School of Management, Information Technology and Governance Westville Campus

Rural communities and water governance: Understanding participatory processes for catchment management in the upper Umzimvubu catchment

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Abstract

Catchment areas play an essential role in water provisioning since catchment areas are the river's source. The management of the catchments is fundamental for good water quality and sustained availability. In the water governance sector, the Integrated Water Resources Management (IWRM) approach best expresses catchment management ideals. The IWRM was adopted in 1992 in Ireland, Dublin, during the "International Conference on Water and the Environment (ICWE)". It encompasses Integrated River Basin Management as its sub-set, which entails public participation in catchment areas. There is a history of inequality among South African citizens due to colonialism, the apartheid regime, and subsequent neglect of rural areas, all of which have affected the water sector.

Nonetheless, many programs were reformed after the first democratic elections in 1994 to correct apartheid-era disparities, particularly the necessity for public engagement. The new National Water Act (Act 36 of 1998) and the Water Services Act (Act 108 of 1997) were such legislations, and they were promulgated to replace apartheid legislation. In addition, the "National Water Resource Strategy (NWRS)" formed in 2004 provided a structure to ensure that water resources are used, conserved, developed, safeguarded, controlled, and managed in an effective, sustainable, and equitable manner (RSA DWS 2013:13).

Despite these developments, water resources remain threatened by various factors in South Africa, and these require exploring. This study took place in the rural areas of the upper of Umzimvubu catchment (Tertiary catchment T31) at KwaSibi Administrative Area (A/A) under Alfred Nzo District Municipality (ANDM) as its Water Service Authority (WSA). It is within the boundary of Matatiele Local Municipality (MLM) in the province of the Eastern Cape, South Africa. The upper Umzimvubu catchment is under threat and degradation. Noteworthy is that the water quality degradation and quantity shortages are major water issues that ANDM experiences. The water shortage is primarily due to poor catchment management practices, a combination of different factors, including natural, socioeconomic, institutional, and political factors. The natural factors relate to the alien plant invasion in the catchment areas, which causes poor water quality and quantity and soil erosion that increases sediment load. Beyond the mentioned factors, governance plays an important part in managing catchments and the sustenance of good water quality and availability. Good governance, specifically, emphasises new spaces, new actors and new networks. Therefore, this study focused on understanding participatory water governance strategies and processes in upper Umzimvubu catchment (Tertiary catchment T31) management for water conservation within ANDM. This study used two research paradigms, namely the constructivist and the interpretivist, and the research design used was the case study. The primary data of this research study was obtained using four datasets, namely the participants, official documents and sources (including websites), and personal observations to triangulate and complement each other in data analysis.

The findings show that there are existing participatory water governance strategies in South Africa and local strategies for water resources management. These include statutory and non-statutory strategies to decentralise water resources management. They are required by the post-apartheid South Africa's National Water Law, which was passed in 1998 to foster

participatory governance. The findings also reveal that the provisions that are made by the National Water Act (Act 36 of 1998) are not yet fully achieved at KwaSibi A/A, since there is no existing and effective statutory body in this area. The findings also showed that current South African legislation has decentralised power and separated mandates from national to local government and contain the participatory processes for cooperative governance. However, the findings show that there are also challenges encountered by local government and community people when it comes to implementing laws and policies, including lack of funding, community protests against local government, and illegal water connections that degrade water resources. The findings also revealed that the community still lacks intense community participation in this study area; they feel neglected in water governance and their traditional water governance practices are not taken into consideration. The findings further revealed that the local people do understand catchment management and degradation. However, they feel less involvement by local government in water governance related issues. In addition, they feel like their indigenous administrative knowledge is not considered in catchment management. Lastly, the findings show that intergovernmental processes are informed by Intergovernmental Relations (IGR) framework, and there is also collaboration in different administrative levels and different government departments. However, this collaboration is not constant, as there are challenges encountered as different government departments have competing mandates. In this regard, good water governance in rural communities remains a concern. Therefore, recommendations include the need to finalise the establishment of the CMA in all nine existing WMAs. A shift in thinking is needed on the part of the government to improve public participation, especially in rural communities. The study also recommends strong consideration of local people to own the public participation process. The community should feel extensively involved in developing strategies for water resources management. In creating rules and procedures, indigenous practices should be considered. Further, rather than a blanket approach, implementation of the IWRM approach should be determined by the local context.

Key Words: *Catchment management; Participatory processes, Public participation; Integrated Water Resources Management; Water Governance; Upper Umzimvubu Catchment; Catchment Management Area; Rural Communities*

Declaration

I, SIYASANGA MBELE with student no. 208520129, declare that:

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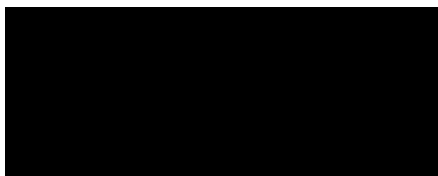
10 February 2022

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List of acronyms

ANDM   Alfred Nzo District Municipality

CMA   Catchment Management Area

COGTA   Department of Cooperative Governance and Traditional Affairs

DWA   Department of Water Affairs

DWAF   Department of Water Affairs and Forestry

DRDLR   Department of Rural Development and Land Reform

DWS   Department of Water and Sanitation

EMP   Environmental Management Programme

ICWE   International Conference on Water and the Environment

ICM   Integrated Catchment Management

IGR   Intergovernmental Relations

ISP   Internal Strategic Perspective

IWMA   Inkomati Water Management Area

IWRM   Integrated Water Resources Management

LDCs   Least Developed Countries

MEC   Member of the Executive Council

MDGs   Millennium Development Goals

MLM   Matatiele Local Municipality

NWRS1   National Water Resource Strategy (first edition, 2004)

NWRS2   National Water Resource Strategy (second edition 2013)

NWA   National Water Act

PEC   Professional Executive Committee

PROWAF   Provincial Water Forum

SADC   Southern African Development Community

SDGs   Sustainable Development Goals

SWPN   Strategic Water Partnership Network

WMA   Water Management Area

WRM   Water Resources Management

WSA   Water Service Authority

WSLG   Water Sector Leadership Group

WUA　　　　Water Users' Association

RSA　　　　Republic of South Africa

SSA　　　　Sub-Saharan Africa

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Chapter One

Introduction and overview of the study

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1.1 Introduction

A catchment is an expansive area where surface water from the rain collects or where melting ice snow converges to a single lower point. Hills and mountains usually bound it, and the exit of the catchment joins another water body such as a reservoir or river. According to Chikozho (2008:33), river characteristics such as physical, biological, chemical, etc., are shown by the activities in that catchment. These are both anthropogenic and natural activities. Given this explanation of catchment, in the twenty-first century, catchment management approaches started to be widely used to manage the catchment areas to achieve effective freshwater resources management. Catchment management focuses on addressing the natural functioning of catchment areas effectively by managing the hydrological cycle in all aspects. It is functioning within the water governance sector can be linked to the introduction of the Integrated Water Resources Management (IWRM) global approach. This is a universal approach or framework that was introduced by the global community for balanced and sustainable management of water resources. This involves economic, social, political, and environmental interests. In this sense, IWRM consists of Integrated River Basin Management as its sub-set designed to involve the IWRM at the catchment scale level, which involves the participation of stakeholders in catchment management. (Kunene River Awareness Kit n.d.) states that "this approach was embraced in Dublin, Ireland at a meeting from 26 to31 January 1992 during the International Conference on Water and the Environment (ICWE)".

