaboration by creating governance structures that promote participatory decision making.

Carley and Christie (2000), for example, have identified some of the factors that limit environmental governance and emphasise tension between centralisation and decentralization forces as well as policy fragmentation as key factors. Reed *et al.* (2013) on the other hand, are of the view that, lack of appropriate institutional frameworks and fragmentations in national development and planning policies contributes to challenges in managing communal natural resources. Furthermore, Simatele and Simatele (2014), argue that environmental governance in sub-Saharan Africa has development as a top-down system of management, involving the elite bureaucrats and party loyalist, far removed from the reality of rural life, continuing to dictate how rural residents should manage their natural resources. As a result, what rural people know and what they might need, is of no concern (Simatele and Binns, 2012; Simatele and Simatele, 2014). Central government authorities, as observed by Cheru (2002) and supported by Binns *et, al.*, (2012), naively believe that they are better placed to make key decisions on environmental management and rural development than illiterate rural residents. As a result, poor policies and institutional failures have and continue to undermine the productivity of rural populations.

Collaborative management has its roots in the development of national and international policies which were popularised in the 1980s and 1990s (Anderson and Grove, 1987; Berkes *et al*., 1991; Reed *et al*., 2013; Spires *et al*., 2014). Chambers (1994) and Hove *et al*. (2013) stress the need of greater civic participation in decision making in an awakening to the growth of democratic and development discourses which empowers poor people through natural resource use. Simatele and Simatele (2014) support the importance of grassroots decision

making in managing common pools of resources, as it promotes collective cooperation of stakeholders. These developments occurred as a result of growing concerns on centralisation of the management of community natural resources (Musavengane and Matikiti, 2015; Simatele and Simatele, 2015). Consequently, this led to ecological approaches that emphasized the need of engaging all stakeholders in decision making and learning based approaches such as adaptive management (e.g. Communal Areas Management Programme for Indigenous Resources-CAMPFIRE) (Frost and Bond, 2008; Holdon and Otsuka, 2014).

From the above discussion, it can be noted that for efforts of CBNRM to be fruitful, it requires maximum support and participation from local communities. In other words social capital plays a pivotal role in the success of CBNRM projects (Liu *et al*., 2014). This paper therefore explores the role of community participation in natural resources management. It is specifically interested in examining the extent to which social capital can be instrumental in enhancing collaborative management of community conservation schemes in sub-Saharan Africa. The article commences with the theoretical consideration on the importance of social capital. Thereafter an outline of the methodological consideration is provided. Finally, the paper provides a meta-analysis on the role of social capital in CBNRM. The article is concluded with recommendations based on the discussions and pointers for future research.

2.2 The importance of social capital in Collaborative Community Based Natural Resources Management

It is evident from existing literature that any effective CBNRM initiative requires the support and full participation of local communities. Thus, through community participation, trust and social networks (or social capital) are developed which then act as a significant resource in the day to day operations and lifecycle of a CBNRM initiative, particularly in rural contexts (Liu *et al*., 2014). Social capital is centred on social networks and results into shared norms, values and understandings which then facilitate co-operation within and among groups of people (Baksh *et al*., 2013). Social capital comes from the interaction of many factors, and the combination of these factors form the way society reacts (Lyon 2000). It can therefore be defined as the networks of relationships that foster the development of resources and benefits

that can be used for the good of the individual as well as the collective (Floress et al., 2011).

Blewit (2008:78) argues that social capital as an operational concept *"denotes the relationship by which groups and individuals identify, communicate, network, build trust, enter into dialogue, resolve conflicts, and solve problems and realise collective and individual potential as agents of change and sustainable development*". Pretty and Smith, (2003) further argue that strong positive relationships within and between social groups can significantly lower the cost of working together, facilitate cooperation, reduce the likelihood that individuals will engage in activities that result in negative impacts to the group and leads to quicker innovation in response to new or previously unmet needs. Thus, social capital consists of three main features, trust, reciprocity and co-operation, and when these elements are strong within a community, they are more likely to enhance collaborative governance of CBNRM programmes in tribal communities (Zahra and McGehee, 2013).

In view of the above, social capital can be a critical asset for attaining common goals that may otherwise be unattainable. It is an important asset in the attainment of other productive assets such as financial, human and physical and can be a vital link in natural resource conservation (Moser and Felton, 2006; Ranjan, 2014). According to Jin (2013), social capital enhances social trust amongst conservation group members. It is suggested that, the higher the social trust the greater the level of complying towards attaining common goals (Chambers, 1994; Ranjan, 2014). Furthermore; social capital promotes institutional trust, which is an essential ingredient in managing common resources. Jin (2013) describes institutional trust as citizens' trust in legal organisations such as government and other community based governance structures.

Baksh *et al*., (2013) posit that, institutional trust is positively related to the perceived effectiveness of environmental policy and the legitimacy of both internal and external actors. Jones (2010) also associates social capital to high levels of compliance with social or environmental norms. Jones regards compliance as a vital parameter influencing environmentally responsible behaviour during the

application of an environmental policy in the co-managing of common pool resources (Jones, 2010). Moreover, Esterhuyse (2012) is of the view that, the general tendency to comply with social norms has an influence on individual behaviour, especially where citizens are indifferent on implementing environmental policies. In light of the above argument in CBNRM, it can be argued that social capital, anchors on networking which invigorates economic and social relations to avert continued degradation of natural resources and social crisis in rural areas (Moser & Felton, 2006; Moore *et al*. 2014).

2.3 Methodological consideration

The paper is a desk review which was conducted between March 2014 and September 2015 and involved a review of different pieces of literature obtained from various sources. We adopted a systematic review of the literature on the role of participation in CBRNM, which then forms the basis of a qualitative meta-analysis. The criteria used to determine inclusion of a study in meta-analysis are: (1) the studies that analysed the factors leading to success or failure of CBRNM schemes (2) studies that were geographically restricted to co-management of natural resources in sub-Saharan Africa only and (3) studies with a focus on factors influencing participation of community members in an CBRNM scheme based on the empirical analysis of primary data. The search for relevant literature involved an internet search using various academic search engines such as Scopus and Web of Science. Key words such as environmental collaborative, environmental governance and Community-Based Natural Resource Management (employing the Boolean search operator "AND" between key words to retrieve relevant literature), were entered in the search engine and several pieces (150 peer reviewed articles) of literature were generated. These were rapidly scanned through and it was purposely decided to select only those articles that focused on Community-Based Natural Resource Management and environmental resource management in a developing context.

The selection of these articles resulted in 60 peer reviewed articles and eight reports being appraised and evaluated for possible inclusion in the study. However, a further review of these articles resulted in the selection of 22 peer-reviewed journal articles focusing on environmental issues in sub-Saharan Africa being included in

the study. An additional 15 journal articles focusing on environmental issues in rural areas of southern Africa were selected and included in the study. Finally, 13 articles that focused on environmental governance in a South African context were identified and included in the study. In total, the first phase involved a comprehensive review of 50 peer reviewed journal articles. Finally 12 articles were selected for meta-analysis. Once the articles were selected, the identification of social capital variables affecting participation in CBNRM schemes was undertaken. More than 120 variables were collected from the selected studies (See Table 2.1 for selected studies). These variables were then classified into five major social capital dimensions: (a) g*roups and networks* (b) *trust and solidarity* (c) *collective action and cooperation* (d) *social cohesion and inclusion* and (e) *Information and communication*. Apart from social capital dimensions, we also included the empowerment and financial capital as a dimension since some of the articles reported a positive co-relationship between participation and financial benefits (See Table 2.2).

Table 2.1 Overview of the studies in the meta-analysis

Author (s)	***Countries***	***Sample***	***Sample year***	***Specific CBRM***
Dyer et al. (2014)	Zambia, Mozambique and DRC	***	2012	Participatory practices
Pienaar (2012)	Botswana	499	2007	Direct Incentives for Wildlife Conservation
Snyman (2012)	Namibia	79	2009	Ecotourism joint ventures
Katikiro (2015)	Tanzania	208	2012-2013	Challenges facing local communities marine areas
Mabuza et al. (2015)	Swaziland			Collective action in small-scale production
Sharaunga et al. (2013)	South Africa	153	***	Values of rural households and their participation
Songorwa (1999)	Tanzania	308	1996	Communities' interest in CBRM
Frost (2007)	Zimbabwe	48	***	Improved rural livelihoods
Meer & Schnurr (2013)	South Africa	***	***	The community versus CBNRM
Zulu (2008)	Malawi	58	2003	Community Forest Management in Southern Malawi: Solution or Part of the Problem?
Fritz-Vietta et al. (2009)	Madagascar	53	2005/2006 & 2008	CBRM in biosphere
Suich (2013)	Mozambique & Namibia	233	***	Economic incentives for sustaining Community-Based Natural Resource Management

Source: Developed during the data review process of this study

Table 2.2 Factors influencing participation of community members in CBRM in the literature

Social Capital Dimensions & Variables	Paper number											
	1	2	3	4	5	6	7	8	9	10	11	12
Groups & Networks												
Density of membership	X[a]	X[a]	X*		X*					X[a]		
Diversity of membership		X*			X[b,k]							
Democratic functioning	X[b]		X[f]	X**e			X[a]	X*	X**,g	X**,q,g	X[r, **u,o]	
Connections with other groups	X[c,d]			X**g	X*,aa,s	X*,i			X**,o			
Trust & Solidarity												
Fairness of rules	X*,b	X*,b	X*,p	X**z,g	X*,g,u		X**	X*	X**,g,q		X*	
Official procedures		X[p]				X*,u	X**m,g		X**,g	X**,x	X[g]	
Dispute resolution			X*	X**z			X**,t	X*,o		X**q		
Resource allocation			X*	X**	X*,q	X*	X**,m,t		X**,m,x,bb		X*	
Collective Action & Cooperation												
Community organised activities	X*,i				X*		X[z]				X*	X*
Infrastructure maintenance		X[a,n]						X*				
Public service provisions			X[n]	X**		X*						
Social cohesion & inclusion												
Sociability	X[o]		X*s		X*,b		X**,i			X*,h	X[b,o]	
Inclusion or exclusion in decision making	X*q		X*f	X**f,q	X*f	X*		X*	X**o		X*	
Confidence				X**g,h,q	X*		X**,h			X[u]	X*	
Violence							X**			X**q,u		
Information & Communication												
Open dialogue	X[a]	X[c]		X**		X*	X**		X*		X*	
Medium for knowledge and communication	X*,v,w	X[b]		X**	X*		X**,q,o	X*,v				
Downward flow of information	X*,g		X*g	X**	X*		X**,h			X**		
Upward flow of information	X*,g		X[q]	X**			X**			X[a]		
Economic Empowerment												
Income	X[j]	X[j]			X*,y,j,i	X*	X*,i	X[y]				X*,y
Business criteria							X*					X*
Training		X*,q,l	X*q,x	X**u,	X*	X*,x	X**,x	X*,o,x	X[a]		X*	X*

a. No significant effect

b. Ties to people who are similar in terms of their: demographic characteristics, family members, neighbours, close friends and work colleagues

c. ties to people who do not share the demographic characteristics in (b)
d. one's ties to people in position of authority
e. normative reciprocity
f. collective action
g. key institutions
h. norms of cooperation
i. reciprocity that surround attempts to work together to solve problems
j. resident as game reserve employee
k. household duties
l. positive economic expectations (i.e. training, employment)
m. community livestock
n. access to transport
o. traditional culture
p. legal system or law
q. power
r. conservation related organisations
s. social organisations
t. flexibility over usage of community natural resources
u. management processes
v. meetings
w. focus groups
x. ownership
y. household income
z. goodwill
aa. private company or group
bb. access to natural resources

***** Significant positive effect on community members' participation in CBRM

****** Significant negative effect on community members' participation in CBRM

Source: Developed during the data review process of this study

2.4 Meta-Analysis Findings

Groups and networks: Some of the variables used in the selected studies in measuring the level of social capital within groups and networks include; density membership, diversity membership, democratic functioning and group connections. Dyer *et al*. (2014), Zulu (2008) and Pienaar *et al*. (2013) found out that density of membership of CBNRM groups has no significant influence on the networking of group members. In this context, density membership refers to number of membership of each household in existing groups and scope of the group (physical operational boundaries). In his study on community forest management in Malawi, Zulu (2008) found out that there was no co-relationship between networking of group members and the actual numbers of group members. Furthermore, in their assessment of participatory practices in CBNRM, Dyer *et al*. (2014) found out that the economic status of group members had no effect in group participation. In this respect, all members regard each other as equal in group decision making process. On the other hand, Snyman (2012) established that membership density can either positively or negatively affect group collective action. For instance, Snyman's research on ecotourism joint ventures in Namibia suggests that achieving medium or higher education levels positively influence community members' willingness to participate in CBNRM. Taken together, these results suggest that group density membership, should not be ignored as it can influence the networking of members. However, it should be appreciated that groups with a considerable number of people tend to have a wide pool of information to use in decision making (Snyman, 2012).In the same vein, Pienaar *et al.* (2013) and Mabuza *et al.* (2015), observed that groups with high diversity tend to share more experiences which in-turn motivate many people to join and participate. Overall, there seems to be some evidence to indicate that the greater the diversity in group composition the higher the probability of attaining positive output through sharing experiences.

Polman and Slangen (2008) point out that like other social networks, conservation organisations are important catalysts for community members' behaviour towards CBNRM schemes. The role of conservation related organisations is found to be heterogeneous in the selected studies. For example, the historical connectivity between certain conservation organisations and previous oppressive governments

negatively affect the willingness of community members to participate in CBNRM initiatives as community members lack trust in such organisations (Meer & Schnurr, 2013). In contrast, in their study on mushroom production Mabuza and colleagues argue that affiliation to conservation organisations increased mushroom yield and fostered social cohesion. For example, mushroom production provided a base for the formation of other community organisations. This is reflected by over 47% of the respondents who reported to be affiliated to other community organisations, besides being members of mushroom producing groups (Mabuza *et al*., 2015). In view of all that has been mentioned so far, one may suppose that interacting with people from different groups increases trust among community members. The importance of the collective effort is vividly articulated by a common statement cited by Simatele and Binns (2008:11): 'W*hatever is done for us without us is not ours*' Thus, it is important to have support of community members in CBNRM projects.

Trust, solidarity and fairness of rules: Nine of the twelve studies found that factors on the fairness of rules have a significant effect on community's willingness to participate in CBNRM initiatives. Songorwa (1999), Meer and Schnurr (2013) and Katikiro *et al*. (2015) found that lack of fair rules negatively affects trust and solidarity of community members. Bodin and Crona (2008) included the variable of 'fair rules' in their study on the role of social capital and leadership in a rural fishing community in Kenya. They presented each villager with a hypothetical scenario in which they encountered a conflict that they could not resolve themselves. They also measured villagers' willingness to monitor and report breaking of fishing rules. The idea was to find out if these behavioural characteristics could be interpreted as an indication of their respect for common rules and practices as well as the sense of community expressed by villagers. A great part of the community has adopted a rather ''laissez-faire''attitude. Bodin and Crona acknowledge that the unwillingness to report others may instead be attributed to the presence of strong social capital developed through strong norms. As a result of the existence of rules, community members participated more in the fishing project and increased their trust in the scheme. In addition to this, it has been observed in other studies that higher levels of trust positively affect community members' willingness to participate in CBNRM

because this makes the decision less risky and increases productivity (Snyman, 2012; Pienaar, *et al*., 2013 and Dyer *et al*., 2014). In a study conducted by Fritz-Vietta (2009), it was shown that local rules and regulations positively encouraged community members to participate in the bio-reserves in Madagascar.

Furthermore, Songorwa (1999) and Zulu (2008) found out that official procedures in the management of CBNRM schemes have significant effects on community's willingness to participate. Both studies reported that lack of devolution of power and authority negatively affected management of the schemes. For example, in his CAMPFIRE research, Songorwa (1999:2075) observed that "I*nstead of devolving authority and responsibility to communities, the program created a new bureaucratic layer which became too big for the already conflict-ridden communities to manage and which failed to serve their interests".* For instance, corruption grossly affected the CBNR programme and there was mismanagement and irresponsibility in the created community. Zulu (2008) further argues that the de-facto devolution of authority by the state to committees instead of communities may be self-serving and discourage community participation.

It can thus be suggested that links between dispute resolution criteria and community members is important in determining community participation in CBNRM initiatives. For example, Songorwa (1999) and Zulu (2008) found that unclear dispute resolution processes increase the marginal probability of non-participation in CBNRM schemes as there will be lack of conflict resolution action plans to achieve socio-ecological goals. In addition to this observation, Songorwa (2009) and Katikiro (2015) suggested that continual lack of dispute resolution procedures hinders progress in participation as community members will feel neglected and results in loss of goodwill and eventually leads to community dissolution. On the other hand, Frost *et al.* (2007) and Snyman (2012) highlighted that having clear dispute resolution policies can be beneficial, as it instils trust among stakeholders. However, if implementation of dispute policies is not done properly it may aggravate disagreements. For instance, in their study in Zimbabwe, Frost *et al*. (2007) revealed that the CBNRM scheme eventually closed down

because the committee that was set to resolve problems paid much attention to other issues that were not at the core of the CBNRM.

Resource allocation and accessibility also influence the participation of community members in CBNRM. Fritz-Vietta *et al.* (2009) and Mabuza *et al*. (2015) reported that fair distribution and accessibility of natural resources increases participation of community members in CBNRM schemes. There were similar findings in a community where everyone had access to fishing facilities and space; people were willing to work together in a communal CBNRM project as a result (Bodin and Crona, 2008). In contrast to that, Songorwa (1999), Meer and Schnurr (2013) and Katikiro *et al*. (2015) found that lack of access to common pool of natural resources decreased participation and resulted in violence as people felt powerless and unsafe in their own community. Together these studies provide important insights into the significance of trust, solidarity and fairness in pursuing common conservation goals in rural areas.

Social inclusion and cohesion (and collective action): Variables related to social inclusion and cohesion have also been identified as significant in explaining the decision to participate in CBNRMs. According to Fritz-Vietta *et al.* (2009) and Dyer *et al*. (2014) community members who voluntarily participate in social events are more willing to do the same in CBNRM programmes. For example, Fritz-Vietta and colleagues highlighted the importance of the World Environment Day (5 June) where women and men of all age groups gather for dancing and social networking. Similarly, Snyman (2012) further emphasised the importance of conservation or social organisations' involvement or support in these social events as they build group morale.

Inclusion or exclusion is also a crux factor in determining the cohesiveness and participation of community members. In their research, Mabuza and colleagues observed that inclusion of majority of stakeholders in the entire process of CBNRM is beneficial in ensuring community sustainability (Mabuza *et al.,* 2015). They noted that inclusion of community members from the onset of the mushroom project yielded better results compared to another model where people were not included

from the beginning. However, Katikiro (2015) found out that exclusion of the underprivileged, voiceless or powerless people discourages community participation in CBNRM (43% locals were excluded). Further studies revealed that important attributes such as social networks and inter-relationships among stakeholders if neglected cause negative resilience against CBNRMs (Meer and Schnurr, 2013; Katikiro, 2015). This will result in the community losing confidence in CBNRM schemes and eventually aggravate violence towards any project of such nature as observed by Songorwa (1999) and Ngubane and Brooks (2012).

Information and communication: According to Pienaar *et al*. (2013) and Dyer *et al.* (2014) informing community members from the onset of CBNRM project encourages participation. Furthermore making information available to all CBNRM stakeholders eliminates speculation and rumour which can be a source of conflict (Dyer *et al*., 2014). In congruence to making information available, open dialogue provides a platform for all stakeholders to access CBNRM information. In their study, Pienaar *et al*. (2013) found that an open dialogue provides everyone a chance to share their views, concerns and express their feelings towards CBNRM projects. Furthermore, Meer and Schnurr (2013) observed that, some of the mistrust in communities with a history of suppression emanates from lack of open dialogue. In this case, local people disinclined to cooperate with a local conservation organisation because of its historical links to the Apartheid regime. Such responses are born of a culture of resistance due to a long-lived suppressive era and that can be cleared through open dialogue (Meer and Schnurr, 2013).

Mabuza *et al*. (2015) highlighted that both downward and upward flow of information has effect on the participation of community members in CBNRM projects. For example, Dyer *et al*. (2014) established that, the participation of community members was enhanced by the meetings which were arranged from the onset of the project where information was exchanged from 'up to down' and 'down to up'. However, Songorwa (1999) associates the low participation of community members to downward flow of information which was deemed as authoritarian management style. In order to avoid community resistance towards CBNRM,

Snyman suggests that, there should be equal flow of information from those on top to those at the bottom and vice-versa (Snyman, 2012).

Economic Empowerment: After analysing all the articles included in this meta-analysis, the three significant economic variables found are; income, business opportunity and training. Seven articles revealed that there is a positive co-relationship between income and participation in CBNRM schemes. Suich (2013) and Sharaunga et al. (2013) observed that community members tend to positively participate if they perceive the accruement of economic benefits. Helen Suich's comparative study on the effectiveness of economic incentives for sustaining CBNRM between Tchuma Tchato (the first CBNRM in Mozambique) and Kwandu Conservancy in the Caprivi Region of Namibia provide interesting results. In Tchuma Tchato, 81% identified economic benefits or the potential of CBNRM activities to generate benefits and 77% in Kwandu stated shared similar perceptions (Suich, 2013). Both Kwandu and Tchuma Tchato projects managed to partially meet expectations of the majority which motivated them to continue participating. For example, local community members were employed and trained by the CBRM schemes in an effort to empower local communities (Suich, 2013). Other findings by Snyman (2012), Pienaar *et al*. (2013) and Mabuza *et al*. (2015), suggest that if people receive the right training they can start their projects. Regardless of this observation, Mabuza (2015) noted with concern the exclusion of the poor and the weak in obtaining training as the elite of the community tend to be awarded an opportunity to train first. Meer and Schnurr (2013) associated the cause of violence in some CBNRM schemes to such unfair or discriminatory practices when allocating benefits.

2.5 Discussion and Conclusions

One common finding on the above meta-analysis is that, pursuance of CBNRM schemes should benefit the local people and their communities. However, if less investment is made on social networks, the intended results will be disappointing as reflected in some of the reviewed case studies. This finding is in accord with recent studies indicating that, social capital is perceived to have a critical role in shaping the future of CBNRM initiatives in communities which commonly own

natural resources (Musavengane and Matikiti, 2015). Similarly, Liu *et al*. (2014) in their study in China on the role in social capital in encouraging residents' pro-environmental behaviours in Community-Based Ecotourism (CBET) found out that social capital enhances the understanding of pro-environmental behaviours in CBET's where community members have limited means to economic emancipation. Their results seem to be consistent with our meta-analysis findings on the correlation between financial concerns and social capital; where cognitive social capital is believed to have some influence on the pro-environmental behaviours of local people.

From a number of case studies engaged with in the contemporary paper, it is observed that community members tend to distance themselves from CBNRM schemes that exclude them in decision making. Simatele and Simatele (2008) and Muller (2012) assert that if the citizenry is neglected in managing community development projects, it will be difficult to develop successful locally-driven and tailor-made CBNRM models. It can thus, be suggested that in order to propagate increased participation in community projects, all interested stakeholders must be mobilised and organised into building blocks that can then input into the running and management of CBNRM schemes. Through the involvement and increased participation of all stakeholders, one would speculate that the management of common pool resources, which often are not easy to manage, can result in an effective and sustainable use of resources. Muller (2012) holds the view that, involvement of all stakeholders is a form of building cognitive social capital. Liu, *et al*. (2014) on the other hand see cognitive social capital as subjective since it focuses on the intangibles such as values, attitudes, norms and beliefs among individuals; as well as trust, perceptions of support, sharing and reciprocity among members of a specific populace. Chowdhury *et al. (*2013) use the term 'cognitive social capital' to refer to the feelings of people while structural social capital relates to their actions. It is possible, therefore, that these two types of social capital are complementary and enhance community development and effective pursuance of CBRM. The reviewed CBNRM cases reveal the importance of both cognitive and social capital and possible implications of down-up management approach in promoting community participation.

In this study, social capital has been reported to be instrumental in promoting participation of CBNRM. This finding has important implications for developing sustainable community based projects through generation of shared norms and rules as this enhances trust and reciprocity (Jones, 2005; Liu *et al*., 2014). A recent study by Kencan and Martha (2014) on Community-Based Ecotourism (CBET) report that strong social capital has the ability to foster strong relationships in managing CBET ventures. For example, Kencan and Martha observed that social capital can create a welcoming environment for tourists visiting the community. In the same vein, Pongponrat and Chantradoan (2012) in their study on the mechanism of social capital in community participation in Thailand note that, social capital can act as a mechanism that pushes and pulls people to participate in their local tourism development. This view is supported by Muller (2012) who writes that the impact level of social capital in CBRM is reflected by positive fruits of good governance: participation, inclusiveness, responsiveness, equity, rule of law, transparency, accountability and freedom of information. It is interesting to note that in all twelve cases of this study, it was highlighted that, trust and norms of reciprocity increase the willingness of both internal and external stakeholders to cooperate because people have confidence to invest in collective activities, knowing that others will also do so. It can therefore be assumed that as a result of collective action, social capital may accumulate because it is created by well-knit processes of working together (Naughton, 2014).

