THE DYNAMICS OF STRUGGLE FOR WATER IN POST-APARTHEID SOUTH AFRICA

Analysis of Negotiations over Water at Catchment Level

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MSc Thesis WM.10.16

April 2010
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This research is done for the partial fulfilment of requirements for the Master of Science degree at the UNESCO-IHE Institute for Water Education, Delft, the Netherlands.

Delft
April 2010
The findings, interpretations and conclusions expressed in this study do neither necessarily reflect the views of the UNESCO-IHE Institute for Water Education, nor of the individual members of the MSc committee, nor of their respective employers.
"A science is any discipline in which the fool of this generation can go beyond the point reached by the genius of the last generation".


This thesis is dedicated to my late beloved father, John C. Kwezi who passed away one month after the start of my studies at UNESCO-IHE.

To my mother Savera, my sisters Editha, Devotha, Linda and Diana. You are the best. God bless you all.
ABSTRACT

The history of South Africa has resulted in huge inequality in access to natural resources among various groups in the society. As a result, access to and control over water resources is skewed towards a few powerful stakeholders making it a critical and emotive issue, forming a potential arena of conflicts as well as social and political divisions. This unequal distribution of land and water resources has arisen because of historical reasons of political apartheid which divided people along racial lines, favouring the white minority at the expense of black majority. In response to redress the inequality in access to water resources, the government has pioneered the water reforms since 1998. However, over more than one decade of on-going reform processes, access to water is still divided along racial lines and is economically and politically contested. The reform process has been challenged by the institutions created in the past as well as by powerful water users who are often supported by neo-liberal economic policies. Consequently, the negotiations over water have evolved under the legal plural setting with complex set of fuzzy institutional structures.

With an aim to better understand the negotiations over water and expose the dynamics of struggle for water in South Africa, Potshini catchment was used as a study catchment to specifically examine the stakeholders involved in the negotiations over water as well as their capacities, positions, goals, interests and relationships between them. The study also analyzed the strategies used by stakeholders in the negotiations over water in order to assess the potential water conflicts and windows of opportunity to manage the conflicts and improve the negotiations. The extended case study approach was used to study the everyday interactions between stakeholders in the catchment and extend the lessons learnt in time (through history and seasonal fluctuation in water availability) and space (the upstream downstream interactions and the influence of local, national and global geopolitical forces). To explore the dynamics of struggle for water, the extended case study approach was used in a combination with stakeholder and conflict analysis. This enabled to understand the context through which the negotiations over water takes place, the stakeholders involved in the negotiations over water and the causes of struggle for water. In depth semi-structured interviews were used for data collection and the results were cross-checked through focus group discussions, observations, comparison with existing literature and by consultations with key informants such as local authorities, government, research and academic institutions and non-government organisations active in Potshini catchment. A conceptual model was developed and used to analyze the profile of stakeholders involved in the negotiations over water in the catchment.

The results obtained indicated that the negotiations over water in Potshini catchment takes place in an unlevelled playing field, with some of stakeholders having stronger leverage position than others. Nevertheless, stakeholders use their capacities to mobilize resources, and apply strategies that would ensure they defend what they perceive to be their fair share of the water cake. As a result, the negotiations over water are dominated by stakeholders' positions rather than their interests resulting into conflicting relationships between them. The results also show that, the structural inequality in access to land and water as well as the
need of various groups to cope with the fluctuations in the availability of water are the underlying causes of struggle for water in Potshini catchment. The study concludes that there are water conflicts in Potshini catchment, even though conflicts are not expressed in an explicit claim on water resource shared between users. The study maintain that water conflicts in Potshini catchment are manifested in the different forms of struggles over access to water resources and the notions of inequities in land and water control. In order to manage these conflicts and improves the negotiations over water, the study draws attention for the need to transform the current negotiation style from position-based to interest-based negotiations. Other options could be thinking of developing options and solutions that are beyond physical control and/or use of the water resources; and through making use of the forthcoming Thukela Catchment Management Agency, the current municipal Integrated Development Plan and the on-going research activities in Potshini catchment as appropriate platforms for mediating conflicts and improve the negotiations over water.

Key words: Stakeholders; negotiations over water; struggle for water; water reforms; conflicts; Potshini catchment; Potshini community; Commercial farmer; South Africa.
ACKNOWLEDGEMENTS

There are many individuals who contributed to the production of this thesis through their moral support, advice or participation.

I would like to thank the Dutch government through the Netherlands Organisation for international cooperation in higher education (NUFFIC) for awarding me the Netherlands Fellowship Programme (NFP) scholarship to study Master of science degree in Water Management at UNESCO-IHE institute for water education.

Thanks to Prof. Pieter Van der Zaag of UNESCO-IHE for his critical contribution to this thesis. You are such an ideal role model for a beginning academic and an up-coming water professional. I am also indebted to Jeltsje S. Kemerink of UNESCO-IHE for her patience, careful supervision and encouragement throughout the time of my research. It has been both a privilege and a pleasure to have been supervised by you. I sincerely thank you for being the sort of a mentor every student needs—astute, critics supportive, enthusiastic, and inspiring. Your efforts resulted in many improvements, yet you bear no responsibility for the remaining shortcomings.

The work presented in this thesis was funded by DGIS and UNESCO-IHE. The field work was assisted by the School of Bioresources Engineering and Environmental Hydrology and the Centre for Environment, Agriculture and Development of the University of KwaZulu-Natal, South Africa. I thank the respondents for sharing their knowledge and opinions with me. My gratitude goes to Ms. Ncamsile Promise Mduba for translations during interviews, to Mr. Michael Malinga and Ms. Hlengiwe Mabaso for their assistance in the field and to Prof. Graham Jewitt for his valuable comments. I further extend my sincere appreciation to Mrs. Sizakele Mduba, Mr. Wombe Mduba and their families for hosting me during my field work. I also had fortune to have the support of my fellow student Ms. Julia Wesely of Stockholm University in Sweeden. I met Julia during my field work in Potshini. Throughout the field work, she encouraged and provided me with critical comments. It was a pleasure to have met and worked with you.

The encouragements from my fellow participants, Maybin Ngámbi from Malawi, Leonard Hango from Namibia, Raymond Luwita from Uganda and Niken Puspitasari from Indonesia are highly appreciated. SIYABONGA!

Special thanks to Fr. Didas Kasusura, Marloes Mul, Nancy Mbicari, my family and friends for their understanding, encouragement and moral support over the year of my candidature.

Finally and most importantly, I thank the almighty God of all good health and blessings.
# TABLE OF CONTENTS

ABSTRACT .................................................................................................................................. I
ACKNOWLEDGEMENTS .................................................................................................................. III
LIST OF TABLES .............................................................................................................................. VII
LIST OF FIGURES ............................................................................................................................ VII
LIST OF BOXES ............................................................................................................................... VIII
LIST OF ACRONYMS ....................................................................................................................... IX

1 INTRODUCTION .......................................................................................................................... 1

1.1 BACKGROUND OF THE STUDY ............................................................................................. 1
1.2 DESCRIPTION OF THE PROBLEM ......................................................................................... 2
1.3 JUSTIFICATION OF THE STUDY ............................................................................................ 3
1.4 STUDY OBJECTIVES AND RESEARCH QUESTIONS .......................................................... 3
  1.4.1 Research objective ........................................................................................................... 3
1.5 DEFINING STRUGGLES IN THE CONTEXT OF THE RESEARCH ........................................ 4
1.6 STRUCTURE OF THE THESIS ............................................................................................... 5

2 LITERATURE REVIEW .................................................................................................................. 7

2.1 INTRODUCTION ....................................................................................................................... 7
2.2 THE HISTORICAL AND INSTITUTIONAL CONTEXT OF SOUTH AFRICA ......................... 7
2.3 THE SOCIO-ECONOMIC CONTEXT OF DEMOCRATIC SOUTH AFRICA ............................ 10
2.4 WATER RESOURCES MANAGEMENT IN SOUTH AFRICA ............................................... 12
2.5 INSTITUTIONAL FRAMEWORK IN RELATION TO THE REFORMS IN WATER SECTOR .... 14
  2.5.1 Colonial and apartheid era .............................................................................................. 14
  2.5.2 Post apartheid era .......................................................................................................... 15
2.6 INSTITUTIONAL FRAMEWORK IN RELATION TO THE LAND REFORMS ...................... 16
2.7 GLOBAL POLITICS AND LEGAL PLURALISM IN WATER AND LAND REFORMS ........ 19
  2.7.1 Global politics in water and land reforms ...................................................................... 19
  2.7.2 Legal pluralism in water and land reforms .................................................................... 21
2.8 WATER AND LAND RIGHTS INTER-PHASE ....................................................................... 21
2.9 STAKEHOLDERS AND CONFLICTS IN WATER RESOURCES MANAGEMENT ............... 24
  2.9.1 Stakeholders in water management ............................................................................... 24
  2.9.2 Stakeholder analysis: A process, an approach and a tool ............................................. 25
  2.9.3 Conflicts in water management ..................................................................................... 27
  2.9.4 Power relations in water conflicts .................................................................................. 30
  2.9.5 Conflict Analysis ........................................................................................................... 32

3 RESEARCH METHODOLOGY ....................................................................................................... 35

3.1 INTRODUCTION ....................................................................................................................... 35
3.2 CONCEPTUAL FRAMEWORK OF THE RESEARCH ............................................................ 35
  3.2.1 The context of the negotiations over water ................................................................. 35
  3.2.2 The causes of struggle for water ................................................................................... 36
  3.2.3 Actors/Stakeholders ...................................................................................................... 37
3.3 GENERAL APPROACH OF THE STUDY .............................................................................. 37
3.4 DATA COLLECTION: INSTRUMENTS, TECHNIQUES AND METHODS ............................. 38
3.5 DATA ANALYSIS .................................................................................................................... 38
3.6 DESCRIPTION OF THE STUDY CATCHMENT: THE POTSHINI CATCHMENT .................. 40
4 RESULTS AND ANALYSIS ............................................................................. 43
  4.1 INTRODUCTION ...................................................................................... 43
  4.2 IDENTIFICATION, CATEGORISATION AND DESCRIPTION OF STAKEHOLDERS 43
     4.2.1 The commercial farmer and the Potshini community ......................... 43
     4.2.2 The Amangwane Traditional Authority .............................................. 51
     4.2.3 Government Institutions .................................................................. 53
     4.2.4 Civil Society Organisations ............................................................... 56
  4.3 ANALYSIS OF STAKEHOLDERS’ CAPACITIES ...................................... 56
     4.3.1 Bio-physical and economical resources ............................................. 57
     4.3.2 Social resources ................................................................................ 57
     4.3.3 Orientational resources ..................................................................... 58
     4.3.4 Institutional resources ....................................................................... 59
  4.4 ANALYSIS OF STAKEHOLDERS’ POSITIONS, GOALS AND INTERESTS ....... 60
     4.4.1 Stakeholders’ positions ...................................................................... 60
     4.4.2 Stakeholders’ goals ........................................................................... 60
     4.4.3 Stakeholders’ interests ....................................................................... 62
     4.4.4 Revisiting stakeholders’ positions, goals and interests ....................... 63
  4.5 THE ANALYSIS OF STAKEHOLDERS’ STRATEGIES IN THE NEGOTIATIONS OVER WATER 69
     4.5.1 Strategies of the commercial farmer .................................................. 69
     4.5.2 Strategies of the Potshini community .................................................. 71
     4.5.3 Strategies of the traditional authority .................................................. 73
     4.5.4 Strategies of the local municipality ...................................................... 73
     4.5.5 Strategies of the government departments .......................................... 74
     4.5.6 Strategies of civil society organisations ............................................. 74
  4.6 ANALYSIS OF STAKEHOLDERS’ RELATIONSHIPS ................................ 75

5 DISCUSSION ................................................................................................. 83
  5.1 INTRODUCTION ...................................................................................... 83
  5.2 THE UNDERLYING CAUSES OF STRUGGLE FOR WATER .................. 85
     5.2.1 Structural inequality in access to land and water ............................... 85
     5.2.2 Fluctuation in water availability ....................................................... 90
  5.3 WINDOWS OF OPPORTUNITY TO IMPROVE THE NEGOTIATIONS OVER WATER 94
     5.3.1 Interest-based negotiations ............................................................... 94
     5.3.2 Thinking beyond the ‘water box’ ....................................................... 96
     5.3.3 Capitalizing on the existing institutional frameworks ....................... 97

6 CONCLUSION AND RECOMMENDATIONS ............................................... 101
  6.1 INTRODUCTION ...................................................................................... 101
  6.2 CONCLUSIONS ....................................................................................... 101
  6.3 RECOMMENDATIONS TO IMPROVE THE NEGOTIATIONS OVER WATER 104
  6.4 FURTHER RESEARCH AREAS .............................................................. 105
  6.5 REFLECTION OF THE RESEARCH PROCESS ..................................... 106

LIST OF REFERENCES .................................................................................... 109

ANNEXES ....................................................................................................... 121
  ANNEX 1: SAMPLE OF THE SEMI-STRUCTURED INTERVIEWS .................. 123
  ANNEX 2: RESEARCH PLAN AND LOGISTICS ....................................... 127
# LIST OF TABLES

Table 1: Characteristic features of Potshini Catchment .......................................................... 41  
Table 2: Stakeholders involved in the negotiations over water in Potshini catchment ............... 44  
Table 3: Basic information on the Amangwane Traditional Authority ...................................... 52

# LIST OF FIGURES

Figure 1: The conceptual framework of the research The idea adapted from International Alert (2004) ........................................................................................................................................... 36  
Figure 2: General research approach ......................................................................................... 37  
Figure 3: Conceptual model for the analysis of stakeholders in the negotiations over water .... 39  
Figure 4: An overview of the Thukela river basin and the Potshini Sub-catchment .................. 41  
Figure 5: Education level of the interviewed respondents by gender ....................................... 46  
Figure 6: The pictures showing different sources of water supply ............................................ 48  
Figure 7: Gender representation by sub-stakeholder group in Potshini community .............. 49  
Figure 8: Respondents in Potshini community in sub-stakeholder groups ...................... 50  
Figure 9: The heterogeneity model of the Potshini community ............................................. 51  
Figure 10: The Amangwane Traditional Authority governance structure ................................. 52  
Figure 11: Pictures showing the installed set RWH storage tanks in one of the farmers’ household ......................................................................................................................... 54  
Figure 12: Analysis of goals of farmers in Potshini community .................................................. 62  
Figure 13: Farmers (F) and Non-Farmers (NF) ........................................................................ 64  
Figure 14: Externally Supported Farmers (ESF) and Non-Externally Supported Farmers (NESF). 65  
Figure 15: Civil society organisations (CSO) and Farmers (F) .................................................. 66  
Figure 16: Non-Farmers (NF) and Civil Society Organisations (CSO) ................................. 66  
Figure 17: Farmers (F) in Potshini community and the Commercial Farmer (CF) ............... 67  
Figure 18: Government Departments (GD) and Local Municipality (LM) .............................. 68  
Figure 19: Traditional Authority (TA) and Local Municipality (LM) ....................................... 69  
Figure 20: The pictures showing the strategies of the commercial farmer .............................. 70  
Figure 21: The pictures showing the strategies of Farmers in Potshini community ............... 72  
Figure 22: Pictures showing poorly maintained infrastructures in Potshini community ......... 75  
Figure 23: Pictures showing parts of the communal grazing land ............................................ 76  
Figure 24: Framework of the dynamics of struggle for water in Potshini catchment ............. 83  
Figure 25: Position-based versus interest based negotiations ................................................... 94
# LIST OF BOXES

<table>
<thead>
<tr>
<th>Box</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The trend of land related legislations in South Africa</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>Water rights</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>The Province of KwaZulu-Natal</td>
<td>42</td>
</tr>
<tr>
<td>4</td>
<td>Community institutions</td>
<td>47</td>
</tr>
<tr>
<td>5</td>
<td>DWAF RWH Programme</td>
<td>55</td>
</tr>
<tr>
<td>6</td>
<td>Why the Potshini community can not exercise its situational power in water control?</td>
<td>86</td>
</tr>
<tr>
<td>7</td>
<td>Neo-liberalism and the struggle for land and water in Potshini catchment</td>
<td>89</td>
</tr>
<tr>
<td>8</td>
<td>The RWH storage tanks project and the dynamics of struggle for water</td>
<td>92</td>
</tr>
</tbody>
</table>
# LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AgriSA</td>
<td>Agricultural Trade Association in South Africa</td>
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<td>ANC</td>
<td>African National Congress</td>
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<td>API</td>
<td>Approved Project Implementers</td>
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<td>ATA</td>
<td>Amangwane Traditional Authority</td>
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<tr>
<td>CF</td>
<td>Commercial Farmer</td>
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<td>CMA</td>
<td>Catchment Management Agency</td>
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<tr>
<td>CSO</td>
<td>Civil Society Organizations</td>
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<tr>
<td>DAEA</td>
<td>Department of Agriculture and Environmental Affairs</td>
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<tr>
<td>DWAF</td>
<td>Department of Water and Forestry Affairs</td>
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<tr>
<td>DGIS</td>
<td>Directorate General for International Cooperation</td>
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<tr>
<td>ESF</td>
<td>Externally Supported Farmers</td>
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<td>F</td>
<td>Farmers</td>
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<td>FSG</td>
<td>Farmer Support Group</td>
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<td>GD</td>
<td>Government Departments</td>
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<td>GI</td>
<td>Government Institutions</td>
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<tr>
<td>IDP</td>
<td>Integrated Development Plan</td>
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<td>IFP</td>
<td>Inkatha Freedom Party</td>
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<td>IWRM</td>
<td>Integrated Water Resources Management</td>
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<td>LM</td>
<td>Local Municipality</td>
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<td>LRP</td>
<td>Land Reform Programme</td>
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<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>Non-Externally Supported Farmers</td>
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<td>NSIF</td>
<td>Non-Self Identified Farmers</td>
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<td>NWA</td>
<td>National Water Act</td>
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<td>PIA</td>
<td>Programme Implementing Agency</td>
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<td>RDP</td>
<td>Reconstruction and Development Programme</td>
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<td>RWH</td>
<td>Rain Water Harvesting</td>
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<td>SIF</td>
<td>Self-Identified Farmers</td>
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<td>SSI</td>
<td>Smallholder System Innovations in Integrated Watershed Management Project</td>
</tr>
<tr>
<td>TA</td>
<td>Traditional Authority</td>
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<tr>
<td>ULM</td>
<td>UKhahlamba Local Municipality</td>
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<td>WUA</td>
<td>Water User Associations</td>
</tr>
<tr>
<td>WSWB</td>
<td>Willing-Seller, Willing Buyer</td>
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1 INTRODUCTION

1.1 Background of the study

Water problems in the world are neither homogeneous, nor constant or consistence over time; they often vary in time and space (Biswas, 2004). This is attributed by the fact that, water is constantly in motion, passing from one state to another as liquid in the form of rain, vapour when transpired as green water in the unsaturated soils and blue water in the rivers flows, lakes and aquifers; and from one location to another (Falkenmark and Folke, 2002). This unique characteristic of water makes water problems local and context-specific in their occurrence (Mosse, 2008). Mollinga (2008) point out that water problems are not only caused by a combination of natural and physical processes of water abstraction and storage but also are physically, ecologically and human made, embedded in the locally specific outcome of social and political histories and processes.

To deal with water related problems; water use and management practices in a specific locality are defined through continuous negotiations and bargaining between different actors (Delgado and Zwartveen, 2007). The platform in which the negotiations over water take place is in a multiple legal systems in which different normative orders co-exist and interact with different coercive means and degree of legitimacy (Von Benda-Beckmann, 1997; Bentzon et al., 1998; Boelens et al., 2005). As water resource is increasingly becoming scarce due to biophysical, economical, socio-political and institutional processes, water users compete over this scarce resource using different normative orders to claim their rights over water (Meinzen-Dick and Bakker, 2001; Mehta, 2007). The situation becomes much more challenged when existing water institutions are changed, as they often imply the change in the formerly defined social-political and economic power relationships between people (Mollinga, 2001; 2008; Mosse 2008). These challenges have become apparent in the water reform process carried out in South Africa; a country that has been haunted for decades by racial segregation under the so called apartheid regime (Perret, 2002).

The water sector reforms in South Africa emphasizes on the need to correct historical imbalances in ownership of the means of production. They also stress the need to address poverty among the mostly rural communities (Chikozho, 2008). The National Water Act of 1998 formulated during the transition to the post-apartheid era, defines the state as the custodian of the nation’s water resources and only water required to meet basic human needs and maintain environmental sustainability is guaranteed as a right (RSA, 1998a). This is radically different from the previous water acts which were based on riparian water rights. The new water act gives the state a strong tool to redress race and gender inequities inherited from the past. However, the implementation and enforcement of the water act is highly contested by the historical entrenched socio-economic and political powers in the society; and a decade after the endorsement of the National Water Act, access to water is still highly stratified along racial lines (Steyl et al., 2000; Bond, 2006; Merry, 2008). It is apparent that in South Africa various groups in the society struggle for water under the legal
plural setting using different social, cultural, political, values and norms to justify their claim over water (Perret, 2002; Boelens et al., 2005). Since different individuals or groups involved in the struggle for water have different interests supported differently by socio-economic and political powers it is likely that there is a potential for conflicts between them. Therefore, critical understanding of the stakeholders directly or indirectly involved in the struggles for water and the strategies they employ in the negotiations over water is the most important element in managing these conflicts (Ramirez, 1999). The information obtained can be used in shaping the negotiations and to develop robust and sustainable water sharing arrangements at various levels in the catchment (Hirsch et al., 1999).

The Potshini catchment is located in the Thukela river basin on the foothills of the Drakeberg Mountains in south eastern part of South Africa (The Kwazulu Natal Province). The study build further on the research done under the SSI\textsuperscript{1} project (Bhatt et al., 2006) and focused on the negotiations on access to water between the various stakeholders in the catchment. A systematic study of the identification of stakeholders and their profiles, the context through which the negotiations over water takes place and the causes of struggles for water was conducted. In addition, the study analyzed how these three elements are dynamically linked and influenced in time (through history and seasonal fluctuation in availability of water) and space (by upstream-downstream interactions in the catchment, and by local, national and geo-political forces).

1.2 Description of the problem

Previous studies show that competition over water and unequal distribution in access to water and land resources form potential for water conflicts between the commercial farmers and the smaller holder farmers in Potshini catchment (Kemerink et al., submitted; cf. Barry, 2007). The unequal control of water and land resources is mainly due to the apartheid policies which divided people along racial lines; favouring distribution of arable land and the investment in hydraulic infrastructure to the white-owned commercial farms at the expense of the people in the former homelands (cf. Grey and Saddoff, 2006). The smallholder farmers inhabit the upstream part of the catchment (a former homeland) to which they were partly relocated during apartheid. At the downstream end of the catchment commercial farms are located. The streams in Potshini catchment (most of them being perennial) provides water for domestic use to the upper part of the catchment, while replenishing reservoirs for commercial farmers downstream. Extreme low flows occur in winter time between June and August the time when the smallerholder farmers and their cattle suffer from water shortage, sometimes even for domestic use when the boreholes run dry (Kongo and Jewitt, 2006). The unequal control of water and land resources and the scars of apartheid have hampered the relationship between the smallerholder farmers and commercial farmers and have negatively affected the arrangements for joint development and utilization water resources in the catchment (Kemerink et al., submitted).

Moreover, the legal plural conditions in which access to water has to be negotiated in the former homeland in Potshini catchment is characterised by a more complex reality than

\textsuperscript{1} SSI Project - Smallholder System Innovations in Integrated Watershed Management Project (Bhatt et al., 2006)
other parts of the country (Kemerink et al., submitted). This is due to the co-existence of both traditional and state governance structures in which the roles and responsibilities of traditional leaders are unclear (Lehman, 2007). The traditional leaders still have power over land tenure in the former homelands both in representation and in actual policy implementation in the local government legislations\(^2\), which far exceed their unstated role in the constitution (Lipuma and Koeble, 2009). However, the authority of the chief has lost legitimacy among the rural population as it was seen as the puppet of the white government during apartheid (Mamdani, 1996). Furthermore, the power relations between commercial farmers and the smallholder farmers as well as the institutional context also shape the negotiations over water (cf. Mosse, 2008). The commercial farmers have stronger economical power because they have vested economic position due to the fact that they contribute significantly to the nation’s food security (Chikozho, 2008). The economic power of commercial farmers put them in a leverage negotiation position than the smallerholder farmers over issues related to land and water management in the catchment as they are often and continuously supported by neo-liberal water reforms and privatization policies (Boelens et al., 2007).

1.3 Justification of the study

The above problem description shows that the negotiations over water in Potshini catchment takes place in a complex environment involving the interactions of various groups. This is because the relationships between individuals and groups are not only based on economic, social, cultural and political histories of apartheid but also represent other inequitable and exploitative intra and extra-community relationships over time (Chikozho, 2008). Intervening in catchment water management practices without clear understanding of the stakeholders involved, the context through which the negotiations over water takes place and the causes of struggles for water, may trigger the potential water conflicts rather than the use of water itself (Hirsch et al., 1999). This research was therefore conducted to enhance an in-depth understanding of the negotiations over water in Potshini catchment. The research specifically contribute to the ongoing negotiations among various stakeholders and provide useful inputs in developing a robust and sustainable water management arrangements at various levels in Potshini catchment and beyond.

1.4 Study objectives and research questions

1.4.1 Research objective

The overall objective of this study was to conduct an in-depth analysis of negotiations over water in Potshini catchment.

Specific objectives

The meet the overall objective of the study, the following specific objectives were addressed:

\(^2\) Traditional Leadership and Governance Framework Act, the Municipal Structural Act and the Communal Land Rights Act (Lipuma and Koeble, 2009).
a. To identify stakeholders involved in negotiations over water and analyze their capacities, position, goals, interests and the relationships between them;
b. To analyze the strategies used by the stakeholders in the negotiations over water;
c. To analyze the potential water conflicts as well as the windows of opportunity to manage them.

Research questions

To meet the study objectives the following research questions were investigated:

1. Who are the key stakeholders involved in the negotiations over water in Potshini catchment? What are their capacities, positions, goals, interests, strategies and relationships?
2. What are the underlying causes of struggle for water in Potshini catchment and how are they shaped in time and space?
3. What are the potential water conflicts in Potshini catchment? How are they manifested? Is there potential to manage these conflicts and improve the negotiations over water?

1.5 Defining struggles in the context of the research

During the liberation struggles, many South Africans (most of them from poor and working class) are believed to have fought and died not just for political freedom from apartheid, but for socio-economic freedom and justice including the redistribution of the nations' wealth (Thompson, 2006). After the end of political apartheid in 1994, the vast majority of South Africans gave the democratic governance the political power to ensure that the nation's natural resources like water would be controlled and accessible to all citizens irrespective to race and class (Butler, 2004). These high expectations are reflected in the Reconstruction and Development Programme (RDP) as well as in the on-going water and land reforms. However, more than a decade and half since the end of political apartheid, the division of wealth is hardly unchanged as compared to the expectations raised at the very early beginning of post-apartheid South Africa (Swatuk, 2008; cf. Grimble and Wellard, 1997). As a result, most South Africans who gave the political mandate to the democratic government still struggle over the material conditions of life and livelihood. According to Hart (2008) and Peters (2009) these struggles are the expression of the frustration about the dire conditions in which people live compared to the living conditions of the elite.

The on-going struggles in South Africa are specific yet connected in time and space (Hart, 2006). The struggles in time are revealed in the country's painful history and interactions of policies imposed during colonial, apartheid and post-apartheid era. The struggles in space are revealed by the interconnection between the former homelands and the rest of the country, for example rural -urban migration, and the upstream downstream interactions at catchment level. But also in relations with regional developments and the geo-political forces, for example the Zimbabwean economic crisis and the influence of neo-liberal policies on the land and water reforms in South Africa. In a more explicit view, the struggles in South
Africa range from the deep-rooted anger over the forced evictions during apartheid, protests against the slow pace of land reforms and its framing in terms of the ‘willing -buyer, willing -seller’ model, recent murderers of several white commercial farmers, anger of black tenants over the on-going abuses on white owned farms and the urban-based movements opposing the costs of basic services of water and electricity (Hart, 2006; Steinberg, 2002). Also the xenophobic attacks\(^3\) that occurred in South Africa in May 2008 can be viewed as examples of struggles over the structural inequality in the South African society.

For the purpose of this research, I assume that struggles over access to water resources and notions of inequities have different manifestations. It does not necessarily include an explicit and open claim on a water resource currently used by another user or outspoken resistance to proposed changes (cf. Yasmi et al., 2006). It can also be a passive struggle in which dissatisfaction is expressed without action being taken or the dissatisfaction is expressed in frustrating relationships or even sabotage (cf. Giddens, 2002). The way in which the dissatisfaction is expressed is closely related to self-perceived capacity to challenge or maintain the existing situation. In this view, it is possible that water conflicts in Potshini catchment could be seen not only through the attempts of stakeholders to have physical control of water but also hidden through a complex set of everyday interactions between stakeholder groups (cf. Davis, 2002). Hence, I maintain that water conflicts are encompassed in a broader definition of the struggles. In other words, water conflicts are manifested in different forms of struggles for water in Potshini catchment.

In the context of this research, I adopt the same viewpoint that the stakeholders’ struggle for water in Potshini catchment are specific yet dynamic (cf. Hart, 2006). This implies that the struggles for water in Potshini catchment are specifically driven by the bio-physical and socio-economic conditions in the catchment influenced in time (i.e. historical and seasonal fluctuation in the availability of water) and space (i.e. upstream-downstream the catchment, between the catchment and the rest of the country, regional and global geo-political forces). For the purpose of this research I define struggles as the attempts of stakeholders in securing access to and control over water. In this way I assume that stakeholders would use violent and non-violent means in securing access to and control over water.

1.6 Structure of the thesis

The results of this thesis are presented in six chapters. The following paragraphs provide a brief overview of each chapter.

Chapter 1 gives a general introduction (background of the study, description of the problem, justification, objectives, research questions and the definition of struggles) of the study. This chapter shows that this research will enhance an in-depth understanding of the negotiations over water in Potshini catchment.

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Chapter 2 provides a comprehensive review of the relevant literatures. The literature is explored and reflected to suit the study objectives and research questions.

Chapter 3 focuses on the methods used for this study; it explore the conceptual framework of the research and document the necessary steps taken to obtain the results, analyze them and present them in a scientific manner.

Chapter 4 presents the results of this study. An in-depth analysis of the negotiations over water is made to address the research questions.

Chapter 5 focuses on the causes and the dynamics of struggle for water and provide insights on the windows of opportunity to improve the negotiation over water in Potshini catchment.

Chapter 6 presents the conclusion of this study and the recommendations for improving the negotiations over water and suggestions for future research.
2 LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review in relation to the South African context and in particular to the research topic. The first part of the literature explores an in-depth review of the historical, institutional and socio-economic context of South Africa. The second part of the literature covers the water resources management in South Africa, the land and water reforms and how the reforms are influenced and shaped by global politics and legal pluralism. The third part reviews on the stakeholder analysis and the fourth part analyzes the concepts of water conflicts with special reflection on the South African context. The last part of this chapter gives insights on the concepts of power relations in relation to water conflicts.