Coming to the regional level, Mokiwa (2015:1) states that most Sub-Saharan countries have set out comprehensive Water Resources Management (WRM) reforms in the past two decades, and much emphasis has been placed on institutions. Therefore, river basin management has been top on the priorities of Southern Africa, which established the Southern African Development Community (SADC) in 1980. SADC is an international organisation that has 15 states, including South Africa. It consists of water division that focuses on the Integrated River Basin Management, transboundary water management issues and challenges. The need to guarantee agricultural and industrial development as well as national water security led to most of these agreements.

Therefore, when approaching IWRM in South Africa, it is important to consider the regional level (Claassen 2016:327). However, in South Africa, the history of catchment management can be associated with establishing Water Management Areas (WMAs) that go along with Catchment Management Agencies (CMAs), which occurred during the 1990s. The inception of CMAs formed part of redressing the political laws of the past that had inequalities. CMAs can be regarded as river basin organisations in all nine of South Africa's provinces prepared for the catchment management at the local level. CMAs strongly represent transformation and social equity (Meissner *et al.* 2019:16). Their establishment occurred when South Africa was embarking on reform processes of water legislation in the late 1990s. This includes the

promulgation of the National Water Act (Act 36 of 1998) in 1998 (Meissner *et al.* 2019:16). It is further indicated that this establishment was done based on open and participatory processes after the establishment of the White Paper on the National Water Policy of 1997 (Meissner *et al.* 2019:16).

Against this background, the catchment management falls under the umbrella of water governance, through the introduction of water laws. The State laws were established in 1652 from European ideas, gradually replacing the customary principles of water management (Funke *et al.* 2008:315). Therefore, the history and the structure of South African water governance can be traced back to, and be associated with, the Dutch, British colonial period, and the apartheid era. In 1652 Jan Van Riebeeck and the Dutch East India Company arrived in the Cape for trading purposes. The company also took over the territory due to the inability of the Khoikhoi to provide enough supplies. The South African formal water law was set up for the first time. The efficient execution of the company's ventures and maintenance of the Cape settlement led to strict control over access to land and water as it superseded individual water rights (Funke *et al.* 2008:315). Given this, Funke *et al.* (2008:315) outline that there are two periods of water control that existed under Dutch rule. The first period was between 1652 and the 1750s, which is when the Cape Dutch government water use was controlled by a series of orders called *placcaets*. The second period was during the second half of the 18th century when the government kept on with exercising control over water by allowing rights for shared streams. In the second half of the 18th century, the government continued exercising control over water by granting entitlements for water use from shared streams and by regulating the resolution of disputes. Water law in the Cape was based on the Roman-Dutch law, which specified that water was common to all. However, the government had the right to control the way in which water was utilised. Importantly, Funke *et al.* (2008:315) state that, "The introduction of Roman-Dutch law, despite its underlying principle that the Cape's water resources belonged to all who inhabited the area, resulted in a situation where those in possession of land and economic and political power had far more rights and greater access to water resources than those who were poor or landless."

Funke *et al.* (2008:315) state that after the Roman Dutch law, the British colonial rule succeeded and took over in 1806 by introducing several new laws. These rules included the formalisation of the riparian principle, which was based on the idea that the landowners along the rivers have common rights in those rivers (Funke *et al.* 2008:315). Notably, this gave more privilege to those who owned land along rivers than those without land along rivers. It is important to state that the Natives Land Act (Act 27 of 1913) allowed unequal access to land and water because it formalised the Native Reserve system in the Union of South Africa. It therefore allocated only 13% of land to Black people (Funke *et al.* 2008:317). Moreover, a strong focus was placed on agriculture and irrigation. Funke *et al.* (2008:317) submit that this led to the promulgation of the Union Irrigation and Conservation of Waters Act in 1912. They further state that missionaries introduced Black people to extensive agriculture and irrigation under the British colonial rule. Of great importance, these practices contributed to the destruction of rich culture and indigenous knowledge that would never be recovered (Funke *et al.* 2008:317). Furthermore, in 1886 gold was discovered and this led to the implementation

of legislation that allowed water rights to mining operations. Although the government successfully tried to supply water to financially lucrative and mineral-rich areas in South Africa, Funke *et al.* (2008:317) argue that "vast numbers of rural South Africans were neglected".

Having said this, the National Party was voted into power by the white minority in 1948. After this, many laws were introduced that included the Group Areas Act (Act 41 of 1950) as well as Bantu Education Act (Act 47 of 1953). Funke *et al.* (2008:315) state that, "These resulted in increasingly deteriorating living conditions for the majority of the Black population, especially with the creation of the so-called homelands that would house millions of disenfranchised people." Therefore, in South Africa at the time of apartheid the structure of the government and political power were structured in a top down manner. In addition, government policies tended to advance the needs of a few and water policies were no exception. Under this political power of apartheid, water was a securitised resource from national to local level. Earle & Phemo (2005:5) argue that during the apartheid regime water resources were not focusing on the water provisioning improvement to the South African citizens especially in rural communities, but they were established to support the wealthy of the state. Earle & Phemo (2005:5) further ague that water was used as an economic development tool in the mining and agricultural sectors and the legislations of the pre-democracy era were in line with economic development policies of the time. The Water Act of 1956 divided water resources into two categories, namely public water and private water. The public water was regarded as the water that flows from known sources and private water was regarded as natural falls or drains, but not for the common use.

Nonetheless, beyond democratic elections that were held in April 1994, a lot had happed behind the scenes to ensure change for South African citizens (Earle & Phemo 2005:5). The issue of water was placed close to the top of the political agenda. The water law principles were introduced in 1996, and the Department of Water Affairs and Forestry (DWAF) initiated an intensive public participation process. In 1997, the National Water Act (Act 36 of 1998) and the Water Services Act (Act 108 of 1997) were setup and adopted. The related legislations as well as the National Water Act (Act 36 of 1998) replaced the Water Act (Act 54 of 1956). Donkor (2007:8) states that after 1994, an era that introduced a non-racial government, a strong political will was exhibited to implement sound water governance. This brought water sector reforms through reforms in institutions and water policies. In this regard, several programmes were introduced. It is stated that:

> *The National Water and Sanitation Program which is an international partnership*
> *focused at improving accessibility to affordable and safe water supply and sanitation*
> *for the poor people was introduced, National Water Policy of 1997 (DWAF 1997)*
> *which redefined ownership and allocation of water and declares that all water*
> *irrespective of where it occurs in the hydrological cycle is public water, and that the*
> *national government will act as a public trustee, Republic of South Africa*
> *Constitution (Act 108 0f 1996) that establishes a human right dimension for access*
> *to adequate and sustainable water supply and services and enshrine the Bill of Right*
> *and Water Service Policy (White Paper) 1994 which addresses the backlogs in the*

country's water service and the institutions and mechanisms needed to remedy the backlogs was also introduced. (Donkor 2007:8.)