In conclusion, the purpose of the current study was to explore the role of community participation in natural resources management. It specifically examined the extent to which social capital can be instrumental in enhancing collaborative management of community-based conservation schemes in sub-Saharan Africa. This study has identified some influential social capital variables which are key factors in Collaborative Community-Based Natural Resources Management (CCBNRM) within sub-Saharan Africa. One of the most significant factors to emerge in this study is trust and solidarity, cited as the crux of CCBNRM by articles reviewed. Other enhancers of community participation identified are factors such as fair rules, official dispute resolution procedures and equal resource allocation.

Similarly conservation schemes which emphasise on inclusivity of all stakeholders in decision making also exhibit high levels of participation amongst stakeholders. These findings suggest that in general policies that promote trust and solidarity and social cohesion and inclusion could therefore have positive effect on bringing community members and other stakeholders into CCBNRM projects.

Findings on density and diversity of members in groups and networks varied across studies. Regardless of this observation, in general there is an agreement that the groups with diverse members will encounter some differential challenges but if managed properly will create unity and cultivate positive participatory behaviours. Further findings on the democratic function variables and connectivity with other conservation groups seem to suggest that policy makers should take this as an opportunity to encourage a greater involvement of experienced external actors in advising local CBNRM schemes with limited knowledge or skills. However, the decisions of conservation schemes should be home-grown or locally developed by community members. Despite the frequent exclusion of rural population in participating in processes that have a direct influence on their lives, it has been observed that there is an urgent need to promote a strong and genuine grassroots grown community participation in environmental management decision making (Hove *et al*. 2013; Oteng-Ababio *et, al*. 2013).

Another important practical implication to be considered by policy makers is the interplay between social capacity and economic motivation. The empirical evidence obtained through meta-analysis of various pieces of literature suggests that the economic benefits that will accrue to local community members from CBNRM schemes can serve as motivators in engaging in conservation programmes especially in Southern Africa. In addition to that, when community members benefit economically through CBNRM they tend to develop a more positive attitude toward protection of natural resources. More importantly, economic motivators act as drivers of the cognitive and structural social capital in sub-Saharan Africa (Musavengane & Simatele, 2016; Muller, 2012). For instance, lack of understanding on the importance of social capital among community members can be offset by the derived economic benefits. In the same vein, it is of essence for policy makers to

appreciate the strong links that exist between cognitive and structural social capital. For instance, the meta-analysis seems to suggest that trust (*cognitive indicator*) and norms (*structural indicator*) have a strong relationship. If local people lose trust in the leadership structure for a long period they tend to develop aggressive norms which will further negatively impact adherence to rules (*cognitive indicator*) and cohesion (*structural indicator*). Policy makers should also consider that the strength of cognitive and structural social capital determine the links a community creates with external organisations (bridging capital) in resource accumulation.

The findings from this study make several contributions to the current literature. Firstly, it provides a better understanding of social capital variables influencing community participation in conservation activities when designing or developing future CCBNRM projects. Secondly, from a broader perspective, the study suggests that national rural development policy makers need to promote greater community participation when formulating policies on local natural resources. The most possible implication of this is that, it minimises unforeseen conflicts through provision of a strong structure to work on. Thirdly, it provides a possible framework for empowering local people and their communities to enhance participation in CCBRM.

Further research should be conducted to determine the effectiveness of social capital in different regions of Africa as the results obtained might not be applicable to all parts of the continent. Further work also needs to be done to establish whether higher social capital has negative effects in managing common natural resources. It would be more interesting to examine more closely the links between community social capital and development of rural communities through conservation. It is recommended for future research to explore the links between community participation and the role of social capital in Community-Based Natural Resource Management.

CHAPTER THREE

METHODOLOGICAL CONSIDERATIONS[2]

ABSTRACT

This paper reviews conceptual and methodological approaches for Environmental Operational Research (EOR) associated with participatory Community Based Natural Resource Management (CBNRM) in tribal communities. The analysis focus on research that uses a socio-ecological learning approach to study community participation in CBNRM. We firstly deconstructed the methodological choices reported in current EOR and social learning literature to map out the prevailing epistemological orientation of eco-social research in participatory CBNRM. Secondly, using the case of Gumbi and Zondi communities in Umvoti and uPhongolo municipalities of KwaZulu Natal (KZN, South Africa) respectively, the paper proposes systemic-resilience thinking participatory model to enhance EOR practices in tribal communities. It is argued in the paper that in tribal areas there is an absence of a coherent and broad-based approach to CBNRM in tribal communities that claimed their land. Empirical evidence suggests that contemporary participatory collaborative Community-Based Natural Resources Management approaches developed on a global scale and local contexts different from Gumbi and Zondi communities have proved to be inadequate to address local collaborative management challenges. In view of this, a possible EOR methodological framework focusing on the formulation of appropriate participatory approaches for CBNRM using systemic-resilience thinking to enhance natural resources management was developed.

Key words: Environmental Operational Research, Participative approaches, Social capital, Collaborative environmental management, Tribal communities and Systemic-resilience thinking

3.1 Introduction

Despite the frequent exclusion of rural population in participating in processes that have a direct influence on their lives, it has been observed that there is an urgent need to promote a strong and genuine grassroots grown community participation in environmental management decision making (Hove *et al*. 2013;Oteng-Ababio*et, al*. 2013). It is argued that community participation is at the heart of Environmental Operational Research (EOR) and Environmental

[2]This chapter is based on: Musavengane, R. and Simatele, D. Forthcoming. Systemic Resilience Thinking in Environmental Operational Research: A participatory modelling approach for community-based natural resource management in South Africa. **Applied Geography** (Under Review)

Governance (EG) as it facilitates and promotes a sense of ownership in any decision making and social development issues of a society (Midgley and Reynolds, 2004; Child and Jones, 2006). Therefore, the quest for more effective EOR and EG approaches in collaborative natural resource management has led to the development of new frameworks for analysis and understanding such socio-ecological systems, deliberative processes and participatory approaches (Ostrom, 2010; Yang and Wu, 2009; Hager and Wagenaar, 2003). Social learning has been regarded as a key to participatory Environmental Operational Research (EOR) by most researchers in both urban and rural contexts where there is a shared understanding and diverse interests (Chambers, 1988, 1994; Rodela *et al*. 2012; Ison *et al*., 2013; Midgley *et al*., 2013). Nevertheless, despite being the subject of increased research effort, both participatory modelling and social learning is yet to establish itself as a well understood 'contemporary' governance mechanism in EOR in tribal communities that claimed their land.

This precipitated a great shift in the rhetoric of rural development than in its practice as resembled by dramatic changes in participatory approaches. For example, the Rural Participatory Appraisals (RPA) changed from top-down to bottom-up, from centralization to localization and from blue print to social learning (Chambers, 1994; Simatele and Simatele, 2014). These changes led to the formation and growth of different social learning modes which distanced themselves from extractive survey questionnaires to more in-depth inquiry whereby local rural or urban people are actively involved in the process (Chambers, 1994). However, social learning (including its methods) remains widely contested as both a concept and a set of practices (Armitage *et al*., 2008; Reed *et al*., 2010; Ison *et al*., 2013). Beer et al (2010) have questioned whether social learning is about helping people to develop trust and shared understanding, or about collaborative learning, with a focus on how people learn in groups? Social learning as any other participatory model leaves us with a question on "*how much potential these approaches and methods have for making participation more practical and the rhetoric more real*" particularly in tribal communities of sub-Saharan Africa (Chambers, 1994:953).

Using systemic and resilience thinking as conceptual and environmental operational frameworks, this paper reviews the current epistemological orientation of eco-social research in participatory Community-Based Natural Resources Management (CBNRM) with the aim of informing future EOR. The attempt is to suggest other ways of knowing and thinking about CBNRM and formulate alternative methodological considerations for developing EOR systems. An attempt is made to develop strategies for sustainable natural resources use and management in sub-Saharan rural areas and other developing countries using the case of Zondi and Gumbi tribal communities in KwaZulu Natal Province of South Africa. According to Stockholm Resilience Centre (SRC, 2014:3) "*Resilience is the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. It is about the capacity to use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking. Resilience thinking embraces learning, diversity and above all the belief that humans and nature are strongly coupled to the point that they should be conceived as one social ecological system*." On the other hand, systemic thinking is a technique for gaining situation-wide insights into complex situations and problems. It combines both analytical and synthetical thinking in resolving collaborative conservation challenges (Bartlett, 2001).

EOR has yet to be fully used in managing environments in tribal communities that went through land reform in developing nations. To the extent Operational Research (OR) has been used in developed nations, it focused much on the reciprocal relationships between supply chain and environmental management (Kleindorfer*et al*., 2005). The literature has suggested the need to focus on the role of EOR in sustainable utilisation of community natural resources through stakeholder participation (Midgley and Reynolds, 2004). In light of this observation, the article will inform on EOR practice, specifically in land reformed communities in developing nations.

The paper will begin by outlining the departure point of EOR in tribal communities. This will be followed by a description of methodological considerations followed in the study. Thereafter, a contextual analysis of EOR participatory methods will be done. The paper will end with specific reflections

on the Environmental Operational Research in CBNRM, stakeholder participation and sustainable development.

3.2 Significance of Environmental Operational Research in tribal communities

Midgley and Reynolds (2004) posits that the general success of OR requires both Environmental and Community OR practitioners to look beyond their own areas and collaborate with others in attaining a common goal. They emphasised that, a divergent of interests (if it happens) will not threaten EOR and Community Operational Researchers (COR) practitioners' main goals in their focus areas instead it can be a valuable learning source when groups respect autonomy of each other. This view is supported by White and Lee (2009) who write that an expansive scope is required for OR to adequately deal with both environmental and social operational elements. Thus, there is need to address the environmental wicked in the broader inter-generational context especially in tribal contexts through collaborative efforts of both EOR and COR practitioners.

In their seminal study in this area of OR, Midgley and Reynolds (2004) note that, the importance of multi-dimensional and complexity of environmental issues and associated political ramifications require co-efforts of both COR and EOR practitioners. Furthermore, there is consensus among social scientists that the economy is on an unsustainable trajectory due to overuse of both natural and non-renewable resources which has negative ecological footprint (e.g., Meadows et al., 1992). Thus, EOR emphasises much on citizenry participation in environmental management to attain sustainable community development (codified in Agenda 21) (Midgley & Reynolds, 2004).

At the centre of successful Community-Based Natural Resource Management in tribal areas, is the need for sustainable development and sustainable livelihoods (Musavengane & Matikiti, 2015). This assertion is supported by international policies such as Agenda 21 which declares a commitment to poverty eradication and reduction of disparities in living standards. Although sustainable development anchors on the common three operational pillars – social, environmental and economic, most of the ORs tend to put greater attention on

the environment (White & Lee, 2009). For example, Bloemhof-Ruward *et al*. (1995) provided a consolidated analysis on the reciprocal links between the supply and environmental chains. Their study revealed that in order to reduce negative environmental feedbacks, the adoption of different Operational Research methodologies and interventions is important. Although extensive research has been carried out on the dimension of environment in OR, no single study that we could find exists on the EOR in tribal communities that were established through land reform processes.

In our view, EOR has the potential to foster dynamic and systemic applied practice of sustainable Community-Based Natural Resource Management in tribal areas where uncertainty is high due to diverse anticipations and values. Midgley and Reynolds (2004) reinforce this in their study where they argued that both sustainable development and OR share three fundamental characteristics. Firstly, they both have 'wide boundaries' – referring to multiple and conflicting values and different clientele. Secondly, both schools foster 'interdisciplinarity' in problem solving. Thirdly, the two schools are concerned with the 'design' and 'implementation' of planning approaches. Their study found out that, in both schools, three generic issues seem to recur- '*complexity and uncertainty*' due to unpredictability of social and natural dilemmas in the communities, '*political effects*' in particular on those non-involved in planning processes; and '*multiple and conflicting values*' of stakeholders involved in the planning. We regard their study as comprehensive in EOR when addressing complex enviro-social situations such as those in tribal areas pursuing sustainable community development. The following section will therefore discuss the methodological considerations followed in this paper.

3.3 Methodological consideration

This paper's methodological positionality is interpretive in nature, and its operational framework base is qualitative research. It uses systemic-resilience thinking and socio-ecological learning approach to analyse the participatory relationship and effects in managing community natural resources in sub-Saharan Africa. Much focus was drawn in Umvoti and uPhongolo tribal

communities of KwaZulu Natal (KZN), South Africa; in particular Zondi and Gumbi communities respectively. As this research is mainly qualitative in nature, it is vital to first clarify philosophical underpinnings adopted in this EOR study.

Ritchie, *et al. (*2013) point out that, in a qualitative research there is no single, accepted way of obtaining data. This view is supported by Denzin and Lincoln (2011:6) who writes that, qualitative research "*has no theory or paradigm that is distinctively its own….Nor does it have a distinct set of methods or practices that are entirely its own*". Based on this, it can therefore be concluded that, the way the researcher conducts the study depends upon a range of factors. Firstly; Researcher's *ontology,* which includes beliefs about the social nature of the environment which might influence the way he or she will conduct the research process. Secondly; *epistemology*, which entails the nature of knowledge and how it can be acquired might also influence the gathering of data on the role of EOR in collaborative environmental governance in Zondi and Gumbi rural communities in KZN.

Furthermore, as explained in chapter 1, the researcher subscribes to critical or transcendental realism school of thought which asserts that reality consists of three levels (see Chapter 1 for details). Thus, the researcher acknowledges the critical importance of participants' own interpretations of the issues of social capital in collaborative environmental governance. The researcher also believes that, the varying vantage points will yield different types of understanding of social capital and EOR in both Gumbi and Zondi communities. Our own position is that external reality is itself diverse and multifaceted and it is the aim of this research to capture that reality in all its complexity and depth to enhance EOR.

Moreover, an 'inquiry pathway' is another key organising metaphor for our methodological approach. We follow Churchman who speaks of inquiry as: "*Reflective learning in the literal sense: it is the thinking about thinking, doubting about doubting, learning about learning, and (hopefully) knowing about knowing*" (Churchman, 1971:17). In addition, Churchman describes 'inquiry' as an action

which produces knowledge. In other words, inquiry facilitates a particular way of knowing which, when enacted, makes a difference. In the same vein, Oliver (2005) suggests that, inquiry pathway is not something pre-existing to be discovered, but something that is laid down in the doing, where the challenge is to be as reflexively rigorous as possible in execution. Thus, the methodological implication of the inquiry pathway adopted in our study is 'meta' inquiry; meaning second-order inquiry (i.e. an inquiry into an inquiry). It was approached by inquiring from all stakeholders in both Zondi and Gumbi communities – '*face to face inquiry reflections'.*

In light of the above, primary data was collected between December 2014 and February 2015 from Gumbi community which is located in uPhongolo Local Municipality in the Zululand District Municipality in Northern KwaZulu Natal Province. The other data was obtained from the Zondi Community which is located in Umvoti Local Municipality under Umzinyathi District, situated north of Greytown, Kwa-Zulu Natal, South Africa (See Fig. 1.1). The two sites are tribal areas and own a common pool of natural resources and game reserves. The Gumbi and Zondi community owns Somkhanda Game Reserve (SGR) and Ngome Game Reserve (NGR) respectively. The communities thus, provide a good scenario for a study of this nature, EOR, in terms of comprehending the interactions of social capital in natural resource management and ecological conservation.

Gumbi and Zondi communities have approximately 312 and 415 households respectively. A sample population of 30 households from Gumbi and 23 households from Zondi was selected to ensure an appropriate presentation of the population. A systematic random sampling procedure was then applied across the two study locations using the equation:

$$k = \frac{N}{n}$$

Where *n* is the sample size, and *N* is the population size

The first households in both locations were purposely selected and then specific intervals were applied to select the actual households. In the case of Gumbi, every tenth household was selected and in Zondi it was every 18th household that was selected for inclusion in the study. In addition to this, the snowball technique was applied to identify and engage with key actors such as policy makers, who often function as leaders of environmental collaboratives; local government officials, project coordinators and managers, local community leaders and chiefs and other Non-Governmental Organisations operating within the study locations. Data collection tools included semi-structured interviews, focus group discussions and personal observations.

The study's methodology further borrows from Midgley and Reynolds's Critical Systems Thinking (CST); where they identified CST's three main principles as:

- *Improvement* – in terms of power relations within the local communities.
- *Boundary Critique* – in the context of our study, this involves constant questioning of methodological approaches used in Community-Based Natural Resources Management and exploration of values and boundary judgements; and
- *Methodological Pluralism* - implies learning from past methodologies and drawing developing appropriate methods to suit the situation (Midgley & Reynolds, 2004)

Combined together, these principles are used in developing a systemic-resilience model that enhances community participation and informs on future Environmental Operational Research (EOR).

In addition, a rapid appraisal of existing literature on environmental participatory methodologies was extensively reviewed in order to assess the effectiveness of these methods in natural resources management. A total of 43 reviewed articles or journals were consulted. These were obtained from major research search engines such as Scopus and Web of Science and also internet searches where key words such as collaborative, participatory and rural

appraisal were used. The conceptual model focused on the formulation of alternative solutions for collaborative natural resources management through systematic and resilience thinking and the development of Causal Flaws in order to have a clear understanding of environmental operational processes and systems that underlie participatory natural resource management in co-managed game reserves in KwaZulu Natal.

3.4 Contextual analysis of Environmental OR participatory methods

The past two decades have seen the re-emergence of numerous Community-Based Natural Resource Management programmes aimed at addressing what is referred to as wicked or environmental challenges that have resulted from increased natural episodes and anthropogenic activities (Chambers, 1994; Colvin *et al.*, 2014). As a result of this, different methodological approaches were developed and implemented in an effort to resolve such challenges in managing community based natural resources (Chambers, 1994). Ison *et al*., (2013) note top-down approach as the first method that was adopted by environmental practitioners. The approach entails conveying decisions from the top ladder or leadership to the grassroot community members without following any consultative processes. However, d'Aquino and Bah (2013) point out that, the approach was deemed unpopular with local communities due to their exclusion from making decisions on issues that directly affected them which resulted in costly implementation of decisions.

Thus, this led to the shift from top-down to bottom-up, centralisation to decentralization and blueprint to learning process (Chambers, 1994). It is a widely held view that these changes led to the development of various learning modes and emergence of diverse participatory models (Rist & Moen, 2013). This view is supported by Probst *et al*. (2003) who write that, a core criteria for participatory approaches is an interaction process between local and external actors to 'co-create' solutions in managing communal resources. Probst and colleagues re-classified Briggs (1989) classification of linkages between social actors according to varying degrees of involvement in (and control over) decision making. The value of ownership was used as key to classification in an

effort to answer the most asked question in collaborative management: "W*ho is participating in whose process*?" Three forms of participation were identified in an effort to answer this question. Firstly, *Contractual participation*, whereby one social actor has legal right to solely make decision with minimum consultation. Secondly, C*onsultative participation* is when most of the key decisions are kept with one stakeholder group and maximum consultations should be done with all other groups. When different actors collaborate and share ideas, knowledge in decision making, the process is known as collaborative participation. Thirdly, C*ollegiate participation* which refers to a process whereby 'different actors work together as colleagues or partners. In collegiate participation, ownership and responsibility are equally distributed among partners, and decisions are made by agreement or consensus among all actors' (Probst *et al*., 2003).

It has commonly been assumed that, collegiate participation gave rise to social learning approaches in resolving challenges in Community-Based Natural Resources Management (Probst *et al*., 2003). However, Ison *et al*., (2013) argue that, most researchers mistakenly (if not implicitly) equate social learning with consensus. For example, in their research on breaking down traditions in agriculture, Ison and Russell (2007) found out that consensus might negate follow-up action because the emotional enthusiasm to participate only dwells within those who have the consensus position from the beginning. Furthermore, Van den Hove (2006) is of the view that, a focus on consensus ignores the legitimacy of negotiation and the use of conflict in finding solutions, limiting the effectiveness of participatory learning approaches. Thus, this suggests the need to focus more on accommodation of differences, based on explication and valuing differences instead of focusing on consensus. Similarly, Schusler *et al*. (2003) highlighted that, social learning can result in (i) participants learning wrong information and perceiving other people wrongly and (ii) subversion of an open discussion by more powerful participants. In their critical review of the theory and application of social learning in participatory natural resource management processes, Muro and Jeffrey (2008) conclude that, social learning participants rarely overcome their differences in an effort to acquire shared understanding. This current paper therefore draws more attention to collaborative and

consultative participation as they are more prevalent in Gumbi and Zondi communities.

In one of his three-part series of examining Participatory Rural Appraisal (PRA) methods, Robert Chambers points out; activist participatory research, agroecosystem analysis, applied anthropology, field research on farming systems and rapid rural appraisal, as the main source of participatory research (Chambers, 1994). A critical review into the three sources provides an understanding of PRA. Firstly, '*Activist Participatory*' (AP) research pertains to a family of methods and approaches which uses dialogue to foster awareness and confidence in people. Freire (1968) suggests that, poor and exploited people should participate in finding solutions to their own problems. In the same vein, Simatele and Simatele (2014) suggest that, outside stakeholders should strive to overcome temptation of dominating the decision making process. Likewise, Chambers (1994) points out that 'AP' research views outsiders only as convenors, catalysts or facilitators, and that the marginalised must be empowered. Nevertheless, in their observation, Mendoza and Martins (2006) found out that facilitation seems to be the only feature exhibited by current participatory approaches. Secondly, '*Agroecosystem Analysis*' (AA), developed in Thailand, draws on systems and ecological thinking by combining systems analysis and systems properties (such as, sustainability, productivity, stability and equitability) (Chambers, 1994). It is evident that, AA contributed in natural resources management by developing transects (systematic walks and observation), informal mapping (sketch map drawing) and innovation assessment (scoring and ranking different actions).

Thereafter, '*Rapid Rural Appraisal*' (RRA) emerged in the 1970s, specifically at a workshop held at the Institute of Development Studies at the University of Sussex. RRA's aim was to find ways for outsiders to learn and understand rural lives. According to Chambers (1994) it is believed that RRA evolved in three phases. The first was biased and results were dissatisfactory as a result of anti-poverty biases on rural tourism development. The second version was deemed disillusioned due to the use of long questionnaires which were tedious to

complete and transcribe. Thus, the questionnaires misled stakeholders in decision making. The third phase was more effective and yielded positive results due to the fact that rural people were themselves knowledgeable on issues affecting their lives. Brokensha *et al.* (1980) referred to this as indigenous technical knowledge (ITK). FAO also points out weaknesses of RRA; the first one being that it poses risk. Risk in the sense that, the information gathered by RRA is not very "representative" but is a collection of "particular cases" which do not tell researchers very much about general conditions. Secondly, RRA is very dependent on the skills of the people carrying it out and having the right combination of experience and viewpoints on the team (Food and Agriculture Organisation of the United Nations – FAO, 2015).

Regardless of this, the success of some past and current participatory models has some limitations. For example, Rosenhead (1989) and Mendoza & Martins (2006) note some of their limitations in natural resources management which include: (a) comprehensive rationality that tends to substitute analytical results and computation for judgement; (b) preferred presumable objectives and optimal alternatives instead of creative generation of alternatives; (c) unclear reasons on motivations for public participation which leads to misunderstanding and misrepresentation; and (d) absence of a value framework that goes beyond the typical utilitarian precepts.

In recognition of the above limitations in traditional participatory models, alternative approaches commonly known as 'soft systems' were developed to address such ill-structured or difficult to define problems (Mendoza, 2006; Ison, 2013). As Belton and Stewart (2002) note, these alternatives are characterized by; simplicity and transparency; facilitation of bottom-up approaches; people are treated as active subjects; and encourages search for acceptable high quality alternative solutions. Systemic method is one of the approaches that look at the causal relationship between distinctive elements and activities (reductionism) (Kreiner *et al*., 2015). Hard and soft systems are the two schools of systemics. Hard systems approaches attempt to understand entire systems (i.e. communities, in the case of this paper) from an outside view with the

assumption that systems variables under consideration are measurable. Soft systems thinkers on the other hand argue that systems are creations of the mind or theoretical constructs in solving complex issues (Probst *et al*., 2003). In their study, Seiffert and Loch (2005) note that, systemic thinking helps in understanding complex systems and resolving wicked challenges within such systems due to interlinkage between various parts thereof.