2.2 The Historical and institutional context of South Africa

Water problems are not only caused by a combination of natural and physical processes of water abstraction and storage but also are physically, ecologically and human made, embedded in the locally specific outcomes of social and political histories and processes (Mollinga 2008). Based on this argument, it is most likely that the negotiations over water in Potshini catchment are shaped by South African history. In other words, the stakeholder involved in the negotiations over water, their capacities, positions, goals and interests, as well as the strategies they use in getting access to and control over water are likely to be influenced and shaped by South African history. Understanding the history of South Africa contributes to comprehend the context of the negotiation over water in Potshini catchment, the relationships between stakeholders and the dynamics of struggle for water. For the purpose of this research, the history of South Africa history is described in three parts; the colonial history, apartheid era and the post-apartheid era.

Colonial history

South Africa is a country located in the southern tip of the African continent. According to Thompson (2006), it is believed that people speaking Khosain languages are the oldest surviving inhabitants of the territory of South Africa. However, most of present day black South Africans belong to the Bantu language group, which migrated south from central Africa, settling in the Transvaal region sometimes before 100 A.D. The Nguni, ancestors of Zulu and Xhosa, occupied most of the eastern coast by 1500. The Portuguese were the first Europeans to reach the Cape of Good Hope, who sailed to the region in 1488. However, permanent white settlement did not begin until 1652, when the Dutch East Indian Company established a provisioning station of Cape. In subsequent decades, French Huguenot, the Dutch and Germans began to settle the cape. Collectively they form the Afrikaner segment of the current South African population. The British gained control of the Cape of Good Hope
The Zulu tribe originates from Bantu communities and they have settled in the area in the 16th century. A crucial turning point in Zulu history occurred during the reign of Shaka (1787-1828). Before his rule, the Zulu consisted of numerous clans that were related but disorganised. During Shaka's reign the Zulu conquered most of the territory between the Drakensburg Mountains and the sea (the current KwaZulu-Natal) and the conquered tribes were incorporated into the Zulu kingdom (Omer-Cooper, 1994). The Zulus also fought several wars against the British, but surrendered in 1906. From then on the tribe was subjected by European settlers and their descendents to an increasingly harsh series of racist law and practices that led to the disempowerment and subordination of the Zulus and other black African tribes (Mamdani, 1996).

Apartheid era

In 1912 the South Africa Native National Congress was formed in Bloemfontein and became known as the African National Congress (ANC) with the goal of eliminating the injustice of the colonial government to the black people (Thompson, 2006). However, in 1913 the colonial government introduced the Native Land Act which reduced the agricultural land that the black people were allowed to own to areas designated 'Native reserves' (Ross, 1999). Black people were not allowed to own land beyond this limited area. In 1948, the National Party (NP) with its ideology of apartheid won the general election. Apartheid was a system of legalized racial segregation enforced by the white-dominated national government of South Africa between 1948-1994. Under apartheid, a new legislation classified inhabitants into racial groups (black, white, coloured and Indian). The government segregated education, medical care, and other public services among different racial groups, and provided black people with services inferior to those of the whites. The education system was designed to prepare the black population for manual labour. While most men were commuted to work on the commercial farms and in the mines owned by white South Africans the women often stayed behind and were relegated to reproducing the future labour force and taking care of the sick and the elderly (Bond, 2006; Butler, 2004).

Additionally, blacks were divided into ethnic groups and relocated into one of ten tribally based and nominally self-governing ‘homelands’ also known as Bantustans. These homelands occupied relatively small and economically unproductive areas of land in the country (Ramutsindela, 1997). The creation of the homeland system was under ‘separate development notion’ that intended to reshape South African society so that the white population would be the demographic majority (Butler, 2004). In this strategy ethnicity or tribalism was established as the principal foundation of the homeland system self-government with ethnic affiliation designed to make the majority black population lose their original South African nationality and voting rights (Butler, 2004; Mamdani, 1996). To better implement the homeland system the South African government, through the Bantu Authority Act of 1951, incorporated the traditional governance structure by appointing local

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4 The British's land law and the Union's constitution that gave no rights to black people.
tribal leaders to administer the homelands (Butler, 2004). Through this Act, the traditional authorities were no longer accountable to their own people but to the government, making the residents of the homelands to regard traditional leaders as puppets to the government. The traditional leaders were remunerated with salaries and benefits which made the apartheid regime to have influence over the semi-autonomous homelands and the ability to control resistance (Lipuma and Koeble, 2009; Mamdani, 1996). Over time, ruling black elite emerged with a personal and financial interest in the preservation of the homelands.

On advice of the apartheid government large scale reorganization of the land use in the homelands (re-structuring the homelands) was introduced under the betterment schemes. The reorganization included dividing the land into distinct land use zones e.g. residential, arable and grazing areas. People living in the homelands were forced to move into demarcated residential zones and dispossessed of arable and grazing land. Only small plots were given to households to ensure the most basic crop production. The expressed goal of the betterment scheme was to rehabilitate the land from the perils of overgrazing and inefficient African land use, but some argue that the Betterment Schemes facilitated the increase in population densities in the homelands (McCusker and Ramudzuli, 2007). The population in the homelands far exceeded the carrying capacity of land making them difficult to attain economic self-sufficiency, and thus they were sustained through government subsidies (Ross, 1999). Moreover the Betterment Schemes resulted into increased poverty and unemployment in the homelands making it possible for the apartheid regime to use the labour in the numerous mining industries and farms (De wet, 1995).

By the end of 1950s, blacks started social movement against the apartheid system through the political parties, mainly the African National Congress (ANC) and Pan African Congress (PAC). These parties challenged the white government leading to the banning of the two political parties in 1960s (Dollery, 2003). The banning of the ANC and PAC gave room to Inkatha Freedom Party (IFP), merged along with the black consciousness movement to fill the vacuum of black politics. It is claimed that IFP drew on Zulu military tradition and derived its main support among rural Zulu and thus seen by some as an ethnic movement in KwaZulu-Natal (Thompson, 2006). Moreover, some claim that IFP sided with the apartheid government by advocating for capitalism, opposing the international sanctions introduced against the apartheid government and presiding over an apartheid institution (e.g. the Zulu homeland). This culminated in the ANC executive to denounce IFP as divisive in the black resistance to apartheid in 1979 (Thompson, 2006).

During 1970-80’s, the apartheid politics sparked stronger internal resistance which signalled the crumble of the apartheid regime. The resistance involved the decade of organised political opposition and powerful mass protest movement of labourers, students, school children and community associations against the white government (Butler, 2004). Bloody armed clashes also occurred between the ANC and IFP. This violence, believed to be

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5 The specific number of people who were forced to move under the betterment has not been quantified, but it is confirmed that it is between 1.3-2.5 million people (Border Rural Committee 2004b).
6 IFP was found as the Inkatha National Cultural Liberation Movement by Dr. Mngosuthu Buthelezi on 21st March 1975 with some of its roots in the cultural organisation, “Inkatha”, established by King Solomon in the 1920s. It was renamed as Inkatha Freedom Party (IFP) on 14th July 1990 (Thompson, 2006).
7 The Zulu tribe originates from the Bantu communities enshrined by the reign of Shaka (1816-28) who used to conquer tribes and incorporate them into the Zulu Kingdom (Omer-Cooper, 1994).
supported by the security forces of the apartheid government, escalated at the end of apartheid. Today the political and human relations in KwaZulu Natal and in the country as a whole between the two political parties (ANC and IFP) and between members of these parties are characterised by tension, intolerance, hostilities, distance and even hatred (Vilakazi, 2007).

The efforts to end apartheid were initiated by the negotiations between the African National Congress (ANC) and the National Party (NP) but failed in the 1980s due to strong mounting opposition. However, in 1990 President Frederik Willem de Klerk reinitiated the negotiations with political groups and political parties to end political apartheid. A series of negotiations took place between 1990 and 1993 and was accelerated by both internal and international pressure resulting into the enactment of South Africa interim constitution of 1993. This constitution included a provision for limited recognition of traditional leadership and Houses of Traditional Leaders at both national and provincial level were established (Butler, 2004). The negotiations finally resulted into a multi-racial democratic election in 1994, which gave a landslide victory to the African National Congress (ANC) under the first black president Nelson Mandela.

The Post- apartheid era

Reconciliation of the society was the major concern of the new government and it was a tool on the transformation of the discriminatory legal systems. During this period the new constitution was rewritten and adopted in 1996. The reforms in land and water sector were undertaken including the enactment of legislations such as the National Water Act of 1998. As part of the institutional reform the government structures were redefined and the homelands were dismantled reincorporating their territory in to the republic. The national, provincial and local government levels all received legislative and executive authority in their own spheres and are defined in the South African constitution as distinctive, interdependent and interrelated. The new constitution also acknowledges traditional governance structures and states that the country should be run on a system of cooperative governance (RSA, 1996). However, the new constitution does not specifically state clearly the place, power and functions of the traditional leaders. Nevertheless, prime advisory bodies of traditional leaders exist at all government levels and in the former homelands the traditional authorities still play a formal executive role in addition to the local government structure (Lehman, 2007).

2.3 The socio-economic context of democratic South Africa

South Africa has a total population of about 50 million people out of which 40% lives in the rural areas (World Bank, 2008). With a nominal GDP in 2008 of USD 280bn, the country is the continent’s most dominant and developed economy (RABOBANK, 2009). However, Gini Coefficient shows that country has gross inequities in income distribution, ranked the second among the middle income countries after Brazil (World Bank, 2004). It is estimated

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8 Today South Africa is divided into nine provinces including the KwaZulu-Natal Province in the south east of the country.
9 Six metropolitan municipalities, 46 district municipalities and 262 local municipalities.
10 Is one of the most commonly used indicators for measuring distribution, traditionally applied to measure the income inequality. The income Gini Coefficient for South Africa increased from 0.60 in 1995 to 0.64 in 2001 (UNDP, 2003).
that 44% of individuals in South Africa are living below the national poverty line and 73% of the adults aged 25 and above have low educational attainments (HDR, 2009). The country's unemployment rate by the first quarter of 2009 was 24% (Statistics South Africa, 2010\textsuperscript{11}). About 18% percent of the populations (aged 15-49) are living with HIV and it is estimated that over 300,000 children aged between 2-9 years are living with HIV/AIDS (HIV/AIDS Statistics for South Africa, 2006; World Bank, 2008).

In South Africa, one fifth of all children are stunted due to malnutrition, the main contributing factor being not enough food in the household, and the subsequent lack of a balanced diet. Unfortunately, the macroeconomic policy of South Africa has not led to rapid change in the socio-economic status of many South Africans (Bonti-Ankomah, 2001). Poverty is the root cause of food insecurity in South Africa and as a result, food insecurity is a major concern among a large proportion of the population with about 30% of the population being food insecure (Mander, 2003). According to the Food and Agriculture Organization of the United Nations definition, food security depends on sufficient food production and access to food and is defined as: the access by all people at all times to adequate, safe and nutritious food for a healthy and productive life. The groups most vulnerable to food insecurity are: the rural poor, female headed households, disabled, elderly, retrenched or evicted farm workers, AIDS orphans and households with HIV sufferers, cross-border migrants and the street homeless (Hendricks and Maunder, 2006).

The observed high level of poverty in South Africa can be explained by two main factors; the legacy of apartheid policies and the influence of South Africa well-established non-agricultural sector. The country has a history that reflects profound inequities in the distribution of both land and water across different races. As a result of apartheid policies water is concentrated in the hands of a few powerful stakeholders (Boelens et al., 2007). It is estimated that during the apartheid era, 83% of agricultural land was in the hands of white commercial farmers and the majority of water for irrigated agriculture was controlled by white farmers and white controlled irrigation boards (Chikozho, 2008). This historical inequity was further increased by the contrast between the highly supported commercial farms of 50,000 whites and the subsistence farming being scratched out by a third of the country’s population on the impoverished former homelands (ICG, 2004).

Perret (2002) argue that high levels of poverty in rural areas of South Africa are a result of South Africa’s long term well-developed non-agricultural labour market despite the recent economic recession. These labour markets includes mines and industries and have for long-time provided higher paying opportunities than farming for rural black labour force. This off-farm market dominates labour allocations and generates adult male migration among the black population. Consequently the off-farm employment opportunities seriously deplete the available labour supply for farming. Therefore the workers who remain on the farms are those with the lowest opportunity costs as defined by the external labour market which favours men. As a result many rural households are still headed by women or pensioners for whom household and child rearing responsibilities exclude them from intensive labour in agriculture and hence their main focus is on subsistence agricultural production.

\textsuperscript{11} Accessed from \url{http://www.statssa.gov.za}.
At national level, in the efforts to reduce the levels of poverty the government introduced the social security system in the form of social assistance grants\textsuperscript{12}, which by 2004 provided social grants up to the estimated 7.7 million low-income South Africans (EPRI, 2004). It is also estimated that by 2008, it covered more than 12.4 million grant beneficiaries in South Africa with national expenditure on social assistance to the tune of 75.3 billion Rand (National Budget, 2008). It is claimed that the social assistance grants have helped the country to reduce the level of poverty, attain household basic needs such as education, health care and food security (EPRI, 2004). However, it can also be argued that the system has maintained the culture of economic dependency as it was during apartheid since it does not make people self reliant but rather promote the mindset of charity and dependency in the black rural communities of South Africa. Also, because South Africa is capitalist-market oriented economy most of the black rural communities can not participate in the macro-economy other than being labourers at the bottom of the chain.

In addressing the issues of poverty and livelihood at international level, all member countries of the United Nations pledged to meet the eight ‘Millennium Development Goals’ (MDGs) by the year 2015 as agreed upon at the United Nations Millennium Summit held in September 2000 (United Nations, 2004). The Millennium Development Goals have been articulated into over 20 targets and over 60 indicators (United Nations, 2008) generally aiming at combining global efforts in fighting poverty. With regards to water the Millennium Development Goal aims to halve the number of people without access to safe drinking water and basic sanitation by 2015. With regard to agriculture and food security, the MDGs aims to reduce by half the number of people living with hunger. However, the MDGs followed by the World Summit on Sustainable Development (WSSD) Johannesburg 2002 plan of implementation remain focused largely on drinking water and sanitation and do not take sufficiently broad perspective in addressing water for productive uses (e.g. agriculture). Nevertheless, water plays an important role in attaining all the Millennium Development Goals. The challenge however is to translate the MDGs in practical water resources management in South Africa.

The United Nations Development Group (2005) report that South Africa is generally on track to meet all Millennium Development Goals and targets. However, it is important to note that the MDGs are defined in such a way that the population living with hunger or without access to water should be halved by 2015 based on 1990 as a reference year. By 1990, the poorest parts of South Africa, the homelands, were not regarded as part of the Republic and therefore not included in the baseline survey for monitoring the MDGs. Consequently, the targets set in actual numbers are low in South Africa, which makes it easier for the country to achieve the MDGs despite continued dire living conditions in the former homelands.

2.4 Water resources management in South Africa

South Africa is generally viewed as a water-stressed country with an average annual rainfall of 500 mm, a greater part the country being arid or semi-arid. The rainfall is highly variable in spatial distribution and unpredictable. Agriculture is by far the largest user of water, using

\textsuperscript{12} Child Support Grant (CSG), State Old Age Pensions (SOAP), Disability Grants (DG), Care Dependency Grants (CDG), Foster Care Grants (FCG) and Grants in Aid (GIA).
62% of the surface water, while urban and rural domestic requirements make up 25% and 4% respectively. Agriculture and forestry use two thirds of the available water resources while industry, mining and power generation uses less than 10% of the country's fresh water resources despite the fact that they are essential and of high priority for the South Africa's economy (DWAF 2004a).

Chikozho (2008) argues that South Africa is a water scarce country based on the fact that it receives low annual rainfall portraying water scarcity in absolute and volumetric terms. Also, due to the historical reasons water scarcity experienced today in many parts in South Africa is politically and socially constructed due to huge asymmetry in control over and access to natural resources, including land and water. Few powerful stakeholders such as commercial farmers through the ownership of hydraulic infrastructures are in control over land and water resources (Mehta, 2007). It is estimated that about 14 millions rural and sub-urban black South Africans still do not have access to running water in their homes and posing burden to rural women who have to walk long distances to collect domestic water from rivers or water points (Perret, 2002; Mehta, 2007).

According to Mukheibir (2008) there are three main issues affecting South Africa’s water resources management. First, the natural conditions and low rainfall associated with high evaporation rates which together create low availability of runoff. Second, the rapid population growth and economic development which has lead to greater water demand and increased use of available resources. Third, the institutional framework pertaining to management of water resources have greatly influenced the approach taken by relevant authorities to manage the resources and directly impacted other driving forces and pressures. For example, the need to redress social equity is likely to negatively affect water allocation to the most productive sector such as the commercial farmers who to a large extent are claimed to contribute to the nation’s food security (Chikhozo, 2008).

During the apartheid era in South Africa, control over water was unequally partitioned between the white republic of South Africa and the black homelands. High inequality with respect to land ownership between the whites and blacks has been translated into inequality in access to water as the access to water is often related to land resources (Peluso and Watts, 2003). Also the investment in hydraulic infrastructures and institutions in water allocations were skewed towards the white dominated, large-scale farmers, mining, forestry and tourism industry to ensure their permanent access to country’s water resources. In contrast, in the homelands, water was one of the subjects falling under the jurisdiction of the homeland governments, who partially relegated control over water to local chiefs and tribal councils (Van Koppen, Jha and Merrey, 2005). As a result, the white minority obtained access to a high level of water-related services such as domestic water supplies, and water supplies for irrigation, mining and industrial use, while large sections of the black community had little or no access to even basic services. Hence, the black population in South Africa suffered under a double deprivation in relation to water because the lack of water services was compounded by a lack of access to water for economic purposes, including irrigated agriculture (Perret, 2002; Grey and Sadoff, 2006).

It can therefore be argued that the legacy of apartheid has left the country with a huge task of providing sustainable water delivery services to its population in order to meet the basic
needs taking into account that the majority of people lacking basic domestic water services live in rural areas. In addition to that, redefining water and land rights remain a big challenge in agriculture sector due to huge asymmetry between commercial farmer and smallholder farmers. The provision of water related services is far challenged by the former homeland system which has resulted into high population density in rural population areas, dislocated settlements and resettled communities which are isolated from economic opportunities Consequently, the level of interdependence of rural communities and distant large cities remain high as most of the rural communities live in uneconomically productive land and hence mainly rely on remittances from the extended family members employed in urban areas and on the social security grants provided by the government (Ramutsindela, 1997).

2.5 Institutional framework in relation to the reforms in water sector

2.5.1 Colonial and apartheid era

Institutional framework of water sector in South Africa dates back in the 1910 Irrigation Conservation Water Act. The Irrigation Conservation Act of 1910 was the first nationally applicable water legislation after the creation of the Union of South Africa in 1910. The riparian principle was the central feature of water law and state involvement in water resources management was limited to irrigation related works. This Act was followed by the 1956 Water Act. The 1956 Water Act came up in Post World War II industrial development in South Africa which required the Act to be adjusted to match with industrial development. The Act consolidated control, conservation and use of water for domestic, agriculture, urban and industrial purposes and perpetuated the riparian principle in terms of normal flow and private water rights which granted exclusive use but not ownership.

Under the riparian principle, the landowners whose properties are adjacent to a body of water have the right to make reasonable use of it. Allocation of water based on the riparian principle makes land ownership important for access to water. It can be argued that the system of riparian water rights as put forward by the two Acts resulted in commercial white land-owning farmers having secure access to water due partly to a tenuous distinction between private and public water and streams. These legislations were biased towards protecting the interest of irrigated commercial farmers which were mainly united in irrigation boards and undermining the smallholder farmers who were the black majority through the entrenched apartheid policies. With the riparian water rights the commercial farmers could take as much water as they would need despite certain restrictions. The access to and control over water by commercial farmers were accelerated by the fact that huge investment were made in hydraulic infrastructures in their favour. Blacks had no such infrastructures and the nature of rain-fed subsistence farming in black communities strongly limited the potential for improvement and intensification.

In the process of ending political apartheid in South Africa access to water was crucial for reducing the inequality in economic opportunities and therefore it was a key cornerstone for the process of economic empowerment of previously disadvantaged farmers (Perret, 2002). These inequities necessitated huge reforms in land and water sector in South Africa (Jaspers,
In redressing the legacy of apartheid the newly democratic elected government formulated a Reconstruction and Development Program (RDP) which aimed to raise the living standards of the poorest sectors of the population and build skills to drive the economy. Reconciliation between races was high on the political agenda under the highly publicized concept of the ‘rainbow nation’ (Lehman, 2007).

### 2.5.2 Post apartheid era

In order to enable these reforms, water was seen as a tool to transform society towards social and environmental justice and poverty eradication. Therefore, the reform process was directed towards developing a framework for addressing inclusion-exclusion discourses, taking into consideration the historical realities of the skewed economic regimes established during the (colonial) apartheid era in South Africa (Chikozho, 2008). Consequently, water reforms in South Africa emphasized the need to correct historical imbalances in ownership of the means of production while simultaneously stressing the need to address poverty among the mostly rural communities. This paved the way to the enactment of the South Africa National Water Act (Act 36 of 1998) during the transition to the post-apartheid era which is currently appraised in policy circles as one of the most comprehensive water law in the world (Van Koppen and Jha, 2005; Merry, 2008). However, after a decade since the enactment of the new water act, water control is still in the hands of few powerful water users. A recent study conducted in the Olifants Water Management Area in South Africa reveals a huge asymmetry in the allocation of water use between rural households and licensed individuals and companies. The study found that 95% of the available water is located to only 1% of water users while 99% of rural households are entitled to use less than 5% of the available water (Cullis and Van Koppen, 2007).

The 1998 National Water Act discards the individual right to use water for riparian users and defines the state as a custodian of all water resources. The NWA (1998) provides for the ’Reserve’ as the water use right i.e. the right to water in the Law consisting of two parts: the ecological reserve and the basic human needs reserve (drinking, food preparation and personal hygiene). In addition, the Act specify that the right to use water is granted to users, most of whom have to be registered and licensed and should pay for the licences and registration. Schedule 1 of the Act provide for authorization to take water for reasonable domestic use, gardens, stock watering and rainwater storage (though not for commercial purpose) without registration, licensing or payment. Second, water use right based on the existing lawful use in NWA of 1998. Existing lawful users are not required to apply for licenses (except in water stressed situations) but they must be registered.

Moreover, the Act provides the mechanism of subsidiarity (decision making at the lowest appropriate level) of water management activities through the hydrological units. At the national level water management is under the custodianship of the Department of Water

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13 The term used to describe post-apartheid South Africa to encapsulate the unity of multiculturalism and the unification of people of many different races in a country once identified with the strict division of white and black (Lehman, 2007).
14 These are licensed 1,706 individuals and companies.
Affairs and Forestry (DWAF). At regional level water management is overseen by the Catchment Management Agencies (CMA). CMA are statutory bodies established under the Act. The catchment management agencies manage water resources within their Water Management Area (WMA). South Africa has been divided into 19 Water Management Areas as part of the progressive development of the National Water Resource Strategy (Oosthuizen, 2002). To date only one CMA has been launched and in operational (i.e. Inkomati Catchment Management Agency, launched in 2007). It has however been reported that the establishment of CMA in South Africa faces social-political challenges mainly characterized by great disparities in terms of income, education and access to resources, financial challenges and inadequate technical capabilities (Waalewijn et al., 2005; Mosai, 2004). At local level, the Act provides the provision of establishment of Water User Associations (WUAs). It is expected that WUA will be key units in the Governing Boards and activities of the CMAs in order to ensure that the interests of water users, potential water users, local and provincial government and environmental interests groups are represented (Van Koppen and Jha, 2005).

2.6 Institutional framework in relation to the land reforms

Prior to the official introduction of apartheid, black people in South Africa were confined to native reserve areas, known as homelands. In 1936 the total reserve area was 13.8% of the national area. Under apartheid the process of homeland consolidation continued into the 1980s. By 1980 homelands covered 20% of the national area and supported 11 million people (Wilson, 1991). It was impossible for people classified as black to own land in the white farming areas and measures were taken to impede black agricultural production on white-owned farmland, driving black farmers out of the commercial farming areas. As a result, many households became reliant on incomes from migrant labour in towns and mines. The agricultural policies and related investment during the apartheid era in South Africa reflected a biased concern for white-owned commercial farming units.

The agricultural policies excluded the homelands, which were far from being stable and prosperous. Almost all of the land in the former homelands of South Africa then, and now, is held under communal tenure, which combines elements of individual and collective property rights. It is communal in that an individual’s entitlement to land flows from membership of a socio-political community (e.g. a tribal unit), rather than from private ownership, but production is generally on an individual basis (Bennett, 1995). Tribal Authorities manage communal land tenure through tribal chiefs and headmen, who have survived the transition to democracy. In KwaZulu-Natal, even now, the system enjoys a relatively high level of legitimacy even though tribal authority is waning. Every household within a communal area has, in principle, a right to a residential site, an arable plot for crop production, and access to common property resources, such as grazing land. In practice, however, a substantial proportion of people in communal areas have little or very meager access to land (Lahiff, 2000). The right to land usually applies only to male household heads but was sometimes extended to female heads of households (Bennett, 1995). Unallocated land is generally used as commonage, providing pasture for livestock and other natural resources, such as timber, grass and sedges for craft production, thatching grass, edible fruits and plants and materials for use in traditional medicine (Cousins, 1996). Tribal leaders have the power to repossess
allocated land but seldom do so, and the communal system is generally seen as a reasonably secure form of tenure (Lahiff, 2000).

At the beginning of the new South African democracy in 1994, the government of national unity faced the challenge of redressing distribution of land injustices without risking the collapse of the nation’s commercial farming sector. It adopted a broadly neo-liberal approach to economic policy and ignored many of the demands of its more radical supporters for nationalization or expropriation of white-owned land (Lahiff, 2000). To address the highly controversial issue of land ownership and access to land, the Land Reform Programme (LRP) was initiated in 1994 and the Broad-Based Black Empowerment Framework for Agriculture (AgriBEE) was launched in 2004 with some similar elements of the LRP (see Box 1). The purpose of the land reform process in South Africa is to ensure equitable distribution of land among its population groups (Cousins, 2009). The land reform programme has three broad programs: restitution, redistribution and land tenure reform (Cousins, 2009). The programme is enshrined by the various neo-liberal economic instruments of market mechanism such as the ‘Willing Seller Willing Buyer’ (Hart, 2008; Bond, 2006).

Land restitution aims at direct to return the land or compensate individuals illegally forced from their land after the enactment of the 1913 Native Land Act. However, critics argue that restitution offers no assurance with regard to livelihoods, as there is not an effective link between restitution and development (Turner and Ibsen, 2000). It can also be argued that restitution has limited impact in land transfer because land ownership in the past need to be proven by showing official evidence (e.g. title deeds) of which most of people do not have written proved documents. Land redistribution aims at promoting the transfer of land to historically disadvantaged groups. Cumulatively, it is estimated that the approved hectares of land transferred in terms of restitution since 1995 is 2.47 million hectares. The government claims that this represents a significant contribution towards the overall target of redistributing 30% of white-owned agricultural land by 2014 (DLA, 2009), even though it is just over 5% of the targeted land (Makhanya, 2009). In the former homelands land tenure reform involves the transfer of ownership of land that is owned by the state but held under custodianship of the tribal authorities to the legitimate residents. It is argued that the land tenure reform would only have significant economic impact in areas where economic incentive is strong but would hardly have impact in areas having deprived rural economies (Cross et al., 1982).

Critiques of the land reform programme argue that the programme is a failure. For example they argue that, for the year 2008/2009 the government initially had a national redistribution target of 1.5 million hectares of land but this target was subsequently reduced to 0.61 million hectares to bring it in line with the actual budget allocation of the land reform programme. A total of 0.44 million hectares of land was eventually transferred and although this was less than the revised target, the programme spent almost 100% of its allocated

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15 It is important to note that the former ‘white’ South Africa was already a neo-liberal capitalist based economy.

16 Neo-liberalism is a contemporary variant of liberalism which encompasses political, ideological and economic policies that a strong role of state in the economy would seize the individual and economic freedom. Instead, neo-liberalism ideological and political policies argue for deregulation, marketization, privatization, cuts in government spending, decentralization management, pricing and full cost recovery, increased participation of stakeholders and the control of the economy through money supply (Harvey, 2005).
budget. Factors such as escalating land prices eroded the buying power of the budget, making it impossible for the programme to meet even the revised target (DLA, 2009). In addition, the government lack institutional capacity as the land reform programme is complex, emotive and legally difficult area of governance. This is because the programme needs high administrative capacity to manage the enormous complicated exercise and the ability to coordinate the overlapping institutions involved (DLA, 2009).

**Box 1: The trend of land related legislations in South Africa**

1913- Native Land Act: The first major piece of segregation legislation passed by the Union Parliament and remained a cornerstone of Apartheid until 1990's when it was replaced by the current policy of land restitution. The act aimed at regulating the acquisition of land by "natives".

1951- Bantu Authorities Act: One of the pillars of apartheid in South Africa during the apartheid era. The legislation created the legal basis for the deportation of blacks into designated homeland reserve areas and established tribal, regional and territorial authorities.

1970- The Black Homeland Citizenship Act: A denaturalization law passed during the apartheid era of South Africa that changed the status of the inhabitants of the black homelands so that they were no longer the citizens of the white republic of South Africa. The aim was to ensure that white South Africans became the majority of the Population. The Act ensured that the white population of South Africa would have its contact with the 'non-white' population reduced to a bare minimum but keep them close for labour capital.

1991- Abolition of Racially Based Land Measures Act: Repeal or amend certain laws so as to abolish certain restrictions based on race or membership of a specific population group on acquisition and utilization of rights to land established by previous Acts.

1993- Provision of Certain Land for Settlement Act: To delete certain definitions and to substitute certain obsolete provisions in the previous Acts.

1994- April 27, South Africa general democratic election, re-integration of the homelands into the South Africa republic. In the same year the enactment of the Restitution of Land Rights Act which led to the Land Reform Programme (LRP)-See section 3.3.2 for details.

2004- Broad-Based Black Economic Empowerment Act. This led to the Broad-Based Black Empowerment Framework for Agriculture (AgriBEE). The objective is to eliminate racial discrimination in the agriculture sector through implementing the initiatives to mainstream involvement of black South Africans in all level of agriculture activities and enterprises along the entire agricultural value chain.

2004- Communal Land Right Act- Allocates power of land administration in the former homelands to the traditional councils headed by traditional leaders.

Moreover, it is argued that the land reform programme has been dominated by social engineering approaches that contradict the economic realities with the single main notion of replacing white commercial farmers with large numbers of black farmers (Makhanya, 2009). This is evident as the programme has only concentrated on the transfer of land and did not include the mechanisms to ensure necessary skills, assets and finances to black claimants. Also it is claimed that black South Africans have shown little interests in land as still most of potential smallholder farmers migrate to cities to look for employment. Critiques suggest that there is a need to change the philosophical shift from land redistribution to sustainable land usage and to critically rethink on how to develop a strong black commercial farming.
2.7 Global politics and legal pluralism in water and land reforms

Water and land reforms in South Africa form a key step towards redressing the inequities created by the colonial and apartheid policies. While these reforms take place in South Africa, they are influenced by and interact with global politics and discourses. It is also noticed that the reforms are shaped by the legal plural settings in South Africa. The subsections that follow explain the dynamics of water and land reforms in the context of the global politics and discourses as well as the multiple legal settings through which the reforms takes place.