It should be indicated that International initiatives such as the Millennium Development Goals (MDGs) of 2000, the United Nations International Decade for Action, and "Water for Life" 2005-2015 have also set targets on the water sector. Given this, MDG 7 deals with environmental sustainability, and it includes water in its targets, with the intention to reduce the high population of people who live without access to improved drinking water by 2015. In the same sense, Santos *et al.* (2018:6) state that under the 2030 Agenda for Sustainable Development 2015-2030 of Sustainable Development Goals (SDGs), water remains a target and water and sanitation constitute a standalone goal (number 6) that comprise extensive targets focusing on other aspects of water such as wastewater, water management, water governance and ecosystem resources. Although it is stated that the global MDG water target was achieved by 2010, but the only regions that failed to meet the MDG targets are Sub-Saharan Africa and Oceania, even five years ahead the target deadline was not met by these regions (Santos *et al.* 2018:6).

As previously indicated, the history of catchment management can be linked to the WMAs establishment that goes along with CMAs in South Africa which occurred during the 1990s. In addition, policy makers and scholars argue that a centralised government or a top down political power is ineffective because it disempowers people and ignores the local realities. This is also experienced in the water sector. Claassen (2015:328) argues that the consequent National Water Act (Act 36 of 1998) stresses that water management should be undertaken from national level down to catchment levels and it made a specific allocation for established mechanisms. Claassen (2015:328) notes that "these mechanisms also placed a premium on participative management, thus supporting the Dublin Principles of social and economic benefit, community participation, a policy framework and the role of communities and women".

Umzimvubu catchment falls under Umzimvubu-Tsitsikama WMA. This catchment is currently under threat. Water shortage is one of major issues within Alfred Nzo District. The water shortage is largely due to poor catchment management practices that are a combination of different factors i.e. the natural, socioeconomic, institutional, and political factors. The natural factors relate to the alien plant invasion in the catchment areas which cause poor water quality and quantity and soil erosion that increase sediment loads. The socioeconomic factor relates to low levels of stakeholder participation while institutional and political factors, in combination, relate to funding and policy implementation processes. Poor catchment management is the greatest contributor to water shortage due to the widespread invasion of alien plants in the Umzimvubu catchment. The large part is within the Matatiele Local Municipality boundary within Alfred Nzo District Municipality (ANDM). It was thus helpful to explore, through research, the possible ways that the situation could be turned around within the context of decentralisation, local government and public administration.

1.2 Background of the study

First, it is important to briefly outline the historical development of this study area as it is regarded to have a high percentage of threatened aquatic and terrestrial species globally. This Upper Umzimvubu catchment area was roamed by the nomadic people in the early 1800's, and it was also in the conflict scene for the fight over grazing land and possession of livestock between Europeans and Africans (Umzimvubu Mbashe ISP Area Internal Strategic Perspective 2005:4). The inland part of this area is still dominated by subsistence agriculture and livestock farming. "Several large towns have been established in the water management area to serve the needs of local people and of regional economic activities" (Umzimvubu Mbashe ISP Area Internal Strategic Perspective 2005:4). Industrial developments led to the establishment of many industries, and WMA needed to distribute water to industries and communities such as Kokstad, Umtata, Queenstown and Bisho.

The Umzimvubu key area covers a surface area of 20 060 km^2 and it falls from an altitude of about 2 900m on the Drakensberg escarpment to sea level over approximately 200 km (Umzimvubu-Keiskamma Water Management Area, Umzimvubu Mbashe ISP Area Internal Strategic Perspective 2005:43). Given this, the escarpment was formed by geological processes. It is stated that:

> *The escarpment of this area was formed as a result of the uplift of the interior of Southern Africa which took place over a prolonged period in relatively recent geological time, this process has caused the rivers to be deeply incised and to have well-developed meanders.* (Umzimvubu-Keiskamma Water Management Area, Umzimvubu Mbashe ISP Area Internal Strategic Perspective 2005:43.)

Given this, the Umzimvubu catchment river basin is in the northern boundary of the Eastern Cape Province. It originates from the rugged Maluti-Drakensberg watershed of Lesotho escarpment and flows across deep gorges and coastal plains over 200km from its source down to its Port St. Johns estuary in the Indian Ocean (Umzimvubu Catchment Overview 2011:4). In addition, Umzimvubu is characterised by four tributaries, namely Tina, Mzintlava, Tsitsa and Kinira rivers, all which have their headwaters in the Drakensberg Mountains along the border with Lesotho. "*Average annual rainfall of Matatiele ranges from below 550 mm to more than 1 000 mm per year and a typical summer rainfall pattern commences in October and continues through to April*" (Matatiele Local Municipality IDP 2017-2022:249). Umzimvubu WMA is characterised by the highest mean annual rainfall in the county, and the northern boundary of Umzimvubu catchment forms the northern portion of WMA12 and it forms about 15% of the county's total river flow, 40% of which is from the Umzimvubu system (Umzimvubu Catchment Overview 2011:22). However, this river is regarded as the largest but also the most underdeveloped in the country.

Against this background, the research study on this catchment took place in the northern boundary, which is in the upper parts of Umzimvubu catchment, specifically on the Tertiary Catchment T31 in the Eastern Cape as shown in Figure 1.2 below. The adjacent part of this river basin is characterised by several predominantly scattered rural settlements. This study