To enhance the use of systemic thinking in natural resources management, we propose the use of resilience thinking in conjunction with systemics. In our introduction section, we stated the definition of resilience thinking as noted by Stockholm Resilience Centre (SRC). In the same line, Fischer *et al*. (2009:549) also describe resilience as '*The capacity of a system to absorb disturbance and reorganise while undergoing change so as to retain the essential function, structure, identity and feedbacks'*. Rist and Moen (2013:417) attributed the evolvement of resilience thinking to its ability in "*analysing interdependent ecological and human systems that allows for more integrated consideration of dynamics and scale in managing the environment*". In the case of Zondi and Gumbi communities, ecological resilience entails "*the magnitude of the disturbance that can be absorbed before the system changes its structure" (*Rist and Moen (2013:417). Both communities in this case have a bounce-back-ability following the dark apartheid history.

3.5 Environmental Operational Research in CBNRM in KwaZulu Natal

There is some evidence to suggest that, most of the tribal communities in Kwa-Zulu Natal and South Africa at large comprise of households that were previously marginalised and displaced from their land during the Apartheid era (Ngubane and Brooks, 2013). It is believed that the displacement of local people from their traditional land marked the beginning of intervention of external actors in the South African development process (Spierenburg & Brooks, 2014). Kamuti (2014) observed that, most communities that successfully claimed their land in KwaZulu Natal province (KZN) pursue Community-Based Ecotourism with the aim to improve their livelihoods. The current status of Community-Based Ecotourism (CBET) efforts in Zondi and Gumbi communities can be attributed to

either formation processes or collaborative structures and communication processes.

3.5.1 Formation processes of Somkhanda and Ngome Game Reserves

Respondents were first asked to explain the formation processes of the Community Game Reserves. In response to this question, the majority (seven of eight) of experts who participated in focus group discussions indicated that the Ngome Game Reserve was established in order to pursue conservation efforts by involving the participation of local people. One individual stated that, the NGR was to first establish a consultation process through the Ngome Community Land Trust (NCLT) with all interested groups in order to capture the aspiration of all stakeholders. Further interviews with the households (23 households) revealed that such a process was never implemented. None of the respondents reported their involvement in the formation of Ngome Game Reserve. Thus, majority (96 %) of focus group discussion participants linked the violence against the Game Reserve to exclusion of community members in decision making. The current state of the Ngome Game Reserve has left community members, government and conservation organisation gripped to respond to the balance between *'resource use and natural resources management*'. One of the female respondents in her late 70s in Zondi community lamented the exclusion of local people in managing and using their resources:

"The Chief and his friends forcefully removed us from our homes to pave way for the game reserve. We were informed that we had to move as the place was supposed to be turned into a game reserve……. We were never consulted by the community leaders or Trust and we don't even know what a Community Trust is and how it came into being. To them (conservationists) we are like enemies and undesirable species inhibiting the progress of conservation….they don't even care about us. They fenced the game reserve to stop our livestock from grazing in the reserve; the initial fence they erected was further moved closer to our new houses without any consultation. That's why we dismantled it and we don't want to hear anything about this game reserve!! Now there is rumour that they want to reopen the reserve, l believe it's true as there are unusual cars coming into the reserve". They

must leave us alone and our livestock must feed freely on our land." (Pers.com, 2015).

Moreover, another set of questions to measure fairness within the community were asked. When focus group participants were asked whether there was fairness in resource use and ownership, the majority (93 %) commented that there was lack of clear structure for resource allocation. The evidence provided, therefore suggests that there was deficiency in transparency within Zondi community. All household respondents (23 households) reported that there was lack of openness and no discussions with stakeholders in the management of the Game Reserve. A common agreement among community members is that, only the elite were considered in decision making. This scenario therefore raises a question on who participates and for what? Chambers (1995) regards this situation of consulting only the elite in the society as upper-to-upper biases, thus missing the poor. In the causal flow diagram (Fig 3.1) we can see that aggressive management style and exclusion of people in decision making also contributes to lack of community participation in CBRM schemes.

In addition to the above, Spierenburg and Brooks (2014) note that most reclaimed farms in KZN are closely juxtaposed with former 'native reserves', creating an intricate hodgepodge of agrarian and tenure arrangements. Comments such as this, suggest that Zondi community members equate apartheid reserves to current game reserves and that caused them not to participate in CBRM. Apartheid reserves were meant to quarantine or separate people from their land and associated resources. This is the reason why one of the interviewees, Nathi Gumbi, a founder and beneficiary of Somkhanda Game Reserve, emphasised the importance of public consultation:

> *"When we successfully claimed the land, the first thing l did was to do community consultations to educate people on the true or current meaning of reserve as they still had a mind of apartheid reserves. I was blamed by people even my closest relatives who didn't understand what a reserve is. I had to explain to them that the Game Reserve belongs to them and is meant to benefit them." (Pers.com, 2015b)*

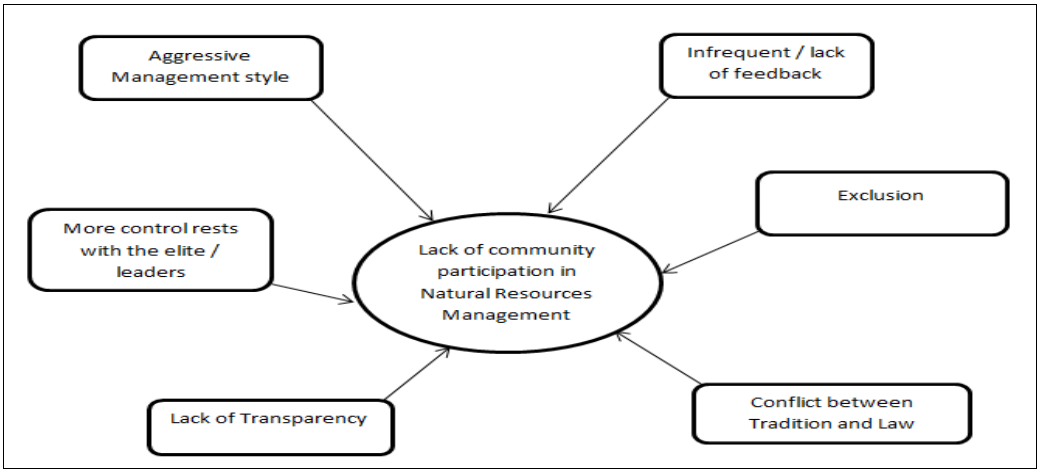

Fig 3.1 Causal flow diagram: causes of lack of participation in community natural resources management
Source: Developed using field data obtained during the study

However, the question here is whether the founder was using participation as a 'cosmetic label', in order to make the Game Reserve proposal appear good to people (in real terms being top-down approach) or was it an empowering process which enabled local people to do their own analysis(Chambers, 1995). The later one being the 'we' approach, whereby participants will feel that they were involved in their own conservation project. In a follow up question on whether the act was done in utmost good faith, the founder of Somkhanda Game Reserve highlighted that:

> *"Before we started operating the reserve, we had a workshop with conservation experts, in particular Wildlands on how to conduct consultations. I called the traditional leaders for the workshop and recorded all minutes. We then went to the grassroots with the business plan and some things were changed upon agreeing. Other people were scattered all over South Africa due to work commitments and they are the ones who feel left out. Our aim was to empower our own people" (Pers.com, 2015c).*

In their accounts of the events surrounding Gumbi Game Reserve, the household participants reported that, during the inception stage there was more involvement of community members and the founders and Emvokweni Community Trust (ECT) members were more visible and provided feedback on time (high bonding social capital). During interviewing, 91% of respondents

reported that they were consulted during the formation stages of the Gumbi Game Reserve and the majority (90%) cited the existence of harmonious relationships within the community. Regardless of these findings, the important question to answer is whether the relationships and communication processes are still being maintained (see section 3.5.2).

3.5.2 Collaborative structures and communication processes

The Gumbi tribe is the majority populace in the Gumbi community and peoples' lives are rooted within their culture. From the focus group discussions held, it was clear that the research participants' way of life and perceptions are heavily embedded and shaped by traditional norms and values. Over half of those participants (60%) reported that they have strong ties with traditional leaders. In conjunction with this, 87% indicated that they work closely with family members in conserving local resources. Thus, the loyalty of people to traditional system of governance as well as culture seems to form the basis of their everyday lives. This is reflected in the inclusion of the chief in decision making and operations of the Community Game Reserve which was established as a CBRM scheme. When asked whether they were happy with the decision, 98% of the Gumbi respondents reported that they were happy with the involvement of the '*late chief*' in decision making as he was faithful and resembled the cultural emblem.

Despite the loyalty of the Gumbi community to their traditional leaders, there is a general sense and feeling among the research participants that the current decay in traditional systems of governance is rapidly resulting into high levels of corruption and unfair distribution of benefits of their natural resources. Only 30% of the respondents reported fairness of rules in the community and 46% cited the presence of fairness in resource allocation. A former member of the Emvokweni Community Trust in Gumbi for example stated:

> *"The passing away of our old chief has brought new dynamics in the power structure. The new chief wants to have the overall voice in decision making of the SGR. We now have a lot of tensions between the Trust members and the*

traditional authorities and this is having a multiplier effect on the extent to which local people can participate in managing the SGR. The current traditional authorities have sour working relationships with the existing Emvokweni Community Trust (ECT), and the community at large" (Pers.com, 2015).

Moreover, the challenge of collaborative structures is on whether the communication processes will be constantly maintained throughout the project lifetime (Muller, 2012). When asked on the flow of information and communication, 33% highlighted that they have open dialogues and 55% indicated that they share information with traditional leaders. However, a minority of participants (5%) reported that they receive feedback from the current Emvokweni Community Trust. This contradicts initial findings which show that 91% of respondents were involved in decision making during the formation stage of the SGR and the presence of harmonious relationships among community members as reported by 90% of respondents. A Gumbi elderly man born in 1936 lamented that:

> *"After the formation of Somkhanda Game Reserve, we never had meetings with the Trust (Emvokweni Community Trust). We just know that there is a Trust but we don't know what it is and who is in it. No one provide us with information or reports on the use of financial benefits for the community except seeing our children getting work there. I am so angry about that, we should be allowed to participate in decision making." (Pers.com, 2015).*

As reflected in Fig 3.2; lack of feedback and transparency and exclusion of other stakeholders (e.g. small holder farmers) in decision making are contributory factors for lack of community participation in CBNRM.

Based on the above findings, it is important to highlight the operations of Land Community Trusts in Ngome and Somkhanda Game Reserves. One of the major challenges facing the management of the Ngome Game Reserve (NGR) is embedded in the governance structures. One key informant reported that, much

of the decision-making process, for example, sits within the traditional realms of power with the local chief being the absolute authority. This development, however, is contrary to the requirements of the South African legislation which governs Communal Property Associations (CPAs) and requires traditional rulers not to be wholly involved in the management of CPAs (Oomen, 2005). Thus, the heavy involvement of traditional structures in the management of natural resources in the NGR has tended to create tensions among community members who oftentimes feel disenfranchised from accessing or having a voice in the resources. It is evident in the NGR that power relationships are at the centre of the disenfranchisement of local people's participation. There is thus, an urgent need to devolve the power structure and shift the locus of resource management to the people. There is need to develop a strategy that will strengthen local people's participation in the management of their resources, failure to which any intervention measures will not be adequate.

In Fig. 3.2 it is clear that, unless there is devolvement of power, lack of effective participation in CBRM schemes will continue to cause loss of community trust, loss of patriotism, community dissolution, loss of community power and community disenfranchisement. All these will eventually lead to unsustainable community natural resources management and as a result of that there will be reduced community development as in Zondi community.

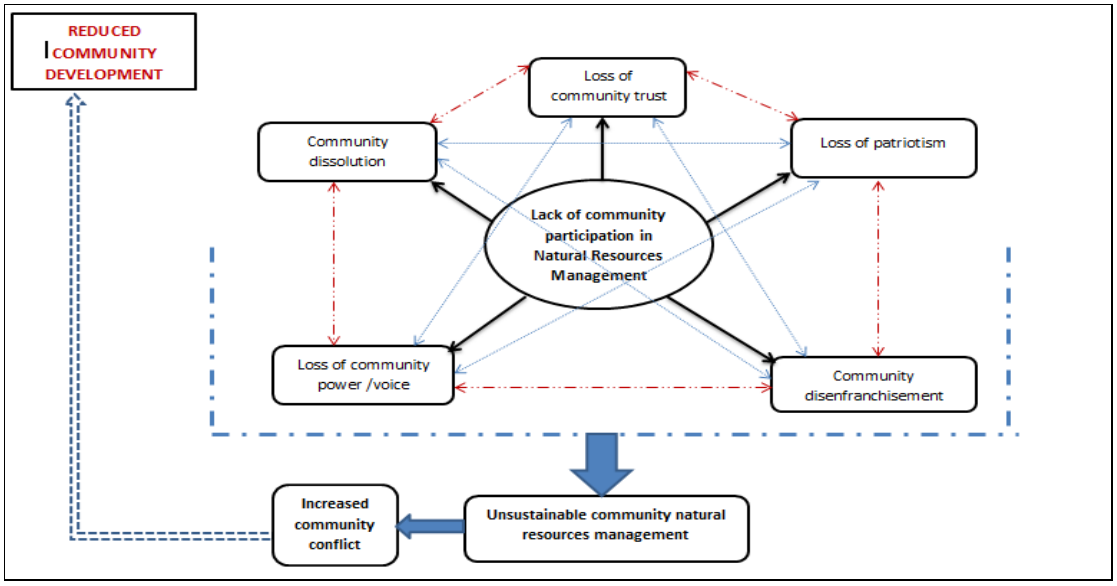

Fig 3.2 Causal flow diagram: Consequences of Lack of Participation in Community Natural Resources Management in KZN
Source: Developed using field data obtained during the study

3.6 Towards 'Systemic-Resilience Thinking' participatory modelling approach in Environmental Operational Research

In order to develop more participatory and sustainable forms of community natural resources management, particularly in sub-Saharan African rural areas, there is need to rethink contemporary approaches that have influenced current management policies and practices in EOR. Most conservation analytical and operational frameworks seek to examine the ordinary management of community natural resources. It is therefore vital to adopt and develop methodologies that examine the embedded complexity in managing natural resources in tribal communities that successfully claimed their land from previous oppressors. Thus, systemic-resilience thinking is used in developing an integrated participatory model for managing communal natural resources in turbulent areas such as those of Gumbi and Zondi communities. In this paper, emphasis is placed on the vertical structure models, in particular the power to influence. Community power dynamics influence and impact participation of stakeholders and might have positive or negative effects on the natural resources and other social capital elements.

In a social-ecological system, such as the one in Gumbi and Zondi communities; components such as cultural beliefs and institutions provide different options for responding to change with uncertainty. Table 3.1 shows that in order to maintain diversity and redundancy, one of the principles of resilience (SRC, 2013), it is important for Gumbi and Zondi communities to build diversity and redundancy into governance system by incorporating the value of diverse sources of knowledge. An implication of this is the possibility that, it will motivate community members and further facilitate development of new operational systems and processes that benefit all stakeholders. As can be seen in Table 3.1, the maintenance of diversity and redundancy enhances three of the six asset factors; collaborative conditions, collaborative work relationships and group-life balance.

Table 3.1 Application of Systemic-Resilience Thinking in Gumbi and Zondi Communities

7 Principles of Resilience (Stockholm Resilience Centre, 2013)	Six Asset factors: Sources of positive and negative pressure and support in co-managing natural resources (Adapted with own modifications from Cooper, Flint-Taylor & Pearn 2013)	Current Consequences of Negative pressures and support: Based on Fieldwork	Possible Consequences of Positive pressures and support to communities	How can Systemic-Resilience Thinking be applied
Maintain diversity and redundancy	(**6**) Job or collaborative conditions (**5**) Collaborative-work relationships (**3**) Work group-life balance	-Lack of transparency in both Gumbi and Zondi communities (community view). -Difficult community members (management view) -Difficult management	-Development of new systems and processes that bring clear benefits. -Opening up of new opportunities for Community-Based Ecotourism. -motivated group members	-Build diversity and redundancy into governance systems by incorporating the value of diverse sources of knowledge.
Maintain connectivity	(**1**) Resource and communication	-Infrequent feedback or no feedback from Trusts and Management in both Gumbi and Zondi communities. -Lack of training in Zondi community	-Leaders will have an inspiring vision and develop goals.	-Map connectivity: identify stakeholders, their scale, interactions and strength of connections. -Restore connectivity
Manage slow variables and feedback	(**1**) Resource and communication	-Obscured feedback which makes management of variables difficult. -Weak relationships between stakeholders.	-Equal management and fair use of natural resources (in Game Reserve). -Strong relationship between stakeholders.	-Strengthen feedbacks that maintain desirable regimes. -Avoid actions that obscure feedback. -Establish governance structures
Foster complex adaptive systems thinking	(**5**) collaborative-work relationships (**4**) Security and change	-Aggressive management style in particular the Zondi community. -Leaders take credit of achievements at the expense of community- Zondi. -Lack of support from community - Zondi	-constructive debate for conservation and community development. -development of new systems and processes that bring clear benefits.	-Adopt a systems framework that helps people to interact. -Expect and account for change and uncertainty. -Match institutions to social-ecological systems processes.
Encourage learning	(**1**) Resource and communication (**2**) Control	-No communication between community members and Trust. -More Control rests with the elite and leaders in Zondi community	-community members take control of operations of Game Reserves. -Feel of ownership and more involvement in reaching the vision. -Learn from challenges for improvement.	-Engage a variety of participants -Establish suitable social context for the sharing knowledge. -Enable people to network and create communities of practice -Provide interaction opportunities
Broaden participation	(**1**) Resource and communication (**2**) Control (**5**) collaborative-work relationships	-Community has no control of natural resources- Zondi. -Lack of transparency in both Gumbi and Zondi communities (community view). -Infrequent involvement of community members in decision making.	-Development of new systems and processes that bring clear benefits. -Responsibility for making key-decisions involvement in making improvements.	-Clarify goals and expectations of the participation process. -Find inspired and motivated leaders -Provide capacity building -Secure sufficient resources for participation
Promote polycentric governance	(**5**) collaborative relationships	-Weak relationships: Gumbi: Emvokweni Community Trust, Tribal Leaders and community. Zondi Community: No good relationship between traditional leaders and community members.	-Strong social relations -Improved social capital	-Balance redundancy and experimentation by involving all institutions i.e. legal, conservation, community forums etc. -Negotiate trade-offs between users of resources. This avoids 'scale shopping', (political party reliance)

The findings of this study reveal that, there are weak communication relationships between community members and the community trusts and traditional leaders in both communities. One of the issues that emerged from these findings is that conflicts always prevail in such environments. There is a strong possibility that, this can be resolved by application of systemic-resilience techniques. According to SRC (2013), systemic-resilience techniques emphasise on engaging various participants, establishing suitable social context for the sharing of knowledge and enabling people to network and create communities of practice.

Table 3.1 shows the importance of fostering complex adaptive systems thinking through rich collaborative-work relationships (4th principle of resilience). Healthy co-relationships can lead to constructive debate for EOR specifically in conservation and community development. This can be achieved by adopting a systems framework that helps people interact and also through expecting and accounting for change and uncertainly in fragile communities with patch history. In the same vein, Cooper *et al*. (2013) note that, ignoring complex adaptive systems thinking can negatively lead to weak communication channels and can cause leaders to take credit for achievements at the expense of the community. For example, as reflected in the interviews with informants in Zondi community, leaders took credit on everything and didn't involve ordinary community members.

Furthermore, as shown in Table 3.1, positive co-relationships help in promoting polycentric governance (5th principle of resilience). Negative pressures which emanate from weak relationships strain communication channels as reported in both Gumbi and Zondi communities. On the other hand, positive polycentric governance leads to strong social relationships and enhances social capital. Positive polycentric governance can be achieved by balancing redundancy and experimentation through involving all concerned institutions; such as legal, conservation and tribal authorities in the context of this study (SCR, 2013). In addition to this, it is also important to negotiate trade-offs between users of

resources. This avoids what is known as 'scale shopping' whereby dissatisfied people take their concerns to their preferred political party (SCR, 2013).

Fig 3.3 shows that in EOR sustainable community development can be achieved through effective participation of all stakeholders. It can therefore be suggested that, the strength of collaborative effort in managing natural resources determines the outcome of community development goals. Based on the findings of this study, community members, community trust, conservation groups, Non-Governmental Organisations and traditional leadership should collectively participate in CBNRM processes in both Ngome and Somkhanda Game Reserves (See Fig 3.3). Thus, plurality in co-managing natural resources helps in effective policy formulation which further enhances implementation of policy and strengthens the participation processes of CBNRM (Chambers, 1994). It can be seen in FIG 3.3 that '*R1*' emphasizes that reinforcement of all six strategies (from policy formulation to involvement) would be necessary in producing or formulating effective, efficient and socially acceptable solutions and systems to improve natural resources management in Gumbi and Zondi communities. This can be made possible through a plurality governance coordination and develop adequate and significant environmental policies (see fig 3.3) that would be pro-poor, environment and sustainable development. It is important to note that if such a framework is employed in the management of natural resources in tribal communities within same settings as Gumbi and Zondi communities, it would ensure that all the stakeholders would share the responsibility and promote efficient management systems and approaches of natural resources principles, aiming to attain sustainable natural resources management (see fig 3.3). Taken together, the findings of this study on EOR suggest a role for sustainable natural resource management in positively increasing both trust and participation of all stakeholders towards establishing effective and efficient collaborative groups. This combination of findings provides some support for the conceptual premise that 'collaborative environmental management will effectually result in learning and information exchange, fairness and equity, achievement of outcomes and better decision making.'

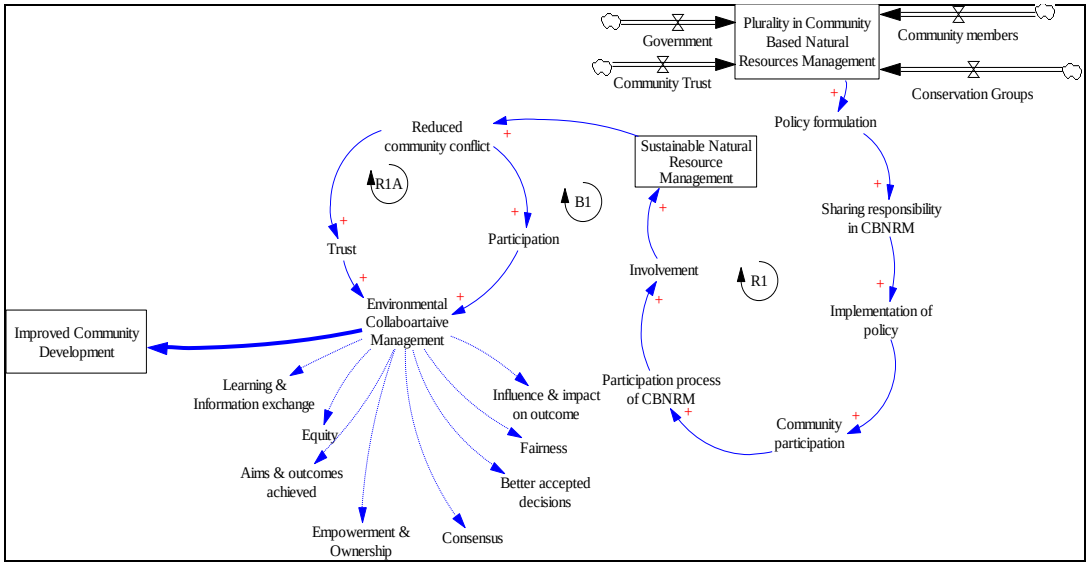

Fig 3.3 Sustainable Community development for EOR through participatory modelling natural resources management

Source: Developed using field data obtained during the study

3.7 Conclusion

This study was undertaken to design alternative Environmental Operational Research (EOR) methodological framework for co-managing natural resources in complex tribal communities sustainably. It examined the impact of systemic-resilience thinking in promoting participatory EOR in Community-Based Natural Resources Management. Using systemic-resilience thinking as conceptual and operational frameworks in EOR, this paper reviewed the current epistemological orientation of eco-social research in participatory Community-Based Natural Resources Management. The paper revealed that the key to successful collaborative community-based projects revolves around vital social capital elements which include but are not limited to; participation of all stakeholders, transparency, reciprocity and effective communication. The findings of this study make a contribution to the existing body of knowledge on EOR in terms of devising an inclusive participatory methodological framework for managing common resources in tribal areas with a gloomy oppressive history. This study lands more weight to Jones *et al.* (2006), Hove *et al*. (2013) and Oteng-Ababio *et al*. (2013) who suggest that, there is an urgent need to promote a strong and genuine grassroots grown community participation in environmental management decision making.