2.7.1 Global politics in water and land reforms

According to Mollinga (2008) global politics incorporate international level of water discourse, policy and tentative regulations. The reforms in land and water are enshrined by the three components of global politics namely globalisation and neo-liberalism, the human right to water and the integrated water resources management paradigm (Gleick, 1998, McCarthy and Prudham, 2004; Conca, 2006). Understanding the linkage between the reforms and the global politics is important because these global political agendas have strong influence in shaping the water resources management institutional framework in South Africa (cf. Aaltonen and Sivonen, 2009).

The concept of 'human right to water' in South Africa has played a prominent role in public discourse, including the reversing of historical inequities caused by the apartheid regime. This is evident as the right to water has been enshrined in the constitution, policy documents as well as in NWA (1998). Based on the description of the NWA (1998) in the previous section it can be argued that the formulation of the NWA was based on the concept of Integrated Water Resources Management (IWRM). This is because the NWA incorporates the main IWRM principles such as water as an economic good and subsidiarity (decision making at the lowest appropriate level). The Act aims to address economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. In other words, it defines the legal means of reconciling basic human needs, ensuring access and equity, with economic development and the imperative of ecological integrity while respecting trans-boundary commitments. However, much is yet to be done to take into account various issues including the interest of all stakeholders and their interdependences at catchment level, securing rain-fed farmers and building problem-solution oriented water institutions. To realize all these the implementation of the NWA requires to stress the need to take into account the entire water cycle incorporating all users from all sectors while taking into account the availability and distribution of water in time and space (Van der Zaag, 2005).

Merrey et al., (2005) caution that IWRM policies pays considerable attention to demand management, cost recovery, reallocation of water to higher value uses and environmental conservation and often identifies agriculture, which serves livelihood of smallholder farmers

17 'The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses' (UNCRESCR, 2003). The human right to water is backed up by the fact that water is essential for life and that other human right which are explicitly recognised are assumed upon the availability of water (Bakker, 2007).
as a problem whose wasteful use of water is the root of many water problems. In other words, he argues that IWRM should not be used as a cover up for neo-liberal policies in which economic objectives such as cost-recovery and profits are dominant. This dominance of neo-liberal policies becomes visible in the chosen approach for the implementation of South Africa water act and priorities of water allocation. The sectoral approach in water allocation is much more suitable for the highly economically productive sector at the expense of rural communities of which even if served under the economic criteria (i.e. users with higher water productivity), could not afford to pay for water services (Bondy, 2006). It is important to note that this sectoral approach overlook the multiple uses of water in rural (e.g. domestic water uses and agriculture) which support the livelihood of the majority of the rural population. Moreover, Cesano and Gustafsson (2000) argue that the free trade mechanism which involves the reduction of state control on regulatory framework over water does not match with the finite and fugitive characteristics of water. This is because the use of water upstream of the catchment might alter both the water quantity and quality downstream. Likewise, for the country like South Africa of which water control is skewed along racial lines and structural inequalities exist, the notion of free trade with limited state control of the markets would accelerate the economic inequities created during apartheid (Harvey, 2005; Bond, 2006).

The neo-liberal policies of marketization are also evident in the South Africa land reform programme through the concept of willing-seller, willing-buyer (WSWB) which has dominated the discourse on land reform in South Africa since 1994 (Hart, 2006). The concept is widely attributed to the influence of the World Bank under the notions of market led, market-based or most recently the negotiated settlement with the view of promoting land acquisition through paying at the market price (Bondy, 2006). In the South African context, the willing seller means the private land owner (mainly the commercial farmers) are free to sell to the highest bidder or the buyer at their choice. The willing buyer means the intended beneficiaries (i.e. the buyer is transferred from the state to the intended beneficiaries) who have to negotiate with the seller in settling the land claim.

The willing-seller, willing-buyer concept within the land reform programme has been criticized in the South African context for several reasons. First, under this concept the land owners can actively avoid offering their land for sale for the LRP, and still dispose of their land on the open market at market prices. The willing seller accurately denotes the lack of compulsion on land owners as it fully protects the interests of existing land owners, as neither compels them to sell against their will nor at a price with which they are not fully satisfied (PLAAS, 2005). Secondly, the simple willingness on the part of the landless people however do not guarantee that they would be able to enter the land market or that they will be able to secure the land they need. This is because, people in need of land are dependent not only on the cooperation of land owners but also on the willingness of the state to approve their application and provide the necessary funding. However, practically on the ground the government is claimed to be the willing-buyer resulting into the form of the "locked land market" (Liebrand, 2007). In the land locked market one buyer (i.e. the government) sets the price which is not always necessarily equivalent to the value of the land. This has been a main concern of the landowners for the consequences for the price of the land. Nevertheless, with the current economic meltdown most of the potential land sellers doubts whether the government would always have funds and willing to pay for fair
land prices. Other critiques of the land reform programme argue that the current approach of the sale of land at market price in South Africa cannot be achieved in the overpopulated and degraded former homelands unless inequity in land distribution is addressed (ICG, 2004; Butler, 2004). They stress that South Africa requires a strong state regulatory framework to oversee externalities which could not be contained in a competitive framework alone.

### 2.7.2 Legal pluralism in water and land reforms

Legal pluralism refers to the co-existence and interaction of different normative orders in the same social-political space that affect and control people’s lives (Von Benda-Beckmann, 1997; Bentzon et al., 1998; Boelens et al., 2005). Under legal pluralism, normative orders are derived from various sources (e.g. global politics, state, customary, religion, culture) at different spatial and temporal scales and the interaction between these normative orders is mainly noticed. As a result, some legal orders enforces and/or contradicts each other which potentially motivates people to shop around for the best legal order to exert their claims (Meinzen-Dick and Pradhan, 2002).

Meinzen-Dick and Nkoya (2005) point out that in legal pluralism all types of law are interpreted differently in different places and by different water users, generating a plethora of local laws making it important to have an understanding of the range and complexity of existing institutions that shape water use. Also, delineating water rights under legal plural settings is complex when we take into consideration multiple uses (irrigation, domestic, fishing, livestock, industries, etc.) as well as multiple users (different villages, group of farmers in the head and tail, fisherman, cattle owners, etc.). These overlapping uses bring in different government agencies, as well as different sets of norms and rules related to water management (Meinzen-Dick and Bakker, 2001). It can therefore be argued that in heterogeneity society, legal pluralism can be good for some actors in certain cases and disabling for others. This is because in such a society, it is most likely that some actors have strong leverage positions to influence certain normative orders to become socially accepted for them to legitimize their claims.

Water management in South Africa is ingrained in a multifarious legal plurality (Butler, 2004; Meinzen-Dick and Nkoya, 2005). In South Africa there is a blend of colonial, apartheid and post-apartheid legal discourses which determines directly or indirectly how water management and control is practiced (ICG, 2004). Based on the fact that water is an economic as well as a social good, the reforms in water sector automatically affects the socio-economic relationships between users and it is most likely that the new laws and rights are challenged by the vested powers in the society (Mollinga, 2008; Mosse, 2008). Legal pluralism is also evident in the former homelands where there is co-existence of traditional and democratic state governance making negotiations over water to take place in a fuzzy institutional structures (see section 1.2).

### 2.8 Water and land rights inter-phase

The previous chapter shows that water management in South Africa can not be realized if the water and land rights are not addressed simultaneously. This is due to the history of

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18 Any system of rules and shared expectations governing a particular situation.
apartheid where the majority of people in the former homelands where principally dispossessed of the land which has been translated in poor access to and control over water (see section 1.2). Hence, this section provides an insights of the physical links between the water and land resources in order to understand how access to water is shaped by access to land resources.

The overlap and co-existence of uses and users is observed in land and water rights (Hodgson, 2004). On one hand, the co-existence of water and land right occur when the two are to be issued or exercised simultaneously in time and space. For example in the case of private water source like a dam, an individual is required to obtain land rights to be able to construct it on a particular piece of land. After the dam has been constructed, an individual may hold the rights to both land and water. Equally the same, in case of irrigation the land and water rights co-exist, meaning that an individual is required to have both water and land rights to run an irrigation district. On the other hand, if both water and land rights are exercised at the same time and space, might lead to divergence of interests between uses or users. For example, keeping animals often overlaps with other land (and water) uses. At the more humid end of the spectrum, animals may be raised in agricultural areas, either by farmers themselves or by pastoralist households. While there can be complementarities in resource use by letting animal graze on fallow fields, thus providing manure in exchange, there is also potential for conflict, especially where cattle must pass by or through growing fields to get water (Hodgson, 2004; Meinzen-Dick and Nkoya, 2005).

Furthermore, the type of land might have implication to the water right to be granted. For example depending on whether the land consist of wetlands, dry lands and riverine vegetation different water rights may be issued (FAO, 2000; Meinzen-Dick and Nkoya, 2005). It is also important to note that water and land rights may affect the status of resource management. For instance, spring protection offers a positive example of how the way in which land is used has a major impact on both quality and quantity of water resources, and thus on issuing the water rights. There are other cases which depicts a clear linkage between land and water in the catchments. For example, the upstream cattle tracks or cultivation of hillsides contribute to soil erosion and hence lower water quality and silting up of reservoirs downstream, pesticide use on farms polluting the streams and ground water or deforestation or reforestation affecting the runoff rates in the catchment (FAO, 2000). The situation may further be challenged in South Africa where there is often a huge power asymmetry in the control of water among users in rural catchments.

Meinzen-Dick and Bakker (2001) argue that the conventional approaches to water and land rights tend to focus only on rights as defined in statutory law, overlooking the importance of a host customary and religious law as well as local norms. Consequently, the rights and claims of many ‘secondary’ water users are often overlooked in the process which can be of a very high value, both in quantifiable economic terms, and especially in terms of supporting livelihood for the rural poor (Meinzen-Dick and Bakker 2001; Merrey et al., 2005). Meinzen-Dick and Bakker (2001) suggests that in order to address the challenges of legal pluralism in water management, pluralism in water and land rights should compressively

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19 Secondary water users include water users other than primary uses such as domestic water supply, industrial uses, irrigation agriculture and may include: homestead gardens, watering animals, fish farming, etc. (Meinzen-Dick and Bakker 2001).
look for many different uses of water, users of water, stronger and weaker rights, bundles of rights (access, withdrawal, exclusion, management and alienation) as well as the institutions that would ensure or mediate the extent to which rights are exercised.

The above analysis shows that land control is often translated into water control. This is reflected in the control of both green and blue water. Green water is the water readily available in the sub-surface soils for crop consumption in the form of soil moisture. This implies that having controlled the land would mean direct control of green water. Under the riparian water rights land control also has direct implication to the control of blue water in the form of groundwater, surface water in the streams and rivers and the existing hydraulic infrastructures such as the water pumps. It can therefore be argued that the land reforms that take into account the reallocation of land would directly imply the reallocation of water and thus the water rights.

Box 2: Water rights

According to Ribot and Peluso (2003) water rights refer the right to water sanctioned by law. The following are the bundles of rights various water users and management entities might have:

Access: The rights to enter a defined physical property. The main use is simply to be in the water (i.e. Non consumptive water uses-in stream water use)

Withdrawal: The rights of obtaining the benefits from that property by taking out some of the flows (e.g. diverting water for consumptive uses)

Exclusion: The rights to determine who will (and will not) have access to the resource

Management: The rights to regulate use patterns, thus transforming the resource and potentially altering the stream of benefits from that resource. Management rights also provide the ability to define access or withdrawal rights

Alienation: The rights to sell, lease, or bequest rights to the resource

In the context of this research, the term access to and control over water is specifically used to refer to legal and extra-legal measures and to a wider range of social and power relations that constrain or enable people/groups to benefit from the water resources. This definition is based on the concept of legal pluralism to refer to the broad definition of rights (formal and informal) based on normative orders that co-exist and interact (Von Benda-Beckmann et al., 2006).

It is important to note that while land might be taken and divided among beneficiaries, with water it is more complicated. Land can be measured and is visible, while water is subject to physical laws (e.g. gravity) that prescribe certain management rules. In many cases is not so easy to ‘measure’ water and it requires investments to capture water, to actually ‘have’ it (FAO, 2000). The physical laws of water imply that reallocation of water does not only center on legislation and on redistribution of land resources, but also on the associated infrastructures (Liebrand, 2007). Based on the above it is clear that there is interconnectedness of land reallocation and water reallocation, and hence in the reforms of land and water rights. However, South Africa there is disconnection between the land and water reforms, making it difficult for users in the former homelands from realizing access to and control over water (Kemerink et al., submitted).
2.9 Stakeholders and conflicts in water resources management

2.9.1 Stakeholders in water management

The word stakeholder was first recorded in 1708 referring to a person who holds a stake or stakes in a bet. Systems analysts prefer to use the term ‘actors’ while sociologists talk of ‘social actors’ as individuals or social entities who are knowledgeable and capable (Mushove and Vogel 2005). Grimble and Wellard (1997) define stakeholders as any group of people, organised or unorganised, who share a common interest or stake in a particular issue or system; they can be at any level or position in society, from global, national, and regional concerns down to the level of household or intra-household and be groups of any size or aggregation. Stakeholder may also mean those groups or individuals ‘without whose support the organisation would cease to exist, or any naturally occurring entity that is affected by organisational performance (Reed et al., 2009).

Buckles and Rusnak (1999) claim that for natural resources management, stakeholders are the natural resources users and managers. However, their definition does not take in to account actors or people who are not direct users or who might be affected by the use of the resources and the environment. Moreover, the definition excludes the groups of people without access to resources but who wish to have access and the future generation (Phillips and Reichart 2000; Currie et al., 2009). In addition to that, the definition provided by Buckles and Rusnak (1999) does not concur with the management of water because of the three characteristics that make water special. First, water is a vital resource to sustain life for which there is no substitute. Second, water is a finite resource for which many of its uses are subtractible, meaning that the use of water by somebody may preclude the use by somebody else. Third, water is a fugitive resource making it difficult to assess its variations in storage and flow and to define its boundaries. Based on these three unique characteristics of water everyone can be regarded as a stakeholder. However, it is practically very difficult to include all stakeholders resulting into only those that are organised to be recognised as stakeholders (Holmen and Billgren, 2008). Consequently, stakeholder participation in natural resources management, including water resources management is based on theoretical assumptions about who is a legitimate stakeholder and influenced by unevenly distributed power among stakeholders (Mushove and Vogel, 2005).

Stakeholders can be categorised in different groups based on different attributes. The stakeholder theory of Mitchell et al., (1997) categorises stakeholders based on three attributes; power, legitimacy and urgency. Lindenberg and Crosby (1981) categorises stakeholders based on their level of interests and influence. Freeman (1984) categorises stakeholders based on cooperation and competition attributes and Savage et al. (1991) categorises stakeholders using cooperation and threat as attributes. Nevertheless, there is no a standardised system or method of classifying stakeholders, but rather it involves analytical judgement of the person conducting the analysis based on their observations of the issues in question supported by theories on how a specific system functions (Reed et al., 2009). This is supported by Currie et al., (2009) who warns that one should be careful in categorising stakeholders. This is because stakeholders are not static entities and therefore movement between categories is possible as they often try to acquire new attributes by using various strategies such a as coalition building, political action, social persuasion and economic dependence to make sure that they satisfy their interests (Currie et al., 2009).
The increased pressure on ecosystems and enhanced competition over the use of water makes it necessary to develop sustainable methods of water resources management. Yet, water resources management remains a complicated issue as it involves numerous stakeholders, with different needs, resources and perception of nature (Billgren and Holmen, 2008). The main characteristic of water management, like any natural resource management, is the conflicting dimension of water management objectives and the interests of stakeholders which often requires tradeoffs between interacting sets of local people, government departments, national and international planners and professional advisers (Grimble and Wellard, 1997). For example, in a catchment various groups of water users such as irrigators, industries and fishermen have different interests on the utilization of water in the catchment. The same resource (water) can not be used to equally meet different objectives. This is because, the consumptive water use reduces the availability of water to other users and how much water is abstracted today has the implication to both the environment and future generations (Phillips and Reichart, 2000). Therefore, a comprehensive stakeholder analysis to carefully assess water users and those who might be affected by management decisions is vital for successful water management.

2.9.2 Stakeholder analysis: A process, an approach and a tool

Despite the fact that Stakeholder Analysis originates from the fields of management studies and business administration, it is now widely used in political science, development studies, policy development, international relations, participatory research, ecology and environmental studies. As pointed out by Reed et al., (2009) stakeholder analysis is also used in development and natural resources management where is sometimes referred as diversity analysis. Different authors have tried to describe what is meant by stakeholder analysis. On one hand, Grimble and Wellard (1997) see stakeholder analysis as an approach. They define stakeholder analysis as a holistic approach or procedure for gaining an understanding of a system, and assessing the impact of changes to that system, by means of identifying the key actors or stakeholders and assessing their respective interest in the system.

On the other hand, Reed et al., (2009) describe stakeholder analysis as a process. They maintain that as a process stakeholder analysis defines aspects of social and natural phenomenon affected by a decision or action. It also identifies individuals, groups and organisations who are affected by or can be affected, those parts of the phenomenon and prioritises of the individuals for involvement in the decision making process. For that case a comprehensive stakeholder analysis involves the identification of stakeholders, differentiating between and categorisation of stakeholders as well as investigating the relationships between stakeholders. Ramirez (1999) looks at stakeholder analysis as an approach, a process and a combination of tools for the identification and description of stakeholders on the basis of their attributes, interrelationships and interest related to a given issue or resource. Ramirez (1999) also claims that stakeholder analysis essentially seeks to differentiate and study stakeholders on the basis of appropriate attributes and criteria that are set by a researcher to address a specific context. The attributes and criteria may include the relative power and interest of each stakeholder, the importance and the influence they have, the multiple hats they wear as well as the networks and coalitions to which they belong (see section 2.9.1).
Stakeholder Analysis can also be used as an approach and a tool to undertake different functions in natural resources management. Explaining stakeholder analysis as an approach, Mushove and Vogel (2005) state that stakeholder analysis aim:

- To identify and categorise stakeholders that may influence and perhaps transform an organisation or a system;
- To develop an understanding of why changes occur;
- To establish who can make changes happen; and
- To discern how to best manage, for instance natural resources.

On the side of stakeholder analysis approaches, Reed et al., (2009) mention the normative, instrumental and descriptive approaches in stakeholder analysis. Normative approaches mainly adopted in policy, development and natural resources circles emphasises the legitimacy of stakeholder involvement and empowerment in decision making process. In this context, stakeholder analysis has been used to legitimize the decisions that are made, through the involvement of key and or representative figures. Normative stakeholder theory aims to identify whether decision makers are morally responsible within the legal and institutional context. Instrumental approaches are more pragmatic, and largely devoted to understanding how organisations, projects and policy makers can identify, explain and manage the behaviour of stakeholders to achieved desired outcomes. The approaches are used in business management to improve the strategic management and thus performance of an organisation. In the development and natural resources management instrumental approaches are used to overcome obstacles to the adoption of new technologies, adapt technologies to relevant user groups, or to disseminate the same technologies in different ways to different groups. The descriptive approaches are used to prior to normative and instrumental approaches to mainly describe the relationship between a particular natural, historical or social phenomenon and its stakeholders. In the context of this research the relationships between stakeholder groups are described in details to provide an insight of their daily interactions in their negotiations over water.

Furthermore, stakeholder analysis can be used as a tool to undertake different functions in natural resources management. Ravnborg and Wetermann (2002), Ramirez (1999), Grimble and Wellard (1997) point out that stakeholder analysis can be used as a tool to:

- Empirically to discover existing patterns of interactions between stakeholders;
- Analytically to improve interventions;
- As a management tool in policy making;
- Enhance the understanding of interdependencies among stakeholders and advance negotiations in catchment management; and
- To predict potential conflict.

Stakeholder analysis has both advantages and disadvantages. The main advantage of stakeholder analysis is that it acknowledges that stakeholders have different power relations and interests (Holmen and Billgren, 2008). It analyzes how various stakeholders relate to each other and form the means to communicate differences between stakeholders in order to create understanding of different view points. In addition, stakeholder analysis has the
better ability to show the variation in drawbacks and benefits for various stakeholders and as a result it facilitates and visualizes tradeoffs between stakeholders. Stakeholder analysis can also empower stakeholders in communication between each other as in a comprehensive stakeholder analysis many more people, organisations and groups might be considered when crucial decisions are to be made.

Furthermore, stakeholder analysis may assist the empowerment and participation process by highlighting the particular interests of different groups and the promotion of more transparent negotiation. This may be applicable in South Africa where people are still divided along racial lines as a result of apartheid and by political ideologies due to current party politics. The division of the communities in the former homelands leave the powerless group such as the smallholder farmers in a disadvantaged position when it comes to negotiations their right to natural resources such as land and water (Kemerink et al., submitted). The negotiation process becomes much more challenged when the existing local and national politics are linked with neo-liberal policies and global politics. Hence, in the South African context and in the former homelands in particular, stakeholder analysis could be used to assist for the empowerment and enhance participation of different groups in the negotiations over redressing equity in natural resources ownership. Moreover, stakeholder analysis could also be used in understanding the strategies used by various stakeholders in their negotiations over natural resources including land and water.

However, stakeholder analysis tends to overlook how to define who is and who is not a stakeholder. Also, how to prioritize stakeholders based on what criteria remains as bottleneck in stakeholder analysis (Grimble and Wellard 1997). In addition, despite stakeholder analysis being a useful tool for problem analysis and for enlightening the interests of stakeholders, it can not in itself provide answers to problems or guarantee representation of every group affected by a particular issue (Ramirez, 1999). It reflects and provides an insight of the groupings and an interest of society. In other words, stakeholder analysis in itself does not try to make changes where it is applied. If strong participation of various groups in the society is to be achieved, it is likely to be through the fostering other issues such as empowerment and participation process outside the direct realm of stakeholder analysis (Grimble and Wellard, 1997).

2.9.3 Conflicts in water management

Background concepts in conflicts

The word conflict has many connotations, ranging from a state of open prolonged fighting to a situation when entities wish to carry out acts which are mutually inconsistent (Visscher, 2008). Grimble and Wellard (1997) define conflict as a situation of competition and potential disagreement between two or more stakeholder groups over the use of one or more scarce resource. Bonta (1996) define conflict as the occurrence if incompatible needs, differing demands, contradictory wishes, opposing beliefs or diverging interests which produces interpersonal antagonism and at times may result into hostile situation. Conflicts can be between individuals, between groups and within groups. The chance for conflict to occur increases when people have differing styles of communication, ambitions, political or religious views or different cultural backgrounds (Obeidi et al., 2005). Conflict between groups of people occurs when the groups have tendency to emphasise the things that make
their group "better than" or "different from" other groups. Conflict within a group of people can arise from the individual differences or ambitions mentioned earlier; or from rivalry between sub-groups or factions (Oregon Mediation Centre, 2009).

According to Blackman (2003) there are many different types of conflicts experienced by communities e.g. from no conflict, surface conflict, latent conflict, open conflict and aftermath conflict. In a situation where there is no conflict, the community is assumed to have good procedures at resolving conflicts before they develop. This may be related to those communities where there is robust arrangement for mediating conflicting between conflicting parties. Surface conflicts have shallow or no roots and may be due to misunderstanding of goals. This can be addressed by improved communication and the conscious effort of opposing groups to understand each other’s needs and opinions. Latent conflict (potential conflict) is a conflict below the surface. It might need to be brought out into the open before it can be effectively addressed. Open conflicts are very visible and have deep roots, sometimes over several generations. Aftermath conflicts are the situation where a particular problem may have been resolved but the potential for conflict still exists. In fact the potential for conflict may be even greater than before, if one person or group perceives itself as being involved in a win-lose situation.

Moreover, conflicts can be evaluated in form of the relationship, data, interest, structural and value (Oregon Mediation Centre, 2009). First, relationship conflicts occur because of the presence of strong negative emotions, misperceptions or stereotypes, poor communication or miscommunication, or repetitive negative behaviours (Obeidi et al., 2005). Relationship problems often fuel disputes and lead to an unnecessary escalating spiral of destructive conflict. Second, data conflicts occur when people lack information necessary to make wise decisions, are misinformed, disagree on which data is relevant, interpret information differently, or have competing assessment procedures. Some data conflicts may be unnecessary since they are caused by poor communication between the people in conflict or because the data can be used to satisfy the political interests. Relationship and data conflicts are the most common types of conflicts in international river basins where trust and relationship between the riparian countries is not good enough resulting into poor data and information sharing and exchange (Wolf et al., 2003).

Third, interest conflicts are caused by competition over perceived incompatible needs. Conflicts of interest result when one or more of the parties believe that in order to satisfy his or her needs, the needs and interests of an opponent must be sacrificed. Interest-based conflict is commonly expressed in positional terms where a variety of interests and intentions underlie and motivate positions in negotiation. Interest-based conflicts may occur over substantive issues (such as money, physical resources, time); procedural issues (the way the dispute is to be resolved); and psychological issues (e.g. perceptions of trust, fairness, desire for participation, respect) (Mack and Snyder, 1957). Interest conflicts can be resolved through interest-based negotiation which focuses on understanding the interests of conflicting parties and building solutions based on their interests (O'Dowd and Barrett, 2006). Fourth, structural conflicts are caused by forces external to the people in dispute. Limited physical resources or authority, geographic constraints (distance or proximity), time (too little or too much), organizational changes, and so forth can make structural conflict seem like a crisis. In addition, structural conflicts often relate to the organisation of the
Lastly, value conflicts are caused by perceived or actual incompatible belief systems. Values are beliefs that people use to give meaning to their lives. Values explain what is "good" or "bad," "right" or "wrong," "just" or "unjust." Value disputes arise only when people attempt to force one set of values on others or lay claim to exclusive value systems that do not allow for divergent beliefs (Oregon Mediation Centre, 2009). In other words, value conflicts are as a result of the co-existence of different normative orders (i.e. system of rules and shared expectations governing a particular social situation). This is because, in any given society there are interconnectedness of norms and values of very different kinds e.g. moral, legal and religious. Such orders give privilege and derive their legitimacy from certain norms, giving rise to new values and beliefs. When such historically traditional conceptions of orders are challenged by new norms and institutions there are high potential for conflicts in the society. The potential for value conflicts is reflected in the plural legal setting in South African context where the values and beliefs of different groups have been shaped by pre-colonial, colonial, apartheid and post-apartheid systems.

**Water conflicts**

The management of water resources is associated with multiple stakeholder groups who have differences or incompatibilities in interests, values, power, perception and goals and only occurs if a stakeholder feels ‘impairment’ from the behaviour of another stakeholder due to these differences (Yasmi et al., 2006). This often result into different perception regarding water use and conservation as most of the water use have conflicting interests which can not be equally attained simultaneously. In this case conflicts may occur because water users may disagree on the access to and control over water, or have different uses for water, or want to manage water in different ways (FAO, 2000). In addition, water conflicts may arise when the stakes of stakeholders are not properly incorporated during early phase of planning process (Janssen et al., 2006).

Water has both material and cultural values attached to it and embrace the common problems and dilemmas such as free-riders and contested legitimacy of governing stakeholders (Yasmi et al., 2006). This is because water is defined symbolically by people as it shapes people’s ways of life, ethnic identity and also a set of gender and age roles. This results into ideological, social and political struggles over water which, if not contained, might lead into conflict (c.f. Hart, 2006). Based on the fact that the history of South Africa has resulted in a significantly skewed pattern of access to scarce resources in favour of a wealthy minority (Barry et al., 2007) it is likely that the issue of access to natural resources such as land and water is a potential arena of conflict and social and political divisions which might affect water resource use and management. Mosse (2008) points out that water resources management practices is not only shaped by, but also shape the social and political relations and are often a result of history. This is reflected in South Africa society today where there is unequal distribution of water among commercial farmers and smallholder farmers who reside in the former homelands. The power asymmetry in control...
over water and the overall unequal distribution of natural resources (including land) along racial and structural lines form potential for conflict, and is most likely to result into open conflict linked to the widespread spread of unemployment, poverty and housing (ICG, 2004).

Furthermore, Endossa (2005) argues that water conflicts are well-established in local communities as individuals compete for scarce resources. This is because water is subject to the increasing scarcity due to the rapid environmental changes (bio-physical factors), increasing demand and/or politically constructed due to unequal distribution of property right regimes often resulting into competition between users and across sectors posing high tension for conflicts (Peluso and Watts, 2001; Mollinga, 2001; Molle, 2008). Endossa (2005) further stress that water conflicts also arise when local traditional practices are no longer viewed as legitimate or consistent with national policies, or when entities external to a community are able to pursue their interests, while ignoring the customary arrangement in water management at a particular locality. This makes water conflicts to have class dimensions (differences in gender, age, and ethnicity, cultural and social dimensions).

2.9.4 Power relations in water conflicts

Power can be defined as the capacity to achieve desired and intended outcomes (Haugaard, 2002). Blackman (2003) explains power as the ability or capacity to do something or to control and influence what others do. Power determines who makes decisions and what decisions are made. Power is often revealed when two or more people interact resulting into differences in power in everyday relationships (Bondy, 2008). Davis (2002) points out that power is an integral part of social interaction, implying that it exists in all levels of social life from global culture and ideologies to the local level of everyday life. This view, support the existence of interaction between global and everyday local politics and how they influence each other (Mollinga, 2001; 2008). As part of this interaction, stakeholders tend to use their skills and resources to ensure the recognition of their ideologies and claims. In water resources management power asymmetries between various water users might exists which affect their everyday interaction, negotiations and decisions on the control of water and the associated infrastructure. It is often likely that powerful water users would have strong influence in the negotiations over their water rights. Similarly, users’ power to influence water management decisions might also depend on where the user is located within the catchment. Normally, upstream users have strong influence in a water resource system as compared with downstream users in the catchment (Van der Zaag and Savenije, 2007).

In addition to that, Giddens (2002) and Mosse (2009) argue that resources such as land and water are the media through which power can be exercised. This is reflected in South Africa context where the commercial farmers who own a large proportion of land and water have strong influence in the negotiation over these resources than their counterparts, the smallholder farmers (ICG, 2004). Furthermore, Blackman (2003) argues that sources of power could include money, networks, information, authority, knowledge, security and access to resources. However, Blackman stresses that everyone has power to some degree but the state of ‘powerlessness’ occurs when people do not think they have power, when they cannot use their power or when others do not recognise their power. As a result, powerless group in the society may lack the confidence to influence situations which they believe are outside their control (Wilson, 1999). On the contrary to this argument, Davis (2002) argues that there are no powerless groups in any society as it is upon the groups to
make decisions and prioritise what to do and whichever decisions they opt is subject to being influenced by external factors beyond control of the group. In addition to that Giddens (2002) argue that power relations can be reciprocated because even the groups regarded powerless can harness power through mobilizing resources and exert control over the more powerful in the established power relationships.

Power difference in a society is one of the most influencing factors of water conflicts (Giddens 2002). Factors like age, gender, education, literacy, wealth, social capital, physical strength, weapons, legitimacy and location form power bases (i.e. the resources or the tools available to influence one’s environment, the other party or ones own desire). These factors influence the amount of power an individual has or the amount of power that other people will recognise as well as the relationships between groups (Bourdieu, 2002; Coleman, 2006). Haugaard (2002) identifies two dimensions of power and conflict. The first dimension is related to power difference among individuals in the society. In this view the conflict happens when some stakeholders prevail over the other with regard to specific goals and/or interests on a particular issue. The underlying issue is that multiple stakeholders always have divergent opinions, goals, interests and ambitions, of which, when some are met at the expense over the other, might result into conflicts. The second dimension is the conflict with regards to the structural and institutional machinery of power which confers differential powers upon stakeholders. The fact behind this argument is that, different structures and institutions in a given society tend to favour some goals over the other, and often result into giving privilege to some actors over the other. For example, the policies, legal framework and political structures in South Africa in different time from the colonial, apartheid and post-apartheid regimes had different goals and favoured the groups in the society differently. Though the land and water reforms in South Africa aim to redress inequality embedded in the society (as the reforms are seen to mainly favour the disadvantaged groups) from the previous periods, due to historical reasons it may not practically favour all groups in the society thus leaving tension for structural and institutional conflicts.