area is in a traditional tribal settlement under KwaSibi Administrative Area (A/A), which forms part of former Transkei homelands.
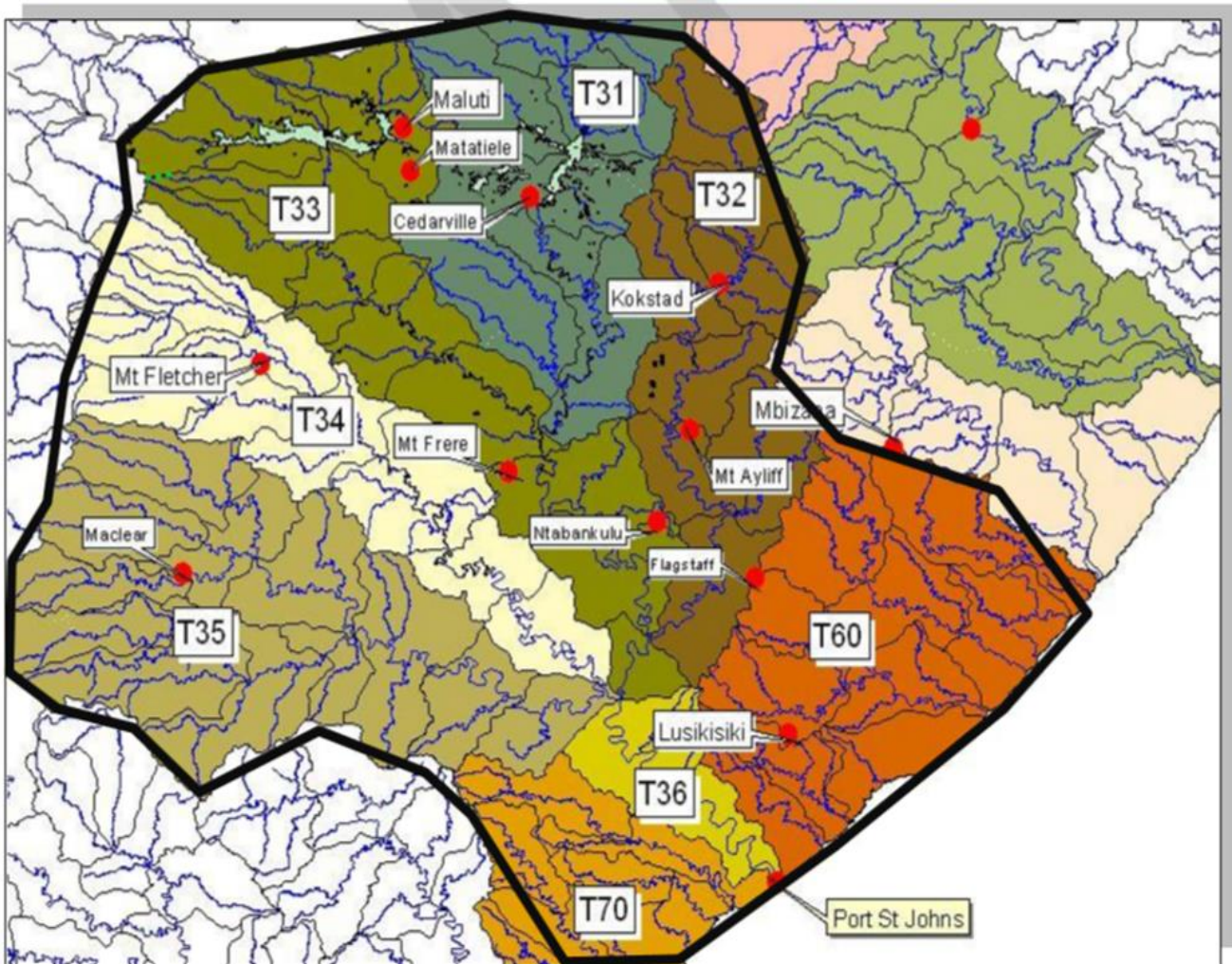
Figure 1.2: *Umzimvubu Tertiary catchments*   **Source:** *Umzimvubu Catchment Overview (2011)*

Furthermore, after the apartheid era in South Africa, organisational setups, legislations policies, water management related policies and legal frameworks have been reviewed and redesigned. The CMAs have been implemented to achieve decentralised management of water resources. The *National Water Act (Act 36 of 1998)* (NWA) (RSA 1998) states that, "*A catchment management agency contemplated in Chapter 7 must, by notice in the Gazette, establish a catchment management strategy for the protection, use, development, conservation, management and control of water resources within its water management area.*" Umzimvubu Catchment Area falls under the Umzimvubu-Keiskamma WMA12, which is now called Umzimvubu-Tsitsikama Water Management Area. The Umzimvubu-Keiskamma WMA has been divided into two Internal Strategic Perspective (ISP) areas, namely Amatole-Kei ISP area and the Umzimvubu-Mbashe ISP area. The ISP contains the strategies and management actions that focus on water resources management. Therefore, Umzimvubu-Mbashe ISP area forms a major part of the Umzimvubu-Keiskamma (WMA 12). The area is bounded in the west by the Kei River catchment, in the east by the Mvoti-Mzimkulu WMA, in the North West by the

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Upper Orange WMA and in the north by Lesotho. Although the ISP area shares an international boundary with Lesotho, there are no shared watercourses between them.

1.3 Brief statement of the problem

The northern part of Matatiele area is bounded by the rugged Maluti-Drakensberg watershed of the Lesotho escarpment where Umzimvubu river basin is situated. This study area is characterised by predominantly rural dwellings with many dispersed villages. Nevertheless, most wards in Matatiele Local Municipality are experiencing water shortages. Inherently, the villages that lie close to the Umzimvubu headwaters also experience water shortages. Further to this, presently Matatiele Local Municipality experiences great backlog regarding water provisioning as well as sanitation, with the water backlog sitting at 51% (Matatiele Local Municipality IDP 2017).

It is worth noting that, at present, Umzimvubu catchment is under threat from fires, over-grazing, alien plant infestations, unsustainable harvesting and plantation development among other problems which result in biodiversity loss, and groundcover and soil erosion (Alfred Nzo District Municipality EMP 2010:14). In this sense, the degradation of water resources is a serious issue in this District. Most wards in Matatiele Local Municipality are experiencing water shortages. As a result, in certain villages of Matatiele people still must travel long distances to draw water from streams (Matatiele Local Municipality IDP 2017-2022:30). It should be noted that people must walk many kilometres to access water, and streams have dried up in certain areas (Matatiele Local Municipality IDP 2017-2022:30). In addition, the Alfred Nzo District Municipality EMP-Implementation-Manual (n.d.) outlines that streams and rivers are polluted; the wetlands are drying up and the dams are getting silted, all because not enough is done to maintain the source of this precious resource. Well managed catchments are more resilient and effective than those which are under threat from development and land use transformation pressures (Alfred Nzo District Municipality EMP 2010:31).

Given the above situation, the major threat to upper Umzimvubu catchment is the invasion of alien plants such as wattle, which takes up a lot of water. This also occurs on riparian zones. The extensive land that is under wattle is covered by Matatiele Local Municipality boundary. Furthermore, human activities such as overgrazing and frequent burning contribute to compromising the catchment. Above all, poor landscape management, which includes poor water governance, has a significant impact.

Therefore, it was significant that the research study be undertaken to understand rural communities in water governance by evaluating the participatory processes on water governance for catchment management. By understanding the water governance strategies, including the participatory processes and intergovernmental processes in place for local water governance. The study also sought to understand community-based catchment management for improved water availability and water conservation for the future. It must be indicated that the main thinking behind this research was that the management of catchments in a participatory approach should improve water resources quality and reduce water shortages in rural

communities, because the catchment will be managed by both local people and the government.

In addition, Santos *et al.* (2018:1) state that for seven years in a line, the Global Risk Report points out that the water crises remain in top five global risks according to impact on society. Santos *et al.* (2018) also argue that the water crisis will remain the issue of great and highest concern for the next decade worldwide, and it remains ahead in various extreme weather conditions and events, climate change, social instability, and food crises. "Across the globe, nearly one in ten people is without access to an improved drinking water source" (Santos *et al.* 2018:1). The Least Developed Countries (LDCs), such as those in sub-Saharan Africa (SSA), are said to be the severely affected by water stress or scarcity, having too much of the population without access to clean drinking water compared to other regions across the globe. Therefore, since ANDM is part of South Africa, the southernmost piece of the continent, it is part of sub-Saharan Africa, the region that has been identified to have the largest number of water-stressed countries, this study intended to contribute to the improvement of community participation on water governance as well as decision making. This would then result in the change of the rural livelihoods of KwaSibi area in terms of water security and sustainability for the future.