It is a widely held view that stakeholder participation is fundamental for sustainable governance of community-based natural resources in EOR (Child and Jones, 2006; Midgley, *et al*., 2013). Thus, in order to pass beyond the rhetoric of participation, experimentation with emerging participatory models is needed to bridge the gaps between the general participatory frameworks. The study used systemic-resilience thinking in modelling an integrated participatory model for managing communal resources in turbulent environments such as the Gumbi and Zondi communities. Looking at vertical structure models, in particular the power to influence; the paper revealed that community power dynamics influences and impacts stakeholder participation. The study has gone some way towards developing and enhancing our understanding of the role of Participatory Resilience-Systemic (PRS) model in EOR on the attainment of seven resilience principles identified by Stockholm Resilience Centre: maintain diversity and redundancy; maintain connectivity, manage slow variables and feedback, foster complex adaptive systems thinking, encourage learning, broaden participation and promote polycentric governance. In EOR, the findings of this study suggest that systemic-resilience participatory approaches to complex collaborative issues in natural resources management will facilitate social capital adaptation and institutions supporting local adaptation.

CHAPTER FOUR

SOCIAL CAPITAL AND COMMUNITY-BASED NATURAL RESOURCES MANAGEMENT IN KWAZULU NATAL, SOUTH AFRICA[3]

ABSTRACT

Community-Based Natural Resource Management (CBNRM) has become an important tool in promoting environmental and ecological sustainability as well as improving community access to eco-system services. However, CBNRM has been criticised as a programme that is largely driven by initiatives that are exogenous to local communities promoting the agenda of external actors. In view of this, there is now increased attention given to CBRM programmes that are co-management driven and which seek the participation of all community stakeholders. Using existing literature and field based data this paper explores the role of social capital in enhancing the management of common pool resources in tribal areas of Kwa-Zulu Natal. It is argued that social capital can be a vehicle through which the accumulation of different forms of capital can be achieved and contribute to sustainable environmental management.

Key Words: Social capital; Collaborative environmental governance; Community-based conservation.

4.1 Introduction

The last two decades have seen the re-emergence of numerous Community-Based Natural Resource Management programmes aimed at addressing a plethora of environmental challenges that have resulted from unsustainable use of natural resources. The environmental governance discourse which initially started in the 1980's and 90's has again become popular due to exacerbated poor governance of natural resources both on a local and global level (Reed *et al*., 2013; Spires *et al*., 2014). Although most of the analyses and studies of environmental governance have centred on the role and importance of communities in nature conservation, less attention has been paid to empirically examine the social networks that impact governance of environmental collaboratives. Environmental Collaborative is a form of an agreement between

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two or more actors or partners to work together on a common goal in managing natural resources (Muller, 2012). In a quest to avert threats of environmental degradation, Community-Based Natural Resource Management initiatives have been identified as one of the strategies in which this can be achieved. This development explains recent trends towards decentralised, self-regulated and localised systems of environmental management which have been presented as being among the most appropriate and effective tools (Musavengane & Matikiti, 2015; Sessin-Dilascio, 2015).

Carley & Christie (2000) have identified some of the factors that limit environmental governance and emphasise tension between centralisation and decentralization forces as well as policy fragmentation as key factors. Reed *et al.* (2013) on the other hand, are of the view that, lack of appropriate institutional frameworks and fragmentations in national development and planning policies contributes to challenges in managing communal natural resources. Simatele & Simatele (2014), argue that environmental governance in sub-Saharan Africa has developed as a top-down system of management, involving the elite bureaucrats and party loyalist, far removed from the reality of rural life, continuing to dictate how rural residents should manage their natural resources. As a result, what rural people know and what they might need, is of no concern (Simatele & Simatele, 2014). Central government authorities, as observed by Cheru (2002) and supported by Binns *et al.*, (2012), naively believe that they are better placed to make key decisions on environmental management and rural development than illiterate rural residents. As a result, poor policies and institutional failures have and continue to undermine the productivity of rural populations.

Despite the frequent exclusion of rural population in participating in processes that have a direct influence on their lives, it has been observed that there is an urgent need to promote a strong and genuine grassroots grown community participation in environmental management decision making (Hove *et al*. 2013). This paper therefore explores the role of community participation in natural resource management. It is specifically interested in examining the extent to which social capital can be an instrument of promoting collaborative

environmental governance in tribal communities of Kwa-Zulu Natal province in South Africa. In this article CBRM success is defined as 'positive effect of environmental activities on social capital dimensions namely; groups and networks, trust, collective action, social inclusion and information and communication'.

4.2 Social Capital and Collaborative Community Based Natural Resources Management – a meta-analysis

Muboko and Murindagomo, (2014) define Collaborative Community-Based Natural Resources Management (CCBNRM) as a group of people with same goals who convene to police and manage a common pool of natural resources (Spires *et al.*, 2014). Existing literature suggests that any effective CBNRM initiative requires the support and participation of local communities. Through community participation; trust and social networks (or social capital) are developed which then act as a significant resource in the day to day operations and life cycle of a CBNRM initiative, particularly in rural contexts (Liu *et al*., 2014). Social capital is centred on social networks and results into shared norms, values and understandings which then facilitate co-operation within and among groups of people (Baksh *et al*., 2013). Social capital can be defined as the networks of relationships that foster the development of resources and benefits that can be used for the good of the individual as well as the collective (Putnam, 2000; Floress et al., 2011).

It can therefore be deduced that social capital consists of three main features; trust, reciprocity and co-operation, and when these elements are strong within a community, they are more likely to enhance collaborative governance of CBRM programmes (Zahra & McGehee, 2013). CBNRM is anchored on social networking and has potential of invigorating community social and economic aspirations that may trigger sustainable natural resource use (Moser & Felton, 2006; Moore *et al*., 2014). Moore *et. al*., (2014) for example, are of the view that CBNRM, if properly instituted and managed can result in the propagation of systems and processes that can lead to effective strategies for natural resource management and the opposite is also true.

A good example for the above assertion is the Communal Area Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe which is regarded as the parent of all CBNRM initiatives in Africa as well as the Administrative Management Design for Game Management Areas (ADMADE) which was implemented in Zambia (Songorwa, 1999). ADMADE was also regarded as a successful scheme but later on faced a number of administrative challenges which resulted in its abandonment. CAMPFIRE is one of a '*breed*' of strategies designed to tackle environmental management at grassroots level (Kasere, 2002). The key aim of this initiative was to aid rural communities in the management of wildlife for sustainable development of communities. CAMPFIRE is one of the most celebrated CBNRM programmes of its genre due to the perceived success in taking its benefits and rewards to communal people (Songorwa, 1999).

Child (1996) attributes the success of CAMPFIRE to 'twelve principles' amongst which included the need to consider the unit of production as the basis on which to develop management strategies and benefit distribution approaches which would ensure that local people managed and benefited from the resources within their locales. The other principle revolved around the need to ensure that producer communities were small enough to encourage the participation of individuals and households in resource management. This would help in establishing designing processes that are transparent, accountable, democratic and reflective of people's aspirations. There was also the emphasis on accountability of the community leaders to their constituency in terms of their functions and the rules governing their operations. A tenet of this principle emphasised the importance of the grassroots in carrying out key functions in the management of the natural resources. Connected to this principle was the need to devolve authority and develop community engagement capacity building processes in order to transfer the ownership of resources to communities themselves.

Taylor (2009) is of the view that in order to promote sustainable community resource management, specific legislation and policies must be developed in order to support the activities of grassroot communities. Long (2002) for example, argues that Namibia's success stories of CBNRM can largely be attributed to an enabling policy and legislative environment as well as high levels of community participation. As opposed to Zimbabwe's CAMPFIRE programme which devolved authority to established Rural District Councils, Namibia devolved authority to the community level. The Kunene Region in Namibia for example, drawing on the policy and legislative frameworks, cultivated the participation of communities by using incentives such as community income and wildlife conservation (Murphree, 1997).

In the case of CAMPFIRE, Rural District Councils (to which 'appropriate authority' over wildlife had been granted) were holding on to revenue and management authority and not following policy guidelines for devolving to the lower ward level. This is also replicated in Zambia's ADMADE. A major contributing factor to the failure of ADMADE was the institutional structure which was largely centred on traditional authorities rather than local people as a hub of resource control (Virtanen, 2003; African College of CBNRM, 2012). Traditional rulers, set-up Wildlife Management Committees or sub-authorities to direct the sharing and use of revenue benefits derived from wildlife and to help guide households in resource management (Virtanen, 2003). The concentration of power in the hands of traditional rulers flawed ADMADE's effectiveness in natural resource management and utilisation as vulnerable and poor households with little or no power had no influence on management strategies that were developed (see African College of CBNRM, 2012).

In her seminal work on 'ecotourism in Namibia, Susan Snyman (2012) observed that the conservancy has proved that CBNRM can work through the conservancy approach. Snyman (2012) outlined a number of possible reasons which have led to the success of the joint venture in the Torra Conservancy. The general concern to reduce environmental degradation coupled with a shared community identity, has not only resulted in community self-organisation, but also in establishing and

developing vital collaborations and partnerships with local government, the private sector and NGOs that are interested in natural resource management. It is this collaboration and a sense of membership of all stakeholders that has played a significant role in the success of the Torra Conservancy (Snyman, 2012). Membership to a Community-Based Natural Resource Management is an integral element in the management of common pool resources. Zulu (2008), Pienaar *et al*. (2013) and Dyer *et al*. (2014) for example, found that density of membership of CBRM groups can significantly contribute to the success of a CBNRM scheme. However, Snyman (2012), on the contrary argues that membership density can either positively or negatively affect collective action and participation.

Although community participation and membership have been identified as important ingredients in the success of CBNRM schemes, other scholars argue that trust and solidarity are equally significant. Meer & Schnurr (2013), Katikiro *et al*. (2015), as well as Songorwa (1999) are of the view that when there is lack of trust in the common pool resource management schemes, there is a higher likelihood that community solidarity will be compromised. Bodin and Crona (2008) found similar results in a rural fishing community in Kenya. Community members with less or no trust in the management of the CBRM schemes felt disenfranchised and were less likely to participate in any community based initiatives (Ngubane & Brooks, 2013). In this sense, and as observed by Snyman (2012), supported by Pienaar *et al*. (2013) and Dyer *et, al*. (2014) higher levels of trust can positively affect community members' willingness to participate in CBNRM because this makes the decision less risky and reduces the chances of conflict. Resource allocation and accessibility also influences the participation of community members in CBNRM. Fritz-Vietta *et al.* (2009) and Mabuza *et al*. (2015) argue that fair distribution and accessibility of natural resources increases participation of community members in CBNRM schemes and brings about social cohesion and collective action.

It is important to note that social inclusion and cohesion are important attributes that can provide significant insight in explaining the decision of individuals and households to participate in CBNRM schemes. Fritz-Vietta *et al.* (2009) and Dyer

et al. (2014) are of the view that community members who voluntarily participate in social events are normally those who are well integrated in community structures. This position is supported by Snyman (2012) who observed in her work in Namibia that households which were well connected through social networks and integrated in the community were more involved in environmental conservation and protection. Katikiro (2015) argues that exclusion of the underprivileged, voiceless or powerless often deter them from participating in community activities (see also Ngubane & Brooks, 2013).

4.3 Methodological consideration

This paper is based on data collected through an extensive review of literature and a field-based study. Literature review was conducted between March 2015 and July 2015 and involved an appraisal of dissimilar pieces of literature. A systematic review on the role of participation in CBNRM was conducted, and this formed the basis for an in-depth meta-analysis of existing literature. Using meta-analysis as an analytical framework, it was important to systematically evaluate the literature in order to identify factors and processes that may have contributed to the success or failure of some of the existing or past CBNRM initiatives. Meta-analysis of the literature in this paper was employed in order to facilitate the comprehension of how factors such as geographical positioning, political processes and community participation in CBNRM schemes influence or impact the effective management of common pool resources.

An internet search using various academic search engines such as Scopus and Web of Science was conducted. Key words such as environmental collaborative, environmental governance and Community-Based Natural Resource Management were entered and an estimated 150 peer reviewed articles were generated. A rapid appraisal of these articles was conducted and resulted in the selection of 60 articles and eight reports. A further in-depth review of these articles resulted in the selection of 37 articles which focused on a number of issues such as participation and environmental management. Finally, 12 articles that focused on environmental governance in sub-Saharan Africa were identified

and reviewed using different perspectives among which included a meta-analysis of selected case studies.

The fieldwork was conducted in two geographical locations namely; Zululand and Umzinyathi (see Fig 1.1) between August 2015 and September 2015. Research participants were drawn from two communities: the Gumbi community located in Zululand and Zondi located in Umzinyathi. Gumbi and Zondi communities have approximately 312 and 415 households respectively.

A sample population of 30 households from Gumbi and 23 households from Zondi was selected to ensure an appropriate presentation of the population. A systematic random sampling procedure was then applied across the two study locations using the equation:

$$k = \frac{N}{n}$$

Where *n* is the sample size, and *N* is the population size

The first households in both locations were purposely selected and then specific intervals were applied to select the actual households. In the case of Gumbi, every tenth household was selected and in Zondi it was every 18th household that was selected for inclusion in the study. In addition to this, the snowball technique was applied to identify and engage with key actors such as policy makers, who often function as leaders of environmental collaboratives; local government officials, project coordinators and managers, local community leaders and chiefs and other Non-Governmental Organisations operating within the study locations. Data collection tools included semi-structured interviews, focus group discussions and personal observations. The data was deductively coded using NVivo and the Cronbach's alpha was employed to measure the internal consistency and reliability of variables under considerations. Cronbach's alpha was determined through the equation:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Where N is the number of items, c-bar is the average inter-item covariance among the items and v-bar is the average variance. We devised a 23-questions (i.e. of "items" indicated in Table 4.1) questionnaire to measure how networking influenced participation of community members in Community-Based Natural Resources Management. The questions were presented in a statement format, for example a question in the 'groups and networks' social dimension in Table 4.1 "*Do you belong to a particular conservation group in the community?*", was presented as "*You belong to a particular conservation group in the community*". Each question was a 5-point Likert item from "strongly disagree" to "strongly agree". In order to understand whether the questions in this questionnaire all reliably measure the same latent variable (feeling of safety) (so a Likert scale could be constructed), a Cronbach's alpha was run on a sample size of 15 respondents using SPSS version 20. The measured variables or 'items' are regarded as consistent as they exceed the recommended value of 0.70 (see Table 4.1). Values substantially lower indicate an unreliable scale (Field, 2005). The higher Cronbach scores on the measured items or variables therefore signify the validity and reliability of the questions used during the survey. For example, a score of 0.94 and 0.81 in the trust and solidarity and collective action and cooperation dimension respectively show that the questions are highly reliable, valid and measure the specific social capital constructs highlighted in Table 4.1.

In order to assess the changes of social capital from the inception of the project to the current, the survey was designed with two sets of identical questions. The first section asked questions which required the respondent to reflect about the initial networking that took place during the inception of the community project. The second section asked the respondents' views on the current networking and the extent to which they felt integrated in the community project. Table 4.1 for example, shows a summary of questions which were selected to identify different social capital dimensions or constructs that are pivotal in collective community resource management in the two research sites. These questions, which were

developed by Krishna & Shrader (2000) as part of a World Bank research initiative on social capital were adapted and employed by the current study to measure social capital in Gumbi and Zondi communities. It must be noted that social capital is here conceptualised, and embedded in the survey as well as operationalised in the study to ensure content validity and reliability of the findings. In order to achieve this, both historical and contemporary literature on social capital measures were extensively reviewed, evaluated and analysed (Krishna & Shrader, 2000; Onyx & Bullen, 2001). The output of the review process resulted in the identification of a number of constructs or dimensions of social capital which include, among others: trust and solidarity, collective action and cooperation, social cohesion and inclusion, information and communication; as well as economic empowerment (see Table 4.1).

Table 4.1 Scale Assessment for Social Capital Dimensions in Gumbi and Zondi communities

Constructs/Dimensions	***Item (variables/questions)***	***Specific construct measured***	***Cronbach's Alpha***
Groups and Networks: (Structural Social Capital)	a: Do you belong to a particular conservation group in the community? b: Do you have close ties with traditional leaders (i.e. chief)? c: Do you work closely with family members in conserving the community natural resources?	a: Linking social capital b: bridging social capital c: Bonding social capital	**0.91**
Trust and solidarity (Cognitive Social Capital)	d: Is there fairness of rules in the community? e: Are there official procedures in the management of the reserve? f: Are there dispute resolution procedures in the Game Reserve? g: Is there fairness in resource allocation? h: Is there openness in managing the Game Reserve?	d: Trust e: Solidarity f: Solidarity g: Trust & solidarity h: Trust & solidarity	**0.94**
Collective action & cooperation	i: Do you share similar values? j. Do you discuss the goals of the reserve together and share	i: Collective action j: cooperation k: Collective action & cooperation	**0.81**

	them? k: Are there any community organised activities? l: Is there any public service provisions you are benefiting from the reserve?	I: Collective action	
Social cohesion & inclusion (inclusion, sociability, and conflict)	m: Do you have harmonious relationships among community members? n: Is there social unity within the community? o: Have you been consulted or included in making decisions for the Game Reserve?	m: Social cohesion n: Social cohesion o: Social inclusion	**0.95**
	p: Is there any conflict on what is acceptable in managing the Game Reserve? q: Is there violence in managing the community Game Reserve?	p: Conflict q: Conflict	**0.95**
Information & communication	r: Is there open dialogue in managing the Game Reserve? s: Are there any mediums of communication (e.g. meetings)? t: Do you sometimes share information with leaders? u: Do you receive feedback in time?	r: Communication s: Communication t: Information u: Communication & information	**0.97**
Economic empowerment	v: Where (are) you employed at the Game Reserve? w: Is there any formal training you received since creation of the Game Reserve? x: Is there any business you are operating closer to the reserve?	v: Economic empowerment w: economic empowerment x: Economic empowerment	**0.81**

Source: Fieldwork based material, 2015

Furthermore, Table 4.2 shows the listing and ranking of social capital. This is based on the frequency of citations of social capital variables made by respondents during the field work. Thus, the variables cited most =1 and variables cited least = 5 or 6.

4.4 Role of Social Capital in Co-management of Natural Resources in KwaZulu Natal

a) **Case Study 1***: Gumbi Community – Somkhanda Game Reserve (SGR)*

The Gumbi community comprises most of the Gumbi clan who have strong connections to their culture. From the discussions during the interviews, it was clear that the research participants' way of life and perceptions are heavily embedded and shaped by traditional norms and values. An estimated 60% of the respondents have strong ties with traditional leaders and 87% work closely with family members in conserving the natural resources (See Table 4.3). Their loyalty to traditional system of governance as well as culture seems to form the basis of their everyday lives. This is reflected in the inclusion of the chief in decision making and operations of the Community Game Reserve which was established as a CBRM scheme. Discussions with research participants in Gumbi revealed that an estimated 98% of the responses suggested that they were happy with the involvement of the late chief in decision making and the general operations of the Game Reserve.

Despite the loyalty of the Gumbi community to their traditional leaders, there is a general sense and feeling among the research participants that the current decay in traditional systems of governance is rapidly resulting into high levels of corruption and unfair distribution of benefits of their natural resources. Only 30% of respondents reported fairness of rules in the community and 46% cited the presence of fairness in resource allocation (See Table 4.3). A former member of the Emvokweni Community Trust in Gumbi for example stated:

"The passing away of our old chief has brought new dynamics in the power structure. The new chief wants to have the overall voice in decision making of the SGR. we now have a lot of tensions between the Trust members and the traditional authorities and this is having a multiplier effect on the extent to which local people can participate in managing the SGR. The current traditional authorities have sour working relationships with the existing Emvokweni Community Trust (ECT) and the community at large" (Pers.com, 2015a).

Table 4.2 suggests that 22% of trust and solidarity variables influence community participation in Somkhanda Game Reserve initiatives. Nineteen percent and sixteen percent of community network and social inclusion and cohesion variables respectively determines community participation.

Table 4.2 Listing and Ranking of Important Social Capital Variables Affecting Participation in Gumbi and Zondi CBRM Schemes

	Gumbi Community (SGR)			***Zondi Community (NGR)***		
Types of social capital	***Frequency of citations N=30***	***%***	***Ranking***	***Frequency of citations N=23***	***%***	***Ranking***
Trust and solidarity	28	22	**1**	23	19	**1**
Community networking	25	19	**2**	20	17	**3**
Collective action and cooperation	20	16	**4**	18	15	**4**
Social inclusion and cohesion	21	16	**3**	23	19	**2**
Information and communication	18	14	**6**	23	19	**2**
Economic empowerment	17	13	**5**	13	11	**5**
Total	**129**	**100**		**120**	**100**	

Source: Fieldwork material, 2015

When asked on the flow of information and communication, 33% highlighted that they do have open dialogues and 55% of respondents do share information with the leaders. However, only 10% reported that they receive feedback from the current Emvokweni Community Trust regardless of the fact that 91% of respondents being involved in decision making during the formation of the SGR and presence of harmonious relationships among community members as reported by 90% of respondents. In the same vein, a Gumbi elderly man in his late 70s and who has lived his entire life in this community lamented:

"After the formation of Somkhanda Game Reserve, we never had meetings with the Trust. We just know that there is a Trust but we don't know what it is and who is in it. No one provides us with information or reports on the use of financial benefits

for the community. I am so angry about this because we should be allowed to participate in decision making" (Pers.com, 2015b).

The above sentiments suggest that if any collaborative CBRM scheme is to be successful, there is need for fundamental social and political changes that must be accompanied by a positive alteration in power relations among all the interested stakeholders. These alterations must be tailored towards cultivating increased participation in issues that affect individuals and households in a community. From the views expressed by the respondents above, we can thus, speculate that a key precondition for achieving a successful CBNRM scheme, in the context of this case study, would be the presence of strong and effective enabling community structures which would respond effectively to the demands of different interest groups and stimulate their participation in the project. A starting point would be to identify factors that make it difficult (see Tables 4.2 and 4.3) for the local people to get involved in the scheme and address these issues.

From the above argument, it would appear that until the authorities within the SGR project develop a system that clearly filters the benefits of its resources to the local populace, the scheme is likely to cease. However, an official within the SGR pointed out that every effort had been instituted to ensure increased participation of the local people. He stated that every year a group of local youths are trained and certified to manage wildlife and this process should soon facilitate a situation where these young people will own the project and start benefiting economically. It is clear from the Gumbi case study that if local initiatives are to succeed in the management of the SGR, there is need to institute a clear and new power-sharing relationship among all the interested groups. A socio-political space must be opened up to allow local people to establish new relationships between themselves and the traditional systems of governance.

b) **Case Study 2***: Zondi Community - Ngome Game Reserve (NGR)*

The Ngome Game Reserve was established in order to pursue conservation efforts by involving the participation of local people. The scheme was to first

establish a consultation process through the Ngome Community Land Trust (NCLT) with all interested groups in order to capture the aspirations of all stakeholders. However, discussions with the research participants revealed that such a process was never implemented. None (0%) of the respondents reported their involvement in the formation of Ngome Game Reserve hence 100% of respondents linked the violence against the Game Reserve to exclusion in decision making (see Table 4.3). A male respondent aged between 50 and 60 years lamented:

"They came here and removed us from our land without any consultation; we just saw the cars parked around with white farmers and Inkosi (Chief). We were informed that we had to move as the place was supposed to be turned into a game reserve…….when the game reserve was still functional we never got involved in any decision making. We were never consulted by the Community Trust and we don't even know what a Community Trust is and how it came into being" (Pers.com, 2015c).

Furthermore, 7% of respondents said that there is fairness of rules in the community whereas 93% disagree with such sentiments. Only 5% were aware of the official procedures of managing Ngome Game Reserve and 95% reported on the unfairness of resource allocation and all (23) respondents reported on the lack of openness in managing the Game Reserve. This explains why again all of the respondents reported that they do not discuss the goals of the Game Reserve (See Table 4.3). Thus, trust and solidarity variables ranked highest (with 19%) in influencing participation of community members in NGR followed by lack of information and communication cited 19% at par with social inclusion and cohesion variables.

A discussion with a conservation expert who was involved in the initial development and is still working with the NGR stated: *"At the beginning all seemed okay but our relationships with the Ngome Trust deteriorated as there was lack of respect and openness from all of us. We have tried to see how we can restart building the trust but we still have some challenges. All l can say for now is that a*

lot happened and we need to be open enough for us to make any progress" (Pers.com, 2014a).