Furthermore, water conflicts could be fuelled when the balance of power between different groups changes or is very uneven. Perhaps one group abuses their power, or wants more power or fears losing their power. Perhaps another group wants to challenge those in power in order to improve the balance of power. Watts and Lee Peluso (2001) point out that conflict is site specific phenomenon rooted in local histories and social relations but far more connected to larger processes of material transformation and power relations. Their observation is typically noticed in the land and water reforms in South Africa where there is a huge power asymmetry between the black majority and the white minority who owns large commercial farms and water infrastructures and between emerging black elites and blacks. On the one hand, the reforms challenge those who own land and water rights and those favoured by the current institutional structures making them fear of losing their power. On the other hand, the reforms motivate those underprivileged (Blacks) who seek to gain land and water rights as well as the politicians who claim to attain equity in the society and to be re-elected so that they remain in power. On the contrary to this argument, Giddens (2002) argues that conflict is not necessarily caused by power asymmetry between individuals or groups in the sense of either division of interests or active struggle because if power is used properly, it can give all groups of people in the society equal political and legal rights.
Coleman (2006) identifies the unwillingness of the powerful to share their power (wealth, information, access, authority) with those in needs as the central problem within the power and conflict dynamic. This situation is much more related to most of water conflicts in international river basins where data exchange and information sharing between states is poor. As shown in section 2.9.3, in this regard data related to water management is a valuable source of power and countries are unwilling to share the data fearing to lose the power they have in controlling water culminating into data conflicts (Blatter and Ingram, 2001). Lastly, Coleman (2006) argues that power and conflicts can be explained based on ideological frames on how one view the society. These includes the unitary, radical and pluralist views all having something to do with how can one respond to the situation of power and conflicts. The unitary view look at the society as an integrated whole with common interest which is vested in few individuals (leaders) who represent the interests of the society (Cleaver, 1999). The radical view look at the society as an entity comprised of antagonistic classes characterised by deep rooted social and political cleavages. In pluralistic view, the society is considered as a space where different groups bargain and compete for a share in the balance of power to realise a negotiated order that creates unity out of diversity. Therefore, it is claimed that in pluralistic society dominated by multiple legal systems power is seen distributed more or less equally among the groups, and as the primary medium in which conflicts are resolved. However, in legal plural environment there is a room for stakeholders to claim their right based on whichever legal framework they feel best fits their situation in the negotiations over water (Meinzen-Dick and Pradhan, 2002).

2.9.5 Conflict Analysis

Conflict analysis is the systematic study of the profile, causes, actors and the dynamics of conflict (International Alert, 2004). Conflict analysis helps to; understand the history and background of the conflict identify the actors involved, their perspectives and how they relate to each other and identify issues of disagreement. Conflict analysis can be carried out during or after the conflict. During the conflict, the analysis can help actors to aim for peace and identify solutions. The analysis after the conflict can help actors to think of ways to address the deep causes of conflicts (Blackman, 2003). In natural resource management, stakeholder and conflict analysis are often combined and integrated in the management of natural resources. This is achieved through mapping the stakeholders and their interests, analysing the conflicts and to develop methods for conflict mitigation and cooperation with stakeholders (Bruckmeier, 2005).

As pointed out by Obeidi et al., (2005), many techniques have been developed to analyse interest based conflicts. The developed techniques mainly apply to analyse multi-stakeholder conflicts and multi-objective decision problems. One of the techniques is the Game Theory which was the first set of mathematical tools to conceptualize conflict in decision making. The Game Theory attempts to mathematically capture behavior in strategic situations, in which an individual's success in making choices depends on the choices of others (Turoy and Stengel, 2001). Other tools for conflict analysis such as the Metagame Theory, Hypergame Analysis, the Graph Model for conflict resolution and the drama theory share the game theory view of the meaning of conflict and they all focus on finding outcomes that are stable with respect to choices made in decision makers' interests, but differ in the assumptions or analysis principles. Apart from the aforementioned tools there is also the concept of strategic conflicts analysis...
that is assumed to capture all relevant components as structural characteristics, as it describe
the decision makers, their opportunities, their objectives and values as represented through
their preferences (Obeidi et al., 2005). This study used the combination of the conflict and
stakeholder analysis theories described in the framework of analysis in section 3.2.
3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was applied to analyze the negotiations over water in Potshini catchment. The chapter is divided into five sections. The conceptual framework of the research is presented under section 3.2. The general approach employed in this study is presented in section 3.3. The instruments, techniques and methods used for data collection are presented under section 3.4. and the conceptual model used for data analysis is explored under section 3.5. The description of the Potshini catchment is presented under section 3.6.

3.2 Conceptual framework of the research

This research based on the conceptual framework shown in Figure 1. As shown, the framework presume that the causes of struggle for water, the stakeholders/actors and the context through which the negotiations over water takes place are dynamically linked, influencing and shaped by the geo-political forces and the bio-physical characteristics of the catchment. The framework is based on the combination of the conflict and stakeholder analysis theories (Bruckmeier, 2005). This is achieved by mapping the profiles of stakeholders, analyzing the conflicts and developing methods for conflict management and cooperation between stakeholders . Based on the theory of conflict, conflict analysis was used to understand the historical background of the struggles, identify the actors involved in the conflicts, their perspectives and how they relate to each other and identify issues of disagreement (International Alert, 2004).

Specifically to suit this study, stakeholder analysis was used as an approach to identify, categorize and describe the stakeholders as suggested by Mushove and Vogel (2005). Stakeholder relationships are analyzed using a descriptive approach of the relationships between the stakeholder groups based on their daily interactions in the catchment to determine if the relationships between them are conflicting, complementary or cooperative (cf. Reed et al., 2009). This enabled to gather an in-depth understanding on how the stakeholder groups are connected and affects each other as well as how they feel, perceive and behave towards each other. The comprehensive understanding was important to capture the complexity of the negotiations over water in the catchment as the actor-linkage matrices and stakeholder-issues diagrams commonly used in the stakeholder analysis are felt to be too linear to reveal the dynamics of the daily interactions and the intra-and inter-relationships of stakeholder groups. Stakeholder analysis also served as a tool to enhance our understanding of the interdependencies among stakeholder groups, predicting the

20 In this research the terms stakeholders and actors have the same meaning and are used interchangeably
potential conflicts and looking for windows of opportunity to improve the negotiations over water in Potshini catchment (cf. Grimble and Wellard, 1997; Ramirez, 1999).

3.2.1 The context of the negotiations over water

The analysis of context aimed to comprehend the historical, environment, political, economic, social and cultural setting through which the negotiations over for water takes place (cf. International Alert, 2004). It also provided an in-depth understanding of the structures, mechanisms, processes and institutions related to water management (Loucks and Gladwell, 1999). The analysis of context mainly relies on the literature as presented in chapter 2 of the thesis.

3.2.2 The causes of struggle for water

The analysis of causes of struggles for water aimed at enhancing the understanding of the underlying causes of struggles for water in Potshini catchment. The underlying causes of struggle for water were drawn from the analysis of the empirical data presented in chapter 4 and were cross-checked with the literature review in chapter 2. The causes and the dynamics of struggle for water are discussed in chapter 5 by integrating different parts of the thesis.
3.2.3 Actors/Stakeholders

The analysis of stakeholders aimed at identifying the stakeholders involved in the negotiations over water in Potshini catchment, differentiating and categorising them as well as investigating the relationships between them (Reed et al., 2009). The analysis involved identification of stakeholders’ capacities, positions, goals, interests, and relationships with other stakeholders at various levels and their perceptions of such relationships (International Alert, 2004). In addition, the strategies employed by stakeholders in their negotiations over water was carefully analyzed. The analysis of stakeholders based on the empirical data collected from the three-month field work in Potshini catchment and was crosschecked with relevant literature as analyzed and presented in Chapter 4 of the thesis.

3.3 General approach of the study

The extended case study was used as an approach for this research, because it can be used to study the everyday interactions in Potshini catchment in connection to various levels (i.e. local, national, global) e.g. extension in space. In addition, the extended case study approach takes the historical context into account and thus make possible to connect the present to the past using the information obtained from the study e.g. extension in time. These two elements of the extended case study approach are very important since they allow studying in-depth the dynamics of struggles for water over time and space. To study the everyday interactions between stakeholders groups (i.e. to locate everyday life in its extra-local and historical context) in the catchment, participant observation was deployed; implying that a certain degree of reflexive science (extent to researcher’s own opinion and experiences) is reflected in this study. In general, as shown in Figure 2, the extended case study approach applied the researcher’s own opinion and experience (i.e. reflexive science) in order to abstract the everyday interactions in Potshini catchment (rather than special cases normally studied in case studies) and extend them in space and in time by building on conflict and stakeholder analysis theories (Burawoy, 1998).

Figure 2: General research approach
3.4 Data collection: Instruments, techniques and methods

In accordance with the research approach mainly the qualitative data were collected. Three main data collection techniques were used in this study. These include the review of secondary data through literature review and collection of primary data using field interviews and participant observation techniques. The interview techniques used include in depth semi-structured interviews, follow up interviews and interviews with key informants. Respondents were selected using a stratified random selection procedure to guarantee the geographical spread, balance in age and gender and to include the disadvantaged respondents. The results of the interviews were cross-checked through focus group discussions, observations, comparison with existing literature and by consultations with key informants as well as local authorities, government, research and academic institutions and non-government organisations active in Potshini. The combination of these techniques (multiple research techniques) enabled to gather and verify the data necessary to answer the research questions (Silverman, 2005). The responses were documented in the field notebook in the form of detailed narratives. The data collected are comprehensively documented, analyzed and presented in chapter 4 of the thesis.

3.5 Data analysis

In the context of this research, the stakeholder and conflict analysis were combined to analyse the negotiations over water in Potshini catchment (see section 3.2).

The conceptual model for the analysis of actors/stakeholders in the negotiations over water applied in this research is shown in Figure 3. First, I assume that the platform through which the negotiations over water take place is not a levelled playing field as the stakeholders are likely to have different capacities that they could use to influence and or shape the negotiations. Hence, stakeholders would tend to use their skills and resources to ensure the recognition of their ideologies and claims. As a result, the negotiations over water in Potshini catchment are most likely to be dominated by expression of power differences among stakeholders in their everyday relationships (cf. Bondy, 2008). Also, it is possible that the power differences among stakeholders could shape their position, goals, interests and strategies they use in getting access to and control over water and vice versa. Therefore, I define stakeholder capacities as the resources or the tools the stakeholder use to influence their environment and/or other stakeholders in order to get access to and control over water. In the other words, capacities are the power bases used by stakeholders in their course of getting access to and control over water (Coleman, 2006).
Second, I define the negotiations over water as the official and non-official interactions between stakeholder groups in securing access to and control over water. I assume that the negotiations over water in Potshini catchment are characterized by stakeholders' positions, goals and interests. Positions are the proposed solutions provided by stakeholders in a means to legitimize their right to access and control over water (i.e. (which) normative orders used by stakeholders to legitimize their claims). Hence stakeholders are likely to select a position because it satisfies their particular interests or meets a set of needs. In other words, positions are the cover up of stakeholders' goals and interests. Based on their interests, each stakeholder group has their own goals on which they negotiate upon to pursue their interests. Goals are the desired result the stakeholder group wish to achieve in the future (i.e. what to achieve in order to meet their interests). Interests are the underlying motivations which make stakeholders to negotiate over access to and control over water. Motivations can be mainly in the form of concerns, hopes, fear, needs and desires (i.e. the why behind their positions and goals). However, in the course of negotiations over water in Potshini catchment, each stakeholder is primarily likely to present their positions without unveiling their goals and interests.

Third, during the negotiations over water depending on their positions, goals and interests, stakeholders are likely to use different strategies to get access to and control over water. Therefore I define the strategies in the negotiation over water as the planned series of actions applied by the stakeholder in securing access to and control over water. In this view, I maintain that the stakeholders in Potshini catchment do not only capitalize on their capacities in ensuring their access to and control over water, but also strategically undertake series of actions with the explicit view that taking no action is also an action (see section 1.5). I also assume that the strategies used by the stakeholders are likely to be shaped by stakeholders' current status of access to and control over water and hence are linked to their positions, goals and interests. Moreover, I assume that in the negotiation over water stakeholders are likely to interact with each other. In their course of interaction each stakeholder would strive to defend their position, attain their own goal, and ultimately try to meet their interests. This interaction is likely to result into complex and dynamic relationships between them. These relationships between stakeholder groups are not only likely to be shaped by economic, social, cultural and political histories but also represent other inequitable and exploitative intra-and extra-community relationships over time (Chikozo, 2008).
Therefore in the context of this research, stakeholder relationships were analyzed using an in-depth description of the relationships between the stakeholder groups based on their daily interactions in the catchment to determine if the relationships between them are conflicting, complementary or cooperative. This enabled us to understand how the stakeholder groups are connected and affected by each other and therefore how they feel, perceive and behave towards each other. The comprehensive understanding is important to capture the complexity of the negotiations over water in the catchment as the actor-linkage matrices method and the stakeholder-issue diagram commonly used in the stakeholder analysis is felt to be too linear to reveal the dynamics of the daily interactions and the intra- and inter-relationships of stakeholder groups. Lastly, I define stakeholder's struggle for water as addressed in section 1.5 of this thesis.

3.6 Description of the study catchment: the Potshini Catchment

Potshini is a sub-catchment of the South Africa Emmaus catchment\textsuperscript{21} in the Thukela river basin (DWAF, 2003). The catchment is located in the foothills of the Drakenberg Mountains, in the Bergville District (uThukela district located in Ladysmith) of the KwaZulu-Natal province in south eastern part of South Africa (Figure 4 and Box 3). The Potshini catchment falls together with neighbouring villages in ward 12 under the formal authority of the UKhahlamba local municipality and is represented by an elected councillor at ward level in the municipal council. The composition of the municipal council is based on proportional representation of the political parties including the councillors, who are party candidates that gained majority vote in the respective wards (Butler, 2004). The municipality has the responsibility to ensure the provision of services (including water supply) to the communities in a sustainable manner and to promote social and economic development (RSA, 1998b).

\textsuperscript{21} Quaternary Catchment (QC) number V13D.
The catchment is characterized by a concurrence of commercial agriculture and industrial economies with impoverished communities dependent on subsistence farming in degraded areas (Kongo and Jewitt, 2006). The catchment consists of streams; most of them being perennial providing water for domestic use to the upper part of the catchment which used to be the former Zulu homeland (i.e. the Potshini community), while replenishing reservoirs for commercial farmer situated downstream. Topographically, the catchment has gentle slopes, suited for agronomic purposes, surrounded by steeper slopes in the upper riches of the catchment which are predominantly used for livestock grazing. The elevation ranges from the minimum of 1219 to 1483 m above sea level (Winnaar et al., 2007). Other biophysical characteristics of the catchment are presented in Table 1.

Table 1: Characteristic features of Potshini Catchment

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>10 km²</td>
</tr>
<tr>
<td>Mean Annual Rainfall</td>
<td>700 mm/year</td>
</tr>
<tr>
<td>Minimum temperature</td>
<td>-4°C</td>
</tr>
<tr>
<td>Maximum temperature</td>
<td>34°C</td>
</tr>
<tr>
<td>Mean Annual Potential Evapo-transpiration</td>
<td>1600 – 2000 mm/year</td>
</tr>
<tr>
<td>Economic activities</td>
<td>Subsistence and Commercial agriculture</td>
</tr>
</tbody>
</table>

KwaZulu-Natal (KZN), one of the nine provinces of the Republic of South Africa, has a total area of 9.2 million hectares. Located on the east coast of South Africa bordering the countries of Lesotho, Swaziland and Mozambique is an important subtropical agricultural and plantation forestry production region. Only a third of this area is suitable for dry land cultivation, with half already under cultivation. Over half (60.4%) of the land area is still natural vegetation; excluding Nature Conservation Areas that cover another 10% of the total provincial area. KwaZulu-Natal has a population of 8.6 million people (21% of South Africa), of which 5.3 million (62%) live in rural areas. There are an estimated 400,000 rural agricultural land-user households (i.e. black farming families) and about 4038 commercial farming units (STATISTICS SOUTH AFRICA, 2006).

The province is characterized by the influence of the Indian Ocean, especially the warm Agulhas current, on its climate. This creates a wide coastal region of subtropical climate, characterized by high humidity, high temperatures and high summer rainfall (900± 1200 mm). The climatic transition from the coast to the westerly plateau is gradual. Consequently, the region has warm, wet summers and cool, dry winters. KwaZulu-Natal's western border is defined by the Drakensberg Escarpment that forms a marked climatic gradient due to the influence of physiographic relief and altitude on temperature and moisture (Fairbanks and Benn, 2000). It is expected that under the water reforms three Catchment Management Agencies (CMA) will be established in KwaZulu Natal. These are the Mvoti to Mzimkhulu CMA, Thukela CMA and the Usuthu-Mhalhuze CMA (Mosai, 2004).

There are two main seasons, summer season (September to April), with heavy rains being characterized by thunderstorms and occasional hailstorms and dry winter season (May-August), during which frost is common and mainly characterised by extreme low flows (Kongo and Jewitt, 2006) resulting into severe water shortage for the Potshini community. The Potshini community consist of about 200 households. The households are characterised by inter-related families. Field observations show that there is an average of 7 people per household. The population in this part of the catchment fluctuates as many migrate to urban areas. However, it is estimated that around 500 people reside in the area on a permanent basis (Kemerink et al., submitted). Herding cattle and practicing agriculture are the major activities in the area. The agricultural plots are relatively small (0.5 to 2 ha) and the main crops grown are maize and beans for subsistence, although regularly parts of the harvests are sold. Supported by the civil society organisations, some farmers are growing vegetables in home gardens. Mudhara et al., (submitted) reports that agricultural activities in Potshini are not the main sources of income as 37 % of the households earn regular income, 45% of the household have access to remittance from family members working elsewhere, and 82% of the households receive social grants from the government. In addition, despite the banning of growing marijuana in 2008, some of farmers still illegally grow marijuana and generate considerable income from it. The governance system in Potshini community is characterised by a plural legal layers of traditional and the democratic governance structures.

Handouts provided by the government in the form of pension, housing subsidies, disability grants and children care benefits. On a monthly basis grants for elderly and disabled people are circa 125 US$ equivalent and for a child circa 30 US$ equivalent (SASSA, 2008).
4 RESULTS AND ANALYSIS

4.1 Introduction

This chapter presents the results and analysis of primary and secondary data collected in the field and through the review of relevant literatures. Primary data were collected during a three-month field work conducted in Potshini catchment between October and December 2009, using the instruments, techniques and methods presented under section 3.4. The chapter is divided into five sections. Section 4.2 covers the identification, categorisation and description of stakeholder groups. Section 4.3 provides the insight of stakeholder capacities and section 4.4 explore the positions, goals and interests of various stakeholders. The strategies used by the various stakeholders in the negotiations over water are presented under section 4.5. The relationships between stakeholder groups are presented in section 4.6.

4.2 Identification, categorisation and description of stakeholders

The flow of water in Potshini catchment connects people, groups and institutions. The water creates relationships between them and leads to complex negotiations in the access to and control over water. Table 2 shows the identified stakeholders groups involved in the negotiations over water in Potshini catchment. Stakeholders were identified, categorised and distinguished based on biophysical, cultural, political, governance and socio-economic factors which are shaping the negotiations over water in the catchment. Moreover, the analysis shows that the stakeholder groups are socially constructed and shaped by South African history. However, it is important to note that the stakeholders involved in the negotiations over water in Potshini catchment are not static groups, and they move between categories to make sure they satisfy their interests (cf. Currie et al., 2009). Therefore, the results are analyzed and presented based on the interpretation of the researcher.

4.2.1 The commercial farmer and the Potshini community

In Potshini catchment the commercial farmer and the Potshini community are the two most distinctive groups which are the result of apartheid policies of separate development (cf. Butler, 2004). The Potshini community is situated in the upstream part of the catchment, the former Zulu homeland of which the land ownership is communal under the administration of the traditional authority. The commercial farmer is situated downstream of the catchment on privately owned land. The landscape in Potshini is clearly defined by a ditch and a fence separating the two stakeholder groups.
Table 2: Stakeholders involved in the negotiations over water in Potshini catchment

<table>
<thead>
<tr>
<th>Stakeholder group</th>
<th>Sub-stakeholder group(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Farmer (CF)</td>
<td>-</td>
</tr>
<tr>
<td>Potshini Community (PC)</td>
<td>Farmers (F)</td>
</tr>
<tr>
<td></td>
<td>Self Identified Farmers (SIF)</td>
</tr>
<tr>
<td></td>
<td>Non-Self Identified Farmers (NSIF)</td>
</tr>
<tr>
<td></td>
<td>Non-Farmers (NF)</td>
</tr>
<tr>
<td>Amangwane Traditional Authority (ATA)</td>
<td>-</td>
</tr>
<tr>
<td>Government Institutions (GI)</td>
<td>Government Departments (GD)</td>
</tr>
<tr>
<td></td>
<td>UKhahlamba Local Municipality (ULM)</td>
</tr>
<tr>
<td>Civil Society Organisations (CSO)</td>
<td>-</td>
</tr>
</tbody>
</table>

**The commercial farmer**

The commercial farmer at the downstream end of the catchment privately owns 1,500ha of land. One-third of the land is arable to support farming\(^{23}\) and the remaining two-third is used for grazing 300 cows. The commercial farm was established around 100 years ago and has been owned by three different families from the British descendants. The current farmer is male and has owned the farm since 2002 and lives with his family on the farm.

The water supply for agriculture is mainly from the four surface dams and rainfall. Three dams are replenished by streams flowing from the communal land of the Potshini community upstream and have a total full capacity of 950,000 M\(^3\) with an irrigation potential of about 200ha depending on the cropping patterns. The water storage in the dams allows the farmer to grow irrigated crops in both summer and winter. The farmer uses the four centre pivots irrigation systems to irrigate the crops\(^{24}\). The farmer indicated that the pivot

\(^{23}\) Less than 50% of arable land is currently under irrigation.

\(^{24}\) The commercial farmer grows commercial trees, wheat, maize, soybeans, pepper juice and potatoes. Wheat is grown in winter depending on the water storage in the dams.
Irrigation equipments are the main limiting factor for irrigating all of the arable land. The water supply for domestic purposes is from the five boreholes drilled about 50 years ago supplying water for three farm houses. The commercial farmer employs about 30 workers permanently and up to 150 workers during the harvest seasons. The permanent workers reside in six houses on the farm, all of them are supplied by water from the springs. The water used by the farmer is recognised as an existing lawful use as he has a registered water right granted under the previous water acts (RSA, 1998a).

The farmer was born in South African agricultural family from British descendants and obtained knowledge and received trainings on farm accounting and economics, experience in crop management and modern agriculture techniques for about 15 years. Moreover, the farmer has access to capital through banks and financial institutions and owns the on-farm workshop, warehouse, farming machinery, field cars, and the filling station. The farmer has reliable domestic markets for the farm products. Wheat, maize and soybeans are sold to the mills and factories in Pietermaritzburg and Winterton respectively.

**The Potshini community**

The in-depth semi-structured interviews were conducted with twenty-three respondents who permanently reside in Potshini community in contrast to other residents who regularly commute to urban areas for longer periods of time. They are the members of households located in different parts of the community and include members of large extended families residing in the area as well as the respondents with few relatives living in the catchment. The interviewed respondents have different political affiliations, educational backgrounds and different means of sustaining their livelihoods. In addition, two focus group discussions were conducted. One focus group discussion involved the diverse group of respondents including representations by gender and age groups while the other focus group discussion was held with youths residing in Potshini.

Out of twenty-three respondents twelve were females. Out of the interviewed women 75% were older than fifty years and 7 were non-educated. Of the interviewed men 55% were older than fifty years and 7 has attained primary education. Only one male interviewed respondent has attained tertiary level of education and only one female interviewed respondent has adult education (Figure 5). To get a comprehensive understanding of the community and to cross-check the findings, in-depth semi-structured interviews were conducted with community institutions in Potshini (Box 4). These include the interviews with teachers at Potshini High School, Ezweletu Primary School and the Potshini Children Day Care Centre.
The Potshini community is located in the upstream part of the catchment, which is one of the former Zulu homelands in KwaZulu-Natal province. The Potshini community consist of about 200 households. The households are characterised by inter-related families. Field survey show that there is an average of 7 people per household. The population in this part of the catchment fluctuates as many commute to urban areas to work. However, it is estimated that around 500 people reside in the area on a permanent basis (Kemerink et al., submitted). Nevertheless, according to the interviewed respondent the population in Potshini community has increased in the recent past.

Herding cattle and practicing agriculture are the major activities in the area. The agricultural plots are relatively small (0.5 to 2 ha) and the main crops grown are maize and beans for subsistence, although regularly parts of the harvests are sold. Supported by the civil society organisations and government departments, some farmers are growing vegetables in home gardens. Mudhara et al., (submitted) reports that agricultural activities in Potshini are not the main sources of income as 37% of the households earn regular income, 45% of the household have access to remittance from family members working elsewhere, and 82% of the households receive social grants from the government. In addition, despite the banning of growing marijuana in 2008, some of farmers still illegally grow marijuana and generate considerable income from it. As means to diversify the sources of livelihoods the government and civil society organisations are engaging the community in various projects such as savings and credit projects and food security projects.

25 Handouts provided by the government in the form of pension, housing subsidies, disability grants and children care benefits. On a monthly basis grants for elderly and disabled people are circa 125 US$ equivalent and for a child circa 30 US$ equivalent (SASSA,2008).
The Potshini community keeps cattle mainly for cultural reasons although a few farmers also raise cattle for commercial purposes. The cattle graze in summer time on the communal land in the upper part of the catchment and are left to graze in the crop field plots during winter. The number of cattle in Potshini community is believed to have increased considerably and it is felt that livestock claims a substantial share of the water. Land degradation affects the communal grazing land in the upper part of the catchment. Field observation shows that land degradation in the communal grazing land is characterised by the natural gullies accelerated by regular pathway of cattle.

The people in Potshini have strong ties with the Zulu religious life and traditions. In the first place, great emphasise is placed on ancestor spirits through conducting offerings and sacrifices to the spirits for protection, health and happiness. For example, the Zulu believe that ancestor spirits sometimes come back to the world in the form of snakes, and if a snake appears the villagers sacrifice a goat or sheep with traditional beer ‘umqombothi’ to show respect for the visiting snake spirit.

**Box 4: Community institutions**

There are three main community institutions in Potshini, Ezwelethu Primary School, Potshini High school and Potshini Child Day Care Centre. The three schools offer education opportunities to young girls and boys living Potshini. These community institutions are characterised by inadequate education environment e.g. having few classrooms as compared to the increasing rate of enrolments and lack of school facilities such as libraries and sports fields. The lack of educational infrastructures is not only caused by budgetary constraints but also a limited size of compound on which they are located. Teachers indicated that the institutions lack reliable water supply and sanitation infrastructures. They also associate theft of fences, school chairs, tables and water taps from the existing rainwater harvesting storage tanks to people in Potshini community.

The education environment is further challenged by the social and cultural environment in Potshini. The culture of keeping livestock makes it necessary for boys to take care of cattle and thus affecting their schooling. This happens during summer and teachers at the Potshini High School indicate there is a 60-80% rate of boys’ late comers at school in the morning when boys are required to take cattle to the grazing land every morning before going to school. The boys are also required to come back home early in the afternoon to assist their families in ploughing. Moreover, the poor school attendance of boys is affected by the fact that most of them are regularly employed by the commercial farmer downstream the Potshini community. During summer there is almost 90-100% attendance of young children at the Potshini Child Day Care Centre because at this time most of the parents get occupied in preparation of their farms before the rain seasons.

At household level girls are mainly involved in domestic work such as fetching water. This consumes most of their time especially at peak hours when they have to queue as many people have to share the communal boreholes. During summer girls are mostly needed for weeding in the farms and thus have to leave their classes earlier. These factors leave girls tired with no time to revise and do their school homework. During winters girls are needed to assist in harvesting thus make it necessary to leave classes and come back home earlier. It is also at this time where fetching water becomes worse as most of the streams and boreholes dry up. Moreover, teachers indicated that high levels of pregnancies and drop outs due to earlier marriages prevents girls from excelling in school.

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26 In Zulu culture cattle are used for socio-cultural purposes (marriage, offerings and sacrifice to ancestor spirits); goats are used for conducting ritual ceremonies and a minimum of 11 cows are used to pay for one ‘Ilobolo’ (i.e. bride price) during marriage.

27 For example at Ezwelethu primary school faces an increase enrolment of 10 pupils each year.
The water supply in Potshini is mainly through the ten communal boreholes which are freely used for domestic purposes. Not all boreholes work properly\textsuperscript{28} and some households are located more than one kilometre from the borehole. In addition, the Potshini community rely on three springs and several small earthen dams (Figure 6). These surface water sources form an important source of water supply for watering cattle. During the winter the community suffers from water shortage, sometimes even for domestic use when boreholes run dry. For agricultural activities the farmers primarily rely on rainfall. Nevertheless, with the support of civil society organisations and government departments, forty farmers are supported by domestic rainwater harvesting storage tanks collecting water from the rooftops and courtyards. These rainwater harvesting storage tanks form a major water supply for domestic use and for supplementary irrigation of crops in the home gardens of those farmers.

![Image of water sources]

Figure 6: The Pictures showing different sources of water supply.

The picture on the left hand side shows the unimproved water point. The Picture in the middle shows the borehole and the picture on the right shows the shallow groundwater source.

Heterogeneity of the Potshini community

Based on the means through which people in Potshini community sustain their livelihood, the community is further categorised into two main stakeholder groups, the Farmers (F) and Non-Farmers (NF). Farmers represent the people who sustain the livelihood of their households through engaging in farm activities mainly by keeping livestock or through subsistence farming. Non-Farmers represent the people who sustain the livelihood of their households through engaging in non-farm activities such as small businesses and employment. However, as livestock form an important cultural value in the community, both farmers and non-farmers were found to raise livestock. As shown in Figure 7, out of twenty-three respondents, eighteen are categorised as farmers of which 60% are male. Of the interviewed respondents, five are categorised as non-farmers of which all of them are female.

\textsuperscript{28} By the end of field work in December 2009, only 8 boreholes were working properly in Potshini community.
Non-Farmers

This category of Potshini community sustains the livelihood of their household through engaging in non-farm activities (Figure 8). All of the five interviewed non-farmers were female out of which three engage in small businesses and two rely on employment opportunities. Three are female-headed households\(^{29}\). All of the five interviewed non-farmers have livestock\(^{30}\) and access to land but claim not to be able to afford the increasing in the costs of farming.

Farmers

This category of the Potshini community sustains the livelihood of their households through engaging in farming activities. Nevertheless, most of these farmers’ households receive regular remittances\(^{31}\) from extended families working elsewhere and also get social grants from the government. As shown in Figure 8 and Figure 9 based on the means of identification, farmers can be further categorised as Self-Identified Farmers (SIF) and Non-Self Identified Farmers (NSIF). SIF are those farmers engaged in farm activities and identify themselves as farmers while the NSIF are those farmers engaging in farm activities but do not identify themselves as farmer.