1.4 General aim of the study

The aim of this study was to understand the participatory water governance strategies and processes in upper Umzimvubu catchment (Tertiary catchment T31). The researcher investigated the participatory processes in the upper Umzimvubu Catchment management for water conservation within ANDM. Recommendations were made to enhance the rural water governance in a participatory manner.

1.5 Research questions

1. What are the water governance strategies designed for catchment management within the local government space?

2. What are the government participatory processes for community involvement?

3. How have participatory processes been interpreted in the laws and policies applied in local government?

4. What is the understanding of local people about catchment degradation and management?

5. How extensive is community participation in the decision-making and implementation processes of catchment management and how can stakeholder participation be enhanced for improved catchment management in Umzimvubu?

6. What intergovernmental processes contribute to catchment management practices?

1.6 Research objectives

1. To explain the water governance strategies that are designed for catchment management within the local government space;

2. To explore local government participatory processes for community involvement;

3. To understand how participatory processes have been interpreted in the laws and policies applied in local government;

4. To explore the understanding of local people about catchment degradation and management;

5. To understand how extensive community participation is in the decision-making and implementation processes of catchment management and to assess how stakeholder participation can be enhanced for improved catchment management in Umzimvubu, and

6. To understand existing intergovernmental processes and their contribution to catchment management practices.

1.7 Preliminary literature review

Degradation of catchment areas is one of the serious challenges that South Africa is facing. As mentioned above, a catchment area is an extent of area normally on mountainous areas where surface water from the rain collects or where melting ice snow converges to a single lower point. According to the Alfred Nzo District Municipality EMP (2010:12), soil and water are key issues within the Alfred Nzo District Municipality. The Alfred Nzo District Municipality EMP (2010:12) also states that poor catchment management and bad planning are the main issues in water quality and quantity shortages, which results in damage of 'water catchment function' as it causes poor water system function and reduces recharge of water resources. With this in mind, the deterioration of catchment areas is caused by poor management of these water resource areas amongst other things. Although contributing factors include natural and socio-economic issues, institutional and political factors play a critical role in the management of catchment areas, which involves water governance strategies that are applied or not applied in a participatory manner. The Upper Umzimvubu catchment is under threat of degradation due to poor management of this catchment.

The general objective of this study was to understand the participatory water governance strategies and processes in Upper Umzimvubu catchment (Tertiary catchment T31). The focus was to investigate the participatory processes at local government level within the Upper Umzimvubu catchment. This study dwelt on the water governance strategies prepared for catchment management at local government level, available laws and policies at local government and the way in which they are implemented, community involvement in water related issues and their understanding of catchment degradation and management as well as intergovernmental processes that are in place for catchment management practices.

The degradation of the upper Umzimvubu Catchment is evident in the water shortages in the areas that are within this watershed, the KwaSibi Area, as it lies adjacent to Upper Umzimvubu catchment (Tertiary catchment T31). The Umzimvubu Catchment Overview (2011:8) stresses that, "Umzimvubu river is the largest underdeveloped river in South Africa with the upper sections of the catchment experience large scale degradation and increasing alien plant infestations." It is also stated that through catchment management there is great potential to create sufficient access to water during water scarcity periods in in this area, with the aim to also reduce vulnerability to rural households who rely on this water resource (Umzimvubu Catchment Overview 2011:8). Interestingly, there are interventions made to restore the

catchment, including discussions with the stakeholders that include government departments, the private sector and Non-Governmental Organisations (Umzimvubu Catchment Overview 2011:28). Presently, the catchment area is still under threat of degradation and there is still little community participation by local government. After the democratic elections of 1994, the South African Government introduced a new National Water Act (Act 36 of 1998). The implementation of the National Water Resource Strategy was mandated by the National Water Act (Act 36 of 1998). The Department of Water and Sanitation talks about introduction of WMAs and CMAs for decentralisation of catchment management down to catchment scale on National Water Resource Strategy. However, this area is still facing the challenge of catchment degradation with no existing CMA and with little public participation in water related issues, particularly catchment management. This study recommends that there should be establishment of a CMA in this area by the Department of Water and Sanitation. The topic of this study was selected because of the Upper Umzimvubu catchment degradation and the water quality and quantity shortages within the Alfred Nzo District Municipality, particularly in the KwaSibi Administrative Area, which lies adjacent to the source of Upper Umzimvubu Catchment (Tertiary catchment T31). The preliminary literature of this study was conducted through using content analysis. The research was conducted in Matatiele at KwaSibi Administrative Area, and on Non-Governmental organisations based in Matatiele who focus on ecological conservation and environmental management, local and district municipal officials responsible for water management, the provincial government, and the national government.

1.8 Conceptual framework

Conceptual framework generally focuses on how the researcher is going to explore the study.According to Dickson & Emad (2018:439), a conceptual framework is regarded as "a structure which the researcher believes can best explain the natural progression of the phenomenon to be studied". The conceptual framework of this study related to government, governance, good governance, water governance, and good water governance, which are briefly outlined below

1.8.1 Government

A government can be regarded as the authority that sets rules or the system of a group of people governing a society to help members in society relate to one another and keep the society running. Shabbir *et al.* (2007:1) state that, "Government was seen as the institutional embodiment of state sovereignty and as the dominant source of political and legal decision-making." However, after debates in developing countries that revolved around moving from a central power to a decentralised one, the scope of government changed. Shabbir *et al.* (2007:1) state that by the early 1980s, increasing investment, international trade and emerging technological innovations helped spread information and knowledge worldwide and changed perceptions of governance. "The concept of governance expanded to include not only government but also other societal institutions, including the private sector and civil associations" Shabbir *et al.* (2007:1).

1.8.2 Governance

Tortajada (2010:288) indicates that there is no existing agreed on definition of governance; rather, it has been used mostly as an umbrella concept. Tortajada (2010:288) further indicates that "governance is not synonymous with government instead it is a complex process that considers multi-level participation beyond the state, where decision making includes not only public institutions, but also the private sector, civil society and society in general". Nonetheless, Shabbir *et al.* (2007:1) outline that, "The United Nations, in the 1990s, helped to reconceptualise governance, defining it as the exercise of political, economic and administrative authority in the management of a country's affairs."

1.8.3 Good governance

Shabbir *et al.* (2007:2) state that after economic interaction grew internationally and as societies became interconnected and more complex, government became a critically important governance institution. Therefore, Shabbir *et al.* (2007:2) indicate that, "Good governance came to be seen as transparent, representative, accountable, and participatory systems of institutions and procedures for public decision-making."

1.8.4 Water governance

Tortajada (2010:288) states that the water governance concept is still evolving just like the governance concept in general. However, Tortajada (2010:288) further states that, "Water governance can be perceived, in its broadest sense, as comprising all social, political, economic and administrative organizations and institutions, as well as their relationships to water resources development and management."

1.8.5 Good water governance

One of the highest priorities for action (Environment Matters 2006 — The World Bank Group) indicate that good water governance is based on many factors, including legal and regulatory frameworks, more effective implementing organisations, strong policy, and civic determination to improve appropriate investments and water governance.