Table 4.3 Assessment of social capital dimensions in Gumbi and Zondi Communities

		Gumbi Community	**Zondi Community**
Social Capital Dimensions	**Item**	**N=30**	**N=23**
		Yes (%)	***Yes (%)***
Groups and Networks: Bonding & Social capital, bridging capital and linking social capital	1: Do you belong to a particular conservation group in the community?	0	0
	2: Do you have close ties with traditional leaders (i.e. chief)?	60	8
	3: Do you work closely with family members in conserving the community natural resources?	87	74
Trust and solidarity	1: Is there fairness of rules in the community?	30	7
	2: Are you aware of official procedures in the management of the reserve?	83	5
	3: Are you aware of any dispute resolution procedures in the Game Reserve?	53	5
	4: Is there fairness in resource allocation?	46	5
	5: Is there openness in managing the Game Reserve?	57	0
Collective action & Cooperation	1: Do you share similar values?	73	75
	2. Do you discuss the goals of the reserve together and share them?	10	0
	3: Are there any community organised activities?	40	25
	4: Is there any public service provisions you are benefiting from the reserve?	47	0
Social cohesion & inclusion	1: Do you have harmonious relationships among community members?	90	92
	2: Is there social unity within the community?	93	83
	3: Have you been consulted or included in making decisions for the Game Reserve?	91	0
	4: Is there any conflict on what is acceptable in managing the Game Reserve?	20	96
	5: Is there violence in managing the community Game Reserve?	0	100
Information & communication	1: Is there open dialogue in managing the Game Reserve?	33	0
	2: Are there any mediums of communication (e.g. meetings)?	50	0
	3: Do you sometimes share information with leaders?	55	5
	4: Do you receive feedback in time?	10	0
Economic empowerment	1: Where (are) you employed at the Game Reserve?	62	44
	2: Is there any formal training you received since creation of the Game Reserve?	30	0
	3: Is there any business you are operating	0	0

	closer to the reserve?		

Source: Fieldwork based material, 2015

Discussions with community members on economic empowerment revealed that 44% of respondents were employed by NGR but none reported on the formal training received during its existence and none operated any business closer to the reserve (Table 4.3). An elderly man in his 70s lamented that: *"I worked at Ngome Game Reserve as a security guard and l didn't even get a cent. I am so hurt by the way they treated me and other people*." (Pers.com, 2015d*).*

It is evident in the NGR that power relationships are at the centre of the disenfranchisement of local people's participation. There is thus, an urgent need to devolve the power structure and shift the locus of resource management to the people. There is a need to develop a strategy that will strengthen local people's participation in the management of their resources, failure to which any intervention measure will not be adequate. There is need to utilise the available social cohesion variables such as harmonious community relations, 92%; social unity 83% and on the shared values, 75% (See Table 4.3).

4.5 Discussion

The findings suggest that the co-management of commonly owned natural resources in tribal areas where land restitution took place encounters challenges more so if the involvement and participation of communities is not fostered. However, to address these challenges locally-driven and tailor-made solutions need to be identified, embraced and implemented. But these need to revolve around the idea of propagating increased participation from all stakeholders in the community. Through the involvement and participation of all stakeholders, one would speculate that the management of common pool resources can result into an effective and sustainable use of resources. This argument stems from the appreciation that environmental co-management challenges are not 'obvious' and their success is much derived through social learning and adaptive governance. A comprehensive social network for example, helps to build social capital which will in turn facilitate the accumulation of other vital capitals. As

land restitution is inevitable in most parts of sub-Saharan Africa, it is important to derive lessons on the role of social capital in the co-management of environmental collaborative so as to maximise and use the natural resources in a more sustainable and equitable manner.

The two case studies have highlighted the importance of community engagement and participation as being instrumental in building strong social capital in collaborative management of CPR. The importance of the collective effort is vividly articulated by a common statement cited by Simatele and Binns (2008:11): 'W*hatever is done for us without us, is not ours'*. Thus participation of the citizenry in any development project can be considered as a useful tool in the identification of community challenges as well as in the articulation of community goals and designs that can contribute to the attainment of community methods in propagating change, and pooling their resources in the problem-solving process. Berkes *et al*., (1991), for example, argue that when managing communal natural resources, it is important to engage all stakeholders as the success of a project is dependent on the participation of the community members and the level to which people take ownership of the project. If participation is absent, particularly in the management of common pool resources, there is a high likelihood that people will tend to distance themselves from any development effort. This situation is clearly illustrated in both research sites considered in this paper.

The Zondi community for example, seems to be operating on a top-down system of resource management and this is increasingly causing tensions among all interested groups. The community members feel alienated from their own resources due to the lack of community engagement and participation in the management of the NGR. It is important to note that the participation of all interested stakeholders in resource management discussions and decision making is an important process in enhancing and building new social networks. Chang (2013) is of the view that social networks, particularly horizontal networks, connect people of the same status and power and this can create a situation of shared norms and aspirations. Wagner *et al*. (2008), identify '*respect*

of view points' and '*equal consideration of input*' as essential pillars in the success of co-management of natural resources. They are of the view that at the onset of collaborative resource management initiatives, there is bound to be differences of opinions and aspirations, which if not properly negotiated, embraced and managed can be a catalyst for failure and conflict (Wagner *et al*., 2008). Building on this argument, Simatele & Simatele (2015), observe that respect for interest groups can be a valuable resource for fostering shared agendas and community aspirations.

The development of social capital in tribal communities, can be determined by three elements; commitment, transparency and dependability. Firstly, the commitment and increased participation of all interested stakeholders is of paramount significance in building trust and positive expectations of reciprocity. Commitment and participation, particularly in communities that experienced racial segregation and socio-economic exclusion in the past, can play a key role in building new norms of reciprocity and the two aspects can act as a form of continuity to guarantee future successes of collaboratives. Secondly, transparency as an avenue of openness on goals, motives and actions can cultivate trust among interested stakeholders. Cohan & Prusak (2001:46) argue that "*knowing who people are and what they are doing, builds social connections and trust, just as secrecy builds suspicion".* Thirdly, dependability enhances trust and reciprocity by facilitating positive trustworthy reputation. Ostrom (1998:12) is of the view that, "*a reputation for being trustworthy, or for using retribution against those who do not keep their agreements or keep up their fair share, can either become a valuable asset or a liability".* It is important to note that building social capital is a vital process that can be enhanced by effective communication and interactions across and among interested parties and partnerships in the management of common pool resources. Cultivating social capital, not only facilitates the efficient functionality of environmental collaborations, but can also be a useful tool in the accumulation of other productive capitals that the majority of poor and vulnerable individuals and households employ in obtaining livelihoods and other vital services such as education. It is thus, important that

every development intervention programme and initiative seeks avenues through which social capital can be cultivated and enhanced.

4.6 Conclusion

It has been revealed in this paper that the key to successful collaborative environmental management projects revolves around issues of participation, transparency, reciprocity and effective communication. These elements are important ingredients in building strong social capital. Community social cohesion builds trust between internal and external actors, especially in communities that were once subjected to various forms of segregation and dishonest corrupt systems of governance. The presence of trust in managing common pool resources as argued by Baksh *et al*., (2013) ensures effective stakeholder participation as well as involvement in decision making processes. If stakeholder participation is absent, community members often feel disenfranchised and will tend to disconnect from any development effort that may have implications on their well-being, the ecological system and the natural environment as a whole.

It is important that community leaders and project managers are aware of what is happening within their communities in order to make decisions that are inclusive of all interested parties. Local authorities must now evaluate the significance of collaborative environmental management in light of sustainable environmental management and sustainable development. It is vital that government institutions should work much more closely with local people, NGOs and community-based organisations to support community structures and systems that have a direct impact on common pool resources.

CHAPTER FIVE

THE ROLE OF SOCIAL CAPITAL IN PURSUING COMMUNITY-BASED ECOTOURISM IN KWAZULU NATAL, SOUTH AFRICA[4]

ABSTRACT

Following decades of apartheid that manifested itself through oppression and racially-based land dispossessions; the democratic South African regime developed a platform for previously oppressed people to re-claim their land. Successful land claims on conservation areas by previously disenfranchised communities have often resulted in co-management agreements with external actors, including conservation organisations in pursuit of both Community-Based Ecotourism (CBET) and enhancement of sustainable livelihoods. Using field-based data collected through methods inspired by the tradition of participatory research such as semi-structured interviews and focus group discussions, this paper explores the role of community participation in natural resources management. It specifically examines the extent to which social capital can be instrumental in promoting collaborative management of Community-Based Ecotourism (CBET) initiatives in tribal communities of Kwa-Zulu Natal, South Africa. It is argued in the paper that social capital is an indispensable tool for successful co-managing of CBET schemes in land reformed tribal communities and should be part of the integrated national development agenda and policy framework.

Key Words: Community Based Ecotourism, Social Capital, Land claim and Collaborative environmental management

5.1 INTRODUCTION

Political transformations in most developing nations have been accompanied with vast land claims by indigenous communities who were forcibly detached from their traditional land during colonization and apartheid eras (Holden & Otsuka, 2014; Cundill *et al*., 2013). In the context of sub-Saharan African countries, the need for land-reform has been aggravated by the great scarcity of

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farmland (Headey & Jayne, 2014). However, most of the reclaimed land is being done in areas pursuing conservation activities (Cundill *et al*., 2013; Musavengane & Simatele, 2016). Caught between owning the land and pursuing conservation as a land use option and improving their livelihoods; local communities have tended to form collaborations with external stakeholders in managing communally owned natural resources (Morton *et al*., 2012; Cundill *et al*., 2013). Collaborative management (commonly known as co-management) is perceived as a sustainable route in governing common pool natural resources in re-claimed areas (Travers *et al.*, 2015; Anaafo, 2015). Co-management "*describe a partnership by which two or more relevant social actors collectively negotiate, agree upon, guarantee and implement a fair share of management functions, benefits and responsibilities for a particular territory, area or set of natural resources*" (Borrini-Feyerabend, 2004:69). Whilst there is a well-developed literature on collaborative and social networks of reclaimed land in state-run protected areas, there is a considerable lack of research on collaboration efforts in reclaimed privatised wildlife farms (Brooks *et al*., 2012; Spierenburg & Brooks, 2014).

Muboko and Murindagomo (2014) define Collaborative Community-Based Natural Resources Management (CCBRM) as a group of people with same goals who convene to police and manage a common pool of natural resources (CPR) (Spires *et al.*, 2014). Existing literature suggest that any effective CBRM initiative requires the support and participation of local communities. Through community participation; trust and social networks (or social capital) are developed which then act as a significant resource in the day to day operations and lifecycle of a CBRM initiative, particularly in rural contexts (Liu *et al*., 2014). Social capital is centred on social networks and results in building common values and norms that enhance understanding and participation of all stakeholders in collaborative management of communally owned natural resources (Baksh *et al*., 2013). Social capital is defined as the networks of relationships that foster the development of resources and benefits that can be used for the good of the individual as well as the collective (Putnam, 2000; Floress *et al*., 2011).

This paper explores the role of community participation in natural resources management. It is specifically interested in examining the extent to which social capital can be an instrument for promoting collaborative management of Community-Based Ecotourism (CBET) initiatives in tribal communities of Kwa-Zulu Natal, South Africa. Much emphasis is placed on establishing the role of community participation in managing their resources in an effort to achieve sustainable ecotourism schemes in rural areas. The article first provides theoretical background of social capital in CBET. Then the methodological considerations followed. Thereafter, research findings are reported and conclusions are made based on these results.

5.2 Social Capital and Collaborative Community-Based Ecotourism

The International Ecotourism Society (2004) defines ecotourism as responsible travel to natural areas that conserve the environment and sustain the well-being of local people. This definition of CBET implies that social dimension of ecotourism cannot be ignored in creating sustainable CBETs (Jones, 2005). It is inherent in the above definition that for any CBET efforts to be fruitful there is a need to solicit appropriate support from all stakeholders and encourage the participation of local communities (Musavengane & Matikiti, 2015). This view is supported by Hakim and Nakagoshi (2008) and Liu *et al*. (2014) who write that, social capital plays a vital role in the success of CBET ventures yet the issues of local community participation and involvement in tourism are rarely discussed in scientific literature. Similarly, Jones (2005), Okazaki (2008) and Ha (2010) found that, although social capital is a term that is commonly used in the development literature, its use in the tourism literature is a recent development and there has been no consensus on what it implies. Despite the lack of agreement on what social capital means within the tourism discourse, it can be speculated that social capital is an aspect that is centred around the notion of how social networks intertwine in forming shared societal norms, values, aspirations and how these combine in facilitating a process of co-operation among actors in achieving specific objectives and goals (Putnam, 1995; Baksh *et al*., 2013; Simatele & Simatele 2015).

Social capital is a result of a systematic interaction of several factors, among which include aspects such as social relationships that exist between community members (Krishner, 2001; Jones, 2005). These social associations, to a large extent influence and form the basis on which society reacts to given and specific scenarios (Lyon, 2000; Simatele, 2010). From these observations, it can therefore be argued that social capital is a systemic process in the formation of social networks and relationships that are aimed at fostering the development of resources and benefits that can be used for the good of the individuals as well as the collective (Portes 1998, Woolcock, 1998; Pretty & Ward, 2001; Musavengane & Simatele, 2016). The formation of social capital in a community promotes social cohesion and this cohesion can play a pivotal role in inspiring communities to attain desired goals. Pretty & Smith, (2003) for example, argue that positive social cohesion facilitates cooperation of all stakeholders and significantly reduces possible costs and negative impacts associated with disjoined groups.

Trust, reciprocity and co-operation can be regarded as the three main features of social capital. It can therefore be argued that, the stronger these three elements are within a community, the greater the collaborative output of Community-Based Ecotourism schemes in local communities (Zahra & McGehee, 2013). Collaborative management has its roots in the development of national and international policies which were popularised in the 1980's and 1990's (Anderson & Grove, 1987; Berkes *et al*., 1991; Spires *et al*., 2014). Similarly, Simatele and Simatele (2014) support the importance of grassroots decision making in managing common pool resources, as it enables and promotes collective cooperation of stakeholders in devising strategies for effective resource management.

The need for collaborative management in common pool resources was born out of growing concerns on centralization in the management of community natural resources, a situation that left many communities with no or little voice in the way natural resources were governed (Simatele & Simatele, 2015; Musavengane & Matikiti, 2015). Consequently, communities felt increasingly disenfranchised and this resulted into unsustainable use of natural resources and environmental

degradation (Ngubane & Brooks, 2013). The need for sustainable solutions to natural resource management and community development, necessitated the search for ecological approaches that emphasized the necessity for engaging all stakeholders in decision making and learning based approaches requiring collective and adaptive management strategies such as the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) implemented in Zimbabwe (Frost & Bond, 2008; Holdon & Otsuka, 2014).

Despite the paradigm shift in resource management from top-down systems to bottom-up strategies, research evidence seems to suggest that community-based approaches to natural resource conservation can be problematic (see Dressler *et al*., 2010). A critical question, for example, revolves around the issue of whether the single structure collaborative banner can simultaneously be used to pursue both conservation and community development efforts. Hove *et al*. (2013) for example, argue that nature conservation often becomes compromised in the process of pursuing both goals. Another critical concern as observed by Brockington *et al*., (2008) is on the lack of benefits accruing to local residents, an aspect that is considered by some observers as resulting from the dominant role assumed by the private sector which allows it to gain control over resources at the expense of local residents' rights of access and use of natural resources (see also Dzingirai 2003). In support of these sentiments, Büscher and Dressler (2012) are of the view that co-management schemes often end up effectively disenfranchising local people, who lose control over natural resources, while private sector partners involved in these programmes benefit.

The level of importance in involving communities in managing community natural resources is revealed by its enshrinement in world conventions such as the World Conservation Strategy and the Brundtland Commission in which it is emphasised that communities must be empowered and allowed to play a cardinal role in devising environmental management strategies. Cundill *et al.*(2013) for example argue that, decentralization of decision making is a critical pillar in enhancing various co-management types as it informs, shapes and influences the design processes of collaborative projects. Edifying on this

observation, Muller (2012) is of the view that co-management in the management of common pool resources facilitates a situation where local communities have control over resources and promote self-sustenance or sustainable development of the poorest in a community.

In South Africa, the Makuleke community located in Western Kruger National Park (WKNP) reclaimed control of a piece of land in 1996 following a protracted court processes for land restitution. This piece of land has been, and continues to be managed under a Contractual Park arrangement between the Makuleke Community Property Association, SANParks and Wilderness Safaris since 1996. This has earned the Makuleke Contract Park a brand conservation identity as 'The Heart of The Great Limpopo Transfrontier Park' due to its strategic location in the centre of the parks (Makuleke, 2004). Due to its potential in Community-Based Ecotourism, Makuleke community entered into partnership with private partners who provided funds and material assistance for development projects. For the benefit of future similar collaboratives, it is vital to note the existing aspects of private sector partnership in Makuleke: the Community Property Association (CPA) receives 10% of revenue; in return the community will be given jobs and skills in areas of their choice and an arrangement on the Built-Operate Transfer (BOT) which allows private partners to build and operate lodges for a specific period then transfer ownership to the CPA (Makuleke, 2004). Through this partnership agreement, CBET revenue benefits the Makuleke community in various ways creating jobs, scholarship for local students, feeding schemes for the poorest individuals and households in the community and other indirect benefits. Coria and Calfucura (2012) observe that, the shortage of resources, lack of skills and poverty often reduce bargaining power and partnerships in local communities such as the one in Makuleke which allows a situation where external partners with the 'know how' negotiate on behalf of local communities to ensure that appropriate benefits accrue to the community. Although Makuleke is widely recognised as a 'successful' co-management model within and beyond sub-Saharan region, the jobs it offers are regarded as unsustainable as most people are employed in unskilled lower position with meagre salaries (Steenkamp & Uhr, 2000; Cundill *et al*., 2013).

In Eastern Cape Province of South Africa, Dwesa-Cwebe community ceded its goals of pursuing other land-use options (such as pastures for cattle grazing) in favour of conservation. This was precipitated by an out of court land claim settlement of R14 276million (*equivalent to* US$921 032.26,) by the state (Ntshona et al., 2013). The focus was not to compensate individual community members; rather, the money was to be invested in various community development schemes that would benefit the entire community at personal level. For example, Dwesa-Cwebe Nature Reserve was earmarked to be a springboard for development of various ecotourism ventures (Cundill, 2013). Furthermore, the Community Forest Agreement (CFA) was developed and incorporated in the land claim settlement to ensure sustainable use of land and associated resources. The CFA has a clause that accommodates use and management of natural resources by local people. As with the trend in land claims in South Africa of having co-management when there is land claim, Dwesa-Cwebe community could not be exonerated from this. The Department of Water Affairs and Forestry, Eastern Cape Parks, and the Department of Land Affairs and local government institutions co-manage the Dwesa-Cwebe Nature Reserve as instituted by the Land Trust under CFA (Ntshona *et al.*, 2013). Regardless of co-management agreements, Ntshona *et al*. (2013) report that local people were disenfranchised their rights to natural resource use by the Game Reserve management. Enlightening on this observation, Palmer *et al*. (2006) note that exclusion of local communities is more the norm than the exception inevitably increasing conflict between conservation authorities and local communities. With this in mind, various authors have included exclusion or inclusion as an important element in measuring social capital (Jones, 2005; Musavengane & Simatele, 2016).

From the above discussion it can be deduced that social capital greatly focuses on social networking within local communities. Social networking has potential of invigorating community social and economic aspirations that may trigger sustainable natural resource use in CBET (Moser & Felton, 2006; Moore *et al*., 2014). Moore *et. al*., (2014) for example, are of the view that Community-Based

Natural Resources Management (CBNRM), if properly instituted and managed can result in the propagation of systems and processes that can lead to effective strategies for natural resource management and the opposite is also true. For example, in his study on the fractured state in the governance of private game farming, Tariro Kamuti found out that low social capital within the community deters attainment of CBET goals (Kamuti, 2014). His case study in Umtshezi Municipality revealed that there are conflicts between land beneficiaries and neighbouring farm owners. For instance, one of Kamuti's respondents shared concerns on the weak social relationship between new land owners and their neighbours:

"*The negatives associated with game farming have to do with land given to the people by the state, something that has come up next to us over there and there are a lot of problems from those people. There is a problem; they stole our fence, they come and steal wood, and poachers come from them. I have spoken to councillors but still we cannot control it. We work hand in hand with a councillor and his team which seems to help a little to solve the problems*" Kamuti (2014:201).

Weak relationships between community members might derail CBET efforts as it deters tourists from visiting the area (Musavengane & Matikiti, 2013). The studies presented thus far provide evidence that embracing the concept of social capital in Community-Based Ecotourism creates and enhances vertical and horizontal linkages. As Jones (2005:305) notes, "*a nuanced understanding sees social capital as part of power relations within a system and embedded within its cultural and political context".*

5.3 Methodological consideration

Description of research site

Gumbi community is located in uPhongolo Local Municipality in the Zululand District Municipality in Northern KwaZulu Natal Province (see FIG 1.1). It has five settlement areas; Zonyama, Cotlands, Hlambinyathi, Bethal and Candover. According to the local headman (*Induna*- in IsiZulu language), there are approximately 312 households in the Gumbi community. The Gumbi people who

were forcibly removed from their land in the 1960s were restored to their land under the Land Reform Process in 2005. The Gumbi is the main tribe that resides in the Gumbi community and are now proud owners of the land that was previously settled by white game farmers. After claiming the land, the Gumbi people decided to keep large portions of the land under conservation and create a consolidated game reserve, *Somkhanda Game Reserve* for economic and social development in the community.

According to Nathi Gumbi, the founder and beneficiary of Somkhanda Game Reserve, the community partnered with Wildlands Conservation Trust (*referred to as Wildlands henceforth*) after failing to manage it on their own for the first five years after successfully claiming the land. Emvokweni Community Trust (ECT) contracted Wildlands to manage and transfer skills to local community members. ECT is a legally, constituted board responsible for operations of the Somkhanda Game Reserve. They are the owners of the Game Reserve and members are voted in by land beneficiaries. ECT also leased the tourism section to African Insight so that they oversee all tourism operations. Both entities are operating on five year leases. The established collaboratives necessitated skills development projects that would ensure transference of skills from conservation groups to local people. The reserve is the first community owned private wildlife reserve to be created from land reform processes in South Africa (Dugmore, 2013). According to Wildlands Conservation Trust, the Game Reserve spans 16 418.82 hectares of land, settlement and grazing area has 5 209.40 hectares and 11 508.72 hectares are still pending land claim (See Fig 5.1).

Somkhanda Game Reserve boasts of a number of wildlife such as rhinoceros, impalas, kudus and wild dogs, just to mention a few. In an interview with the African Insight Manager, it was highlighted that tourists especially student groups enjoy wildlife seeing during educational tours. During the educational tour, the students become engaged in various activities such as rhino monitoring, camera trap projects, tree identification and learning bush skills with qualified trackers or guides. In support of the tour activities, the Somkhanda Game Reserve's tourism section operates a bush lodge facility, a private camp consisting of two lodges, each with a deluxe or family suite and two standard en-

suite units. The reserve also has three private family chalets; each unit is private, set away from the rest of the lodge and complete with its own firepit and braai stand. Thirdly, its 20 bed mobile tented safari camp is fully mobile and can be set up in a secluded setting within Somkhanda Game Reserve.

To enable a comparative analysis, the Ngome Game Reserve owned by the Zondi community was chosen as our second case study. Zondi community is part of Umzinyathi District Municipality under Umvoti Local Municipality, north of Greytown in KwaZulu Natal. It is mainly inhabited by the Zondi tribe, who received their land under the land redistribution process in 1996. The community established a game reserve that spans 4 300 hectares Ngome Game Reserve. The Game Reserve is situated approximately one and a half hours from Pietermaritzburg (see FIG 1.1). It was previously named Bhambatha's Kraal and renamed to Ngome Game Reserve to reflect its transformation from private to community ownership. Prior to the name Bhambatha's Kraal, the labour tenants of the Zondi tribe occupied the two labour farms (Aaangelen and Olivefontein) that were then converted to game farming in 1974 and 1982 respectively.