\(^{29}\) Two of the women are widow.
\(^{30}\) Two of them confirmed to have cows as part of the payments of the ‘Ilobolo’ of their daughters marriage.

\(^{31}\) Remittances are among others used to support family income and partly used to pay for farming costs. By December 2009, ploughing 1ha by tractor was equivalent to 46 US$ and Planting 1ha by tractor was equivalent to 34 US$.
Out of eighteen interviewed farmers eleven identified themselves as farmers (i.e. SIF) and seven did not identify themselves as farmers (i.e. NSIF). Field observation and interviews reveals that external agencies\(^\text{32}\) support farmers regardless of how they indentify themselves and the level of their engagement in farm activities (Figure 9). For example, seven out of eleven SIF are linked to the networks of farmers’ learners groups which are oriented and supported by external agencies. On the same line, five out of seven NSIF are also linked to the networks of farmers’ learners groups. In the other words, out of eighteen interviewed farmers, twelve are supported by external agencies and in this case are referred to as Externally Supported Farmers (ESF). Field interviews also shows that four out of eleven SIF are not supported by external agencies and also two out of seven NSIF are not supported by external agencies. Hence, six out of eighteen interviewed farmers are not supported by external agencies and in this case are referred to as Non-Externally Supported Farmers (NESF)-see Figure 8.

\(^{32}\) For these case external agencies means the civil society organisations and government departments mainly through the establishment of home gardens and rainwater harvesting storage tanks.
The idea of categorising farmers into the two sub-categories (i.e. SIF and NSIF) is based on the supposition that farmers in Potshini are most likely to change the way they present themselves (e.g. as farmers or non-farmers) depending on the criteria and opportunities for support from external agencies (Figure 9). E.g. if the external support is to provide soaps to the Non-Farmers (NF), it is likely that some Farmers (F) could be regarded as Non-Farmers (NF) because they do not present themselves as Farmers (F). It should also be noted that during apartheid black people were (partly) relocated to the homelands as they were expected to provide labour to the whites. Even though some of them worked at the white-owned commercial farms, they were regarded as labourers. However, nowadays people residing in rural former homelands are viewed as smallholder farmers regardless of their former occupation during apartheid. It can therefore be argued that relatively many people currently living in those areas can better be viewed as rural dwellers (Dlali, 2008). It is most likely that those notions of identity have influenced the way people position themselves for external support and potentially this affect the negotiations over water in the former homelands.

4.2.2 The Amangwane Traditional Authority

The Amangwane traditional authority form part of traditional Zulu governance system and is identified as a stakeholder. The Traditional authority consists of the traditional leader at village level, the chief councillor, the Inziduna (the secretary to the chief), Indlunkulu (the advisor to the chief) and the chief in one stakeholder group (see Figure 10). The traditional authority forms an important group in the negotiations over water in Potshini catchment as they still have the control over land in the former homeland. In addition, based on the notion that the traditional customs and laws still hold sway in communal area, the traditional authority has an influence in shaping the negotiations over water. The in-depth semi-structured interviews were conducted with the traditional leader and the traditional councillor responsible for Potshini community. The interview results of this stakeholder group are cross-checked with key informants and the Potshini community.

33 Most of these supports are in the form of handouts from governments and charities especially in the form of money, food and other supplies necessary for daily life.
## Table 3: Basic information on the Amangwane Traditional Authority

<table>
<thead>
<tr>
<th>Information</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Municipality</td>
<td>UThukela District Municipality (DC 23)</td>
</tr>
<tr>
<td>Local Municipality</td>
<td>UKhahlamba local municipality (KZ235)</td>
</tr>
<tr>
<td>Clan ID</td>
<td>1302</td>
</tr>
<tr>
<td>Area</td>
<td>37,591 km²</td>
</tr>
<tr>
<td>Population</td>
<td>6,616</td>
</tr>
<tr>
<td>Population density</td>
<td>176 people per km²</td>
</tr>
</tbody>
</table>


The Potshini community is under the Amangwane traditional authority among with other thirty five villages. Table 3 provide some basic information about the Amangwane Traditional Authority. As shown in Figure 10, the Amangwane traditional authority governance structure has levels of hierarchy with limited power and decision levels forming a governance structure in dealing with matters in the former homelands especially those related to land administration and customary arrangement for conflict management on civic cases such as livestock theft and land conflicts. The chief of Amangwane has the supreme power and his decision is binding. The indlunkulu is an elderly man who serves as the advisor to the chief. The chief councillors are the representative of the chiefs in the villages that falls under the traditional authority. The traditional leader is the lowest level of the Amangwane traditional authority at Village level. The traditional leader is selected by men in Potshini and has been in power for over ten years. He is mainly responsible for coordination of conflict resolution meetings in the community, filing and linking land administration issues to the chief of Amangwane.

![Figure 10: The Amangwane Traditional Authority governance structure](image)

34 The traditional councillor responsible for Potshini lives in Potshini and he is responsible for four villages including Potshini.
The Amangwane traditional authority has 30 traditional councillors out of which 18 are appointed by the chief and 12 elected by men in the communities. Together, they form the Amangwane traditional council. The traditional governance structure used to have committees of elderly men at village level and headmen at higher level as intermediaries under the chief. However, in the efforts to make the traditional governance structure more democratic and compatible with the local municipality structure, the committees at village level in the former homeland have been replaced since 2003 by elected leaders at ward level and elected councillors have been introduced in the traditional council (RSA, 2003).

4.2.3 Government Institutions

National and Provincial government departments

After the end of political apartheid in South Africa in 1994, the efforts to form a democratic governance structure were undertaken including the institutional reforms. The reforms resulted in creating various national and provincial government departments which have strong influences on the negotiations over water in Potshini catchment as they play a key role in policy reforms, formulation and implementation. In addition to that, the national and provincial government departments primarily control the budget, resources and assets and they have legitimacy based on institutional and political control of the democratic government. Based on this fact, the national and provincial government departments form one of the stakeholder groups. The in-depth semi structured interviews were conducted with the Department of Agriculture and Environmental Affairs (DAEA) and the Department of Water and Forestry Affairs (DWAF). The analysis presented here is based on these interviews. The interviews were cross-checked with other interviews, key-informants and relevant literatures.

The national government and provincial government department in South Africa have pioneered the land and water reforms with the aim to address the inequity in access to land and water which was created during apartheid. The water and land reforms mainly focuses on empowerment of previously disadvantaged farmers in rural areas. In achieving this objective section 61 and 62 of the National Water Act of 1998 provides the mechanism of financial assistance for resource poor farmers living in the rural areas (DWAF, 2004). The department of water affairs therefore builds on this provision to provide grants to support projects in rural areas that enable the resource poor farmers to provide in the basic food requirements of their families, and then moving on to become economically independent and eventually full-scale commercial farmers (DWAF, 2004). The national government is also ensuring that water is effectively used to contributes to the nation’s economy and thus ensuring the allocation of water to hydropower, industries, mining sectors and urban areas to keep the economic growing.

In the Potshini community farmers are supported by grants from the national and provincial government departments. One of the project falls under the DWAF Rainwater Harvesting (DWAF RWH) Programme and provide support to forty farmers by supporting them with the

\[35\] The division of wards under the traditional structure is not compatible with the wards demarcated by the government.
establishment of the home gardens\textsuperscript{36} and the rainwater harvesting storage tanks. Through the facilitation of civil society organisations\textsuperscript{37}, farmers in Potshini are oriented in two learner groups each consisting of twenty farmers. Two farmers’ learners groups are Celokhule learning group and Mphumelelo learning group. The criterion to qualify for the support and join the group was for one to have a self-initiated small home garden. Apart from being supported by Rain Water Harvesting (RWH) storage tanks, they are also trained in various farm activities and oriented in social networks through farmers’ forum. Each farmer is supported with four storage tanks of which three (often underground) are meant for irrigating the home garden through harvesting from surface runoff in the courtyards. One storage tank is meant to provide water for domestic purposes through water harvesting from the rooftops. Each of the RWH storage tanks has the full storage capacity of 5000 litres of water (see Figure 11).

Figure 11: Pictures showing the installed set RWH storage tanks in one of the farmers’ household.

On the left, the RWH storage tank for domestic purposes harvesting water from the thatched rooftop. On the right the three underground RWH storage tanks for irrigating the domestic home gardens harvesting water from the surface runoff from the courtyard.

\textsuperscript{36} The sizes of the farmers home gardens in Potshini ranges from 30-600 m\textsuperscript{2}.

\textsuperscript{37}
Box 5: DWAF RWH Programme

The programme was initiated by DWAF in 2007 in order to achieve some of the objective of the National Water Act (1998). The objectives of NWA include protection, use, development, conservation, management and control of water resources in an equitable manner. In order to achieve some of these objectives, section 61 and 62 of the Act provides the Minister of Water Affairs and Forestry with the mandate to give financial assistance in the form of grants, loans and subsidies.

Under this programme the Minister approves subsidy scheme to provide financial assistance in the form of grant which is paid to water user association (WUA) or other approved legal entity (also called Approved project Implementers or APIs) for the capital costs towards construction of storage tanks for rain-water and related rain-water harvesting works for poor households in rural areas and villages for the purposes of family food production and other household economic activities. The objective of the program is to provide access to water to the households to enable poor households to grow fresh food at home, year-round, to create constant supply of micro-nutrients at home to prevent stunting in infants and toddlers before they reach school-going age (DWAF, 2007).

The programme targets to achieve to achieve the Millennium Development Goal ‘to reduce by half the number of people living with hunger’ through intensive home food production (or any other home-based productive water uses) through methods of channeling and using rainfall-runoff. Upon implementing their production systems at home successful, the households qualify for a 30,000 litre underground rainwater storage tank and a manual water pump, which is thought to improve their water security and enables them to expand to about 100-200 m$^2$ intensive production in the backyard (i.e. about 1-2% of a hectare).

DWAF RWH programme involves working directly with food insecure households at grassroots level to first establish their intensive family food gardens and then to build the household RWH dams. This is done by DWAF or through its Programme Implementing Agent (PIA) to invite service providers to express interest in becoming an Approved Project Implementer (API) for the DWAF RWH Programme.

The UKhahlamba local municipality

After the end of political apartheid in South Africa, the institutional reforms also resulted into decentralization of democratic governance structures and thus delegation of powers and responsibilities to local municipalities. Based on the fact that the local municipalities have the authority and primary responsibility of providing basic services to the local communities including water supply to promote social economic development (RSA, 1998b), it plays an important role in the negotiations over water in Potshini catchment and is thus included as a stakeholder group. The in-depth semi-structured interview with the councillor for ward 12 under which the case study area falls was conducted at UKhahlamba local municipality. The analysis of this stakeholder group rely on the interview results and were cross-checked with other interviews and the relevant literatures.

Potshini catchment falls under ward 12\textsuperscript{38}, represented by a councillor\textsuperscript{39} at the UKhahlamba local municipality\textsuperscript{40}. The municipal consists of thirteen wards out of which eleven are politically dominated by IFP and two by the ANC. The municipal council is the governing body of the municipality and consists of twenty six councillors\textsuperscript{41} out of whom sixteen belong to IFP,

\textsuperscript{38} Ward 12 is electoral constituency consisting of a total of 8 villages including Potshini.
\textsuperscript{39} The role of a councillor is to represent the constituency at municipal level.
\textsuperscript{40} The UKhahlamba local municipality falls under the UThukela District Municipality.
\textsuperscript{41} The councillors belong to political parties and are elected by majority votes.
nine to the ANC and one belongs to the Democratic Alliance (DA). The mayor of the municipality belongs to IFP and is elected by the councillors by majority votes. Having the majority of the councillors, IFP is the ruling party and has strong political influence in UKhahlamba local municipality. This is in contrast to provincial and national government structures where the ANC is a dominant party. The UKhahlamba local municipality is identified as one of the 57 most vulnerable local municipalities nationally dominated by highly rural and apartheid-based legacies (COGTA, 2009).

### 4.2.4 Civil Society Organisations

Based on the policies and reforms put forward by the government institutions, various civil society organisations (Non-governmental organisations, research and academic institutions) aim to work with the government and other stakeholders in implementing and or shaping the proposed reforms and policies. The intervention of these Civil Society Organisations (CSO) in Potshini catchment influences stakeholders’ positions and the strategies they use in the negotiations over water and thus CSO form an important stakeholder group. Some of the identified civil society organisations working in Potshini catchment include the University of KwaZulu Natal and its network through the school of Bio-resource Engineering and Environmental Hydrology (BEEH), Centre for Agriculture, Environment and Development (CAED)-Farmer Support Group (FSG) and the French based Institute of Research and Development-IRD. Others include the Agriculture Research Council (ARC), CEDARA College of agriculture KwaZulu Natal Wildlife, SAVEACT and ZIMELE community.

A combination of in-depth semi-structured interviews and informal discussions were conducted with the research institutions and NGO involved in various projects in Potshini. The information obtained from these civil society organisations were used together with relevant literatures for the analysis of this stakeholder group. The CSOs are able to attract funding for their projects, have diverse groups of technical staffs and researchers. Moreover, they are well connected to various networks and have established a long-term research base in Potshini catchment. The CSOs are the Programme Implementing Agencies (PIA) and Approved Project Implementers (API) of the DWAF RWH Project in Potshini community.

### 4.3 Analysis of stakeholders’ capacities

The analysis of stakeholders’ capacities is explored in accordance to the conceptual model described in section 3.5. The in-depth semi structured interviews were designed and conducted to capture each stakeholder’s capacities. The interview results and relevant literatures are used concurrently to analyse the stakeholders’ capacities. The results are presented and analyzed based on the researcher’s point of view, opinion and interpretations. The analysis shows that there are four sources of power bases through which the stakeholders in Potshini catchment could use in their negotiations over water. These include

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42 Institutional and socio-economic vulnerability.
43 Independent Development Trust (IDT) is contracted to oversee the project and install the RWH storage tanks.
44 Farmer Support Group (FSG) of UKZN is contracted for project facilitation and training.
the bio-physical and economic resources, social resources, orientational resources and institutional resources as described in this section.

### 4.3.1 Bio-physical and economical resources

The bio-physical and economic resources refers to the resources which give stakeholders the ability over the means of production and or physical control of water. The analysis shows that the commercial farmers’ bio-physical and economic capacities are derived from his four surface dams, the 1500 ha of privately owned land, heavy farm machinery and properties, secure access to financial capital and reliable markets of farm products. In Potshini community the farmers’ (F) biophysical and economic capacities are derived from limited number of externally supported RWH storage tanks. In addition, Farmers (F) in Potshini community have farming implements in the form of cattle and tractors and financial capital mobilized in the form of remittances from the extended families. The Potshini community have labour capital and the situational power of being upstream the catchment, e.g. by being upstream the catchment they have an opportunity to firstly abstract and uses the water before it flows downstream to the commercial farm.

The local municipality derives its bio-physical and economic capacities mainly through control the budget of the local municipality and thus has the decision power to allocate the financial resources and invest and maintain the hydraulic infrastructures in Potshini community. The traditional authority has the power and control of land in Potshini community and thus has the influence on the access to green water and in any attempts involving harnessing of blue water through activities that would entail land allocations in the community. The government departments have a stake in the control of state and provincial budget, nation’s resources and assets. The analysis shows that the civil society organisations have human resources and the capacity to attract funding from government departments and or potential donors elsewhere.

### 4.3.2 Social resources

The social resources lie in the domain of social networks and affiliations through which resources for securing access to and control of water are mobilized. In the other words, it means the social relations of stakeholders that they can employ in the negotiations over water. In Potshini catchment, it is observed that the civil society organisations and social movements play a key role in mobilizing stakeholders’ social resources. The commercial farmer mobilizes the social resources by being a member of the established networks of commercial farmers already established Water User Associations for the upcoming Thukela Catchment Management Agency. Through these social networks, the commercial farmer legitimizes the water use, increased access to information and increase the lobbying power. Farmers (F) and Non-Farmers (NF) in Potshini community mobilize the (financial) resources through the extended family structure and the social networks externally supported by civil society organisations and government departments mainly based on the notions of gender and equity promotion. Through the social networks farmers (F) in Potshini community are

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45 The civil society organisations have strong network and have necessary skills in orienting farmers into social networks.
46 AgriSA, Kwazulu Natal Agricultural Union and Little Tugela/Winterton Irrigation Board.
47 In Potshini there are two farmers’ learner groups established by the Farmer Support Group of UKZN and 4 savings and credit groups established by SAVEACT.
able mobilize the resources such as rainwater harvesting storage tanks, access to information and knowledge.

The municipal councillors derive their social resources from the support of their political parties who have the supporters in the community. IFP, being the ruling party of the local municipality, has the strongest position in the municipality and therefore the prime ability to influence stakeholders in their negotiation over water. Even though, the informal discussions with the people in Potshini community revealed that in the past election majority of people in the community voted for the ANC, the ward councillor, who belongs to IFP won the constituency because he got many votes from the other villages in his ward. On the contrary, the ANC is the dominant party at provincial and national level and derives its social resources from the party supporters and connections to the national government agencies. The social power of traditional authority is rooted in the people’s beliefs and identification with the Zulu culture through its strong network and hierarchy of traditional governance structure. In addition, the traditional authority has the close links with the political parties and derives authority from cooperative governance in the constitution.

4.3.3 Orientational resources

Orientational resources are the resources which could be deployed by the stakeholder to shape the conduct of people and/or other stakeholders. They range from knowledge, access to information, ideologies, cultural symbols and beliefs as well as the ability to strategically frame the issues. The interview with the commercial farmer indicated that he has over fifteen years of experience and knowledge in commercial agriculture. This gives him strong leverage position in the negotiation over land and water. The commercial farmer derives his orientational resources through his formal education and the long experience in commercial agriculture, ability to access information through Information and Communication Technology (ICT) through the use of computers and internet. In addition, his ability to speak three languages (i.e. Zulu, Afrikaans and English) put the commercial farmer in a strong negotiations position not only with the Potshini community but also with other stakeholders at all levels. On contrary; illiteracy, limited access to ICT and language barriers of the Potshini community make it harder for the community to use their orientational resources. However, it can be argued that the Potshini community has knowledge on agriculture mobilized through working as labourers in the white-owned commercial farms. Also it can be argued that within the community the Externally Supported Farmers (ESF) are likely to have better access to agricultural information through their farmers learning groups and social networks than the Non-Externally Supported Farmers (NESF).

The municipal councillors and the traditional leaders have different forms of mobilizing orientational resources and in exerting their power. While the municipal councillors use political ideologies and service provision to gain power and control in their constituencies, the traditional leaders use the already rooted cultural symbols and beliefs to gain and maintain their power in the former homelands. The government departments’ orientational power is derived from the political ideologies of the ruling party at both national and provincial levels and thus influencing the reforms in land and the water sector. In addition, the government departments and civil society are found to have the ability to strategically frame issues based on the fact that they control budget and attract funds. Moreover, the
civil society organisations have access to information and knowledge and employ adequate human resources.

### 4.3.4 Institutional resources

Institutional resources include the normative orders and how the stakeholders are related and connected to those normative order and discourses. The analysis shows that stakeholders use different normative orders to back up their claims in the negotiations over water. Stakeholders in Potshini catchment have different forms of institutional power. The institutional power of the commercial farmer is mobilized through the networks of commercial farmers which are mainly used in lobbying to protect the interests of commercial farmers. In addition, the institutional power of the commercial farmer is mobilized through the legitimate water use supported by the recognised riparian water right system as well as the geo-political forces such as the neo-liberal policies and the world food crisis.

The government departments' institutional power is derived from the political state legitimacy enshrined in the democratic government structure, administrative state legitimacy and international legitimacy. With this vested institutional power, the government departments have the power to influence the reforms by formulating policies and legislations in land and water sector. The municipal councillors and traditional leaders mobilize their institutional power through different legislations. While the municipal councillors’ institutional power is mobilized based on democracy and decentralization discourses through the Local Government Municipal Structures Act No. 117 of 1998, the traditional leaders’ institutional power is mobilized through the Traditional Leadership and Governance Framework Act No. 41 of 2003, the Municipal Structure Act No. 117 of 1998 and the Communal Land Rights Act No. 11 of 2004.

More generally, the institutional resources are mainly derived from development discourses such as equity, and the global political agendas such as the human right to water, integrated water resources management often used by the civil society organisations with the support from the government departments. For example, the people in Potshini community derive their institutional resources from the human right to water and the Millennium Development goals to justify their claims for water. When planning for water related projects, the civil society organisations uses the integrated water resources management paradigm, the human right to water, gender, equity and the millennium development goals to justify their proposal for funding. It is important to note that, the some of the principles enshrined in the integrated water resources management discourses e.g. water as an economic good form a very important institutional resource for the commercial farmer. It can therefore be argued that, powerful stakeholders e.g. the commercial farmers are in stronger leverage position to influence the normative orders that support their claims to become dominant in the negotiations over. In this way, not all the normative orders have the same legitimacy or power of enforcement in the claim for water.
4.4 Analysis of stakeholders' positions, goals and interests

The analysis of stakeholders' positions, goals and interests is explored in accordance to the conceptual model described in section 3.5. The in-depth semi structured interviews were designed and conducted to capture each stakeholder’s position, goal and interests. The interview results and relevant literatures are used concurrently to analyse the stakeholders’ positions, goals and interests in the negotiations over water in Potshini catchment. The results are analyzed and presented based on the interpretation of the researcher.

4.4.1 Stakeholders’ positions

In the negotiations over the access to and control over water, stakeholders are observed to claim their water rights or justify the legitimacy of their actions based on different norms, views and values. All of the twenty-three interviewed respondents in Potshini community claim to have the right to access and control over water because water is essential to sustain their lives. In legitimizing their claim, they argue that water belongs to no body as it belongs to God. They argue that the water they use is from natural supply in the form of rain, ground water and streams. The claim of the right to water for survival by the Potshini community is supported by the Water Services Act (1997) and the National Water Act (1998). At this level of negotiation, all interviewed members of the Potshini community indicate to have the same position regardless of sub-stakeholder group. The commercial farmer downstream the Potshini community bases his claim on the water on the ownership of the four surface dams and the private ownership of the farm land on which the dams are located. In addition, the claim of water rights by the commercial farmer is supported by formal historical use of water based on the riparian water rights doctrine and consequently as a lawful water use supported by the new water act (RSA, 1998a).

The traditional authority position in access to and control over water in Potshini catchment is embedded in their claim to be the guardians of the rural communities such as the Potshini community. On the contrary to the traditional authority the government institutions, in this case the central and provincial government departments as well as the UKhahlamba local municipality, claim that water is an integral part of the nation’s wealth essential for life and entitled to all South Africans. They argue that inequities inherited from the past in terms of access to water should be addressed through re-allocations of the water resource. Moreover, the civil society organisations claim that the access to water in Potshini catchment can be achieved by empowering the previously disadvantaged communities and working towards redressing the inequities and imbalances in the access to and control over water created by the past policies.

4.4.2 Stakeholders’ goals

Underlying the positions, stakeholders have the goals they wish to achieve in the negotiations over water in Potshini catchment. The commercial farmer aims at maintaining his current access to and control over water for continued farm activities. The goal of the traditional authority is to maintain their authority over the land administration in the former homelands and hence the control over water resources. This implies that the traditional
authority should be consulted in any abstraction of water in the communal areas that would involve land uses. The government institutions (i.e. the local municipality and the national and provincial government departments) claim to aim at promoting equitable access to water and or to the benefits derived from using water.

It is observed that the civil society organisation claims that their interventions in Potshini catchment aim at improving land and water productivity. The goals of sub-stakeholder groups in Potshini community are mostly influenced by two main factors; the means through which the sub-stakeholder group sustain their livelihoods and their current status of access to and control over water. For example, all of the five interviewed Non-Farmers (NF) in Potshini community claim to aim at securing access to water for domestic purposes mainly because their livelihoods is not derived from farm activities. For them, intervention in promoting access to and control of water in Potshini community should focus on how to improve and increase networks of domestic water supply. This is contrary to the farmers (F), who among themselves are divided in goals either in acquiring water to irrigate their crop fields or in acquiring more land to expand their farm activities. The observed divergence of goals of farmers (F) in Potshini community is mainly influenced by the current status on their access to and control of water.

In more detail it is noted that seven Externally Supported farmers (ESF) aim at acquiring more land for growing their crops. This is because these farmers are currently having water storage tanks supported by the civil society organisations and the government departments and thus they relatively feel to have secured access to water at the moment. On contrary, four Non-Externally Supported Farmers (NESF) indicated their aim at increasing their access to water for watering their crops mainly because at the moment they do not have secured access to water as compared to their counterparts the ESF. As shown in Figure 12, these farmers identified themselves as farmers and hence here referred to as Self-Identified Farmers (SIF). Further analysis shows that five ESF aim at acquiring more land: four of them aim at additional land for grazing ⁴⁸, while the other one aim to have land for growing crops. On the contrary two NESF aim at increasing their access to water for watering their crops. These farmers did not identify themselves as farmers and hence here referred to as Non-Self Identified Farmers (NSIF). It can therefore be argued that the diversity in goals of farmers (F) is strongly influenced by the goals of the civil society organisations and the projects underway in Potshini community which specifically aim at improving land and water productivity.

⁴⁸ These farmers own substantial herds of cattle (≥ 10 cows).
4.4.3 Stakeholders’ interests

Underlying the goals, stakeholders involved in the negotiations over water show diverse interests. Some of the interests are directly linked to the access to and control over water, while others are hidden in other claims such as claim for power and legitimacy. The analysis shows that stakeholder interests are mostly influenced by the current status on the access to and control over water and the means through which they derive their livelihoods, power and legitimacy. Within the Potshini community, all of the eighteen interviewed Farmers (F) indicated their interests in emerging from subsistence to commercial farming and five interviewed Non-Farmers (NF) indicated their interest in improving their livelihoods through the non-farm activities. The interests of Farmers (F) more or less match with the interests of civil society organisations who expressed their interest in improving the livelihoods of smallholder farmers in rural areas such as in Potshini community. Like any other commercial operation, commercial farmer would want to maximize profit from his farm operations and thus his main interest is in increasing his farm productivity. In addition, having being born and grown in a farm family the commercial farmer find himself interested in continuing and maintaining his farm-based life style.

The analysis also shows that behind the position of the traditional authority is their interest in maintaining their legitimate political authority and power in the former homelands. Although the traditional authorities are recognised in the South African new constitution, their executive powers are limited to the advisory role and their precise role and level of authority are not clearly defined (Lehman, 2007). In addition the ongoing land reforms and proposals to change the land tenure in the former homelands make the traditional authority fear losing their legitimate political authority and power in continued land administration in the former homelands. In the view of that context, the traditional authorities are observed to resist the land tenure reforms in the former homelands (Lyne and Dorroch, 2004).
Local municipal councillors are interested in securing delegated power and functions to the ward councillors through decentralization and having access to government funds and programmes. Both the traditional authority and the ward councillors back up their interests by arguing that they are lowest level of governance structures close to the people they serve and the delegation of power and functions would mean improved level of service delivery to majority of the disadvantaged rural population. This argument complements the interest of the government departments of redressing the inequity of the past based on racial differences, promoting environmental justice and poverty reduction. The government is also interested to boost the economy through water allocation to the highly productive water sectors such as mining, industry and urban areas and thus has engaged in the inter-basin water transfers from Thukela river basin to Gauteng regions which contributes largely to the South African economy (DWAF, 2003).

4.4.4 Revisiting stakeholders' positions, goals and interests

The aim of this section is to comprehensively review whether the positions, goals and interests of stakeholders are complementary, shared or conflicting. The section provides bases in identifying windows of opportunities to manage the potential conflicts and improve the negotiations over water in Potshini catchment. The information provided in sections 4.4.1, 4.4.2 and 4.4.3 are further analyzed to answer the question: Are the stakeholders' positions, goals and interests complementary, shared or conflicting?

The analysis reveals that farmers (F) and non-farmers (NF) in Potshini community have different yet complementary interests and goals and they share the same position in their claim for increasing their right to access and control over water (Figure 13). This means that in the negotiations with other stakeholders the Potshini community presents one common position regardless of their differences in the underlying goals and interests. This should be carefully noted as the provision of water to meet the position presented by the community is likely to result into failure to address the goals of different groups in the community. For example, providing access to water based on the position that water is essential to sustain life is most likely to meet the goal of the Non-Farmers (NF) who aim at acquiring water for domestic purposes at the expense of the Farmers (F) who aim at acquiring access to irrigation water and land. This is because water to sustain life is most likely to be defined in terms of the free basic water (i.e. 25 litres per person per day) which does not include water for productive purposes to meet daily household needs for food production. The goals and interests of Farmers (F) and Non-Farmers (NF) are found to be complementing each other. At the level of goals both of them would first aim at ensuring access to water for domestic purposes even though Farmers' (F) prime interests is access to more water and land for farming. The interests are also complementary because at one moment both Farmers (F) and Non-Farmers (NF) needs improved livelihood although they might take different approach. Therefore, interest level, it is obvious that meeting the needs of Farmers (F) does not compromise the needs of Non-Farmers (NF).
A more detailed analysis show that although Farmers (F) in Potshini community have shared interest, they have different but complementary goals depending on their current level of access to and control over water (Figure 14). On one hand the Externally Supported Farmers (ESF) aim at acquiring more land for growing their crops, the Non Externally Supported Farmers (NESF) aim at securing additional water for irrigation purposes. This is because the Externally Supported Farmers (ESF) feels to have stable water supply as they are supported with the rainwater harvesting storage tanks by external agencies (i.e. civil society organisations and government departments) and thus for them their goal would be on land. On the other hand, the Non Externally Supported Farmers (NESF) are not supported with the rainwater harvesting storage tanks and for them their goal is to secure access to water for irrigation. This analysis shows that the rainwater harvesting project underway in Potshini shapes the goals and choices of farmers, even though as a group Farmers (F) would present the same positions and seem to have shared interests in the negotiations over water.
Further analysis in Figure 15 shows that the positions, goals and interests of the Farmers (F) in the Potshini community and civil society organisations (CSO) complement each other. This is likely to be attributed by the fact that, most of the CSO and even the government departments view and approach the Potshini community as farmers’ community. Potentially, in order to get support from the CSO people in Potshini community present themselves as Farmers (F) and orient their positions, goals and interests towards meeting the criteria of support that are put forward by the CSO. However, it should be noted that the approach of the civil society organisations to view the whole of Potshini community as Farmers (F) results to isolation of the Non-Farmers (NF) in the community whose interests and goals are conflicting to those of civil society organisations (Figure 16). This implies that the approach of CSO to provide support of rainwater harvesting storage tanks to the community based on the assumption that the community is a homogeneous farming community is likely to have resulted to inequities in terms of access to and control over water between Farmers (F) and Non-Farmers (NF) groups within the Potshini community.
Moreover, the analysis shows that there is conflict of positions between the farmers (F) in Potshini community and the commercial farmer (CF) downstream (Figure 17). The Commercial Farmer (CF) position his claims of water rights based on the control of hydraulic infrastructures, private ownership of land, riparian water rights doctrine and lawful water use all supported by the past and current legislations. On the contrary, the Farmers (F) in Potshini position their claim for water rights based on the fact that water is basic need to sustain human life. The position of Farmers (F) in Potshini community is supported by the current legislations and the declaration of the human right to water by the United Nations. The conflict in the position is revealed by the fact that the position of the Commercial
Farmer (CF) is oriented towards maintaining his water rights for productive purposes while the position of Farmers (F) in Potshini community is geared towards getting increased access to water for basic needs. For the Farmers (F) in Potshini community, the water they need includes the water required for subsistence production to sustain their livelihood which is most likely to compromise the availability of water for the downstream Commercial Farmer (CF).