1.9 Research methodology

Research methodology is regarded as a process that is structured for undertaking research. It seeks to address why, how and in what ways a research study has been conducted. Igwenagu (2016:4) defines research methodology as "a set of systematic technique used in research to guide research and how it is conducted". In this regard, it has different methodologies that are used for different types of research, and these include research paradigm, research design, research approach and research methods. This research was about understanding participatory processes for catchment management in the Upper Umzimvubu Catchment, and participatory processes were investigated.

1.9.1 Research paradigm

A paradigm is regarded as a set of beliefs that directs a researcher's inquiry (Rehman & Alharthi 2016:51). This study was informed by the constructivist and interpretivist paradigms. Shah & Al-Bargi (2013:253) state that the constructivist paradigm strives to unlock beliefs and practices that shackle human freedom, and it challenges both the positivist and interpretivist paradigms. However, Shah & Al-Bargi (2013:253) state that "this paradigm is considered as constructivist, naturalist, humanistic and anti-positivist which emerged in contradistinction to positivism for the understanding and interpretation of human and social reality."

1.9.2 Research design

Research design focuses on how the research is conducted. It typically involves a research that is undertaken using interviews, questionnaires, experiments and observations. This study used the case study research design. A case study is seen as a systematic investigation of community, group, or a single person, where a researcher investigates in-depth data associated with many variables.

1.9.3 Research approach

This study was in line with the qualitative research approach. A qualitative research approach is regarded as collecting non-numerical data such as audio, video, and text with an intension to understand opinions, concepts, and experiences.

1.9.4 Data collection and tools

Data collection tools refers to the instruments used to collect data that involve structured, semi-structured and loosely structured questionnaires, interviews, observations, and surveys. The data were collected through semi-structured and loosely structured questionnaires, interviews (in-depth and Focus Group Discussions (FGDs) and observations.

1.10 Significance of the study

Water access was unequal in South Africa due to policies of societal segregation at the time of apartheid. The transformation to democracy marked new beginnings for the Republic of South Africa. The natives were considered as equal to all other races and that came along with the need for equal access to water resources. The new government allocated the water resources to previously sidelined communities. Therefore, the heart of the new water policies, laws and regulations of South Africa is the attempt of reforming the inequalities of the past through collaborative water governance. The new government introduced policies that allow the right to access to water resources by all citizens.

Moreover, according to Förstera *et al.* (2017:1), African nations including South Africa have accepted the ideas of IWRM. These ideas emphasise the view of decentralisation of water management capabilities to stakeholder engagement and recently initiated institutions on local and regional levels in decision making. However, Förstera *et al.* (2012:2) state that there has been criticism around the IWRM approach for delivering ineffective results, and these results are believed to be ineffective in a sense that they do not solve the water problems, which continue unabated. *"IWRM is more limiting in nature if its pre-defined outcome goals are*

compared with the real-world societal processes and actions; it has uncertain results. Institutional approaches aiming at collective management of natural resources and governance face the same inherent problems in many instances" (Förstera *et al.* 2012:2).

In this regard, considering the newly established policies and the adopted global water structures with the idea of collaborative water governance, it seems there are still issues that are experienced in South African water governance practices. This study strove to fill the gap in understanding and knowledge of Umzimvubu catchment management. It sought to understand water governance strategies and the participatory process that are in place in local government, to identify the intensity of stakeholder involvement and the interpretation and implementation of policies in local government as well as the role of intergovernmental processes in the local government space. Despite availability of frameworks and plans outlining the issue of Umzimvubu catchment, a few studies have tried to assess this issue within Alfred Nzo District. This study was important because it helps assess the intensity of rural community involvement in water governance, and it examines the strategies used for water governance in the local government space. It also intended to contribute to water governance within the field of Public Administration. Since this study focused on understanding the water governance participatory processes such as participation of rural communities in the management of the catchment, the results would potentially help improve community participation. In addition, this study intended to play an important role in government planning and decision making for catchment management in rural areas. Therefore, it contributes towards sustainable rural livelihoods in terms of water security and water conservation for the future.

1.11 Rationale of study

The study area lies within Umzimvubu Catchment area and it is well served in terms of water resources as it is situated close to headwaters of Umzimvubu Catchment. However, this watershed is predominantly characterised by the rural settlements that are water stressed. For this reason, a research of this nature was needed to be undertaken with a purpose to understand the place of rural communities in water governance. This involved water governance strategies, participatory processes, and intergovernmental processes in place at local water governance for catchment management. As mentioned before, this catchment is under threat of degradation, yet Matatiele Local Municipality's 2017-2022 IDP outlines that there is a large water backlog in many villages surrounding this municipality. In the same way, the 2017-2022 IDP of ANDM, which is the Matatiele Local Municipality's district municipality, also addresses the same issue of a huge water and sanitation backlog. However, this municipality is located in the central region of Umzimvubu Catchment in Umzimvubu River. As previously mentioned, this river is regarded as the largest in this Water Management Area (WMA 12) and the largest undeveloped in South Africa. For this reason, this study intended to improve the catchment management by both government and local communities through understanding the water governance dynamics which would ultimately be applied to assist in the reduction of water shortages in rural areas, using the case of KwaSibi Administrative Area within Matatiele Local Municipality boundary as a point of reference.

1.12 Ethical considerations

The research ethics for this study followed the ethics prescribed by the University of KwaZulu-Natal and necessary consent was obtained. The consent includes Ethical Clearance as shown in Appendix A and informed consent as shown in appendix B. All participants were given consent letters before the interviews and focused group discussions (FGDs) could start and this made the participants feel comfortable as the consent letters guaranteed their anonymity and confidentiality. Given this, the disclosure of participants' personal information was guarded against and the researcher maintained respect and privacy; no self-respect and self-esteem were violated. All the information collected during this research study was strictly used for research purposes. The researcher committed to adhering to confidentiality and anonymity of the participants. All participants were also assured that the information obtained from the research would be made available on agreed time should the organisation or community request it. This would be arranged and communicated with the researcher, supervisor and other relevant individuals.

Due to the COVID-19 pandemic the researcher brought masks and hand sanitisers for each participant, and social distancing was maintained during the interviews and focused group discussions. Ina addition, the interviews and focused group discussions with the participants from community were held outdoors and in open spaces instead of indoors to reduce the chances for the spread of the novel corona virus.

1.13 Limitations of the study

The global outbreak of novel corona virus, namely COVID-19 became the greatest challenge during this study. The outbreak of the pandemic led to a national lockdown, because of which people had to work from home and institutions and organisations had to close. This brought great implications during the data collection of this study. It was not easy to collect field data through observations of meetings due to the national lockdown in South Africa. It was also not easy to get hold of participants to obtain primary data since the disease is highly infectious and requires social distancing and that others work remotely. Data were thus collected through telephone conversations and virtual meetings. However, one-on-one discussions, focus group discussions and interviews were conducted in person after the national government started to gradually relax the lockdown measures, but social distancing was maintained as per the national government precautionary measures to control the spread of the virus.

1.14 Thesis outline

Chapter one gives the background and overview of the study. It also provides the general aim of the study, research questions and objectives of this study, preliminary literature review, overview of the conceptual framework, research methodology and research design the significance of the study, rationale, ethical considerations, and limitations of the study**.**

Chapter two reviews relevant studies related to this research topic. It focuses on a literature review thematically structured around the key elements of the study. It also draws conclusions and highlights knowledge gaps, which justify the need for this study's objectives and questions.