Ngome Game Reserve is managed by the Ngome Community Land Trust (NCLT) in partnership with Ezemvelo-KZN Wildlife (EKZNW) and KwaZulu-Natal Hunting and Conservation Association (KZNHCA). The NCLT was established in 2004 as a reaction to the corruption and money laundering allegations of the previous trust. These allegations led to lack of trust in the Ngome Game Reserve project. Since then, it is reported that the community members lack confidence in the management and operation of the Game Reserve (Ngome, 2012). These allegations culminated into poor management of Ngome Game Reserve and derailed progress in attaining the intended goals of being a benchmark project of other rural communities in South Africa

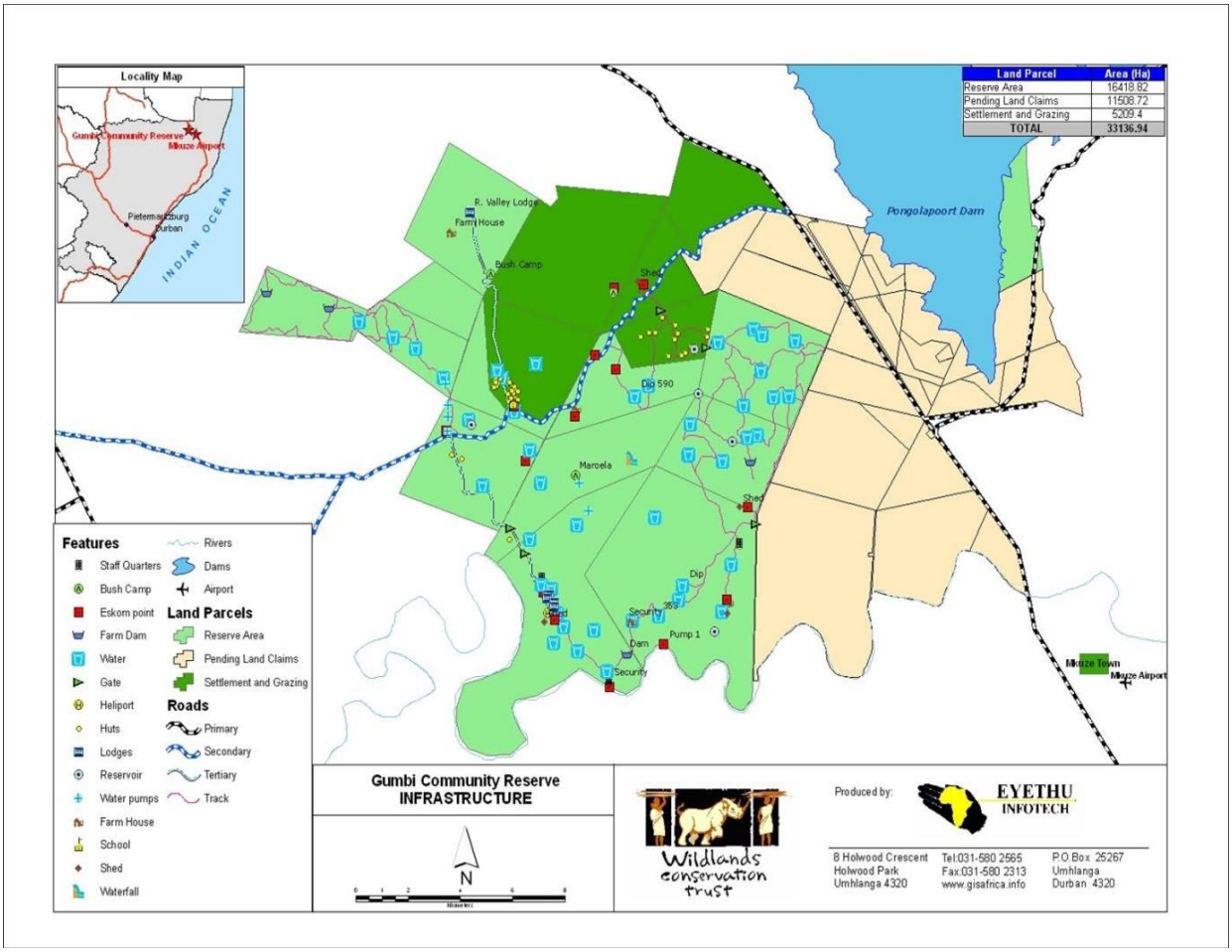

Fig 5.1 Somkhanda Game Reserve Map
Source*:* Courtesy of Wildlands Conservation Trust

The research approach

Following his seminal work on social capital, Putman and others adopted the use of density of membership in community organisations in measuring social capital (Putman, 2000). One disadvantage of this approach is that it excludes cognitive social capital indicators as emphasis is mainly placed on structural social capital. Furthermore, Krishna (2001) argues that the approach cannot be generalised in all communities due to heterogeneity of cultures. Thus, in his study on measuring social capital conducted in India, Krishna developed a questionnaire with a range of questions on social cohesion, trust, collective action, solidarity, reciprocity and group membership. The design of the questionnaire was based on the six broad social capital dimensions; groups and networks, collective action and cooperation, information and communication, social cohesion and inclusion and empowerment and political action. With some modifications it was decided to

adopt some of Krishna and Shrader's research questions which they developed during their noteworthy World Bank research on social capital (see Krishner & Shrader, 2000).Based on this, a structured questionnaire which captures both structural and cognitive social capital was developed for the current study (see Table 5.1). It must be noted that social capital is here conceptualised, and embedded in the survey as well as operationalised in the study to ensure content validity and reliability of the findings. In order to achieve this, both historical and contemporary literature on social capital measures were extensively reviewed, evaluated and analysed (Krishna & Shrader, 2000).

Table 5.1 Survey Responses to Questions and Social Capital Indicators & Scores

Social Capital Indicators	Answer	Gumbi (%) N= 30	Zondi (%) N=23	Scoring system[a]	Gumbi Score[b]	Zondi Score[b]	Stat Signif. Diff.[c]
Background information							
Proportion M/F		14/16	11/12				
Average Age		36.3	35.2				
Mutually beneficial collective action							
In the last month, how many days have you joined together with other community members for community work?	Never	44	72	0			
	Once	50	28	0.33			
	2-5 days	6	0	0.67			
	More than 5 days	0	0	1	0.88	0.51	U= .193
Structural indicators							
Vibrancy of Associational Life							
Average membership in any organisation	Number of organisations			1 each	2.0	2.0	U= .106
Norms and Rules							
The rules and regulations in this community are adhered to	Very well	30	10	1			
	Well	47	4	0.33			
	A little	13	4	-0.33			
	Not very well	10	82	-1	0.89	0.21	U=.01
Cognitive indicators							
Reciprocity and sharing	Individually	6	5	0			
Would you prefer jointly sharing grazing land or own an area by yourself?	Jointly	94	95	1	0.94	0.94	U=.608
Community	Strongly Disagree	73	4	1			

members are only interested in their own welfare	Disagree	17	22	0.67			
	Neither Agree/Disagree	0	9	0.5			
	Agree	10	17	0			
	Strongly Agree	0	48	-1	0.93	0.32	U=.408
Community leaders are only interested in their own welfare	Strongly Disagree	0	0	1			
	Disagree	0	4	0.67			
	Neither Agree/Disagree	10	9	0.5			
	Agree	20	9	0			
	Strongly Agree	70	78	-1	0.27	0.25	U=.103
If I have a problem, there is always someone who will help	Strongly Disagree	3	78	-1			
	Disagree	7	9	0			
	Neither Agree/Disagree	37	13	0.5			
	Agree	23	0	0.67			U=.338
	Strongly Agree	30	0	1	0.71	0.22	
Conflict and cohesion							
There is social unity within the community	Strongly Disagree	0	9	-1			
	Disagree	3	0	0			
	Neither Agree/Disagree	3	9	0.5			
	Agree	10	21	0.67			
	Strongly Agree	84	61	1	0.96	0.87	U= .101
There is conflict on what is acceptable in managing the Game Reserve	Strongly Disagree	0	0	-1			
	Disagree	7	0	0			
	Neither Agree/Disagree	73	4	0.5			
	Agree	17	9	0.67			
	Strongly Agree	3	87	1	0.55	0.33	U= .193
Trust							
Most people in this community are honest and can be trusted	Strongly Disagree	0	0	-1			
	Disagree	0	9	0			
	Neither Agree/Disagree	10	0	0.5			
	Agree	7	21	0.67			
	Strongly Agree	83	70	1	0.96	0.94	U= .101
Our community leaders are honest and can be trusted	Strongly Disagree	53	87	-1			
	Disagree	13	4	0			
	Neither Agree/Disagree	3	5	0.5			
	Agree	7	4	0.67			
	Strongly Agree	24	0	1	0.44	0.31	U=.120
Community Trust members are honest and can be trusted	Strongly Disagree	80	57	-1			
	Disagree	13	9	0			
	Neither Agree/Disagree	4	30	0.5			
	Agree	3	4	0.67			
Power, exclusion, equity and decision making	Strongly Agree	0	0	1	0.35	0.44	U=.47

There is open dialogue in managing and sharing game reserve information	Strongly Disagree	62	91	-1			
	Disagree	12	4	0			
	Neither Agree/Disagree	10	1	0.5			
	Agree	13	4	0.67			
	Strongly Agree	3	0	1	0.61	0.15	U=.257
There is fairness in resource allocation and I am involved in decision making	Strongly Disagree	0	87	-1			
	Disagree	13	9	0			
	Neither Agree/Disagree	40	0	0.5			
	Agree	10	4	0.67			
	Strongly Agree	37	0	1	0.50	0.17	U=.377

[a]This is the subjective score allocated to each answer, based on the methodology and scoring system developed by Krishna and Shrader (2001): -1 (high negative social capital) through 0 (no social capital) to 1 (high positive social capital).
[b]This is the calculated score for each answer, demonstrating relative differences between Zondi and Gumbi communities.
[c]Exact significance are displayed. The significance level is .05.

Field-based data collection took place between June and July 2015 in both research sites. A total of 30 households from Gumbi and 23 households from Zondi communities were selected respectively. To attain a representative sample of the household composition of the two communities, a stratified sampling method was used. Furthermore, focus group discussions were done with 12 Gumbi and eight Zondi community participants. In addition, judgemental sampling was applied to identify and engage with key actors such as policy makers, who often function as leaders of conservation organisations, project coordinators and managers, local community leaders and chiefs operating within the study locations.

Open ended questions and focus group discussions were employed in order to enable the researchers to determine changes in the social capital variables and possible reasons for such occurrences if any. Moreover, in order to obtain an in-depth understanding of social networks within Zondi and Gumbi communities, questions on inclusion and exclusion of community members in decision making were included in the questionnaire. A scoring system was developed to rank the responses given, where -1 is high negative social capital and on the other end 1 represents high positive social capital and 0 signifies absence of it. Thereafter, average social capital scores are then calculated. Table 5.1 shows the calculated social capital score averages together with percentages of interviewees giving each response.

Thereafter, the Mann-Whitney-Wilcoxon (MWW) *U* tests (sometimes called the Wilcoxon rank-sum test) were conducted on the scores to test and establish certain correlations specifically to determine whether the scores difference between Gumbi and Zondi community were significant (see Table 5.1). MWW is used where two data samples are independent and if they come from distinct populations and the samples do not affect each other. Using the Mann-Whitney-Wilcoxon Test enabled us to decide whether the population distributions are identical *without* assuming them to follow the normal distribution. The Mann-Whitney-Wilcoxon *U* test was adopted in the current study as it covers samples with different sizes, the analysis was done using SPSS version 23. The Mann-Whitney-Wilcoxon signed rank test results shown in Table 1 display exact significance at a significance level of 0.05 (where $p>0.05$ = accept null hypothesis).

5.5 Results and Discussion

Mutually Beneficial Collective Action: The first set of social capital indicators set to measure the level and role of Mutually Beneficial Collective Action in pursuing CBET. It was observed that the existence of Somkhanda Game Reserve in its functional state and the dilapidation of Ngome Game Reserve can be attributed to collective effort of the community. Thus, the discussion that follows critically examines the role of cognitive and structural social capital in shaping the current state of the Game Reserves. This section will also report on the influence of community 'norms' and 'values' (major aspects of social capital) in conservation and utilisation of natural resources in Zondi and Gumbi communities.

In Gumbi community, focus group discussions revealed that the research participants' way of life and perceptions are heavily embedded and shaped by traditional norms and values. During these discussions 10 of the 12 participants explained their strong ties with traditional leaders. Their loyalty to traditional systems of governance as well as culture seems to form the basis of their everyday lives. Strong evidence of this is reflected in the inclusion of the chief in decision making and operations of the Somkhanda Community Game Reserve. Further discussions with Gumbi research participants revealed that an estimated

98% of the responses suggested that they were happy with the involvement of the late chief in decision making and the general operations of the Game Reserve. Thus, the cultural significance and influential role of the 'late' chief instilled collective action amongst community members and substantial variations of social capital can be attributed to this. For example, during our field work visit, the Gumbi men were organising a community service to do during Mandela Day (a national holiday in the Republic of South Africa) which was to be followed by a friendly soccer match. In addition to this, Gumbi community is working on a water project near Somkhanda Game Reserve funded by Wildlands (bridging social capital). They are hoping to have diverse community projects, to enhance the vibrancy of associational interactions. According to this evidence we can infer that the increase in structural social capital can be attributed to a significant high level of community unity. Interviews with Gumbi households supported the general presence of collective action in the community. Of the 30 respondents, 50% reported that they did a community project at least once hence higher average social capital score of 0.88 compared to Zondi community with 0.51 where 28% cited that they at least met for community project once (See Table 5.1). These results give more weight to previous findings that suggest that social relationships that exist between community members influence the level of social capital within the community (Lyon, 2000; Krishner, 2001; Jones, 2005; Simatele, 2010).

If we turn to Zondi community, although the Game Reserve is now in a non-functional state there is high social unity amongst community members. During focus group discussions seven of the eight focus group participants explained how the community is intertwined and how they work together to achieve community goals. In their account of their livelihood, they cited that they do assist each other with the fetching of water from far sources as water is generally a scarce resource in the community. A female respondent in her late 70s further explained that they used to have community meetings to discuss how to resolve water challenges and also whenever there was a problem the community would gather and resolve the issue. For instance men would go and chase monkeys from hurting their goats and crops (bonding social capital). Regardless, of high

collective action, 72% of interview respondents reported that they had never met for community work in the past month (See Table 5.1). Ninety two percent of respondents attributed this to lack of positive commitment from traditional leadership structures. Thus, the lack of bonding social capital between community members and traditional authorities signals a direct link to the dereliction of Ngome Game Reserve. The Mann-Whitney-Wilcoxon signed rank test results as shown in Table 5.1, indicate that the observed difference on mutually beneficial collective action, is significant between measurements in both communities ($p>0.05$, $U= .193$). The null hypothesis is therefore accepted. In summary, these results prove that social associations, to a large extent influence and form the basis on which society reacts to given specific scenarios as noted by Lyon (2000) and Simatele (2010). Furthermore, these findings are consistent with those of Tariro Kamuti, who suggested that low social capital within the community deters attainment of CBET goals (Kamuti, 2014).

Structural Social Capital: The second set of indicators aimed to measure the level and role of Structural Social Capital in pursuing Community-Based Ecotourism. Both Gumbi and Zondi communities have an average of 2.0 in individual membership in community organisations (Table 5.1). Furthermore a common view among the interviewees is that they consider themselves members of the community they stay by joining burial societies and also Stokvel (*a scheme where people put money together then withdraw it as a lump sum and buy food stock in bulk*). These schemes resemble one's commitment to stay in the community. As reported by respondents during focus group interviews, in both Zondi and Gumbi communities there is significantly lack of groups which community members could have joined to increase vibrancy of associational life. These findings further support Jones' (2005) suggestion that, the use of group membership in measuring social capital can be a limitation as it doesn't reflect the real vibrancy in the community.

If we turn to community 'norms and rules', another structural social capital element, there was a general consensus among respondents that Gumbi people do respect the rules and value their norms. When the participants were asked

whether they adhere to the community rules and regulations, the majority (47%) commented that they are well aware and adhere to the laws (See Table 5.1). An example cited by most respondents is the respect of wildlife within and outside the Somkhanda Game Reserve boundaries. Majority of residents pointed out that, they co-habitat with wildlife in their household spaces without harming them, although there is a handful of people who poach animals. Some participants expressed the belief that some rules are violated for various reasons (such as lack of consultation in formulating them). Turning now to the social capital scores, the Zondi score was significantly lower (0.21) compared to Gumbi (0.89). Such low score can be explained by 82% of respondents who reported that the rules and regulations were not adhered to in the Zondi community (see Table 5.1).

A possible explanation for this might be related to lack of openness in the managing and information sharing of Ngome Game Reserve, 91% 'strongly disagreed' with the hypothesis that 'there is open dialogue' in game reserve management (see Table 5.1 – under power, exclusion and decision making). The Mann-Whitney-Wilcoxon signed rank test results as shown in Table 5.1, indicate that the observed difference on structural social capital, is significant between measurements in both communities ($p<0.05$, $U= .01$); the null hypothesis is therefore rejected. Overall, these results indicate that lack of stakeholder participation and consultations reduce the level of structural social capital and derail attainment of common CBET goals. This is supported by Simatele and Simatele (2014) who identified the need of having collective cooperation of stakeholders in grassroot decision making. One outstanding reason highlighted is that stakeholder participation enables and promotes formulation of strategies for effective resource management.

Cognitive Social Capital indicators were then measured to determine the significance of trust and reciprocity in co-managing community natural resources. The first set of cognitive social capital questions meant to determine the levels of reciprocity and sharing in the communities. Respondents were asked to indicate whether they would prefer to own one grazing field of their

own or jointly share with other community members. This question aimed at measuring the depth of trust within the community as land ownership or sharing requires high levels of trust. The findings suggest that there are higher levels (0.94 each) of cognitive social capital in both Gumbi and Zondi community (See Table 5.1). However, a follow up question on reciprocity and sharing, specifically on whether community members were only interested in their own welfare yielded different findings. In Gumbi, the majority (73%) of those who responded to this question felt that community members were not only interested in their own welfare, a minority of participants (10%) were of the view that people were self-centred. On the other hand, 48% of respondents in Zondi community strongly agree on the self-centeredness of community members hence a lower score of 0.32. The next question asked informants whether community leaders were only interested in their own welfare. The most striking result to emerge from the responses is that both Gumbi and Zondi communities yielded lower cognitive social capital scores of 0.27 and 0.25 respectively. This might be related to the focus group discussion results where there were some negative comments about how community leaders handled issues within the community. For example, in Zondi community a woman in her late 60s lamented that "*our leaders do not consult us, they just do whatever they want and most of the money they obtained from and for the Ngome Reserve wasn't disclosed to us. They are more concerned with their personal lives not ours*" (Personal Communication (referred to as Pers.Com henceforth), 2015). These findings seem to provide important insights into the significant role of bonding social capital in attaining common goals and how weak bridging capital derails positive CBET efforts. The results support Pretty & Smith's (2003) argument that positive social relationships within communities can significantly facilitate cooperation in attaining common goals.

A further set of questions on cognitive social capital measures the level of conflict and cohesion in Zondi and Gumbi communities. When the participants were asked whether there is unity within the community, the majority (84% in Gumbi and 61% in Zondi) strongly agreed that there was high level of solidarity in their villages, although Gumbi showed significantly higher cognitive social capital

score of 0.96 than Zondi with 0.61 (see Table 5.1). These scores have shown significantly similar patterns with those of mutually beneficial collective action dimension. Turning now to the presence of conflict on what is accepted in managing the Game Reserve; majority (87%) of respondents in Zondi strongly agreed to the presence of conflict. When the participants were asked this question during focus group discussions, the majority (nine people) cited reasons of lack of trust in the Zondi community leadership structures. The results, as shown in Table 1 indicate that 87% of Zondi respondents strongly lack trust in their community leaders. The most surprising aspect of the results was when participants were asked about the honesty and trustworthiness of Community Trust members, thirty percent could neither agree nor disagree. In addition to this, almost two-thirds of the focus group participants (eight people) said that they were not aware of the existence of the Community Trust. Further focus group discussions with other stakeholders explained the gravity of lack of trust in community leadership. For example, one informant, a conservation expert who was involved in the initial development of the Ngome Game Reserve explained that:

"At the beginning all seemed okay but our relationships with the Chief and Ngome Trust deteriorated as there was lack of respect and openness from all of us. We have tried to see how we can restart building the trust but we still have some challenges. All I can say for now is that a lot happened and we need to be open enough for us to make any progress" (Pers.com, 2015).

Interestingly, a high score of trust (70% - strongly agree) among Zondi community members mitigate the consequences of high levels of lack of trust with leaders and Community Trust. In overall, these results indicate that lack of transparency and fair distribution of project proceeds strongly reduces cognitive social capital. This observation is in agreement with Palmer *et al*. (2006) who are of the view that lack of transparency and fairness increases conflict between conservation authorities and local communities.

As with the Gumbi community, it is apparent from Table 5.1 that respondents have mixed views on the trust element. These variations might be directly linked to comments of change of leadership structures shared during focus group discussions. For example, during focus group discussions, majority (nine out of twelve) of the participants alluded that the previous traditional leadership structure was more people oriented compared with the current structure. These findings suggest that, the current leaders are more power-focused (discussed in detail in the subsequent section). Respondents were further asked to indicate whether Emvokweni Community Trust (ECT) members were trustworthy and honesty. Eighty percent strongly disagreed to the notion that the community members were honest and trustworthy. A possible explanation for this might be related to views that emerged during focus group discussions on lack of trust on leadership. A common view amongst participants was lack of interactive consultations and feedback from the ECT. If we now turn to the level of trust among community members, interestingly a higher score of social capital (0.96) on the level of trust offset lack of trust in leadership and the ECT members (0.44 and 0.35 respectively). The Mann-Whitney-Wilcoxon signed rank test results as shown in Table 5.1, indicate that the observed difference on trust among community members, is significant between measurements in both communities ($p>0.05$, $U= .101$), the null hypothesis is therefore rejected.

The final set of social capital indicators set to measure the level and role of *power, exclusion, equity and decision making* in pursuing CBET. An attempt was made during interviewing to establish the level of involvement of community members in decision making within the community as it determines power-relations within the community. From Table 5.1, it can be seen that in Gumbi community there is currently a lack of open dialogue in managing and sharing game reserve information. The reasons given by more than half (eight out of twelve) of those who participated during focus group discussions may be directly linked to the Likert responses. In their accounts of the events surrounding Gumbi Game Reserve, it was reported that, during the inception stage there was more involvement of community members and the founders and ECT members were more visible and provided feedback on time (high bonding social capital).

However, participants reported that the ECT members have neglected community members in decision making and there are no updates provided to the community. For example, a Gumbi elderly man in his late 70s and who has lived his entire life in this community lamented:

"After the formation of Somkhanda Game Reserve (SGR), we never had meetings with the ECT members. We just know that there is a Trust but we don't know what it is and who is in it. No one provides us with information or reports on the use of financial benefits for the community. I am so angry about this because we should be allowed to participate in decision making".

Furthermore, a common concern raised by focus group participants is the 'diffusion of the traditional leadership system'. It has been observed that, despite the loyalty of the Gumbi community to their traditional leaders, there is a general sense and feeling among the research participants of the current decay in traditional governance systems. These observations suggest that, this might be the cause of power-conflict, corruption and exclusion of citizenry in decision making. Another participant, a former member of the Emvokweni Community Trust in Gumbi for example said:

"The passing away of our old chief has brought new dynamics in the power structure. The new chief wants to have the overall voice in decision making of the Somkhanda Game Reserve. We now have a lot of tensions between the Trust members and the traditional authorities and this is having a multiplier effect on the extent to which local people can participate in managing the SGR. The current Traditional Authority has sour working relationships with the existing Emvokweni Community Trust (ECT) and the community at large".

In all cases, the participants reported that, current conflict between ECT and traditional leadership has affected the holding of meetings. One informant, a former ECT member reported that, *"the conflict is purely power struggle where current members are being forced out of office illegally by the Traditional Leaders who want their own people, who are not elected to hold office to be in charge".*

Another interviewee reported that, the case is currently at the Master of Court. Moreover, the founding member of the Somkhanda Game Reserve also confirmed the current conflict between ECT and traditional leadership. He however, emphasised that, the conflict does not disturb the running of the Game Reserve because it is independently managed by Wildlands.

Turning on to Zondi community, 91% strongly disagreed to the notion of presence of open dialogue in managing the Ngome Game Reserve (NGR), hence a lower score of 0.15 (see Table 5.1). When a hypothesis that 'there is fairness in resource allocation' was proposed to research participants, a minority of participants (4%) indicated that there was fair allocation of resources. The majority of those who responded to this hypothesis cited exclusion of community members in decision making as the cause of unfair distribution of natural resources. Furthermore, in focus group discussions all, eight participants revealed that there were no consultative processes during the lifetime of the NGR. Thus, some respondents linked the violence against the Game Reserve to exclusion of community members in decision making. A male respondent aged between 50 and 60 years lamented:

"They came here and removed us from our land without any consultation; we just saw the cars parked around with white farmers and Inkosi (Chief). We were informed that we had to move as the place was supposed to be turned into a game reserve…….when the game reserve was still functional we never got involved in any decision making. We were never consulted by the Community Trust and we don't even know what a Community Trust is and how it came into being" (Pers.com, 2015f).