At goal level the analysis shows that while the Farmers (F) in Potshini community aim to secure access to land and water for farming the Commercial Farmer (CF) downstream aim to maintain his current level of access to water. This implies that the Commercial Farmer (CF) downstream is likely not tolerate any actions of farmers upstream in the Potshini community that would compromise his current access to and control over water. Moreover, farmers (F) in Potshini community are mainly interested at emerging from subsistence farming to commercial farming while the Commercial Farmer (CF) is interested at increasing commercial farming productivity. This implies that the Commercial Farmer (CF) would need to maintain and even improve his current access to land, water and farm operations if he is to achieve more commercial farming productivity. Nevertheless, critical analysis shows that the interests of the commercial farmer (CF) and Farmers (F) in Potshini are complementary. This is because, at interest level, they all want to attain commercial farming productivity though it may be at different scale. For that case, it is obvious that their interests are to have sustainable means of land and water control that would ensure their productivity forming potential for collaboration between them.

The analysis also shows that the Government Departments (GD) and the Local Municipality (LM) have shared positions and goals though the two stakeholder groups have different yet complementary interests (Figure 18). Both the government department and the local municipality position on the claim that water is essential for life and entitled to all. This position complements the positions of the Potshini community, the commercial farmer and the civil society organisations. Both the government departments and the local municipality
aim at promoting the equitable access to water and the benefits derived from using water. However, the difference in interests becomes clear from the different approaches they use to achieve their goals. The government departments focus on creating the institutional environment that would redress the inequity of the past policies of apartheid while the local municipality emphasizes on the reforms in institutions that would ensure decentralization and delegation of more power and functions to the local municipal council. The analysis shows that despite the slight differences in interests, there is still a room for collaboration at interest level as both groups have the same goals and positions. It interesting to note that the interests of the government department are used as the position by the civil society organisations to justify their intervention in Potshini community. This could better explain the partnership between the government departments and civil society organisations in implementing the DWAF rainwater harvesting programme (see Box 5).

![Figure 18: Government Departments (GD) and Local Municipality (LM)](image)

Lastly the analysis shows conflicting positions, goals and the interests between the Traditional Authority (TA) and government institutions (i.e. Local Municipality and Government Departments ). This is illustrated in the review of the Traditional Authority (TA) and the Local Municipality (LM) as shown in Figure 19. The traditional authority uses the rural masses in the former homelands as cover up to meet their needs by positioning themselves as the custodians of the people in the former homelands. In fact despite this claim, the goal of the TA is to maintain their authority in land administration in the former homelands. These positions and goals of the TA more or less complement to the position and goals of the LM. However, they are conflicting due to the fact that the traditional authority's position and goal are limited towards the former homelands. The conflict in interests between the two is mainly derived from the incompatibility between the traditional governance and the democratic governance structures as both TA and LM compete for political legitimacy and power. However, the interests of the TA and LM also reinforce each other. This is because the TA is dependent on the national government for their legitimacy and hence on land administration to govern the people in the former.
homelands. The LM legitimacy is provided by the national government through the constitutional democracy and thus derives the support from the political party supporters. In order to get the electoral votes from the people who reside in the former homelands, the LM and thus national government would need to accommodate the interests of the TA so that they can mobilize political supporters in the former homelands.

![Diagram]

Figure 19: Traditional Authority (TA) and Local Municipality (LM)

### 4.5 The analysis of stakeholders’ strategies in the negotiations over water

The analysis of the strategies used by stakeholders in the negotiations over water is explored in accordance to the conceptual model described in section 3.5. The in-depth semi structured interviews were designed and conducted to capture each stakeholder’s strategies. The interview result, relevant literatures and field observations are used concurrently to analyze the strategies used by stakeholders in the negotiations over water in Potshini catchment. The results are analyzed and presented based on the interpretation of the researcher.

#### 4.5.1 Strategies of the commercial farmer

The commercial farmer employs various bio-physical strategies in ensuring secure access to and control of water during dry and rainy seasons. In order to cope with the variability of water supply and to be able to meet the crop water requirements in both dry and rainy seasons the farmer increased the total storage capacity of the two major surface earth dams from 600,000 M$^3$ storage capacity to 950,000 M$^3$ (see Figure 20). Along with increasing

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49 Strategies used to ensure physical control of water resource.

50 The two major dams were both on farm when he bought the farm but he increased the capacity in 2002. Before the top had 350000, the bottom had 250000 and the storage capacity was increased to 450000m$^3$ and 500000m$^3$ respectively.
the total storage capacity, small surface earth dams are strategically placed at the entry of the two major dams for trapping silts originating from the upstream part of the catchment. In addition to that, the farmer regularly changes the cropping patterns depending on the amount of water in storage by the end of the rain season. The farmer applies minimum tillage ploughing techniques which considerably conserve the water in the soil and thus increases the availability of green water to crops. It is generally observed that, all the bio-physical strategies employed by the commercial farmer are the ‘adaptation strategies’ to variability of water supply in the catchment.

Figure 20: The pictures showing the strategies of the commercial farmer

On the left showing the ditch and the fence separating the commercial farmer and the Potshini community. On the right, the picture showing the two major dams of the commercial farmer.

Apart from employing the bio-physical strategies, the commercial farmer also employs the socio-economic strategies in ensuring secure access to and control of water. One of the strategies employed by the farmer is the ‘legitimization strategy’. By being a member of the little tugela/ winterton irrigation board, Bergville Agricultural Union, AgriSA and KwaZulu Natal Agricultural Union the farmer complies with the nations polices and legislations in water and agriculture sectors and also gain legitimacy lobbying and influence in shaping the water and land reforms. In legitimizing his water rights the commercial farmer claim his water rights based on ownership of hydraulic infrastructures and historical use of water supported by the old water legislations and the new water act. In addition the farmer applies the ‘accommodation strategy’ by tolerating certain level of sabotage of the Potshini community. Field observations show that the farmer also employs the ‘isolation strategy’. In this strategy the farmer tries to avoid the sabotages of the Potshini community through protecting his farm and the associated infrastructures by a deep ditch and a steal fence surrounding the whole farm (Figure 20).

Moreover, the commercial farmer to some extent learns to live with the Potshini community and thus uses the ‘collaboration strategy’. This strategy is noticed due to the interdependencies between the commercial farmer and the Potshini community. The farmer mainly depends on the Potshini community as they provide him with labour in exchange with wages and also because the water replenishing his three reservoirs comes from their

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51 The commercial farmer grows wheat in dry season only when the storage capacity at the end of rain season can meet the crop water requirements. Note that, wheat has high water requirements.

52 Strategies that aim to influence socio-economic, institutional and political context of the negotiations over water.

53 Sabotage involves the cutting of the fence, stealing of crops and leaving cattle to graze in the commercial farm.
communal land. Hence, the commercial farmer provides the community with seeds and firewood. Furthermore, in the efforts to maintain the control of land and water resources, the commercial farmer uses ‘advocate strategy’. In this strategy the commercial farmers advocates that they play a significant contribution to meeting the nations food security. This claim is often backed up by the production efficiency of the commercial agriculture, globalization and neo-liberal policies in land and water reforms.

4.5.2 Strategies of the Potshini community

Farmers in Potshini employ a combination of bio-physical and socio-economic strategies in securing access to and control over water. One of the main strategies used by the Farmers (F) in Potshini community is the ‘coalition strategy’. In this strategy they form coalition network of farmers’ learners groups which are initiated, oriented and supported by civil society organisations. Through farmers learning groups they receive training, information on various farming techniques and limited support of hydraulic infrastructures. Twelve out of eighteen interviewed Farmers are members of the farmers learning groups and are all externally supported with RWH storage tanks (i.e. Externally Supported Farmers-ESF). Six interviewed farmers are not members of the farmers learning groups and therefore are not supported with RWH storage tanks (i.e. Non-Externally Supported Farmers-NESF). This shows that farmers’ access to water in Potshini community hinges on social identity and status and hence on membership of farmers groups and social networks. The interviewed farmers indicated that through these networks they are able to gain stronger leverage influence in securing access to and control of water.

Two out of twelve Externally Supported Farmers (ESF) have excavated and captured shallow groundwater and runoff in small earth storage dams (see Figure 21). However, these attempts are challenged by the fact that a substantial amount of water is lost due to seepage as the reservoirs have a shallow depth and evaporation is high in summer and winter due to high temperatures and strong winds respectively. Only one out of twelve ESF undertook initiatives to protect the RWH storage tanks from damages by placing the thorny materials on top of the underground storage tanks (see Figure 21). However, the majority of RWH storage tanks are found with the Padlock which is meant to control the misuse of water at household level. The attempts of farmers to get access to and protect the RWH storage tanks, capture the shallow groundwater and runoff in small earth dams is an ‘adaptation strategy’ to the variability of water in the catchment.

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54 Farmers are trained in various soil and water conservation techniques for harnessing green water such as the minimum tillage practices etc.
The Non-Farmers (NF) in Potshini community employ both bio-physical and socio-economic strategies in securing access to and control over water. However, as their livelihood is sustained through non-farm activities their strategies are more oriented and entrenched in securing water for domestic purposes. All of the five interviewed Non-Farmers (NF) confirmed to be involved in household water savings through re-use water\textsuperscript{55}. This is the ‘adaptation strategy’ they use to cope with the availability of water supply. Interestingly, two out of five Non-Farmers (NF) and six Non-Externally Supported Farmers (NESF) expressed their wish to form coalition and join the farmers’ social networks so that they can also be supported with the rainwater harvesting storage tanks by the external agencies. They argue that not all Externally Supported Farmers (ESF) qualify as farmers as most of them have gardens which are poorly maintained and some are even not planted anything and thus feel they have the right to join the farmers’ social networks in return of the access to and control of water.

The Potshini community is believed to apply the ‘intimidation strategy’ by threatening the commercial farmer through regular sabotaging his farm activities by letting the cattle to graze in the commercial farm, stealing of crops and destroying the fences. This pestering may be interpreted as the strategy of the community to force the commercial farmer off the land so that they can have control of the land and thus in turn the control of both green and blue water. The interviewed respondents in the community indicated that the community used this strategy in acquiring the grazing land in the upper part of the catchment by intimidating the commercial farmer upstream of the catchment who then decided to sell the portion of the land as a communal land to the Potshini community.

Moreover, all of the interviewed respondents in Potshini community are found to apply the ‘legitimization strategy’ in justifying their right to access and control of water. All of them stated to have the right to water because water is essential for survival. This claim is supported by the South Africa constitution which states that ‘everyone has the right to have access to sufficient water’. This constitutional protection of the right to water is further translated to the Water Services Act (1997) and the National Water Act (1998). The Water

\textsuperscript{55} Re-use of water of for washing clothes, cleaning of the dishes and the house
Services Act gives provision of the right of access to basic water supply and sanitation necessary to ensure sufficient water and an environment not harmful to health or well-being. The National Water Act provides the provision of meeting the basic human needs. However, it is important to note that the human right to water paradigm is interpreted and used differently by various stakeholders in their struggle for water as civil society and poor farmers argue against water reforms and have often used the language of rights to claim the right to water (Sangameswaran, 2009). The problem associated with this claim is that there is often no clear line between what the basic needs which require water are and whether it should include water for subsistence farming in the case of farmers in Potshini community. Based on this limitation of the human right to water paradigm, it is most likely that people Potshini community use the human right to water as the base for claiming water for domestic uses including water for cattle and for irrigating small home gardens.

4.5.3 Strategies of the traditional authority

The traditional authority stake in the negotiation over water in Potshini is not directly related to their physical access and control of water but rather their influence in the former homelands especially in land administration and hence their indirect influence in harnessing green and blue water. In the negotiations over water in Potshini catchment, three strategies of traditional authorities are observed. The first strategy is the 'physical land control', where the traditional authority based on the Communal Land rights Act (2004) claims the power and control of land in the former homelands. In doing so, the traditional authority has the influence in harnessing of green and blue water in Potshini community. In addition, the second strategy used by the traditional authority is the 'representation strategy' where they claim to be the custodian of the rural populations in the former homelands and that they have the ability to represent and express the will of the people residing in the former homelands. Related to this the traditional authorities are observed to use the 'patronage strategy'. They affiliate themselves to political parties especially during elections and major political events to maintain their legitimacy and authority in land administration in the former homelands.

4.5.4 Strategies of the local municipality

The local municipality shapes the negotiation over water especially the availability of blue water for domestic purposes as they control the budget and thus responsible for the new investment, repair and maintenance of water infrastructures in Potshini. In other words, the strategy of the local municipality is embedded in the notion of 'service delivery providers' at the lowest appropriate level. The municipal council is composed by elected ward councillors who drive most of their power and legitimacy through political supporters. It is therefore observed that the negotiation over water in Potshini community is shaped by political ideologies where the municipal councillors use party politics to legitimize their power. This is mainly characterised by political pledge of provision of water supply and political biased

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56 Also called ‘lifeline supply’ of about 25 litres per person per day for a household of eight people.
57 For example, currently the traditional authority uses the upcoming 100 years ANC anniversary in 2012 to push their claims in the negotiations with the national government.
subsidies to the Potshini community. In this context, the ward councillors use the ‘patronage strategy’. In addition, by being the lowest level of democratic government structure formed through the notions of decentralization of public services including water supply in Potshini catchment the councillors uses the 'representation strategy', claiming to be representatives of their constituencies in order to maintain their power in the rural communities.

4.5.5 Strategies of the government departments

The stake of government departments in the negotiation over water in Potshini is not directly related to their physical access and control of water but rather by their power and mandates in formulating and administering water and land policies and legislations (i.e. 'executive strategy'). In addition, the government departments are also involved in project based interventions through provision of grants to civil society organisations to support farmers with RWH storage tanks, provision of free basic water, farmers’ subsidies, pensions and social security grants to the Potshini community. In ensuring efficient delivery of water services and water management, there are ongoing processes to decentralize water management activities in Catchment Management Agencies. Moreover, in order to correct the inequity in access to and control of water among stakeholder the government department are administering land and water reforms. Furthermore, by understanding the role of traditional leader to the social and cultural life in the former homelands the government departments are trying to ‘accommodate’ the claims of traditional leaders to a certain level. However, it should be carefully noted that for the government to accommodate the interests of traditional authority do not necessarily mean it is at the best interest of the people in the former homelands. It could be argued that the government uses the traditional leaders to gain the political support in the former homelands during elections. It is important to note that the government needed the support of the traditional leaders during the negotiation process to end political apartheid.

4.5.6 Strategies of civil society organisations

The stake of civil society organisations in the negotiation over water in Potshini is not directly related to their physical access to and control over water but rather their claim of working with other stakeholders to realize the increased access to and control of the resource. In this way the civil society organisations uses the 'collaboration strategy'. Under the notions of 'service delivery' civil society organisations are observed to target farmers and identify and orient them in social networks of farmers learning groups. The farmers in groups are supported through training and outreach programmes, field based research, innovation in improving green water use productivity and above all with seeds, fencing material and rainwater harvesting storage tanks. In achieving their goal, civil society organisations uses the 'altruistic strategy' to show they care for disadvantaged rural population. In this way, they back up their interventions by claiming to be agents of providing humanitarian/development aid to underprivileged rural populations through different ideologies such as gender and equity.
4.6 Analysis of stakeholders’ relationships

The analysis of stakeholders’ relationships is explored in accordance to the conceptual model described in section 3.5. The in-depth semi structured interviews were designed and conducted to capture stakeholder relationships. The interview result, relevant literatures and field observations are used concurrently to analyze the relationships between stakeholder groups. The results are analyzed and presented based on the interpretation of the researcher.

Relationships within Potshini community

The relationships between different groups within Potshini community are perceived differently by various groups in the community. The analysis shows that people in Potshini perceive the relationship within the community differently based on various arguments. Eight Externally Supported Farmers (ESF) perceive that there is conflicting relationship between them and the rest of the community. According to them, the households which are not supported with water infrastructures feel isolated and unhappy as they do not have reliable water supply as they do. This is confirmed by one Non-Externally Supported Farmer (NESF) who indicated to feel unhappy and isolated by not being supported with the water infrastructure. She claims that, not all farmers who receive support from external agencies are real farmers as some of them do not have the home garden or do not maintain the home garden actively (see Figure 22). It is important to note that development projects are always subjected to various constraints of time and resources (e.g. human resources and finances) and thus implemented according to the selection criteria that aim at reaching the intended project beneficiaries. Nevertheless, the selection criteria are always biased and whichever criteria are used, some people would always be excluded.

Figure 22 Pictures showing poorly maintained infrastructures in Potshini community

on the left showing poorly maintained RWH storage tanks. The picture on the right showing the poorly managed home garden of one of the farmers supported by the RWH storage tanks.
Moreover, six respondents perceived that there is conflict within the community as a result of differences in political ideologies between the ANC and IFP supporters. They argue that political affiliations separate people towards working together in matters concerning the whole community and that collaboration within the community is often placed within this divided political context. For example, the committee responsible to oversee the management of the communal grazing land is strongly believed to be associated with the ANC supporters who claim to have lobbied for the acquisition of the communal land.

Hence, it is felt that the IFP supporters are reluctant to collaborate with the committee in working together to ensure sustainable management of the grazing land. This division has resulted to mismanagement which is associated with the degradation of the grazing land (Dlamini et al., submitted).

In more detail the soil scientist at the University of KwaZulu Natal is of the opinion that the land degradation in the grazing land is mainly caused by natural gullies accelerated by the mismanagement of the grazing land by regular pathways of cattle in the same grazing strips (see Figure 23). The researcher explained that the rate of soil loss would have significantly been reduced if the community could have a rotational grazing system. However, the soil scientist argued that the soil loss in Potshini catchment is much localized depending on many factors such as slopes, land uses, soil types, erosivity of rainfall and erosion control practices in a particular location of the catchment. It is important to note that, it is not yet proved whether the siltation of the dams downstream at the commercial farm is as a result of land degradation in the communal land upstream in the Potshini community. Nevertheless, the commercial farmer attributes the siltation of his dams mainly to soil erosion due to overgrazing in the communal grazing land upstream the Potshini community.

Figure 23: Pictures showing parts of the communal grazing land.

On the left, the picture shows the natural gullies and land degradation caused by regular pathway of cattle. On the right, the picture shows the fence separating the grazing land (left) and the Potshini community (right).

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58 The ward councillor responsible for Potshini claim that it is IFP who lobbied for acquisition of the communal grazing land. However, it is felt by IFP supporters that the majority of the committee members are the ANC supporters.
59 Placing cattle in the grazing land during winter when the cattle should be grazing in the crop fields, non-rotational grazing and other livestock in the grazing such as horses apart from cows.
60 According to the researcher the soil erosion in the grazing land is mainly from the natural gullies which swell rapidly during when wet and shrinks rapidly when dry causing massive soil loss.
Furthermore, three respondents perceived that there is a conflict within the community due to assumed increase in levels of theft of livestock in the community. They associate the livestock theft with the increased unemployment of youths who have no income to sustain their lives. They point that the stock theft levels are high during summer when cattle are in the communal grazing land. They also claim that there has been an increased level of sabotaging the school infrastructures such as the water taps from the tanks at primary and high schools, chairs, theft and sabotaging the fence in the grazing land and theft and sabotage of research equipments in the catchment. On the contrary, five respondents perceived that the relationships within the community are cooperative as they do not see physical fights between individuals and or groups in the community. However, they predict that there is high potential for land conflicts within the community in the near future. They argue that land conflicts in Potshini community will mainly be attributed the increasing population in Potshini which they claim to be fast growing while the size of the communal land remains limited.

The relationships between the Potshini community and the commercial farmer

Ten out of twenty-three respondents from the Potshini community perceived that the relationship between the community and the commercial farmer is mainly based on cooperation. Out of these ten respondents, five are non-farmers and five are farmers. While the farmers praised the cooperative relationship with the commercial farmer as he provides them with the seeds, the non-farmers praised the cooperative relationship with the commercial farmer because he provides them with jobs and firewood. Thirteen respondents claimed that the relationship between the Potshini community and the commercial farmer is mainly dominated by conflicts. They indicate that people in Potshini community sabotage the infrastructures of the commercial farmer, let the cattle to graze on his farm, by cutting the fence and stealing of maize from the commercial farm. The commercial farmer claim to have a cooperative relationship with the Potshini community because a number of people from Potshini work on his farm and he provides them with seeds and firewood. However, he perceives conflicting relationships mainly with the people in Potshini who own large herds of cattle and he claims that they are the group who sabotage his infrastructures to let the cattle graze on the farm.

The relationships between the Potshini community and the local municipality

Nine out of twenty-three respondents from the Potshini community perceived that the relationship between the Potshini community and the local municipality is mainly dominated by conflicts. Two of them argue that the municipality do not provide timely support to repair the boreholes even if the case is reported directly to the municipality. Seven respondents argue that the municipal services are oriented towards providing services and support to people in Potshini based on their political affiliations. They claim that the municipality favours IFP supporters above the ANC supporters. Fourteen respondents expressed not to have an opinion on the relationship between the Potshini community and the local municipality. The ward councillor claimed that there is cooperative relationship between the Potshini community and the local municipality citing the support provided by the local...
municipality to the Potshini community in soliciting the communal grazing land and the role played by the local municipality in mediating conflicts between the commercial farmer and the Potshini community. The perceptions on the relationships between the local municipality and the Potshini community should be carefully interpreted as in the light of the party politics; it is likely that the seven respondents critical towards the municipality are oriented towards the ANC and being a politician the councillor most likely would try to express positive relationships with the community to maintain his constituency.

The relationship between the Potshini community and the traditional authority

Fifteen out of twenty three respondents from the Potshini community indicated to have no opinion on their relationship with the traditional authority. Most of the interviewed respondents indicated they respect the chief. However, two respondents complained that the chief does not support them in farming. Respondents with formal education and the youth seem to disvalue the role of the traditional authority. Two respondents mentioned that the current chief is young and alcoholic and they feel he has lost the chief’s reputation with regard to the Zulu traditional morals and way of life. However, six respondents mentioned that there is a cooperative relationship between the traditional authority and the community because the traditional authority does attend all the matters related to conflicts, land registration and also in issuing the building permits. The interview with the traditional leader (at village level in Potshini) and the chief councillor indicated that the traditional authority has a good and a cooperative strong relationship as the custodian of the community. They argue that traditional authorities play a big role in maintaining and preserving the traditional norms and values in the community. They also claim that the traditional leaders are close to the people and that they play a big role in representing them and their needs which are perceived to be neglected at higher political platforms.

The relationships between the Potshini community and the government departments

Majority of respondents from the Potshini community indicated not to have an opinion on the relationship between the Potshini community and the government departments. Two respondents perceived that there is cooperative relationship with the government because they receive support from the government in the form of social grants and project based support like the dry beans and the rainwater harvesting storage tanks. However, five respondents perceived the relationship with the government is dominated by conflicts due to the ban of illegal growing of marijuana. They complain that since the ban of marijuana there is no reliable sources of income to enable them bear the increasing costs of living. They claim that banning of marijuana has also demoralized most of the people in the community from engaging in farm activities. Furthermore, two respondents stated being unhappy with the government because of the slow pace and unclarities in land reforms citing the example that the Potshini community is squeezed in a small piece of communal land while the commercial farmer downstream enjoys a large privately owned land. Also the fact that the government extension services to the community are inadequate is a concern.

61 Two of them with close links to the traditional authority. These two are the traditional leader at village level and the chief councillor who both reside in Potshini community.
to the Potshini community as most of the extension services are project based hence, the duration is limited.

The relationship between the Potshini community and the civil society organisations

Twelve Externally Supported Farmers (ESF) from the Potshini community claimed that there is cooperative relationship between the civil society organisations and the Potshini community. They claim that the civil society organisations have supported them in securing access to water. However, six Non-Externally Supported Farmers (NESF) do not feel happy with the situation because they are not supported with RWH storage tanks. Civil society organisations argue that the criterion of supporting people with RWH storage was that people should have a self-initiated home garden to be eligible for support. They claim that this criterion was open to the whole community and the target is to support 140 households. However the initial support is limited to forty farmers as part of the pilot project. They further maintain that those people who are not supported with RWH storage tanks do either not meet the criteria or will be supported in the next project phase. Civil society reports show that there are increasing cases of theft and sabotage of research equipments installed in experimental plots in the catchment and they believe the theft and sabotages is done by people within the Potshini community.

The relationship between the commercial farmer and the local municipality

The commercial farmer does not depend on the local municipality for capital and technical assistance. This has created a distant form of relationship between the commercial farmer and the local municipality. However, according to the ward councillor the interaction between them is noticed through the interactions between the commercial farmer and the Potshini community, especially through the intervention of the local municipality in settling disputes between them. Nevertheless, the commercial farmer claims to be sidelined by the local municipality in favour of the Potshini community. The commercial farmer claims that the local municipality did not provide any support in digging the ditch and fencing the farm to prevent the cattle from the community from grazing in his farm. The commercial farmer claimed to have incurred all the costs in dredging the ditch and putting up the fence. He maintain that the costs was supposed to be shared between the community and him despite the fact that he was ready to contribute up to 75% of the total costs. Nevertheless, the commercial farmer complains that the ditch is currently not useful in preventing the cattle from trespassing to his farm and he believe it is filled up with the soil eroded from the communal land where the Potshini community resides.

The relationship between the commercial farmer and the traditional authority

The power and control over land by the traditional authority is limited to the former homelands and therefore there is no direct interactions between the commercial farmer and the traditional authority. However, the traditional authority present themselves as custodians of the rural communities and therefore biased towards the rural population. This may be reflected in the ongoing land reform process where the traditional authority favour
the restitutions and redistribution of the land while to a certain degree resisting the land tenure changes in the former homelands. As the land restitution and redistribution is claimed to favour the Potshini community there is potential conflicting relationship between the traditional authority and the commercial farmer. Nevertheless, the commercial farmer indicated to have no opinion on his relationship with the traditional authority.

The relationship between the commercial farmer and the government departments

The commercial farmer feels unhappy and worried about the ongoing reforms in land and water sector especially on the way these reforms are implemented. He claims that the reforms in land and water sector are skewed in the favour of blacks communities like those in Potshini community and aim at replacing white commercial farms with black commercial farming. The commercial farmer is worried that the land reforms will result into the crisis that happened in Zimbabwe in the recent past claiming that land reforms are the source of collapse of Zimbabwe economy in the last ten years. In addition, the farmer claims that the way the government is expropriating the farms in not transparent and the exercise is full of bureaucracy and corruption. He argues that the land reforms only offer opportunities to few business elites and political and traditional groups in their search for political power and recognition at the expense of those who really need the land for survival.

Nevertheless, the commercial farmer claims to be ready to cooperate with the government in the land reforms process by building the capacity of emerging black farmers as he believes that this should be the primary step in the land reform process. It is generally observed that the interaction between the commercial farmer and government department has been limited to the ongoing reforms in land and water sector and not in terms of provision of extension services to the commercial farmers even though he indicated that he needs the extension services from the government. This is likely to be attributed by the limited human resources capacity in the government departments but potentially also because the government departments feel that the commercial farmers are well trained and have sufficient experience in farm operations.

The relationship between the commercial farmer and the civil society organisations

The interview with the commercial farmer revealed the he mainly collaborates with the research and academic institutions. The farmer confirmed to work with the research institutions\textsuperscript{62} who mainly provides him with yearly consultancy services in soil sampling and analysis. He cited the example that the soil analysis results of the year 2008 showed the low levels of potassium in the soil and was advised to increase the level of potassium in the soil in the 2009-2010 agricultural calendar which is exactly what is doing. He also indicated to have been advised on the minimum tillage practices which he is currently implementing. The commercial farmer claims to cooperate with the researchers from various institutions in and outside the country. He argues that he believes in research as good policies are mainly informed by scientific research. The research institutions also claimed to have a cooperative

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\textsuperscript{62} Such as CEDARA agricultural college.
relationship with the commercial farmer mainly through field based experiments on the plots of the commercial farmer and they value his collaboration and information sharing.

The relationships between the local municipality and government departments

Although the local municipality and the national and provincial government departments are supposed to closely collaborate, both parties perceive their relationships to be dominated by conflicts. This attributed by the demand for decentralisation of power and functions to the municipal councillors who claim to be close to the targeted rural communities. Decentralization has been implemented by the government reforms but not to a level satisfactory to the ward councillors. The interview with the ward councillor responsible for Potshini revealed that sometimes the national and provincial government departments by passes him in implementing projects in Potshini mainly due to political reasons. However, the councillor confirmed to have been involved and informed by the government departments in the implementation of the DWAF rainwater harvesting storage tanks project which is underway in Potshini community.

In addition, the interview with the councillor revealed that the cooperation between the local municipality and the government departments is only fostered through the annual municipal Integrated Development Plan (IDP) forum. This forum brings together the municipal council and the all government departments to jointly plan for the development activities in the municipality. Only the projects included in the IDP forum are eligible to receive funding and get implementation support from other stakeholders. However, some provincial reports show minimum participation of councillors in the IDP process. This supports the commonly expressed view by some people in Potshini community that some councillors are not actually interested in service delivery in their constituency but merely by maintaining authority through patronage systems. The government departments claim to have decentralised various services to the local municipality including the provision of water supply to the rural communities, but argue that the local municipalities still do not have the capacities to handle projects that involves large budgets and huge capital investment (COGTA, 2009).

The relationships between traditional authority with the local municipality

The relationships between the traditional authority with the government and the local municipality are fragile. This is mainly due to complex overlaps of governance structures and institutions concerning the land administration in the former homelands. This is the result of the aim to fit together the democratic conventional government structures and the traditional governance structures. While the ward councillors claim to be close to people in the rural areas and derive their main support from the party supporters, the traditional leaders also claim also to be close to the disadvantaged rural masses in the former homelands based on traditional beliefs and culture as well as control over land resources. The conflicting relationships between these groups mainly rest at the competition to legitimize their authority.
In a more detailed look the relationship between the traditional authority, local municipality and government department is enshrined in the notions of 'democracy' versus 'traditional customary governance'. This is clearly perpetuated by the South African democratic government after the end of political apartheid in 1994 where both the democratic and traditional governance structures were incorporated in the South Africa Constitution (1996). The analysis has shown that there is tension between the traditional leaders and ward councillors mainly due to the incompatibility of the two governance structures in the former homelands as compared to the rest of the country (Lehman, 2007). For example, the ward councillors argue that the traditional governance structure is undemocratic because it is dominated by men and excludes other members of the community while the municipal councillors are democratically elected by people (Bentley, 2006). The traditional leaders maintain that their fundamental cultural rights and the role they play within the rural societies can not be compromised by the western ideologies of democracy which contradict the political values and morals of other South Africans cultures, in particular the Zulu traditions (Ntsebeza, 2004). In the context of the former homelands and thus the Potshini community, it implies that the negotiations on their access to water are directly influenced by two incompatible governance structures. Hence for them to be able to harness the blue and green water they have to go through a set of fuzzy institutional settings.