Chapter three addresses the conceptualisation of governance by outlining the history of governance system and its growth or increase in focus towards good governance. It explains

and discusses different concepts of governance such as good governance water governance, good water governance and related paradigm shift. It also addresses water governance during the post-apartheid era in South Africa; it discusses the current legislative framework.

Chapter four covers the research process and it focuses on the research methodology that applies to this study by outlining the research paradigm. It also explains the research design and the appropriateness of the research method chosen for this study. Essentially, this chapter focuses on research study area and details the research strategy, which involves the methods of data collection, data analysis and data trustworthiness.

Chapter five comprises research findings and discussions of the study. This chapter recalls the main purpose or goal of this study. A comprehensive interpretation, analysis and discussion of the findings provided.

Chapter six presents recommendations and conclusions of the study about the water governance and participatory processes with a major focus on rural communities. Therefore, in this chapter a generalisation is provided and a way forward is suggested.

1.15 Conclusion
The focus of this chapter was providing the background and the structure of this research study. Further to this, it provided the general aim of the study, research questions and objectives, a brief overview of preliminary literature review, the conceptual framework, research methodology and research design of this research study. This chapter also gave a brief discussion on the significance of the study, rationale, ethical considerations, and limitations of the research study**.** The following chapter discusses the key elements of this study and it reviews literature.

Chapter Two

Key elements and literature review

2.1 Introduction

This study sought to understand and explain participatory processes for catchment management in rural communities with focus on the Upper Umzimvubu Catchment (Tertiary catchment T31) in KwaSibi area. This chapter presents views on studies related to this topic. It does so by, first, explaining the key elements upon which the literature draws. Against this backdrop, the discussion in the chapter focuses on a literature review thematically structured around the key elements of the study. Lastly, the chapter draws conclusions and highlights knowledge gaps, thus highlighting the need for this study The Umzimvubu key area covers a surface area of 20 060 km^2 and it falls from an altitude of about 2 900m on the Drakensberg escarpment to sea level over approximately 200 km (Umzimvubu-Keiskamma Water Management Area, Umzimvubu Mbashe ISP Area Internal Strategic Perspective 2005: 43). Given this, the escarpment was formed by the geological processes.

2.2 Elements of this study

As previously stated, this study explores participatory processes in water governance and catchment management in rural communities within the Upper Umzimvubu Catchment (Tertiary catchment T31). What follows is a discussion of key elements of this study to set the scene for a thematic literature review.

2.3 Catchment management

The global climate change and poor management of natural resources including catchments management pose a major threat for catchment or water resources. This threat also affects countries such as South Africa as they strongly depend on surface water and have water resources that are under stress already, including catchments. However, this is not only a natural or socio-economic matter, but it is greatly a political and administrative issue. Given this, the water sector also experienced changes when South Africa underwent comprehensive transformation of economic and political processes in 1994. Therefore, the water policy has been totally revised. This started in 1997 from DWAF, then the establishment of the new Water Act of 1998, and water law is now based on efficient and sustainable use of water. Pähle (2010:7) states that the current water law focuses on a holistic transition of a participatory approach and decentralised water management. Pähle (2010:7) further submits that "the Water Act inter alia calls for the transition of a water management system that is based both on riparian rights and administrative boundaries where there is licensing of water use and catchment management". In this regard, there is an initiative that has been implemented in which catchment management aims to manage water resources in a holistic manner according to basin principles. Therefore, a catchment can be regarded as management of the river basin in a holistic and participatory manner through application of the hydrological and/ river basin principles.

2.4 Catchment Management Agencies

Following the administrative steps that have been taken by the South African government on water management sector reforms, there was also an action taken towards hydrological and administrative boundaries. The South African government established 19 WMAs in October 1999, although in 2012 these were reduced into newly delineated nine WMAs (Meissner *et al.* 2016:18). The primary intention was that these WMAs work according to the globally accepted principle of catchment management (Meissner *et al.* 2016:18). In each Water Management Area, a managing body, the Catchment Management Agency (CMA), was established. Therefore, a CMA can be regarded as a river basin organisation or an administrative structure for catchment management. According to Pähle (2010:7), it is further outlined that a CMA is responsible for "*protection, use, development, conservation, management and control of the water resources in its water management area*". Each CMA is responsible for managing water resources through different types of uses across the country by coordinating the activities of water management, community participation and water organisations in water management. Pähle (2010:7) also points out that the CMA are obliged to establish a Catchment Management Strategy to fulfill this coordinating role. Given this, Pähle (2010:7) further indicates that since the CMA are still being established and this establishment does not yet exist in most CMAs.

2.5 Water governance

Water governance is a concept that is linked to water management. It is believed that water management and water governance are connected in the manner of governance systems and effective water governance. They are designed to allow practical tools for management of the water governance sector. "Partnerships between the public and private sectors, participation of stakeholders and economic or regulatory instruments will not be effective unless there are administrative and management mechanisms in place, as well as commitments and involvements of governments, private sector groups and civil society organizations" (Tortajada 2010:300). Although water policy reforms have been happening in various countries, progress has been limited and very slow. In many developing countries the water institutions do not function properly; as result, most of them show conflicting or overlapping decision-making structures and fragmented institutional arrangements. Tortajada (2010:300) indicates that in other countries water governance is regarded as the framework within which integrated water resources management can be applied. Tortajada (2010:300) further argue that the integrated approaches for water governance are fundamental and have more efficient ways, but the fact remains that their application has remained unsatisfactory and incomplete in all countries, both developed and developing, after some 60 years of trying.

In this regard, the water governance concept remains a debate across the globe. This term is applied in different ways depending on varying situations and contexts or different interests, norms, and values of countries. This is especially because the world history of water shows that practices and ideas have taken different directions and this occurred in a series of transcultural transmissions at different times back and forth, including improvements, modifications and additions that connect humanity as a single water community. According to Hassan (2011:46), water governance is outlined as "the social function that regulates development and management of water resources and provisions of water services at different

levels of society and guiding the resource towards a desirable state and away from an undesirable state".

Tortajada (2010:300) states that "water governance can be perceived, in its broadest sense, as comprising all social, political, economic and administrative organizations and institutions, as well as their relationships to water resources development and management". It is concerned with how regulations affect political actions and how institutions operate as well as with societal concerns through formal and informal instruments. Tortajada (2010:300) further considers water governance "to include economic, political, social processes and institutions through which the private sector, civil society and governments make decisions about how best to develop, allocate and use and manage water resources". It refers to a range of social, economic, political, and administrative systems that are available or in place to deal with developing and managing the water resources and water service delivery at all levels of the society. Water governance comprises processes, mechanisms, and institutions through which all actors including citizens and interest groups exercise their legal rights, articulate their priorities, mediate their differences, and meet their obligations (Tortajada 2010:300). Lastly, it takes into consideration the casualty of water-related problems by focusing on natural limitation and water supply, appropriate technologies, and lack of financing. It also focuses on profound failures that include ways that society utilises to assign duties for decision-making and management of water resources that are available.