The above sentiments suggest that if any Community-Based Ecotourism (CBET) scheme is to be successful, there is need for fundamental social changes. These changes must be accompanied by a positive alteration in power relations among all the interested stakeholders. It is evident in both the Ngome and Somkhanda Game Reserves that power relationships are at the centre of the disenfranchisement of local people's participation. There is thus, an urgent need

to devolve the power structure and shift the locus of resource management to the people. Taken together, these results suggest that there is need to develop a strategy that will strengthen local people's participation in managing their resources, failure to which any intervention measure will not be adequate. This suggestion is supported by Büscher and Dressler (2012) who note that co-management schemes often end up effectively disenfranchising local people by excluding them in decision making.

5.6 Implications for Sustainable Community-Based Conservation

CBRM success has been defined in this paper as 'positive effect of environmental activities on social capital dimensions, namely; groups and networks, trust, collective action, social inclusion and information and communication'. The findings of this study suggest that the success of Community-Based Natural Resource Management in tribal areas greatly depends on the level of the existing social capital. A closer look at Gumbi community reveals that continued existence of Somkhanda Game Reserve and its success stories results from strong social capital which in turn appear to be instrumental in ensuring its sustainability. For example, high levels of trust and interaction of community members during inception of the Game Reserve secured its current state. However, the future success of Somkhanda Game Reserve (SGR) is greatly depended on the improvement of trust between community members, ECT and traditional leaders.

It is important to note that the current trust that exists among community members and their belief in traditional culture should be maintained through resolving the power-struggles between the ECT and traditional structures. To ensure sustainability of SGR, the conflict was escalated to the Master of Court to define the powers clearly to all stakeholders. Furthermore, the study suggests that the inclusion in decision making and sharing of information with community members will be improved after the Court ruling. Every effort is being taken to conserve the natural resources within Somkhanda Game Reserve. It currently has vast animals including the rhinoceros, wild dogs, kudus and is in the process of introducing the buffalos after concluding the consultative processes.

On the other hand, Zondi Community's lower social capital on various indicators - in particular cognitive, seems to have grossly contributed to the unsustainability of Ngome Game Reserve (NGR). Low levels of trust of community members in their traditional leaders and Community Trust led to the halt of all conservation activities. The Game Reserve fence which was erected was destroyed and buildings are dilapidated. Continuous exclusion of community members and lack of information seems to have worked against conservation efforts. There is a possibility that this was exacerbated by strong social cohesion of community members who united against their exclusion in decision making. To guarantee the resuscitation and sustainability of the Ngome Game reserve it is therefore advisable for policy makers to commence by appreciating the strong unity among community members. This acts as a driver for undertaking and developing community based ecotourism project within Ngome community.

5.7 Conclusion

This paper explored the role of community participation in natural resources management. It specifically examined the extent to which social capital can be an instrument for promoting collaborative management of Community-Based Ecotourism (CBET) initiatives in tribal communities of Kwa-Zulu Natal, South Africa. It further investigated collaborative efforts in the management of common pool resources in pursuance of nature conservation, specifically Community-Based Ecotourism in tribal communities. In light of the worldview, more attention was drawn to Gumbi and Zondi communities in KwaZulu Natal Province of South Africa. It has been revealed that the key to successful CBET collaborative projects revolves around social capital elements: structural indicators, cognitive indicators, collective action and power structures including stakeholder participation.

An in-depth look at cognitive and structural social capital represents an intricate situation in both Gumbi and Zondi communities. Although the communities are not immune from corruption, participants reported their robust trust among one another reflected by presence of strong social cohesion. On the other hand, there

is substantial evidence on the lack of trust with the traditional leadership structures among Gumbi and Zondi community members. This is evidenced by continuous conflicts between traditional leaders and Community Trusts (and with the community members in the case of Zondi). This ultimately led to lack of community participation in CBET issues that directly affect them. Consequently, the Zondi community revolted against the pursuance of CBET initiatives and destroyed the Game Reserve fence and eventually the built-property decayed. Whereas in Gumbi community it is evident that community members are interested in conservation, as it is something they aspire and have benefited from to a certain extent. Nevertheless, the continuous power struggle between traditional leaders and the Emvokweni Community Trust is not sustainable as this will increase the level of lack of trust and considerable social capital dissolution in Gumbi community. In essence, social capital seems to have emanated from the seed of social unity sown through Somkhanda Game Reserve founders and the preceding Chief. However, the passing on of the baton to succeeding leaders who may not share the same vision of collective action and pursuance of people's interests may pose a risk of rapidly destroying that social capital.

The evidence from this study suggests that, the frequent exclusion of rural population in participating in processes that have a direct influence on their lives undermines efforts of pursuing CBET. This view is supported by Hove *et al*. (2013) and Oteng-Ababio *et al*. (2013) who observed that, there is an urgent need to promote a strong and genuine grassroots grown community participation in environmental management decision making. In the same vein, Shackleton and Shackleton (2015) note that, under common ownership or use of land and resources there is often an expression of different expectations and needs as revealed in this study. There would therefore seem to be a definite need for these expectations and needs to be expressed and addressed systematically and transparently to accommodate all stakeholders' needs in co-managing CBETs in tribal areas with a gloomy history of injustice. There is, therefore, a strong need to invest more into social capital- an indispensable tool for successful co-management of CBET schemes that promotes sustainable development.

The present study confirms previous findings and contributes additional evidence revealed in the work of Blewit (2008:78) who notes that social capital as an operational concept *"denotes the relationships by which groups and individuals identify, communicate, network, build trust, enter into dialogue, resolve conflicts, and solve problems and realise collective and individual potential as agents of change and sustainable development*". As an analytical tool, social capital seems to provide a dynamic and holistic explanatory approach to the pursuance of Community-Based Ecotourism in land claimed communities compared with the dominant evaluative techniques in the tourism field. Another important practical implication is that, social capital can be used to promote the analysis of communities as heterogeneous and evolving opposed to assumptions of their homogeneity and static state. There is a strong possibility that social capital can also address power-relations, social exclusion and inequality through consideration of both structural and cognitive indicators.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Synthesis and General Conclusions

This research set out to establish the factors that influence the success and failure of environmental collaboratives located in tribal areas, specifically in Gumbi and Zondi communities. The study further attempted to determine the role of social capital in enhancing management and governance of collaborative game reserves. An examination of the successes and failures of environmental collaboratives in Gumbi and Zondi communities in KZN Province was undertaken in this study. Furthermore, an analysis and suggestions on the factors that promote the establishment and efficient functioning of environmental collaboratives in Gumbi and Zondi multi-cultural societies was done. In addition, an examination on how vital cultural knowledge can be gathered and used in environmental collaboratives in Gumbi and Zondi tribal communities in KZN was also done. Finally, the study developed a model that combines social, economic, physical and cultural factors to shape sub-Saharan environmental collaboratives in rural tribal areas. In view of the analysis undertaken and model developed, it can be safely confirmed that, all objectives of the study were achieved.

The results presented herein make several noteworthy contributions to co-management of natural resources in tribal communities that underwent land reform. The most outstanding is the importance of including all stakeholders in decision making. Stakeholder participation is regarded as a key ingredient in building trust within communities. Realising the fact that, Zondi and Gumbi communities were once excluded in decision making during the oppressive Apartheid era, a lack of it in co-managing communal resources can result in resistance from community members. These findings have significant implications for the understanding of how commitment and participation in such communities can play a significant role in building new norms of reciprocity and the two aspects can further act as a form of continuity to guarantee future success of collaboratives.

The second major finding was that, transparency is an avenue of openness and builds trust among stakeholders. The implication of this is the possibility that, transparency will positively increase stakeholder participation in collaborative environmental projects. The findings of this research provide insights for Community Trusts on how to improve communication networks with community members, traditional structures and conservation groups. The study has shown that weak communication from Emvokweni Community Trust and Ngome Community Land Trust caused people to distance themselves from conservation efforts of any nature. The evidence from this study suggests that, the frequent exclusion of rural population in participating in processes that have a direct influence on their lives undermines efforts of pursuing Community-Based Ecotourism in both Gumbi and Zondi communities although the impacts are more in Zondi. In general, therefore, it seems that, it is important to note that building social capital is a vital process that can be enhanced by effective communication and interactions across and amongst interested parties and partnerships in the management of common pool resources.

In line with the above, it has been observed that power relations play a pivotal role in moving forward collaborative resource management in tribal communities. Given the oppressive background the communities endured during the Apartheid era if any Community-Based Natural Resource Management scheme is to be successful, there is need for fundamental social changes. These changes must be accompanied by a positive alteration in power relations among all the interested stakeholders. It is evident in both the Ngome and Somkhanda Game Reserves that power relationships are at the centre of the disenfranchisement of local people's participation.

In the same vein, the study also found out that there is a challenge in balancing the traditional laws or cultures and South African Restitution of Land Rights Act 22 of 1994. For example, the main issue raised in the Gumbi community is the need of having traditional chiefs within Community Trust structures as they are cultural figureheads whereas the Land Claim Act prohibits such actions. However, further findings revealed that although the inclusion of traditional

chiefs might work under common agreements, it may pose power constraints if other parties feel they are being undermined.

Turning to the issue between the use of local natural resources and conservation in Gumbi and Zondi tribal communities, there was a general agreement among community members on the reasons of claiming the land. The most agreed reason was the need of being restituted to their fore-fathers land. However, due to land use changes over years and increased poverty in rural areas, some community members have opted pursuing conservation activities in order to improve their standard of living. Nevertheless, in Zondi, community members were not consulted prior to the establishment of Ngome Game Reserve and were prohibited from utilising any natural resource within the reserve. This situation created resentment toward conservation initiatives within the community leading to demolition of game reserve physical structures and bringing all community conservation activities to an indefinite halt.

Furthermore, the results of this study indicate that collective action can positively or negatively impact Community-Based Natural Resources Management. In the case of Gumbi, collective action of community members resulted in successful management of Somkhanda Game Reserve; whereas in Zondi, the collective action led to the end of Ngome Game Reserve as the basic consultative process was ignored by traditional leaders. These findings seem to provide important insights into the significant role of bonding social capital in attaining common goals and how weak bridging capital derails positive Community-Based Natural Resource Management efforts. The results support Pretty & Smith (2003) argument that positive social relationships within communities can significantly facilitate cooperation in attaining common goals.

Overall, this study strengthens the idea that social capital can be a vehicle through which the accumulation of different forms of capital can be achieved and contribute to sustainable environmental management. As an analytical tool, social capital seems to provide a dynamic and holistic explanatory approach to the pursuance of Community-Based Natural Resource Management schemes in

land claimed communities. Another important practical implication is that, social capital can be used to promote the analysis of communities as heterogeneous and evolving as opposed to assumptions of their homogeneity and static state.

6.2 Recommendations

The observed impacts of social capital variables on collaborative management of natural resources in tribal communities that claimed their land from previous oppressors should not be ignored in order to ensure sustainable development and improved rural livelihoods. Thus, the following anticipatory measures and strategies can be taken to positively enhance the role of social capital in successfully managing and governing communal natural resources in tribal areas:

- **Stakeholder participation**: there is a common African proverb which says '*If you want to go fast, go alone. If you want to go far, go together*'. The proverb is true in context of this study, for Community-Based Natural Resource Management schemes to be successful for a long period it is paramount to engage everyone. Failure to engage all stakeholders might lead to a quick rise and also prompt fall of collaborative community based conservation projects. There is, therefore, a definite need for stakeholder participation. The participation of all interested stakeholders in resource management discussions and decision making is an important process in enhancing and building new social networks.

- **Power**: can be defined as the ability to control people and their surroundings. Power was at the centre of eviction of people from their land by oppressors and today it remains vital in ensuring sustainable communities. There is thus, an urgent need to devolve the power structure and shift the locus of resource management to the people. Taken together, the obtained results suggest that there is need to develop a strategy that will strengthen local people's participation in managing their resources, failure to which any intervention measure will not be adequate. It has been observed that the inclusion of the traditional system into governance of communal resources can be useful in social

terms. However, there are chances that the traditional leaders might be dominant in governing community resources. It is therefore recommended to separate Traditional Power structures from community conservation without negatively impacting the cultural and social relations.

- **Communication:** refers to the fair sharing of information among all stakeholders. It is closely related to the participation element. In order to attain successful Collaborative Community-Based Natural Resource Management schemes. Information is regarded as a powerful weapon in attaining the common objectives; however a lack of it is detrimental in communities with a gloomy history of being denied access to information. The study therefore recommends the creation of strong communication networks between Community Trusts, traditional leaders and community members. It is recommended for feedback to be given to all parties within reasonable period of time. Timeous feedback limits possibilities of wrong speculations which might be shared among community members.

- **Trust and solidarity:** refers to believing and having confidence in one another within the community. Trust is the key for efficient and effective governance of co-owned CBNRM schemes especially in communities marked with a past where there was gross absence of trust due to oppressive regimes. The current study therefore recommends the establishment of acceptable CBNRM through participatory processes to avoid claims of exclusion. In line with this, it is advisable for responsible community structures to be established through diligent consultative processes (i.e. establishment of Community Trusts and its members). Furthermore, as mentioned earlier, timeous feedback should be given to community members and other interested stakeholders to hamper the breeding environment of negative speculations and rumours which derail or paralyze CBNRM efforts. Moreover, it is recommended that external actors should not be at the forefront of community conservation. Instead, they should follow and advise on the goals of local communities.

- **Social cohesion and inclusion:** Social cohesion refers to the intertwine relationship between and among stakeholders. Community social cohesion

builds trust between internal and external actors, especially in communities that were once subjected to various forms of segregation and dishonest corrupt systems of governance. As revealed in the Zondi community, people united in dismantling the Ngome Game Reserve (NGR) as they were not involved in decision making prior to its inception and during its operation. As the common saying goes, that '*Anything done for us without us, it's not for us'*. It is recommended to establish strong social cohesion through inclusion of all stakeholders in making decisions on issues that affect their livelihoods. It is important to note that, tribal communities strongly share values and norms. Realising this, the study therefore recommends more investments to be done in maintaining community values and norms as they serve as driving forces in building social cohesion and unity.

- **Economic empowerment:** refers to positive improvement in living standards at both personal and community levels. It is reported in the study that the main reason for tribal communities claiming their land was to be empowered economically. However, it has been noted that owning the land only is not an absolute of having an economically empowered life. Although proceeds from community conservation schemes (i.e. game reserves) might not be adequate for all community members, it is recommended for communities to form groups and start some projects (such as poultry, dressmaking etc.) to supplement their incomes.

6.3 Future Pointers

In light of the above conclusions and recommendations, it seems there is possibility for further research to be undertaken in collaborative environmental schemes in rural communities. The following pointers act as guidelines for possible avenues to explore:

- Land reform is a theme of day-to-day in most communities that were marginalised due to Apartheid or colonial regimes. It is recommended that further research be undertaken to determine the effectiveness of social capital in

different regions of Africa as the results obtained might not be applicable to all parts of the continent.

- More research is needed to determine whether higher social capital has negative effects in managing common natural resources. It would be more interesting to examine more closely the links between community social capital and development of rural communities through conservation.

- Further studies need to be carried out in order to validate the links between community participation and the role of social capital in Community-Based Natural Resource Management (specifically in tribal communities that are established through land reform processes). This can be in measuring the negative impacts of strong social capital in tribal communities. Further studies can also consider measuring the extent to which social capital has enabled the accumulation of other forms of capitals (i.e. financial or human capital).

- This study developed a new approach to Environmental Operational Research – 'Systemic resilience thinking'. The approach is fairly new to Community-Based Natural Resource Management at large. What is now needed is to apply it in the same rural settings across all developing nations. In this study, systemic-resilience thinking is used in developing an integrated participatory model for managing communal natural resources in turbulent areas such as those of Gumbi and Zondi communities. Systemic-resilience thinking will enable the absorbing of a large magnitude of disturbance and shocks before a socio-ecological system changes its structure.

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APPENDIX
ETHICS CLEARANCE LETTER

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Musavengane

CLEARANCE CERTIFICATE	PROTOCOL NUMBER: H15/02/38
PROJECT TITLE	Assessment of the role of social capital in collaborative environmental governance in tribal communities; the study of Gumbi and Zondi communities in KZN, RSA
INVESTIGATOR(S)	Mr R Musavengane
SCHOOL/DEPARTMENT	GAES/
DATE CONSIDERED	20 February 2015
DECISION OF THE COMMITTEE	Approved unconditionally
EXPIRY DATE	01 April 2017
DATE 2 April 2015	CHAIRPERSON (Professor T Milani)

cc: Supervisor : Dr D Simate

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

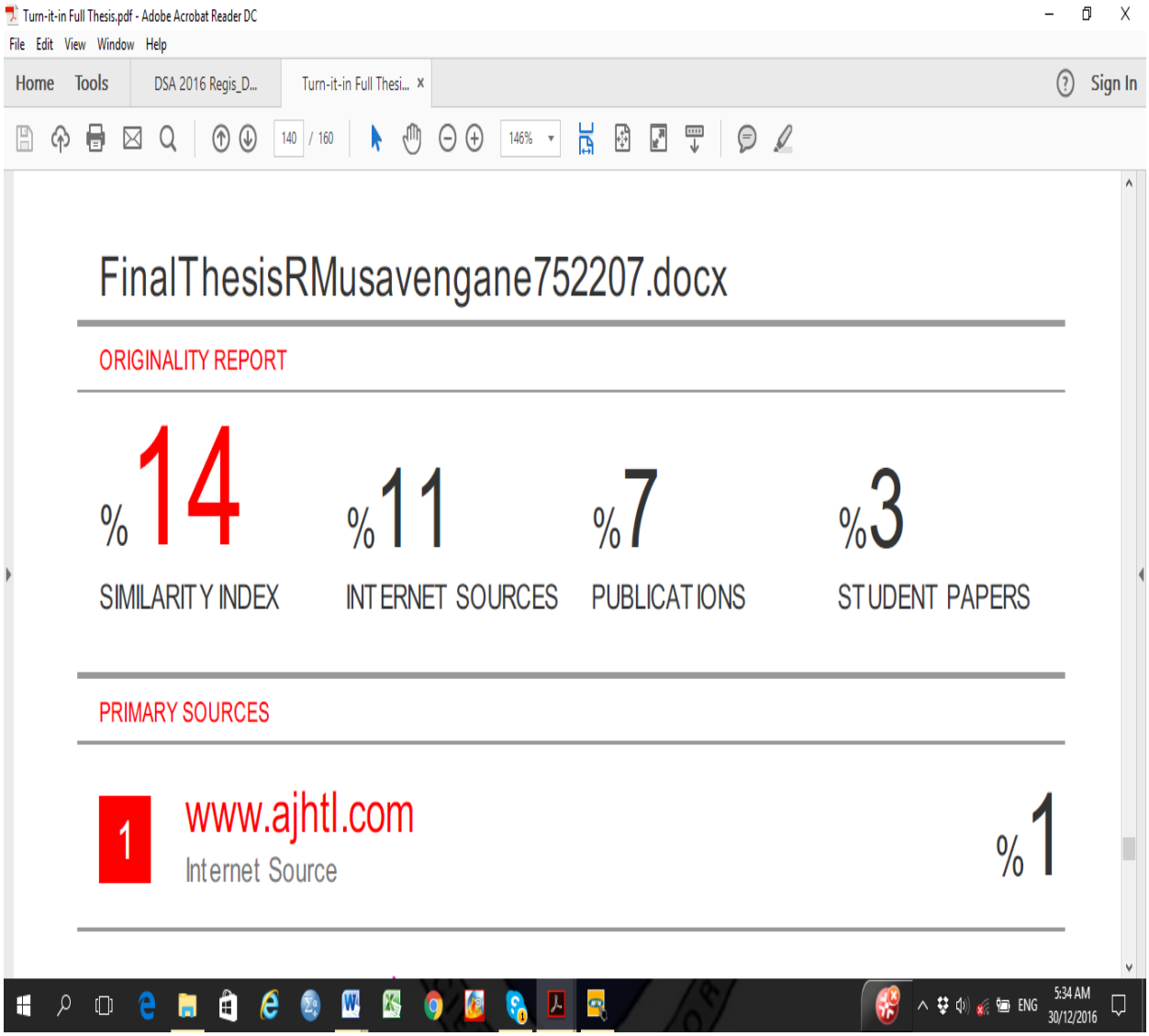
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

Signature

13 / 04 / 2015
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

PLAGIARISM REPORT



HOUSEHOLD QUESTIONNAIRES

Please kindly answer the following questions by putting (x) or by writing your answer in the provided space

SECTION 1: GENERAL QUESTIONS

1. Gender

Male	
Female	

2. In which age category to you belong?

18-25	26-30	31-35	36-40	40+

3. What is your highest level of education?

Never attended school	Primary Grade 7	Secondary Grade 10/12	Diploma	Bachelor Degree	Masters/PhD

4. Which is your current occupation

Farmer	Teacher	Trader	Housewife	Other (specify)

5. How many years of experience do you have in your above-mentioned occupation?

1-5	6-10	11-15	16-20	Over 21

6. Are you part-time or full time in this profession?

Part Time	
Full Time	

7. Which of the following ethnic identities do you associate yourself most?

IsiZulu	IsiXhosa	Ndebele	Other (Specify)

8. Which of the following categories best describes your position as head of the household?

Male Married, resident	Male Married, working away	Divorced or widowed	Female with married daughter at the households	Female with married sons at the households

9. As the head of the household, is this your tribal village?

Yes	
No	

10. May you specify where you were born?

In this village in my district	
In another village not in this district	

11. If you migrated from another province/district, when did you move to this village and why?

Year	
Give reason for relocation	

SECTION 2: LIVELIHOOD CROPS GROWN

12. What food crops do you usually grow as a household?

Sorghum	Sugar cane	Millet	Maize	Soya Beans	Other (Specify)

13. What cash crops do you usually grow as a household?

Cotton	Tobacco	Millet	Soya Beans	Maize	Others (specify)

14. What do you produce the crops for? (Please indicate by ticking (x) the relevant use ahead of each crop mentioned – N.B: you can tick more than one).

	Domestic Use	**Commercial Use**	**Feeding livestock**
Cotton			
Tobacco			
Millet			
Maize			
Soya Beans			
Others (specify)			
Others (specify)			

15. How much land in hectares (ha) would you require for cropping the above crops?

1-5 ha	5-10 ha	10-15ha	15-20ha	20-25ha	Other (specify)

16. Do you want large piece of land Yes _____ No _____

17. What could be the possible reasons for the increase of need for more land in your community? NB: You can choose more than one option.

The land is originally ours and it's part of our inheritance from our forefathers	
People are having more children and we need more land for farming crops	
The land we have is becoming unproductive and we are expanding our fields	
We fallow the land and create new farms for farming	
Our land has not changed and we hold to our traditional plots	

Other (specify)	

SECTION 3: LIVELISTOCK PRODUCTION AND GRAZING

18. How much in terms of livestock did you keep as a household over the last ten years?

Number of animals owned over a ten year period										
Animal	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cattle										
Goats										
Sheep										
Donkey										
Pigs										
Dogs										
Chicken										
others										

19. Where do your animals usually graze?

Family grazing land	
In the Game Reserve	
Community grazing land	
Rented land	
Government grazing land	
Others (specify)	

20. Do you think you have adequate grazing pastureland for your animals in this area?

Yes	
No	

21. If 'NO', why not

Reason 1	
Reason 2	

22. What problems have you been facing with animal rearing concerning grazing after land reclamation of the Game Reserve?

Problem 1	
Problem 2	

23. Considering the available grazing land, would you consider your livestock being too many in your area?

Yes	
No	

24. Do you face any threat from wild animals over your livestock? Yes_____ No _____

25. If yes, please specify_____

26. Do you get any support from any organisation on rearing your livestock? Yes_____ No_____

27. If yes, please state the organisation and the role.

Organisation 1	
Role of organisation	
Organisation 2	
Role of organisation	

28.

SECTION 4: LAND HOLDING AND LAND-USE

29. To your knowledge, to whom does the land belong in this community?

Government	Traditional authorities	Privately owned	Community	Open access	Other (specify)

30. Who mainly determine the use, the size of plots, and allocation of the land to households in your community?

The Government	The traditional authorities	Private operators	Community	No one	Self	Other (Specify)

31. Do you think you have enough land you require for habitation or crop/livestock farming?

Yes		No	

32. If no, how do you think you will get the land you require for habitation or crop/livestock farming?

From traditional authorities: By converting Game Reserve into other land use forms	
Will move from the community and get land elsewhere	
Will continue using the small piece of land	
Will rent from other members of the community	
Others (specify)	

33. How did you get the land you currently use? (*Tick appropriate*)

1	By inheritance	
2	Given by traditional leaders	
3	Given by government	
4	Bought it	
5	Renting	
6	Simply occupied it with no one's authority	

7	Other (Specify)	

34. Are you are aware of the land reclamation of the Game Reserve in your area? Yes___ No ___

35. Where you involved in the land reclamation process? Yes _____ No _____

36. Who initiated land reclamation process?

Community	
Traditional authorities (Chief)	
Non-governmental organisation	
Other (specify)	

37. Who came up with the idea of pursuing a Game Reserve after land restitution?

Community	
Traditional authorities (Chief)	
Non-governmental organisation	
Other (specify)	

38. In your own view, has the land related livelihood activities changed since land reclamation?

Yes		No	
Explain: _____ _____			

39. If yes, which of the following activities changed?

Land related activity that changed	**'Yes'**	**'No'**
Community wild game ranching in the Game Reserve		
Crop farming		
Grazing of livestock		
Harvesting of forest products		

40. Do you get involved in decision making regarding land use policy-making processes that affect your livelihood practices?