The relationships between the civil society organisations with the local municipality, traditional authority and government department

The interaction between these stakeholder groups is mainly through information exchange within ongoing projects in Potshini catchment. The cooperation between the civil society organisations and the government departments is mainly through project based interventions in the catchment. This is noticed in the rainwater harvesting storage tanks projects where the grants provided by DWAF were channelled through the civil society organisations as they are selected as the Approved Project Implementers (APIs) and Project Implementing Agents (PIAs). They assisted with organising farmers into groups, project facilitation and supervision during implementation. However, the level of cooperation between civil society organisations is limited and sometimes competition between CSOs is reported. This becomes visible in the limited collaboration and partial information exchange among CSOs despite the fact that they carry out more or less similar projects.
5 DISCUSSION

5.1 Introduction

This chapter discusses the dynamics of struggle for water in Potshini catchment. The discussion shows that the struggles for water in Potshini catchment are entrenched in socio-economic, political and cultural relations between stakeholders and are biophysically, socially and politically constructed through history. The discussion follows the framework illustrated in Figure 24 to reveal that the causes of struggles, the stakeholders and the context through which the negotiations over water takes place are dynamically linked, shaping the access to and control over the water resources. The framework provides for the integration of the different parts of the thesis to analyze the causes and the dynamics of struggle for water. The analysis of the context is mainly based on the literature review in chapter 2 and the analysis of the stakeholders is based on empirical data as presented in chapter 4.

![Figure 24: Framework of the dynamics of struggle for water in Potshini catchment](image)

Lukas kwezi
The unequal distribution of land and water resources have resulted into the struggles for water in Potshini catchment being rooted in structural conflicts e.g. in the case of the commercial farmer and the Potshini community mainly articulated in the form of relationship conflicts between them (cf. Visscher, 2008; cf. Peluso and Watts, 2003). On the same line, the expressed struggles for water are as a result of the on-going reforms to redress the inequality in the distribution of land and water resources. This is because the historically normative orders created during pre-colonial, colonial and apartheid era are challenged by new norms and institutions which are being developed during the reform process. This form the tension for conflicts between various stakeholder groups mainly expressed in the form of power relations and the search for legitimacy (Meinzen-Dick and Bakker 2001; Oregon Mediation Centre 2009).

Moreover, the current struggles to cope with the fluctuation in water availability form potential for conflicts in the catchment. This is potentially escalated by the rainwater harvesting storage tank project underway in the Potshini community. In the first place, up-scaling the project might reduce the availability of water for use downstream forming the potential for water conflict between the community and the commercial farmer (cf. Buckles and Rusnak, 1999). Second, the project do not equally address the underlying interests of various groups in the community due to the fact that not all groups in the community were involved in the early phase of planning process (cf. Janssen et al., 2006; cf. Yasmi et al., 2006). This has resulted into relationship conflicts between the project beneficiaries and non-project beneficiaries. Furthermore, the discussion shows that water conflicts in the rural communities e.g. in Potshini community are potentially due to competition for water resources at basin scale (cf. Edossa, 2005). This is because, water in Thukela River Basin is subject to the increasing scarcity due to the rapid environmental changes (bio-physical factors), increasing demand (including the inter-basin water transfers) and or politically constructed due to unequal distribution of property right regimes; resulting into competition between users and across sectors (DWAF, 2003; cf. Peluso and Watts, 2001; Mollinga, 2001; Molle, 2008).

Therefore, in a more explicit way I argue in section 5.2 that the structural inequality in access to land and water between stakeholders and their need to cope with the fluctuations in water availability form the underlying causes of struggles for water in Potshini catchment. Concurrently, I show that the struggles are shaped in time (i.e. by history and seasonal fluctuation in availability of water) and space (through upstream-downstream interactions in the catchment, and influenced by local, national and global geo-political forces). Lastly I discuss the windows of opportunity that could be used to improve the negotiations over water to develop robust and sustainable water management arrangement in the catchment.
5.2 The underlying causes of struggle for water

5.2.1 Structural inequality in access to land and water

The inequality with respect to land in South Africa is very much a result of the apartheid policies of the past where the black majority was forced on to 13 percent of the land through a variety of legislations (Cullis and Van Koppen, 2007). The inequality of access to land has been translated into inequality of access to water. In addressing these past and current imbalances in access to the use of water for domestic and commercial purposes, the reforms in water and land allocation programmes are underway in South Africa (DWAF, 2005). Nevertheless, after a decade and half of these reforms it is estimated that 96 percent of commercial arable land remains in a limited number of white farmers (Swatuk, 2008; Olukotun, 2009). This implies that to date land and water control in South Africa is still divided along racial lines.

Structural inequality in land and water control is reflected as one of the main cause underlying the struggles for water in Potshini catchment and creating (potential) conflicts between stakeholder groups. This is observed in the huge asymmetry in water and land control between the Potshini community upstream and the commercial farmer downstream. As a result of structural inequality, the commercial farmer has stronger bio-physical and economic power than the Potshini community hence being in an advantage to physically control the water through the control of hydraulic infrastructures. It can therefore be argued that, the commercial farmer uses his bio-physical and economic power to counterbalance the situational power of the Potshini community. This is because even though the Potshini community has potentially high labour capital based on high population density and is located upstream the catchment of which under normal circumstances gives them higher opportunity cost to abstract and use the water before it reaches the commercial farmer downstream; their situational power is weakened by the fact that they have limited hydraulic infrastructures for water control and storage.

In addition, it can also be argued that the history of apartheid has left the Potshini community with low self-esteem and feeling inferior, they perceive themselves as powerless or failing to exercise their situational power (cf. Blackman's 2003; Wilson, 1999; Coleman, 2006). During colonial and apartheid era, people in the former homelands grew up in an environment dominated by suppression, and that encouraged an economic and social dependence upon others than independence (Butler, 2004). It is claimed that while they now have more constitutional freedom, very few of them have been able to achieve economic and emotional freedom (Thompson, 2006). Box 6 discusses in detail the challenges that make it difficult for the Potshini community to exercise their situational power in water control.

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63 A condition arising from unequal status attributed by a category of people in relation to others, a relationship perpetuated and reinforced by unequal relations in roles, functions, decision rights and opportunities (Dani and De Haan, 2008).
There are several challenges that make it difficult for the Potshini community to exercise their situational power (i.e., possibility of abstracting water before it reaches the commercial farmer downstream). In the first place, the community is situated in a limited portion of land. The land which could possibly be allocated for construction of the water storage infrastructure is dedicated to grazing. This makes it hard to find a place for the reservoir as cattle grazing forms very important cultural values of the Zulu communities. On the same line, when asked why the community do not abstract water that flows downstream to the commercial farm, the majority of people explained that they fear to make a storage reservoir which could provide a habitat for snakes. The fear for the snakes is also confirmed by one farmer in Potshini whose house is situated along the Edwaleni river. She does not use the water from the river because she believes that a big snake is living in the river which is based on the cultural Zulu believes (see section 4.2.1).

The majority of people expressed their fear that the reservoir could be dangerous for children as they could be drowned into the reservoir as was recently experienced when two children were drowned into the river during heavy rains in 2008. Apart from that, the land in Potshini community is under communal tenure with the power over land administration vested to the Amangwane Traditional Authority. Hence, for the community to construct a storage reservoir on the communal land they would need to go through complex institutional layers of traditional and democratic governance structures. This is contrary to the commercial farmer whose have control over the land through the private land tenure system and therefore more flexible in allocating land for hydraulic infrastructure purposes. Moreover, as the agricultural water allocation from surface water are for a large extent already granted based on the ownership of land under previous lawful water use, they do not cater entirely for the interests of farmers like those in Potshini community who have small portions of unregistered ancestral land and landless workers (DWAF 1998a).

Furthermore, Potshini community is still not yet organized in a Water User Association (WUA) as required by the New Water Act (1998) and thus not involved in any decision regarding water allocation. Their involvement in water management activities is limited to the ex-homelands government water scheme which provides a policy framework of grants for projects on irrigated agricultural development of poor resource farmers in the former homelands (DWAF, 2004). This is contrary to the commercial farmer who is a member of the white dominated irrigation boards which based on the reforms have changed their status to WUA in order to legitimize their water use. Furthermore, as the water use of the commercial farmer downstream is recognized as legitimate water use based on the old and new water legislations it is possible for the commercial farmer to object any water abstraction upstream that could have serious implication to the amount of water flowing to his dams and if this would happen, the commercial farmer may need to be compensated based on the loss of production and the market prices. This is confirmed by the position of the commercial farmer that he is a lawful user of the water resource.

Lastly, due to the experienced water scarcity in South Africa and the growing competition between water users (e.g., see section 5.2.2 on the cross-basin water transfers), pumping water from the nearby Mlamboja river is not foreseen in the near future. The Potshini community is also divided in goals and interests (see section 4.4) when it comes to water abstraction for irrigation purposes as substantial number of people in the community do not identify themselves as farmers and rural dwellers might be a more realistic identification (Dlali, 2008). Moreover, subsistence agriculture in Potshini might not be an attractive venture as it is mainly characterized by low production and lack of investments (Kosgei, 2009). This is likely to drawback the morale of emerging farmers to pursue their agricultural ambitions.

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64 Edwaleni river originate from upstream the Potshini community and flows downstream towards the direction of Emmaus village. Though it forms a potential and an important source of water supply the community is reluctant to abstract the water from the river. It is however not confirmed if the reluctance is associated with the strong cultural beliefs of the Zulus and snakes.

65 Mlamboja river is one of the river in the Thukela river basin. It is located upstream the Potshini community.
The inequality in the ownership of means of production between the commercial farmer and the Potshini community has resulted into relationship-conflicts between them, mainly expressed in the form of threats, fear, negative emotions and behaviours (cf. Obeidi et al., 2005). Threats and emotions are expressed through the sabotages of the activities of the commercial farmer by the Potshini community. It can be argued that the sabotages is due to the frustration with huge inequalities in the control of land and water between the commercial farmer and the adjacent Potshini community. Hence, the community opt to intimidate the commercial farmer through regular sabotaging his farm activities by letting the cattle to graze in the commercial farm, stealing of crops and cutting of the fence. In my opinion this is the strategy of the community to force the commercial farmer off the land so that they can have control of the land and thus in turn the control of both green and blue water. The commercial farmer is aware of the inequalities and potential unstable situation. As a result of the fear of retaliation, the commercial farmer provides tokens in the form of free seeds and firewood to the Potshini community. Equally the same, the commercial farmer and the Potshini community fears on whether the on-going land and water reforms in South Africa would result into economic crisis that happened in recent past in Zimbabwe. The commercial farmer is worried whether the land reforms could potentially result into 'land invasion' which is claimed to be the major factor of the collapse of the Zimbabwe economy. Equally the same, the Potshini community is worried on the on-going land reforms in the light of development in Zimbabwe. Their main concern is lack of employment opportunities on the commercial farm and escalating food prices in case the commercial farmers ceases the production.

In my opinion, the expressed fear by the commercial farmer and the Potshini community on land and water reforms can be interpreted as resistance to reforms because the land and water reforms in South Africa and Zimbabwe is interrelated but yet different. The reforms in South Africa and Zimbabwe are related because they all aim at redressing the structural inequality in land and water control created by the past colonial and apartheid policies. But they are different because the reforms in Zimbabwe were fast-tracked and used by the elites of the ruling party\textsuperscript{66} as a weapon to reward their supporters and punish their detractors within Zimbabwe in order to remain in power (Vulkanic, 2009). However, it should carefully be noted that the collapse of the Zimbabwe's economy is strongly associated with dreadful relations\textsuperscript{67} between the West and the Zimbabwe government and thus the stringent economic sanctions imposed to Zimbabwe (Moyo, 2001). It is possible that the Zimbabwe land reforms could successfully be implemented in South Africa as the country's institutional framework is more stable and democratic with good diplomatic relations to the west. Thus, it can be argued that the experience of land reforms in Zimbabwe should be used not as fear for reforms but rather a motivation to improve the reforms in South Africa and all the former settler colonies which faces structural inequality in land and water control.

\textsuperscript{66}ZANU-PF -formed as the merger of two political parties i.e. ZAPU and ZANU in 1989.

\textsuperscript{67}The bad relations with the West dates back in 1990's when Zimbabwe abandoned the neo-liberal policies imposed by the IMF and World Bank in 1996 and initiated extensive compulsory land acquisition in 1997. During this period the Zimbabwean government mobilized Angola and Namibia in 1998 to intervene the US-sponsored invasion of the DRC by Rwanda and Uganda and lastly when it turned on its neo-colonial constitution in 2000.
It is further noted that the on-going reforms to redress structural inequality in land and water control are perceived differently by various stakeholders. This is typically noted in the conflict of interest between the national government and the commercial farmer on procedural issues of land and water reforms. The commercial farmer perceive the on-going land and water reforms as the ANC’s government approach that seeks to transfer some farms, overwhelmingly the white-owned to black majority population thus forcing white farmers to seek land abroad. This is also linked to the recent report that the South Africa farmers through the Agricultural Trade Association in South Africa union (Agri SA) has signed the deal with the Republic of Congo to lease 200,000 hectares of land to South African farmers\textsuperscript{68}. It is believed that under the terms of agreement, South African farmers will lease the land in Congo for 30 years to produce food and fibre mainly for the domestic market in Congo. This shows that although the commercial farmers perceive the on-going land reforms as a way to replace the white farming communities, they can still use their relations and institutions to get access to land and water through the ‘global land grab’\textsuperscript{69} supported by globalization and neo-liberal policies. This also shows that globalization and a neo-liberal policy largely influence water and land reforms in South Africa and shapes the struggles for water.

The neo-liberal economic policies are revealed in the water reforms which has inspired privatization of water supply services through the notions of full cost-recovery of operating, maintenance and replacement costs. As a result there has been an increase in water price which has hit hard the poor communities in black townships of South Africa (Hart, 2008). Consequently, there have been struggles in response to these water privatization measures in poor communities of large urban areas such as Johannesburg, Durban and Cape Town and many other smaller towns and peri-urban areas across South Africa have responded with active resistance (Swatuk, 2008). This shows that the struggles in urban areas are related to struggles in rural areas though they are different in how they are manifested. The influence of neo-liberal policies in the struggle for water and land in Potshini catchment is illustrated and discussed in Box 7.


\textsuperscript{69} The explosion of transnational commercial land transactions revolving around the production and sale of food and bio-fuels, conservation and mining activities. Accessed on 16\textsuperscript{th} March, 2010 from http://www.plaas.org.za/ldpi.
The struggles for water in Potshini catchment are also enshrined in the 'neo-liberal' ideologies. The commercial farmer downstream claims that commercial agriculture is the only way forward to ensure nation's food security and employment to majority of the rural population in South Africa. The commercial farmer's claim is revealed by his interest to increase his commercial farming productivity and his aim in maintaining or even improving his current access to water and land control. In doing so, the commercial farmer would accumulate more wealth while most of the people would remain dispossessed by land and water (cf. Hart, 2008). Interestingly, the neo-liberal ideologies are also revealed in the government's land and water reforms by adopting the neo-liberal instruments such as the 'willing-buyer, willing-seller', and the privatization of public services such as water and electricity through perpetuation of cost-recovery principles. The influence of neo-liberal policies in land and water reforms are reflected in Potshini catchment where the community had to negotiate to buy the piece of land from the other commercial farmer upstream during the 1995-1996 period as explored below.

Through the 'willing-seller, willing-buyer' (WSWB) framework, the Potshini community approached the commercial farmer located upstream who is a private land owner and had to negotiate with him in buying the land on communal basis. Although the commercial farmer had a good arable land suitable for pastures, based on the market-led principles of WSWB the farmer was not compelled to sell his arable part of the land and instead he kept the arable land and sold the small piece of land in a poor location with low quality of pastures to the community as a communal grazing land. The soil scientist researchers at the University of KwaZulu Natal explained that the analysis of soil sample from the communal grazing land in Potshini shows high levels of phosphorous which mean that the land is not suitable for grazing. Also field surveys on the communal land and on to the commercial farmer show that the farmer sold the unproductive part of the land which do not have water storage facilities for cattle. Instead, the commercial farmer kept the good pasture land consisting of small earthen dams of water for cattle as part of his farm.

Because the piece of land which was sold to the community was not enough to meet the need of the community, the Potshini community has recently acquired 22 million Rand (US$ 3 million equivalent) from the government to buy another piece of land from the same commercial farmer. This time the farmer needs a high bid as he claims that the value of the land needed by the Potshini community is worthy 36 million Rand (US$ 5 million equivalent). The ward councillor indicated the reluctant of the commercial farmer to sell the land to the Potshini community, citing that the commercial farmer plays a 'mind game' by escalating the price of the land since he know that the community can not afford to buy the land at the price he want. To date the negotiations between the Potshini community and the commercial farmer are still underway with little possibility for the community to acquire the land unless the government provide for the additional funds. Nevertheless, there is no guarantee whether the commercial farmer would not increase the price of the land in the near future or will decline to sell the land to the Potshini community.

Furthermore, the on-going reforms to redress the structural inequality in land and water control are challenged by the competition for power and legitimacy between the traditional leaders and the municipal councillors. It can be argued that the competition for power and legitimacy between the traditional leaders and the municipal ward councillors is about competition for resources (e.g. wealth) as it is increasingly noticed that, in the South a number of people go into politics (whether traditional or government) for the wrong reasons or because the governance system is weak with too much space for corruption. Because they personally benefit from the system by being in power, hence they would need more power and compete with each other rather than serving the nation and citizens that put them in power. The competition for power between the municipal ward councillors and

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70 The commercial farmer upstream is a different farmer from the commercial farmer downstream and they have no family ties.
the traditional leaders forms potential for interests-based conflicts between them as their competition for power is based on the incompatible the systems of governance (i.e. traditional governance and democratic state governance structures-see section 4.6). It noticed that both the traditional leaders and ward councillors fear losing their power and legitimacy and/or even unwilling to share their power (cf. Peluso and Watts, 2001). This is evident by the arguments they present in defending their power and legitimacy as each party believes that in order to satisfy their needs, the needs and interests of the other party must be sacrificed (see section 4.6). As a result the interaction between the two stakeholder groups is based positional claims, creating different layers of patronage systems.

To keep their constituency pleased, it is likely that the municipal ward councillors lobby for resources (e.g. funds) on the kind of activities that would ensure their popularity in former homelands e.g. in the Potshini community. As a result, the resources that could properly be used in improving water service delivery in these communities are possibly allocated based on political motivations to ensure the councillor maintain his power base in the rural communities and in this way creating a patronage system. Potentially, the municipal ward councillor could lobbies for allocation of resources for other villages where he has more political support other than in Potshini (e.g. the majority of people in Potshini community voted for the ANC and not for IFP, see section 4.3). Second, in order to ensure they maintain the status quo as the guardians of the people in the former homelands, the traditional leaders resists the proposed changes in land tenure so that they continue to have control over land administration and in this way creating a patronage system (Lyne and Dorroch, 2004). The continued power over land administration form the most important pillar of the legitimacy of traditional authority in the former homelands and it would be hard for them to give up this vested power (see section 4.3). Because the majority of people in the former homelands are illiterate with inadequate understanding in democracy and good governance, it is relatively easier for the traditional leaders and the ward councillors to maintain their patronage systems in those areas

In my opinion, the possibility of breaking the deadlocks created by the different layers of patronage systems in the former homelands is not foreseen in the near future. This is because the traditional authority and the democratic government both benefits from the existing patronage systems. On one hand, the traditional authority needs the political parties in the democratic government to include and accommodate their interests in the governance systems so that they keep their legitimacy. On the other hand the political parties get easier access to votes from the mainly illiterate rural population by associating with the traditional authorities. Therefore, it can be argued that access to land and water in the former homelands is and will most likely continue to be negotiated under multiple legal settings of traditional and democratic governance structures.

### 5.2.2 Fluctuation in water availability

The fluctuation in water availability is one of main causes underlying the struggles for water in Potshini catchment. According to Kongo and Jewitt (2006) the mean annual rainfall in Potshini catchment is 700 mm per annum. Nevertheless, the rainfall is strongly seasonal and occur in summer (September to April), with heavy rains characterized by thunderstorms and occasional hailstorms. Winter (May-August) is typically very dry characterized by very high velocity dry winds that could have a significant effect on potential total evaporation. Also
During winter frost is common and mainly characterized by extreme low stream flows. Hence, in order to cope with the variability of water in the catchment stakeholders apply strategies that would ensure that secured access to water is achieved in both wet and dry seasons (see section 4.5). During summer most farmers in Potshini community prepare their crop fields and plant just prior to the rains. Although this may look a trial and error approach in crop water management, it seems to be a farming practice that has developed for a long time and make it ready for crops to utilize every drop of water from the on-set of rain season to the end. During this season, all the cattle are placed in the communal grazing land to allow for crop development in the household field plots.

During winter, extreme low flows are experienced and it is at this time when most of the springs and boreholes run dry. In response to this severe water shortage experienced in winter the government departments and civil society organizations have trained and supported some of the farmers in the community with ex-situ\(^{71}\) rainwater harvesting (RWH) technologies. Hence, it is expected that the farmers who are externally supported with RWH storage tanks are most likely to have secured access to water during the dry season as most of their storage tanks are likely to have been filled up during the rainy seasons in contrast to the non-farmers or farmers who are not supported with RWH storage tanks. As clearly shown in the analysis (section 4.6) the support of the RWH storage tanks to some of the households has created a power asymmetry with regard to water control and thus form high potential for relationship-conflicts between various stakeholder groups (i.e. project beneficiaries and non-project beneficiaries) within the Potshini community. The RWH storage tanks project in Potshini catchment clearly demonstrate the dynamics of struggles for water as discussed in a more detail in Box 8. It is important to note that the civil society organizations and the Department of Water Affairs (DWAF) in charge of the promoting the rainwater harvesting practices in the Potshini community indicated that the current support of RWH storage tanks is a pilot project dedicated to 40 households with the possibility of scaling up to 140 households out of 200 households in total in the community as initially planned.

However, if the RWH project is up-scaled as planned it could cause potential impacts on the stream flows, there by compromising the current access to water by the commercial farmer downstream. This could lead to water conflict between the commercial farmer and the Potshini community. The potential reduction of stream flow is confirmed by a recent study conducted in South Africa\(^{72}\) which shows that both in-situ\(^{73}\) and ex-situ RWH techniques causes marginal to major decreases in runoff compared with the runoff from the virgin catchment (natural vegetation), depending on the adoption rate. The study further indicates that the in-situ RWH techniques has a relatively greater impact on high flows, while the ex-situ interventions have a greater impact on low flows (Kahinda et al., 2008). Nevertheless, the characteristics of the Potshini catchment might be different to the one at which the study was conducted as the response of runoff is very much dependent on the catchment local hydrological processes.

\(^{71}\) Technologies that involves harnessing and storage of blue water (e.g. the rainwater harvesting storage tanks)

\(^{72}\) The study did not focus on a specific catchment.

\(^{73}\) Techniques that involves harnessing water and storing in the form of soil moisture -green water (e.g. Minimum tillage).
Access to and control over water within the Potshini community is entrenched in the ability of people to affiliate themselves with social networks. As a result access to water in Potshini community hinges on social identity and status and hence on membership of farmer groups and social networks. For example, the analysis shows that the criteria for the support by RWH storage tanks needed one to have a self-initiated garden in order to qualify for the support. This implies that people who managed to have gardens qualified to get the RWH storage tanks even though they might not have the ambition to farm. This approach directly disqualified the non-farmers and farmers who might have real ambitions to farm but could not initiate their gardens due to variety of reasons. It is important to note that the project also provide storage systems for domestic water supply to the beneficiaries. Hence, even if up-scaled to cover 140 households, the current selection criterion excludes the non-farmers from additional domestic water supply.

It can therefore be argued some people might have used the domain of social groups such as farmers groups, political networks, traditional networks and civil society organizations networks as their social capital to mobilize resources in acquiring hydraulic infrastructures. This is confirmed by two Non-Farmers (NF) and six Non-Externally Supported Farmers (NESF) who expressed being unhappy as they are not supported by the RWH storage tanks. They expressed their wish to form coalition and join the farmers’ learners groups so that they can also be supported with the RWH storage tanks by the external agencies. However, they could not join the farmer’s learners groups because they did not comply with the criteria set for selection. They argue that not all farmers who are supported with RWH storage tanks are real farmers as most of them have gardens which are poorly maintained and some are even not planted anything and thus they feel to have the right to join the farmers’ learners groups in return of the access to and control over water. This potentially shows that the RWH storage tanks project has been dominated by elements of ‘forum shopping’ (cf. Meinzen-Dick and Pradhan, 2002) where people in the community oriented themselves to qualify for the project support in order to guarantee their access to and control over water.

More strikingly, party politics has resulted in the perception of some people in the community associate the RWH storage tanks project with political parties. Most of the IFP supporters associate the RWH storage tanks project with the ANC. This may have been caused by the feeling that the project facilitator, who is also a community member, is believed to be an active ANC supporter. Also this might have been caused by the fact that the project is supported by the national government departments where the ANC has stronger influence than at the local municipality where IFP has a stronger influence. This potentially means that most of the people supported by RWH storage tanks could be the ANC supporters and thus access to water and organization of the community in development activities likely to be along political party lines. This division of the community could potentially make it difficult for them exercise their situational power control over water (see Box 6).

Hence it can be argued that, the way the RWH storage tank project is implemented forms a potential for relationship-conflicts (cf. Visscher, 2008) in the community as it has created an asymmetry in power over water control within the community complicated by the criteria of support. In addition, it is clear that the project has escalated the party politics which hardly brings the community together. When asked why they support the community with the RWH storage tank project, the civil society organizations and the government departments claimed that the RWH project in Potshini community is driven not only by the human right to water for basic needs but also the need for the country to achieve the Millennium Development Goals by 2015 (i.e. to reduce by half the number of people living with hunger’). They argue that the RWH storage tanks project make it possible for the household to withstand the inter-seasonal variability of water supply in the catchment and thus able to produce food through the home gardens in winter. This shows the influence of geo-political forces and discourses in the negotiations over water at catchment level.

The commercial farmer’s struggles for water are also influenced by the changes in water availability in the catchment. The people in Potshini community indicated that in 2007/2008 there was a prolonged dry spell with a delay in the start of rain seasons. As a result the commercial farmer was also running out of irrigation water and thus approached the
community with the plan to abstract water from the Mlamboja river. It is reported that the commercial farmer had a plan to place a pumping station in the community to enable him to pump water from the river on the other side of the community to his farm. Nevertheless, while the negotiations were underway, the heavy rains came before the installation of the pumping station and water pipes. It can therefore be argued that even though the commercial farmer owns the hydraulic infrastructures to store irrigation water for use in winter, he still needs to collaborate with the upstream Potshini community during extreme drought.

On the same line, it can be argued that dealing with the changes in water availability is much dependent on the scale of water management operation. Both the commercial farmer and farmers in Potshini community apply the water supply enhancement strategies in dealing with availability of water supply by harnessing water in storage reservoirs (cf. Griffin, 2006). However, the size of their infrastructures varies according to the level of operation. For example, the commercial farmer has the four surface dams of full capacity 950,000 M³ potentially to irrigate about 200 hectares of land. The externally supported farmers in Potshini have four RWH storage tanks of total full capacity of 20,000 litres potentially to irrigate the back yard home garden of about 1-2% of a hectare. It is also clear that both the commercial farmer and the Potshini community faces similar challenges in coping with the changes in water availability in the catchment and they use much the same strategies to have secured access to water. Nevertheless due to the high food production potential, the commercial farmer has a stronger leverage position in the water allocation for production purposes than the Potshini community (see also Box 6).

The water supply enhancement strategies are noted at the national the regional level such as the inter-basin water transfer facilities and the multipurpose reservoirs. This is evident for trans-basin transfers of water from the Thukela river basin for supply of water to the industrial Gauteng Region, South Africa’s economic heartland, with the Thukela-Vaal transfer scheme capable of supplying $630.72 \times 10^6$ m³ annum⁻¹ (DWAF, 2001). Additionally, a water resource development in the Thukela river basin has been proposed for the expansion of the existing scheme. The planned scheme is intended to store excess water in the Thukela system and then to transfer a possible further $15$ m³ s⁻¹ via the existing Drakensberg Pumped Storage Scheme to the Vaal River system when required (DWAF, 2003). In my opinion the inter-basin water transfer from Thukela river basin to other parts of the country communicates two major lessons with regard to the negotiations over water in Potshini catchment and the rest of the country.

First, although the commercial farmer has high leverage position in getting secured access to water at catchment level due to high food production potential, irrigation water at national level in Thukela river basin has lower opportunity cost as compared to other industrial regions of South Africa which form the country’s major economic hub (DWAF, 2001). Therefore at national level the commercial farmer faces difficulties in negotiations over water as prior to agriculture water is allocated to industries and urban domestic uses

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74 Mlamboja river is one of the tributary which form a major confluence with the Thukela river: It is located upstream the Potshini community.

75 The Gauteng region provide for more than 50% of the nation’s economic wealth and supports majority of population. Also it is where large thermal power stations which produce 85% of South Africa electricity are situated (DWAF, 2001).
Second, the rural communities in Thukela river basin including the Potshini community, faces competition in water use with other sectors and thus difficult in improving their livelihood through water use (cf. Mokorosi and van der Zaag, 2007). This is because water policies uses the notions of integrated water resources management as cover up for neo-liberal policies which pay considerable attention to demand management, cost recovery, reallocation of water to higher value uses and environmental conservation at the expense of the livelihood of the poor rural communities (Merrey et al., 2005). In other words, the inter-basin water transfer from Thukela river basin illustrate the competition over water between high-volume water users and poor water users which may also be the underlying cause of intra-community water scarcity and conflicts in the rural communities of Thukela river basin. This clearly explains on the limited possibility of the Potshini community in collaboration with the commercial farmer to abstract and pump water from the nearby Mlamboja river (see Box 6).

5.3 Windows of opportunity to improve the negotiations over water

5.3.1 Interest-based negotiations

The previous sections have provided us with a good understanding of the negotiations over water in Potshini catchment. The analysis has given us a comprehensive understanding of the positions, the goals and underlying interests of different stakeholder groups. As empirically shown, it is generally observed that the current negotiations over water are position-based negotiations (see section 4.4). As a result, stakeholders in Potshini catchment negotiate based on their positions by holding on to fix set of ideas, arguing and defending their viewpoints without unveiling their interests resulting in conflicting relationships between them. Also, the position-based negotiation might be misleading as it does not solve and provide for appropriate solutions to the needs of various stakeholders groups. However, the analysis has shown that at interest level there are more complementarities between stakeholder groups hence forming potential for collaboration between them. Therefore, working at interest level could provide appropriate and sustainable long-term solutions to the needs of various stakeholder groups. In other words, one of the window of opportunity that could be used to improve the negotiations over water in Potshini catchment is to facilitate the negotiations over water to shift from the position-based to interest-based negotiations (cf. O'Dowd and Barrett, 2006) as illustrated below (see Figure 25).

![Figure 25: Position-based versus interest based negotiations](image_url)

Interest-based negotiations can be used to facilitate for a 'win-win' solution (cf. O'Dowd and Barrett, 2006) between the Commercial Farmer (CF) and the Farmers (F) in Potshini
community as their interests are complementary. With the prime interest in having stable farming productivity it is obvious that they both aim to have sustainable and sufficient access to land and water control that would ensure and promote their farm productivity. Hence, working at interests level, options can be developed and crafted into solutions that would satisfy interests for both groups of farmers. Assuming other factors in the negotiations remain constant, the options can be developed to ensure the availability and reallocation of water and land to the Potshini community. This can be achieved by for example providing incentives for the commercial farmer to further lower the irrigation water demand by increasing the efficiency in irrigation systems and employing new technologies. This could be done through investing in technologies and innovations that would ensure high productivity per units of water and land. These options can only be jointly developed by stakeholders through working at interest level possibly through assisted negotiation process (mediation). At national level, these options can be helpful in developing options that would result into optimal allocation of land and water to emerging farmers and the existing commercial farmers without compromising their interests. Furthermore, conducive institutional framework could be developed to facilitate joint ventures between commercial and emerging farmers where by emerging farmers could get access to financial capital on individual basis.

The interest-based negotiations can also be used to facilitate and provide 'solutions' that meets the underlying needs of various groups in Potshini community. Only through understanding the interests of stakeholders sustainable solutions can be developed that meet their needs. As shown in the analysis, at interest level, Farmers\(^\text{76}\) (F) want to move from subsistence to commercial farming and the Non-Farmers (NF) needs merely improved livelihood, even though they both present a shared position for the right to sustain their lifeline. However, careful analysis shows that there is an overlap in the interests of two groups in the need for domestic water supply being the prime need of the two stakeholder groups. It can be argued that working at position level might be misleading as the needs of the Farmers (F) are most likely not to be addressed because the provision of water to the community would only aim to achieve domestic water supply and not take into account water for productive purposes. On the contrary, the experience in Potshini community shows that that civil society organizations and the government departments view and approach the Potshini community as a farming community with a shared interest to move from subsistence to commercial farming. In this way, they overlook the interests of the Non-Farmers whose interests is to improve their livelihood through non-farm activities. As a result the support directed to the community are biased towards Farmers (F) and excludes the Non-Farmers (NF) from even domestic water supply (see Box 8). It can therefore be argued that when working in heterogeneous communities such as Potshini community the civil society organisations and government departments should carefully asses the needs of various groups and determine the overlaps in interests so as to prevent the exclusion of some of groups.

\(^{76}\) Working at interest level could also help to identify the priorities in what farmers need to achieve at a particular period of time. For example the goals of Externally Supported Farmers (ESF) who wants more land for growing their crops, because currently they feel to have secured access to water. Also, the Non-Externally Supported farmers (NESF) who aim at securing access to water for irrigation because they are currently not supported with water storage infrastructures (see section 4.4.4).
The analysis has also shown that the local municipality and the government departments have different yet complementary interests. It is important to note that, the concerns of the local municipality is the tendency of the government departments to by-pass the municipality in implementing development projects at local level that would otherwise be implemented by the local municipality. Through interest-based negotiations the concerns can be unveiled and the two stakeholder groups can design the mechanisms for developing the mutually beneficial arrangements for service delivery at local levels. For example, by understanding the concerns of the municipal councillors options can be developed to include them in project cycle from the design to project evaluations. Furthermore, focusing on the interest-based negotiation could potentially help in developing the options for integrating the traditional authority and the democratic state government structures. At interest level the main issues underlying their competition for power, e.g. the incompatibility of state and traditional institutional structures, the unclear roles and responsibilities of the traditional leaders and incompatible administrative boundaries, could be properly addressed (Lehman, 2007). Hence, formulating institutional structures with clear roles and responsibilities of the traditional leaders and the municipal councillors could be a step forward in ending the conflicting relationships between the two stakeholder groups.

5.3.2 Thinking beyond the 'water box'

The negotiations over water can also be improved through thinking and developing alternative options that lie beyond the physical use and control over water. From the analysis in chapter 4 it becomes clear that the traditional authority and the democratic government institutions such as the local municipal councillors have conflicting interests. Breaking the deadlock of the patronage can be solved by changing the land tenure systems in the former homelands to private land ownership and educating the rural population to make them able to fully participate in democracy. Through private land ownership the individual households will have the exclusive rights to residential parcels, agriculture parcels and other on farm assets and other members of the community can be excluded from using the land without the consent of those who hold the rights. Hence, by having the private land tenure and the majority of the people educated the traditional authority would no longer have prime control in the former homelands, which allows the people to evaluate the performance of the municipal councillors and make the entire government structure accountable and in this way break the existing patronage systems. On the same line mechanisms for good governance and accountability can be put in place in fighting corruption through regulations which make sure that people do not use politics for personal gains but rather as motivation to serve the nation and citizens who votes them into power.

The existing strong customary arrangement for conflict management in the former homeland forms a prospective mechanism for managing potential water conflicts within the communities if appropriately adopted in water governance structures. For example, this could be achieved by incorporating the traditional leaders in the community water management committees. There is also potential for sharing of the benefits derived from the use of water. For example, because the commercial farmer currently using substantial amount of water for commercial purposes, arrangements could be developed for him to provide the Potshini community with grants that could be used to invest in small-scale projects. These projects could be those which diversify sources of livelihoods (e.g. small-scale businesses) and which reduce potential competition in water use. In this way the
commercial farmer could also collaborate with emerging farmers to provide farm inputs (e.g. seeds, fertilizers, machinery and more transfer of knowledge. On the same line, the commercial farmer could support the community with the soil conservation techniques that reduces the siltation in his dams downstream.

5.3.3 Capitalizing on the existing institutional frameworks

The identified windows of opportunity above can be enhanced and realized through capitalizing and strengthening the potential institutional frameworks. These include the forthcoming Thukela Catchment Management Agency (CMA), the Integrated Development (IDP) forum and the long-term developed research base established in Potshini catchment.

The potentials of the forthcoming Thukela CMA

The National Water Act (1998) of the Republic of South Africa provide for the provision to establish the 19 Catchment Management Agencies (CMA) as the units of water management in the country. One of the CMA to be established is the Thukela Catchment Management Agency under which the Potshini catchment will be one of the sub-catchments. The establishment of Thukela Catchment Management Agency will potentially set a levelled playing field in the negotiations over water as the agency will assume authority in water resources management that are currently carried out by the Department of Water and Forestry Affairs (DWAF). Some of the functions include water resources planning in the catchment, registration of water use, water charge collection and water authorization (NWA, 1998). At this level of water governance it is anticipated that the interests of water users will be represented in a governing board. It is expected that the pro-poor water institutions e.g. representatives of communities such as the Potshini community will also participate in the governing board.

It is argued that through the CMA poor communities would be able to fully participate in public participation. However, this can only be realized by pro-actively reaching out the poor communities, providing them with information and legal literacy in local languages via multiple media, capacity building, ensuring mobility, structuring and enabling effective representation (Schreiner and Van Koppen, 2001). Hence, by doing so a levelled playing field could be created through which the powerful water users such as the commercial farmers, industries and companies and the poor communities could equally participate in the water management decision making process from sub-catchment to catchment level. Nevertheless, the mechanisms should be arranged to oversee that the stronger water users do not capture and use the CMA to pursue their interests at the expense of weaker groups (Waalewijn et al., 2005). Moreover, with appropriate mechanism for conflict management and when carefully facilitated by competent professionals stakeholders could negotiate within the CMA based on the interests rather than on the positions hence increasing the possibility of developing sustainable water sharing arrangements.
The potentials of the IDP forum

The South African system of Integrated Development Planning (IDP) is a process in which municipalities prepare 5-year strategic plans that are reviewed annually in consultation with stakeholders. Primarily, the IDP plans seek to promote integration by balancing social, economic and ecological pillars of sustainability without compromising the institutional capacity required in the implementation, and by coordinating actions across and spheres of government (COGTA, 2009). However, some actors report a lack of active stakeholder engagement in the IDP process (see section 4.6). Moreover, due to the tensions between the ANC and IFP in UKhahlamba local municipality, it is likely that the IDP forum is dominated by party politics, making it very hard to mainstream fair and joint planning.

However, since the IDP forum brings together the municipal council, the traditional leaders, national and provincial sector departments, communities and other stakeholders if used appropriately the forum offers a high potential to dissolve some of the difference in interests between various groups. For example, the analysis has shown that the positions and goals of the local municipality and the government departments are the same but they have different yet complementary interests. Hence, through a well coordinated IDP forum, effective mechanisms can be put forward to enhance the more collaborative approach between the two stakeholder groups. The forum could be used to engage other stakeholders such as the commercial farmers who are currently not participating in the forum. The participation of the commercial farmer in the IDP forum is likely to improve the relationships with other stakeholder groups such as the local municipality, the national government and the Potshini community thereby developing mutual understanding in matters related to land and water in the catchment. Moreover, the active engagement of civil society organizations in the forum is likely to facilitate sharing of information between them and thus avoid the replication of similar projects communities such as the Potshini community. Furthermore, as the IDP forum brings together all stakeholders in the planning process, it potentially forms the most appropriate forum to integrate the water and land reforms projects as neither of the two can be realized without the other. This could break the deadlock of the disconnection between the currently ongoing land and water reforms which forms an obstacle for the people in the former homelands to realize access to and control over water.

The potentials of the developed research base in Potshini catchment

Various interdisciplinary research projects have been carried out and a strong research base has been developed in Potshini catchment. This implies that a vast number of research findings specific to the situation in the Potshini catchment have been obtained which could be used as inputs for sustainable management of the catchment. For example, a base for collection and monitoring of hydrological information has been established through the installed equipment in the catchment. However, the challenge is to bridge the gap between knowledge and practice that would enhance the livelihoods of the Potshini community. A crucial element is to disseminate the information in a language that is understandable to all.

77 For example the Smallholder System innovations (SSI) in Watershed Management research programme.
stakeholders in the catchment, including policy and decision-makers, and to facilitate dialogues that aim at realizing sustainable catchment management.

The available research findings and reliable hydrological data form a potential to improve the negotiations over water as this information could be used to improve the understanding of bio-physical, social, cultural, political and economic characteristics of the catchment; thereby helping stakeholders and decision-makers in developing sustainable water sharing arrangements in the catchment. It is through this research data that we could understand the potential impacts of water abstraction in the upstream part by the Potshini on the water availability for the downstream commercial farmer. For example, the on-going research could provide us with the understanding of the potential impacts of the adoption of the rainwater harvesting techniques on the stream flows downstream the commercial farmer. Besides, the research could provide us with the understanding of the carrying capacity of the communal grazing land and potential impact of the land degradation in the communal grazing land to the siltation in the dams of the commercial farmer downstream. It can therefore be argued that the on-going research and the long-term research base that has been developed form an opportunity towards managing the potential water conflicts in Potshini catchment.

Furthermore, through the on-going social science oriented research an in-depth understanding of various stakeholder groups is being developed. The developed information can be used as an input in mediating various conflicts in the catchment. Through mediation efforts, trust and confidence can be built which will allow stakeholders to understand each other’s the realities. For example, through the mediation process, the people in Potshini community could understand the risks taken by the commercial farmer to operate his business including huge capital investments through acquisition of loans, financial and risks associated with market failures and fluctuations in water availability. At the same time, the commercial farmer could understand the hardship experienced by the Potshini community in securing their livelihoods through the tiny parcels of communal lands and poor access to water for productive purposes. Hence, through the mediation processes both stakeholder groups could be empowered to understand and pursue their own interests while recognizing the responsibility towards each other (Folger et al., 1996).
6 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

On the basis of the findings of this study this chapter presents the conclusions and recommendations for improving the negotiations over water in Potshini catchment. The chapter is structured in four sections; the conclusions are presented in section 6.2 and the recommendations for improving the negotiations over water in Potshini catchment are presented in section 6.3. Further areas for research are proposed in section 6.4 and lastly the reflections on the study are presented in section 6.5.

6.2 Conclusions

This thesis analyzed the negotiations over water in Potshini catchment to unveil the dynamics of struggle for water. In the analysis of the negotiations over water; the capacities, positions, goals, interests, relationships and strategies of stakeholders were analyzed as presented in chapter 4. The dynamics and the underlying causes of struggle for water as well as the windows of opportunity to manage the (potential) water conflicts and improve the negotiations over water are discussed in chapter 5. Therefore, based on the previous sections of the thesis, the following conclusions can be drawn:

Research question 1

Who are the key stakeholders involved in the negotiations over water in Potshini catchment?
What are their capacities, positions, goals, interests, strategies and relationships?

Despite the fact that the study identified five main stakeholder groups, the analysis has shown that negotiations over water in Potshini catchment involves a complex set of groups of stakeholders. The identification and categorization of stakeholders is to a large extent subjected to the criteria and numerous assumptions by the researcher. This is because stakeholders are not static entities, they are dynamic and change their identities through forum shopping depending on the issues at stake (see section 4.2 and Box 8). The negotiations over water in Potshini catchment takes place in an unlevelled playing field, with some of stakeholders (e.g. the commercial farmer) having stronger leverage position than others (e.g. the Potshini community)- see section 4.2 and Box 6. Nevertheless, each stakeholder mobilizes resources, uses normative orders and strategies (see section 4.3 and 4.5) that would ensure they defend what they perceive to be their fair share of the water cake (cf. Waalewijn et al., 2005). Consequently, the negotiations over water in Potshini catchment are dominated by stakeholders’ positions rather than their interests forming high potential for conflicting relationships between them (see section 4.6 and 5.3.1).

More generally, five main stakeholder groups were identified in the study. These includes; the Commercial Farmer (CF), the Potshini Community (PC), the Amangwane Traditional
Authority (ATA), Government Institutions (GD) and Civil Society Organisations (CSO)—see Table 2 in section 4.2. These stakeholder groups have diverse set of interests. The underlying needs of Farmers (F) in Potshini community is to emerge from subsistence to commercial farming. The Commercial Farmer (CF) is mainly interested in increasing productivity. The Civil Society Organisations (CSO) are motivated by the need to improve the livelihood of smallholder farmers such as those in Potshini community. The study found that, the underlying need of the Government Departments (GD) is to redress the inequality created by the past policies of apartheid. However, the main interest of the Traditional Authority (TA) is to maintain the legitimate political authority and power in the former homelands.

Various strategies used by stakeholder groups to defend their water share are noticed. On one hand the Commercial Farmer (CF) is noticed to use the legitimization strategy to legitimize his water use through positional claims using past and new water legislations as well as actions that make him conform to the new legislations (e.g. being a member of the Water User Association). On the other hand the Commercial Farmer (CF) uses collaboration strategy where he collaborates with the Potshini Community (PC) to maintain certain level of good neighbourhood as he get water from the community. The Potshini Community (PC) mainly employs the intimidation strategy by intimidating the commercial farmer to get off the farm so that they can have control over land and water resources. Farmers (F) in Potshini community mainly employs coalition strategy by joining into farmer leaner’s groups of which most of the support of hydraulic infrastructures are channelled through. In this way, they get secured access to water by mobilizing themselves through social networks. Patronage strategy is mainly noticed to be used by the Traditional leaders and the municipal ward councillors. In this strategy, they both maintain their power base and legitimacy by claiming to be the guardians of the people in the former homelands.

The relationships between stakeholder groups ranges from collaboration to conflicting relationships (see section 4.6). The collaboration is mainly between Civil Society Organisations (CSO), the Farmers (F) in Potshini Community and the Commercial Farmer (CF). Conflicts dominates the relationships between the Traditional leaders and the municipal ward councillors; the Potshini Community (PC) and the Commercial Farmer (CF); and Local Municipality (LM) and the Commercial Farmer (CF). Conflicting relationships are also noticed within the Potshini community mainly between the community institutions and the Potshini community (see Box 4) and between the beneficiaries and non-beneficiaries of the DWAF rainwater harvesting project (see Box 8).

**Research question 2**

*What are the underlying causes of struggle for water in Potshini catchment and how are they shaped in time and space?*

The struggles for water in Potshini catchment are politically and bio-physically constructed. The political construction of the struggles are due to institutional layers that have been created, survived, persisted at different times in the South African history with a critical era during apartheid. The inequality has persisted despite the on-going reforms as the reforms are currently challenged by the vested economic power and institutions created by the past policies. The bio-physical constructions of the struggles are mainly due to seasonal
fluctuation in availability of water in the catchment. As a result, the struggles for water are concealed in a fuzzy institutional structures, shaped by the access to and control over land resources, and hinges in the attempt of stakeholders to cope with the fluctuations in availability of water. In addition, the power relations in water use and control between the upstream Potshini community and the downstream commercial farmer shapes the negotiations over water in Potshini catchment (see section 5.2 and Box 6). Furthermore, local, national and global geo-political forces shapes the current struggles for water and they are often used by stakeholders to rationalize their claims and ideologies (see section 5.2).

**Research question 3**

*What are the potential water conflicts in Potshini catchment? How are they manifested? Is there potential to manage these conflicts and improve the negotiations over water?*

There are water conflicts in Potshini catchment even though they are not expressed in an explicit and open claim on water resource use between users. Water conflicts in Potshini catchment are manifested in the different forms of struggle over access to water resources and the notions of inequities in land and water control. On the one hand, water conflicts are articulated through passive struggle by the Potshini community in which dissatisfaction in their access to water is expressed by the difficulties they face in exercising their situational power and thus their water rights (see section 5.2.1 and Box 5). On the other hand water conflicts are expressed through active struggles of the Potshini community by sabotaging the activities of the commercial farmer and through the outspoken resistance of the traditional leaders to the proposed changes in land tenure in the former homelands. Moreover, the ongoing struggle for water forms potential for future water conflicts between various water users in Potshini catchment. For instance, the possibility of up-scaling the rainwater harvesting storage tanks project in the upstream part of the community might reduce the availability of water for use downstream forming the potential for water conflict between the community and the commercial farmer. Furthermore, the on-going reform process in land and water might increase competition over water use as new water users (e.g. the emerging farmers) are likely to claim more land and water resources and thus forming potential for water conflicts in the catchment.

There are several windows of opportunity to manage the potential conflicts and thus improve the negotiations over water. These include facilitating the negotiations between stakeholder groups by focusing on their interest rather than on their positions and thinking of possible solutions that are beyond physical control and/or use of water resources. The existing institutional framework such as the Integrated Development Plan (IDP), the forthcoming Thukela Catchment Management Agency (CMA) as well as the already established research base in Potshini catchment form potential forums through which (potential) water conflicts can be mediated and thus improve the negotiations over water (see section 5.3).
6.3 Recommendations to improve the negotiations over water

Based on the research findings, this study proposes the following as recommendations.

**Within the Potshini catchment**

To improve the negotiations over water within the community, this study proposes the following measures:

- The government institutions and civil society organizations working in Potshini community jointly to design and implement a communication strategy on various development projects to communicate to the whole community, rather only communicating to project beneficiaries.
- The government institutions and civil society organizations conduct a joint evaluation exercise of the current rainwater harvesting storage tanks project and a community need assessment for gathering an in-depth understanding the identities and the needs of various stakeholder groups in the community before up-scaling the project. Hence, the government institutions and the civil society organisations should not approach the communities in the former homelands as homogeneous farming community but rather view them as heterogeneous communities.
- Strengthen the capacity of the community institutions (e.g. the primary and high schools) to ensure delivery of good quality education to the young generations in the former homelands for them to be able to fully participate in the democracy.
- Civil society organisations and local municipality collaborate to strengthen governance structures within the Potshini community in order to enhance cooperation within the community.
- Build on interdependencies and create awareness of each others realities between the commercial farmer and the Potshini community.

**At Basin level**

To improve the negotiations over water at basin level, this study proposes the following measures:

- Find the means to incorporate the pro-poor water institutions e.g. the emerging farmers in Potshini community into a Water User Associations (WUA) in the forthcoming Thukela Catchment Management Agency (CMA) for them to fully participate in water management decision making process from sub-catchment to basin level.
- Strengthen the capacity of the existing institutions e.g. the Integrated Development Planning (IDP) and the forthcoming Thukela CMA to be used as forums to mediate conflicts and facilitate interest-based negotiations and use the two as forums to integrate the water and land reform programmes.
- Civil society organizations design and implement research communication strategy that would ensure the communication of research findings to all stakeholders and
make sure that the information is accessible and understandable to local communities as well as policy and decision-makers.

- Assess the impact of the Inter-basin water transfers and put mitigation measures to ensure that the water transfer do not only cater for economic reasons but also take into account the livelihood of the majority of the rural population.

**At national level**

To improve the negotiations over water at national level, this study proposes the following measures:

- Review the land reform programme and harmonize the conflicting legislations characterized by the mandate overlaps of various institutions in the former homelands.
- Develop an integrated land and water reform strategy that would ensure the two reform processes are connected in their implementation.
- Invest in capacity building to the emerging farmers and facilitate the collaboration with the existing commercial farmers including provisions of financial capital to the emerging farmers on individual bases.
- Strengthen the human resource capacity of the government departments (e.g. the Department of Water and Forestry Affairs) to be able to implement and facilitate the on-going reforms.
- Develop mechanisms that would ensure good governance and accountability in democratic and traditional governance structures.

**6.4 Further research areas**

Because of limited scope this study did not look into detail the following issues and therefore suggest them as possible areas for further research:

- Assessing the impact of adopting rainwater harvesting techniques to the stream flow downstream. This will help determine the adoption level and techniques of rainwater harvesting in the Potshini community that would not compromise the access to water to the downstream commercial farmer.
- Investigating on the impact of soil erosion to the siltation downstream. This will help to determine the sources of erosion to develop possible mitigation measures and compensation mechanism to the soil conservation that could be done by the Potshini community upstream.
- Research on how the customary arrangements of conflict management in the former homelands could be adopted and used in managing natural resources conflicts in local communities. This could provide insights on how to develop robust and resilience local institutions suitable to deal with challenges related to natural resources management in the former homelands.
- Research on innovations that would enhance water and land productivity to contribute towards household income to meet not only food security but also other household's
needs such as education and primary health care. This would help to ensure sustainability in local management of land and water resources.

- Research on the potential of the emerging farmers in the former homelands in forming the pro-poor Water User Associations (WUA) and participate in the forthcoming Thukela Catchment Management Agency.

6.5 Reflection of the research process

The first day of my arrival in Potshini I was welcomed by a landscape separating the Potshini community and the commercial farmer, by a deep ditch clearly depicting what was happening during apartheid and what is apparently still happening after a decade in democracy. From a scientific point of view this excited me even though it was not for the same reasons as before arriving in Potshini. I felt the Potshini community is better-off since the community has access to electricity and relatively improved water points as compared to villages in other African countries such as in Tanzania, Kenya, and Uganda. However, my three months stay in Potshini changed my perception of the first day of my arrival. As I became part of the community, I understood their problems and knew what they had gone through in their daily lives. The structural inequalities in access to resources and the impact of apartheid policies still shape the interactions between various groups in the catchment. Because I spent most of my time during the fieldwork in the Potshini community, I might have been biased in data collection, analysis and discussion. Also the use of extended case study approach implies that the degree of reflexive science is applied in this study. This is because as a researcher I am not a neutral entity and I might have shaped the respondents during the field work. Likewise, I must have taken a certain position in analyzing the data and discussing the results. The in-depth semi-structured interviews were conducted with the help of a translator who translated the interview questions from English to the local language (i.e. Zulu) and vice versa. This might have caused omissions in interpretation and/or some valuable information being left out.

The study combined conflict and stakeholder analysis theories to analyze the negotiations over water. However, during the research it became evident that stakeholder analysis is too linear approach to analyze the dynamics of struggle for water in Potshini catchment. As a result, the actor-linkage matrices and the stakeholder issue interrelationships diagrams were not used. Instead, stakeholder analysis in this study was used as a descriptive approach to identify, categorize and describe the stakeholders. Moreover, due to the history of apartheid in South Africa it is possible that the answers given by respondents in the interviews were coloured based on the identity of the researcher; I have a feeling that it was of beneficial to me being from Tanzanian because the respondents (blacks and whites) regarded me as a relatively neutral person with no influence on their past and present life, making them free to collaborate with me. This forms the strength of this research as I might have been able to get some information that a person from South Africa could not be able to get from the respondents. It was very challenging for me to have been supervised by a person who has been doing similar kind of research in Potshini catchment. I have a feeling that by taking a different research approach has helped me look at issues from a different perspective to authenticate some of the findings in previous studies and expose new issues and views. Although this was a very challenging task, I believe it add on the strength of this research.
Lastly, the research has its own weakness as some of the data could not be cross-checked with relevant authorities and entirely relied on the information provided by other stakeholder groups and/or literature. For example, I was not able to interview the commercial farmer upstream and the chief of Amangwane to verify some of the information provided by the Potshini community and the municipal ward councillor.
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ANNEXES
ANNEX 1: SAMPLE OF THE SEMI-STRUCTURED INTERVIEWS

OPENING OF THE INTERVIEW

Good Morning/Afternoon/Evening

My name is Lukas kwezi. I am a student from UNESCO-IHE institute for water Education, Delft the Netherlands. I am carrying out a research as a part of my studies about the interaction of various groups and access to water in Potshini catchment. Findings from this study will help the relevant organisations and policy makers in improving water management in the catchment. I am asking for your time to discuss with you some of the issues and also your permission to note-down your answers. Your answers are highly appreciated and they will be kept confidential (i.e. your answers will be kept anonymous but some of the things may be used in the report without attributing them to you). Please let me know if you want more details about this research or have any other issue which I might have not addressed.

INTERVIEW PART

Section I: General information (Interviewees in Potshini community)

a. Interviewee code number
b. Location
c. Gender
d. Tribe
e. Age
f. Education level
g. Occupation
h. The group category
i. Relationship with other authorities/if fall in other categories (Social network, traditional network, political network, NGO and civil society network)
j. Number of people in the household
k. Who is he/she in the family?
l. Position in the community
m. Composition of the households
n. Other observations (i.e. socio-economic power: wealth, money, land, physical capital etc.)

SECTION II: About the Interviewee and the Potshini community

1. Where were you born? And parents? Husband/ Wife?
2. What do you do for living?
3. Can you tell me about how you access the markets, financial capital?
4. Do you spend much of your time in this community?
5. Can you please, tell a short history of this place/community? Critical events?
6. How do you identify yourself?
7. If you were given a chance to categorise this community into different groups, how would you do so? (i.e. rich/poor, farmers, herders, business etc)
SECTION III: About water and water uses (Potshini community)

8. What do you think are the main challenges/problems in this community?
9. Which are the problems that you and your family have experienced with respect to water?
10. How do you cope or try to solve these problems? Both water and non water problems?
11. Why don’t you go organise yourself and abstract water from the streams/build a small reservoir?
12. To whom do you think water belongs to? (i.e. to nobody, everybody, God etc) Why?
13. Where do you usually get water from? (i.e. Sources: groundwater, rainfall, streams etc.) For boreholes (who put it in place?)
14. During the dry period, where do you get water from?
15. How do you and your family use water in this community? (i.e. Agriculture, home gardens, domestic, cattle etc.)
16. What do you think about access to water in this community?
17. Do you own any hydraulic infrastructure? How did you get it in place? Why?

SECTION III: Stakeholder Group (For all stakeholder groups)

18. What do you think of government policies on water and land?
19. As a………..what do you think of the access and control over to water/land
20. Do you think you have the right to access water/land? From which grounds? For which uses?
21. Are you worried about loosing your water/Land rights?

GOALS

22. What do you want to achieve in 10 years? What about access and control over water?

STRATEGIES

23. What do you do to achieve your goal? How will you go about?
24. What do you do achieve secure access to and control over water?
25. Which strategies do you use to realise the access to and control over water? (i.e. wise use of water, storage, secure water rights, works with others etc.)
26. Why not………………… (E.g. Abstract water from streams, build a reservoir, lobby the government etc.)?

CAPACITIES

27. As a………..What is your strength in securing access to and control over water? (i.e. well organised, support from NGOs, government, legitimacy in policies, law)
28. Where do you get support? (i.e. loans, markets, funding, grants)
29. Are you a member of any network (Social network), which is that?

POSITIONS

30. Is access to and control over water important to you?
31. What do you want with regard to access to and control over water?
32. As…………..What do you tell other stakeholders about your access to and control over water?
33. Why do you think you have the right to water?
INTERESTS

34. Why is access to water so important to you?
35. If you would have more water what would you do with it?

RELATIONSHIPS

36. How do you work with other stakeholders to realize you have the access to and control over water? Which stakeholders you collaborate with
37. How is your relationship with...........? (i.e. commercial farmer, smallholder farmers, government, chiefs, NGOs)-Which one are good and bad relationships? Why?
38. How do you compare your relationships in the past and now?
39. Is there room for improving your relationship with ...............are you willing? What do you want?

SECTION IV: CONFLICT ANALYSIS

40. From working in other areas, I have seen that conflicts can be a very common problem between people living in the same area.
   ▪ Do you think there are conflicts in this community?
   ▪ Could you perhaps give some examples of such conflicts in this area? In the past
   ▪ What are the causes of these conflicts?
   ▪ What about conflict in access, use or distribution of water?
   ▪ How do you perceive these conflicts?
   ▪ What do you think will be the status of these conflicts in the future?
   ▪ What do you think would be needed to resolve these conflicts?
   ▪ If you are in conflict with the neighbour/or the other group, what do you usually do?
   ▪ What are the opportunities within the community to resolve these conflicts? Who is mediating these conflicts?

CLOSING OF THE INTERVIEW

Thank you very much for telling me all this and for reserving your time for this interview. This information is very useful. Sometimes later I will organise a meeting with you to share the findings of this research. Do you wish to add any additional information or do you have any queries? If not I am sure that there are other people in this area who see things differently from how you have just described. Could you, please give us the name of an interested person who would be likely to have a different or similar view point?
ANNEX 2: RESEARCH PLAN AND LOGISTICS

Research plan

The research was conducted in six (6) months which is equivalent to 24 weeks. As shown in Table 1, the proportions of time allocated for field and desk work were nearly the same. However, 45% of the time of the research was specifically allocated for field work in Potshini catchment. This is because studying the everyday interactions of the Potshini community requires a researcher to live and participate in daily activities with the community members. The overall plan of activities and the corresponding deliverables is shown in Table 2.

Table 1: The percentage of time allocated to research activity

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Research activity</th>
<th>Weeks</th>
<th>% Time allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Writing of research proposal</td>
<td>6</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>Field work for data collection</td>
<td>10</td>
<td>45%</td>
</tr>
<tr>
<td>3</td>
<td>Data analysis and reporting</td>
<td>8</td>
<td>30%</td>
</tr>
</tbody>
</table>

Table 2: The overall research plan of the main activities and the deliverables

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Activity</th>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>September-October</td>
<td>Writing of the research proposal</td>
<td>Research proposal document</td>
</tr>
<tr>
<td>2009</td>
<td>October-December</td>
<td>Field work (data collection)</td>
<td>Detailed interview results</td>
</tr>
<tr>
<td>2010</td>
<td>January-February</td>
<td>Data processing and analysis</td>
<td>Report of data analysis</td>
</tr>
<tr>
<td>2010</td>
<td>February-March</td>
<td>Data analysis and reporting</td>
<td>Report of data analysis and discussion</td>
</tr>
<tr>
<td>2010</td>
<td>March-April</td>
<td>Reporting</td>
<td>Master of science thesis draft</td>
</tr>
<tr>
<td>2010</td>
<td>April</td>
<td>Thesis compilation and defence</td>
<td>Master of science thesis final document</td>
</tr>
</tbody>
</table>

Research logistics

Supervisory organisation: UNESCO-IHE institute for water education-Deft, the Netherlands

Location of the field work: Potshini catchment in Thukela river basin-South Africa

Host organisation: University of Kwazulu Natal through the SSI project-South Africa

Local co-supervisor: Prof. Graham Jewitt of the School of Bioresources Engineering and Environmental Hydrology at University of KwaZulu Natal

Financial Support: The field work was funded by DGIS and UNESCO-IHE