Strongly Disagree	Disagree	Undecided	Agree	Strongly Disagree

41. If 'Agree/Strongly Agree', which of the following describes the process of decision-making process?

	'Yes'	**'No'**
Community consultation meeting		
Representation by local authority councillors		
Representation by Chiefs		
Individually consulted		
Others (specify)		

42. If no, please explain how decisions are made and two reasons for not being involved:

_____
_____
_____
_____

43. If you have to leave the land you occupy or live on, what would be the reason? (Give two reasons in order of priority)

Biggest Reason 1	
Reason 2	

44. How do you feel about moving from your land you currently occupy?

Strongly negative	
Negative	
Strongly positive	
Positive	

45. Why would you feel like that?

We own the land	
We have nowhere to go	
We have an emotional and cultural attachment to the land of our ancestors	
We would give way to extension of the Game Reserve	
We would move to another better area	

SECTION 5: SOCIAL RELATIONSHIPS

Choose the correct response to the responses below. Use ✘ or ✓	**Strongly agree**	**Agree**	**Undecided/Neutral**	**Disagree**	**Strongly disagree**
(A) Groups and Networks: (Structural Social Capital)					
I belong to a conservation group					
I have ties with Traditional Leaders					
I work closely with family members in conserving our natural resources					
(B) Trust and Solidarity (Cognitive Social Capital)					
There is fairness of rules in the community					
There are official procedures in game reserve management					
There are dispute resolution procures in game reserve management					
There is fair allocation of resources					

There is openness in managing the game reserve					
(C) Collective Action & Cooperation					
We share similar values as community members					
We discuss goals and plans of the game reserve together as a community.					
There are community organised activities					
There are public service provisions l am benefiting from.					
(D) Social Cohesion & inclusion (inclusion, sociability, and conflict)					
There is harmonious relationships among community members					
There is social unity within the community					
I have been consulted in decision making.					
(E) Information & communication					
There is open dialogue in managing the game reserve					
We gather in form of meetings with Leaders					
We/I share information with leaders					
We/I receive feedback timeously					
(F) Economic empowerment					
I am employed by the game reserve					
I received formal training through the game reserve and have a certificate.					
I operate a business near the game reserve					

SECTION 6: GAME RESERVE MANAGEMENT AND COMMUNITY LIVELIHOOD

46. Are you a member of any conservation group in the community? Yes _____ No _____
47. If yes, please specify the name and nature of the group: _____
    _____
    _____
    _____
48. Do you belong to any group within the community, although not conervation per se?
    Yes_____ No _____
49. If yes, what are the objectives of the group
    _____
    _____
    _____
    _____
50. What does trust mean to you? -
    _____

51. Do you think you can depend on the group you belong to: Yes _____ No _____

Give Reason:

_____

_____

_____

_____

52. Are there any conservation organisations working with you in managing the community game reserve? Yes_____ No_____

Give names of organisations:

1. _____ _____
2. _____ _____
3. _____ _____
4. _____ _____

53. Do you think the there is a good relationship between community members and Traditional Authorities in terms of game reserve operations? Yes_____ No _____

Give Reason:

_____

_____

_____

_____

54. Do you community members external conservation organisations have a good working relationship? Yes_____ No_____

Give Reason:

_____

_____

_____

_____

55. If you ticked 'No' on the questions above, **tick** what you think might be the cause for reduced collaborative management effort:

	Not at all	High	Medium	Low
Corruption of game reserve management				
Nepotism				
Lack of proper monitoring				
Lack of opportunities for community members				
Belief on dogmatism and fatalism				
Lack of proper access to game reserve				

Fear of rural elite				
Lack of transparency in Game Reserve activities				
Other (specify)				

56. Do you have any suggestions on how to improve the status or operations of the game reserve? Discuss:

……
……
……
……

The END of the questionnaire
Thank you for your co-operation
PLEASE RETURN THE COMPLETED QUESTIONNAIRE TO THE RESEARCHER

FOCUS GROUP DISCUSSION QUESTIONNAIRE

SECTION 1: GOVERNANCE OF THE SOMKHANDA/NGOME GAME RESERVE

1. Explain your involvement in land reclamation process.
2. Explain if you have participated in meetings about the governance of Somkhanda/Gumbi Game Reserve.
3. Using the **Schutte Scale**, what were your perceptions (positive or negative) about the way the meetings were held, if you participated?
4. Explain your answer in (3) detail.
5. Do you think the community is treated as part of the decision-making in the governance of natural resources in your area?
6. Who, in your opinion, initiates meetings about the Game Reserve's affairs?
7. Using the **Schutte Scale**, how do you feel about the whole consultation process?
8. Do you think you are involved enough in the day to day governance of the Game Reserve? Kindly explain how you should be involved in the governance processes?
9. Is/Are there any communication channels between Game Reserve authorities and community members? Specify.
10. Do you think there is good communication between the community and park authorities regarding conservation of natural resources? If yes, in which way and if no, why not?
11. Are there other institutions or individuals that are involved in the governance of the Game Reserve? If there are, kindly mention them and their duties.

Organisation	Duties

12. Whose interest do you think the above organisations represent? Explain your answer.
13. Using **Schutte Scale**, what is the level of satisfaction are you as a community with their involvement and the interests these organisations represent.
14. Using the Schutte Scale, do you think your livelihood practices and conservation efforts as a community are a priority or not a priority of the organisations?

SECTION 2: CONFLICT MANAGEMENT AND RESOLUTION

15. Do you experience any conflicts regarding access to and use of natural resources in your community and how do you resolve them?

Type of conflict	Type of Authority	Conflict resolution mechanism

16. Do you encounter any conflicts with previous owners of the land? If yes, please specify and explain how you resolve the conflicts.

Previous owner (use code)	Type of conflict	Conflict resolution mechanism

17. Do you face any challenges with wildlife and how are they addressed?

Type of conflict	Type of animal	Resolution mechanism

18. Using the **Schutte Scale**, what are your perceptions (negative or positive) about the way mediation and resolution of natural resource based conflict are handled by local government authorities and their conservation partners?

SECTION 3: COMMUNITY LIVELIHOODS AND LOCAL CONSERVATION

19. Using the Schutte Scale, to what extent your community benefit from the park? If to a large extent, what benefits? If a lesser extent, what benefits would you like to accrue to you?
20. In your opinion, do you think land reclamation and the pursuing of Game Reserve has helped in uplifting your life?
21. If not, do you think there should be change of land use? If so, can you suggest other viable forms of land use?
22. Are you allowed to use natural resources and wildlife within the Game Reserve? If yes, how do you access them?
23. From your experience, can you explain if there has been damage or an improvement of forest and wildlife in this area since land reclamation?
24. In your opinion, what do you think could be the cause for reduction or increase of the natural resources in this area?
25. Which plants and wildlife are critical to your livelihoods? Mention the plant and animal species and what you use them for.

Plant species	**Area harvested**	**Use**

26. From the above stated species, which ones do you think have been disappearing as you use them?
27. From your knowledge, what do you attribute the disappearing of these species?
28. How has the disappearance of animal and plant species affected your livelihoods?
29. Who, in the recent past, decided on access and use of these resources?
30. These days, has this situation changed and who decides on access and control natural resources use?

SECTION 4: ENVIRONMENTAL MANAGEMENT EDUCATION

31. Can you mention and explain any environmental education programmes in your community?
32. As a community, how do you welcome these programmes?
33. In your opinion, who implement these environmental education programmes in your community?
34. Kindly specify the environmental and natural resource issues the education programmes target?
35. What do the educational programmes target these natural resources and environmental programmes?

36. Do you think enough is being done by the environmental agencies to equip your community to conserve natural resources?

SECTION 6: FUTURE OF RECLAIMED LAND IN COMMUNITIES

37. From your own view, do you think you benefited from land reclamation? If yes specify, if not, explain the benefits you anticipate.
38. In your own opinion, do you think the land was more productive with the former farmer (s) or with the current community members? Explain your answer.
39. Do you think the local government and conservation organizations dedicated to continuously assist in enhancing the community livelihoods?

SECTION 5: SOCIAL CAPITAL AND ITS FUNCTION IN CONSERVATION GROUPS

Broad Question	Specific Prompting Questions

How is your group going?	• How do you operate in:
	  ◦ Learning things
	  ◦ Supporting each other?
	  ◦ Taking action?
	  ◦ Having a shared vision?
	• What are the good stories about your group?
	• Do you have any bad stories about your group?
	• Why do people join your group?
	• Why do people leave your group?
	• Why do people stop participating in your group?
	• Why don't people join your group?

What support do you need?	• People?
	• Administration?
	• Burnout – load sharing?
	• Succession planning?
	• Governance?
	• Capacity building?
	• Financial?
	• Equipment?
	• How are you:
	  ◦ Relationship with conservation organisations?
	  ◦ Relationship with local government?
	  ◦ Relationship with other groups?
	  ◦ Relationship with the Network

How would you like to see community conservation in the future?	• What types and level of activity? • What level of membership of the group? • What type of Network support for the group?

	• What type of role of the group?

The END

Thank you for your co-operation

COMMUNITY LEADER QUESTIONNAIRES

❖ **Interview Guide Questions with Conservation Organisations**

1. Please explain your role as a Chief in managing the local game reserve?
   Explain:
   ……
   ……

2. Where you involved in the land reform process? ***Yes.....*** ***No.....***

3. Describe how land reform was done in your community?
   Discuss your
   role……
   .

4. Where you involved in the formation of the game reserve? ***Yes..... No.....***

5. What motivated you to be involved in game reserve activities?
   Explain:
   ……
   ……

6. Discuss how the game reserve was created soon after restitution of land?
   Explain your answer:
   ……

7. Who manages the game reserve?
   State:……
   ……

8. Do you meet with Game Reserve Managers/Trust committee? Yes…… No……

9. If answered yes above, how frequently do you meet (schedule meetings/when there is an issue to be addressed)?
   Explain your answer:
   ……

10. Do you hold meetings with community members to discuss game reserve issues (How, when)?
    Discuss:
    ……
    ……..

11. Are you aware of any conflicts that emanate from the game reserve? Yes……. No……..
    Describe:
    ……
    …..

12. What are the challenges you encountered game reserve managers?
    Mention and explain:
    ……

13. What are the challenges you encountered with community members regarding game reserve operations?
    Discuss:
    ……
    ……

14. From your experience, do you think the local people are well involved in managing natural resources in Gumbi/Zondi community (*delete inapplicable*)? Yes…… No……
    Explain:
    ……
    …….

15. Are there any other organisations or external people involved in managing the game reserve? Yes…… No……
    State them and outline their roles:
    ……
    ……

……
……

16. Is there a criterion that you use when choosing an organisation to work with in the game reserve? **Yes**…… **No**……
    Describe:
    ……
    ……

17. In your opinion, do you think much has been done by these organisations to support local people to advance their livelihoods after land restitution?
    Explain:
    ……
    …….

18. What form of support has been given to communities by conservation organisations? ***Explain***:
    ……
    ..

19. In your view, is the current game reserve model viable in realising community livelihoods been enhanced in the communities since land restitution.
    Explain:
    ……
    …..

20. Is the local municipality interested in game reserve project? Yes…… No……
    Give reasons:
    ……
    ….

21. Describe the relationships between Game Reserve Trust/management and community members.
    Describe:
    ……
    …….

22. Describe the relationships between Game Reserve Trust/management and external organisations.
    Describe:
    ……
    ……

23. Describe the relationships between Game Reserve Trust/management and municipality in regard to game reserve (e.g. assistance etc).

Discuss:

……

……

The END of the questionnaire
Thank you for your co-operation
PLEASE RETURN THE COMPLETED QUESTIONNAIRE TO THE RESEARCHER

CONSERVATION ORGANISATIONS QUESTIONNAIRES

❖ **Interview Guide Questions with Conservation Organisations**

1. What is your organisation's mandate in conservation?
   Explain:
   ……
   ……

2. When and how did your organisation began to be involved in the affairs of Gumbi/Zondi (*delete inapplicable*) community?
   Explain:
   ……
   ……

3. What activities in specific terms was or is your organisation involved in Somkhanda/Ngome game reserve (*delete inapplicable*)?
   Mention:
   ……
   ……

4. What motivated your organisation to be involved in Gumbi/Zondi community (*delete inapplicable*)?
   Explain:
   ……
   ……

5. In your opinion, at what level has your organisation been involved in the governance of natural resources in Somkhanda/Gumbi community (*delete inapplicable*)?
   Explain your answer:
   ……

6. How was or is your relationship with community members?
   Explain your answer:
   ……

7. What are the challenges you encountered with Gumbi/Zondi community members?
   Explain your answer:
   ……

8. How was or is your relationship with community leaders?
   Describe:
   ……
   …..

9. What are the challenges you encountered with Gumbi/Zondi community leaders?
   Mention and explain:
   ……

10. From your experience, do you think the local people are involved in the governance of natural resources in Gumbi/Zondi community (*delete inapplicable*)?
    Explain:
    ……
    …….

11. How do you link your organisation's activities with local people's livelihood expectations?
    Discuss:
    ……
    …….

12. In your opinion, do you think much has been done by your organisation to support the communities after land reclamation to advance their livelihoods?
    Explain:
    ……
    …….

13. What form of support have you been giving to communities from your organisation's involvement in the Somkhanda/Ngome game reserve (*delete inapplicable*)?
    Explain:
    ……
    ..

14. What has been your level of involvement in the governance of natural resources since the establishment of Somkhanda/Ngome game reserve?
Explain your answer:
……

15. How does your organisation facilitate the participation of local communities in the governance of natural resources to derive benefits?
Discuss:
……
….

16. In your view, is the current game reserve model viable in realising community livelihoods been enhanced in the communities since land reclamation.
Explain:
……
…..

17. Which institutions do you work with at community, national, regional and international levels in the conservation of natural resources in Gumbi/Zondi area?
Mention:
……
….

18. How do these institutions enhance collaborative management of natural resources in Gumbi/Zondi communities?
Explain your answer:
……

19. What are the challenges you encountered when working with the institutions identified above?
Mention and explain your answer:
……

20. From your view, how best can you describe relationships between community members & your organisation?

Element	**When we first joined**	**Today/when last participated**
(Example: the way we eat)	*4*	*2*
1. Trust	**-**	**-**
Trust between members		
Trust between members and organisation		
Trust between Community Trust and organisation		
2. Rules and Reciprocity: members…	**-**	**-**
Work together according to common rules		

Return acts of goodwill (helpfulness)		
Are helpful		
Are committed		
Recognise group values		
Show concern for group welfare		
Are willing to compromise for group benefit		
Share resources		
3. Similar values and beliefs	**-**	**-**
Have similar values with community members		
Have similar beliefs with community members		
Have similar beliefs with community trust		
Have similar values with community trust		
Have similar beliefs with Chief/community leader		
4. Communication quality and quantity	**-**	**-**
Are willing to listen		
Respect each other's viewpoints		
Consider all participant's input equally		
Have open and clear communication		
Share information		
Have strong working relationships with other participants		

Any comments on the above responses:

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21. What other ways do you think the game reserve can be useful in improving community livelihoods?

Explain your answer:

……

The END of the questionnaire

Thank you for your co-operation

PLEASE RETURN THE COMPLETED QUESTIONNAIRE TO THE RESEARCHER

GOVERNMENT INSTITUTION QUESTIONNAIRES

❖ **Interview Guide Questions with Conservation Organisations**

1. What is your institution's mandate in regard to conservation?
   Explain:
   ……
   ……

2. When and how did your institution began to be involved in the affairs of Gumbi/Zondi (*delete inapplicable*) community?
   Explain:
   ……
   ……

3. What activities in specific terms was or is your organisation involved in Somkhanda/Ngome game reserve (*delete inapplicable*)?
   Mention:
   ……
   ……

4. What motivated your institution to be involved in Gumbi/Zondi community (*delete inapplicable*)?

Explain:

……

……

5. In your opinion, at what level has your institution been involved in the governance of natural resources in Somkhanda/Gumbi community (*delete inapplicable*)?
   Explain your answer:
   ……

6. How is your relationship with community members?
   Explain your answer:
   ……

7. What are the challenges you encountered with Gumbi/Zondi community members?
   Explain your answer:
   ……

8. How was or is your relationship with community leaders?
   Describe:
   ……
   …..

9. What are the challenges you encountered with Gumbi/Zondi community leaders?
   Mention and explain:
   ……

10. From your experience, do you think the local people are involved in the governance of natural resources in Gumbi/Zondi community (*delete inapplicable*)?
    Explain:
    ……
    …….

11. How do you link your institution's activities with local people's livelihood expectations?
    Discuss:
    ……
    …….

12. In your opinion, do you think much has been done by your institution to support the communities after land reclamation to advance their livelihoods?
    Explain:
    ……
    …….

13. What form of support have you been giving to communities from your institution's involvement in the Somkhanda/Ngome game reserve (*delete inapplicable*)?

Explain:

……
..

14. What has been your level of involvement in the governance of natural resources since the establishment of Somkhanda/Ngome game reserve?
Explain your answer:
……

15. How does your institution facilitate the participation of local communities in the governance of natural resources to derive benefits?
Discuss:
……
….

16. In your view, is the current game reserve model viable in realising community livelihoods been enhanced in the communities since land reclamation.
Explain:
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17. Which other institutions do you work with at community, national, regional and international levels in the conservation of natural resources in Gumbi/Zondi area?
Mention:
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….

18. How do these institutions enhance collaborative management of natural resources in Gumbi/Zondi communities?
Explain your answer:
……

19. What are the challenges you encountered when working with the institutions identified above?
Mention and explain your answer:
……

20. From your view, how best can you describe relationships between community members & your institution?

Element	**When we first joined**	**Today/when last participated**
(Example: the way we eat)	*4*	*2*
5. Trust	**-**	**-**
Trust between members		

Trust between members and organisation		
Trust between Community Trust and organisation		
6. Rules and Reciprocity: members...	-	-
Work together according to common rules		
Return acts of goodwill (helpfulness)		
Are helpful		
Are committed		
Recognise group values		
Show concern for group welfare		
Are willing to compromise for group benefit		
Share resources		
7. Similar values and beliefs	-	-
Have similar values with community members		
Have similar beliefs with community members		
Have similar beliefs with community trust		
Have similar values with community trust		
Have similar beliefs with Chief/community leader		
8. Communication quality and quantity	-	-
Are willing to listen		
Respect each other's viewpoints		
Consider all participant's input equally		
Have open and clear communication		
Share information		
Have strong working relationships with other participants		

Any comments on the above responses:

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21. What other ways do you think the game reserve can be useful in improving community livelihoods?

Explain your answer:

……

The END of the questionnaire

Thank you for your co-operation

PLEASE RETURN THE COMPLETED QUESTIONNAIRE TO THE RESEARCHER

CONSERVATION ORGANISATIONS QUESTIONNAIRES

Please kindly answer the following questions

SECTION 1: GENERAL QUESTIONS

1. Briefly explain your mandate with regards to environmental issues and conservation with respect to the Somkhanda/Ngome Game Reserve (*delete inapplicable*).

Explain:
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2. In your opinion, do you think you have any role to play regarding natural resources and environmental issues in reclaimed areas?

Explain:
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3. Which environmental issues are of particular interest to your organisation in Somkhanda/ Ngome game reserve (*delete inapplicable*)?

Mention them:
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4. What do you think in specific terms is your role with regards to community environmental issues in Somkhanda/Ngome game reserve (*delete inapplicable*)?

Explain:
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5. From the way you work so far, have you undertaken educational programmes in Zondi/ Gumbi community (*delete inapplicable*)?

Specify programmes and motivate:
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……
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……

6. How was or is your relationship with a) community members and b) community leaders?

Explain your answer:
……
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……

7. From your experience, are there any environmental threats from Gumbi/Zondi community on natural resources (*delete inapplicable*)? Explain your answer in the following table.

Environmental Threat	**Impact on natural resources**	**Corrective measure**
1.		
2.		
3.		

8. From your knowledge, how many households have you worked with in Zondi/Gumbi community on environmental awareness and natural resource conservation?

State and explain:

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9. Do you think families who were living in the reclaimed areas are well experienced in conservation and should be managers of the Game Reserves?

Explain:

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10. Do you think continuing with Game Reserve is the best land use option for the livelihood of Zondi/Gumbi community?

Explain:

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11. Do you have a policy position to ensure continuity of managing natural resources in reclaimed areas?

Explain your answer:
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The END of the questionnaire
Thank you for your co-operation
PLEASE RETURN THE COMPLETED QUESTIONNAIRE TO THE RESEARCHER

INFORMATION SHEET TO RESEARCH PARTICIPANTS

School of Geography, Archaeology and Environmental Studies
Private Bag 3, Wits 2050, South Africa Enquiries: **GEOGRAPHY:** TEL: +27 11 717-6503 •
ARCHAEOLOGY: TEL: +27 11 717-6045 •
http://www.wits.ac.za/geography/

My name is Regis Musavengane; I am a PhD Researcher at the University of Witwatersrand University (WITS). The research I wish to conduct for my Doctoral degree is titled *"An assessment of the role of social capital in collaborative environmental governance in tribal communities: Case of Gumbi and Zondi communities in KwaZulu Natal Province, South Africa"*. I invite you to participate in this research.

The information that will be provided in this study will assist in understanding the importance of building strong relationships with community members and other stakeholders when managing natural resources. It is believed that community leaders set a standard for all community members. The study seeks to find best ways of leading community members in conservation projects. The study will therefore find out ways of creating best relationships with community members and other interested external organisations.

Your answers will be used for academic purposes and the ideas, responses, opinions and assertions that will be expressed, will be treated with high degree of confidentiality and privacy. Only with your permission, your names might appear in the research but will not be identified with any statements which are sensitive in nature. While the results of this study will be published, it is of utmost importance to provide information that is as accurate as possible.

Participation in this survey is voluntary and anyone may withdraw at any time. Also complete the attached consent form to show that you agreed to participate in this research. Should you have any questions or comments please contact me (the researcher) or Dr. Danny Simatele (Research Supervisor) on the details below. I therefore, kindly seek for your help to answer the questionnaire or participate in the interview to achieve the research purpose. If there are any questions you don't wish to answer, please feel free not to respond to them. Please let me know if you need results of this research.

Regards



Regis Musavengane
Wits PhD Researcher

FIELDWORK GALLERY



At the Umvoti Municipality – Home of Ngome Game Reserve



Current state of the Ngome Game Reserve



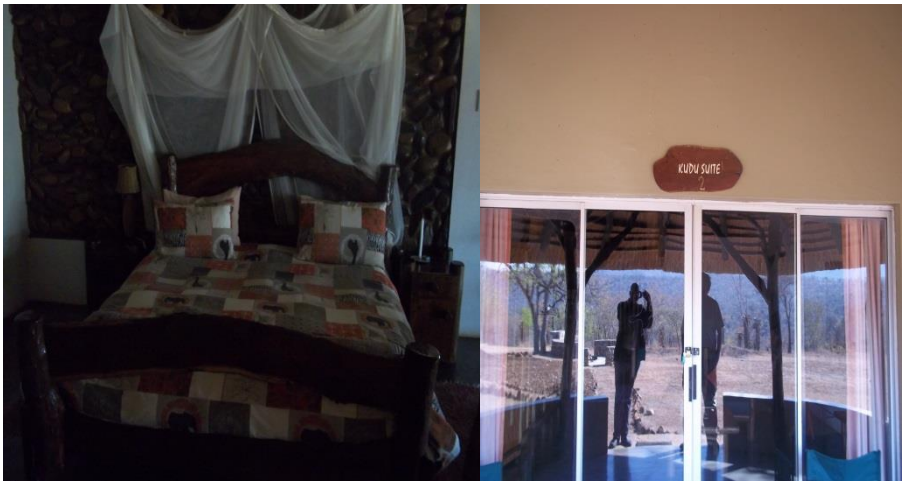
At the Somkhanda Game Reserve Gate with Nathi Gumbi



Interviewing the Traditional Leader – Induna (in IsiZulu language)



Somkhanda Game Reserve Restaurant and Front Office



One of the accommodation suites at the Somkhanda Game Reserve



Severity of water shortage in Gumbi community



Some of the wildlife grazing at the Somkhanda Game Reserve



Driving towards Gumbi community



Entering Umvoti municipality – home of Zondi community