2.6 Public participation

The facilitation of public participation is being put in practice in the modern society. However, in South Africa public participation is a new concept which started to be mostly used after many years of the apartheid regime where government systems were centralised. This concept is part of transformation from the apartheid government systems, and it was accompanied by reform of policies after the 1994 democratic elections.

In the context of this study, public participation is associated with water governance and catchment management. Public participation in water management is highly motivated today and it is also a reality in South Africa after the 1994 democratic elections. The water law principles were introduced in 1996. As a result, the public participation process was intensively implemented by the DWAF. Public participation extends beyond speeches as solution to water scarcity, but goes far up to inequality, bankruptcy of municipal operations, health, and new distributions among sectors in ways that purely engage citizens, such as water users or anyone who may prevent or cause water problems.

The terms stakeholder participation and public participation are used interchangeably by some authors. Some make a distinction between stakeholders and the public. On one hand, stakeholder participation is regarded as a participation that involves specific groups, institutions and people who are directly and indirectly affected by an issue in decision making. On the other hand, public participation is considered as direct participation of different non-governmental actors that include individual citizens, individual companies, civil society groups, economic interest groups and public interest groups in decision-making. Moreover, Anokye (2013:63) states that public participation is citizen participation for issues

of general concern involving the public at large while stakeholder participation involves specific stakeholder groups are addressed in their roles and issues of concern.

2.7 Integrated Water Resources Management

Claassen (2016:324) states that the necessity for sustainable development obtained great recognition after the book entitled *Silent Spring* (Carson 1962) was published. "*Carson reflected on the dangers of pesticides and painted a bleak future of ecosystems and mankind if the trajectories of use continued*" (Claassen 2016:324). The United Nations Conference on the Human Environment (UN 1972) recognised the necessity for a mutual expectation to lead the people for the enhancement and preservation of the environment (Claassen 2016:324). Twenty-six principles were tabled in the conference to inform the significance of safeguarding the environment to reward both current and future generations. Thus, actual planning also draws on states for a motive for an integrated as well as coordinated motion to development planning. Claassen (2016:324) states that the World Commission on Environment and Development improved principles found in Brundtland report of 1987, "Our Common Future", it which outlined that sustainable development strategy for development intends to promote harmony between humanity and nature. This the Brundtland report focuses on sustainable development through identifying challenges and similar concerns and through recommending similar endeavors. After this report, which outlined the significance of sustainable development in 1992, the International Conference on Water and the Environment that took place in Dublin subsequently resulted in the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992 (Claassen 2016:324). According to Claassen (2016:324), it is further stated that;

> *These principles (commonly referred to as the Dublin principles) state that water should be regarded as a finite resource that has an economic value with significant social implications; That local communities must participate in all phases of water management; That water resource management must be developed within a comprehensive set of policies and that there is need to recognise and actively support the role of rural populations with particular emphasis on women.*

These principles will be referred to in the subsequent discussion of IWRM.

Following the IWRM international initiative, National Water Act (Act 36 of 1998) provides for a balance of duties from the national level where there is the Minister and Director General down to CMAs catchment scale and WUAs at sub-basin level (Claassen 2016:324). With this having been said, Claassen (2016:324) further outlines that the establishment of advisory committees and bodies for the implementation of international agreements can be undertaken.

Therefore, from the early 1990s, IWRM has gained attention as the international model for guiding best practices for water resources management of developing countries. In this regard, UNESCO (2009) defines IWRM as a "*holistic approach that seeks to integrate the management of the physical environment within the broader socio-economic and political framework*". However, IWRM execution is critical to various ideologies and world views, as

they are systems of beliefs and values about processes and institutions of the society that are believed to be the truth or fact by a group of people (Claassen 2016:324).

2.8 Rural communities

According to Thomas *et al.* (1988:1), the definition of the term "rural" has surfaced and caused a continuous debate in the social sciences for *some* time. This has been noticed both on theoretical as well as on policy levels. Thomas *et al.* (1988:1) also states that it is theorised that rural started with agricultural occupation and from there a whole host of other attributes followed such as a homogeneous population, low population density and Gemeinschaft-type relationships. Traditionally, rural is seen as an ecological setting in terms of its low population density and population, an economy based on extractive industries as well as its relative isolation (Thomas *et al.* 1988:1). In addition, rural areas have other characteristics that are culturally and occupationally recognised as being significant in defining rurality. Rurality has three components, namely ecological, occupational, and sociocultural which were traditionally viewed as being connected, although there were conflicting ideas around this term.

Given the above explanation of rurality, the concept of community also has several definitions. According to Waghid (2003:57), communitarians believe that community does not merely express an aggregation of individuals; instead there are common ends on people who constitute the community with a motive of sharing values and goals with persons perceiving themselves as "members of the group", and of their values as the "values of the group". Given this, Waghid (2003:57) views community as "constitutive of the shared self-understandings of the participants" and "the expression of social networks". In this regard, community is best elaborated as the result of social arrangements (Waghid 2003:57).

Drawing from this background of rural and community definitions in South Africa there is no officially agreed upon and accepted definition of "rural" (Mabugu 2017-2018:34). Of equal importance is that there has not yet been an entirely successful policy to classify the territories according to their degree of rurality (Mabugu 2017-2018:34). The large scale provincial and municipal boundaries re-demarcation further complicated the situation that was accompanied by the transition of provincial and local government after the administrative difference between rural and urban areas had been put to an end by this transformation process because of the recognition of linkages between towns and the countryside.

Having said this, literature-based approaches and historic, hybrid administration is applied to establish a definition of rural area since there is no singular understanding of what rural area is. In this regard, Mabugu (2017-2018:34) indicates that the Rural Development Framework of 1997 defines rural areas as consisting two characteristics. The first characteristic indicates that rural areas are sparsely populated places in which people depend on natural resources such as villages and small towns that are dispersed in nature. The second characteristic outlines rural areas as large dwellings of the former homelands which depend on remittances and migratory labour and social grants of government for living, and which are typically traditional land tenure systems. Notably, this definition includes population densities and spaces, as well as relevant history such as the mention of "homelands".

Mabugu (2017-2018:34) also indicates that the Department of Rural Development and Land Reform (DRDLR) defines rural as *"areas outside urban settlements where population densities are less than one dwelling unit per hectare, and describes rural development as generally including primary economic activities: agriculture, agro-processing, mining, tourism, resource extraction, water, energy"*. Moreover, Mabugu (2017-2018:34) also indicates that the Department of Cooperative Governance and Traditional Affairs (COGTA) has developed an analytical tool to assist in classification of municipalities according to their spatial characteristics. Municipalities are classified into categories B and C2 categories. Category B is further classified into four sub-categories, namely B1, B2, B3 and B4. Given this, categories B3 and B4 municipalities and C2, which are the district municipalities, are regarded as rural. This rural or urban classification gained advantage because it is generally accepted and used at least at the local government sphere. Over the years this classification remained static, but there are changes of upgrading of two secondary cities into metropolitan status. Most rural municipalities are poor and the poorer municipalities happen to be in former homelands. This study focused on this category of rural areas, which also happens to be under a dual institutional system of democratic local governance and the traditional leadership institution.

2.9 Empirical review

This section discusses recent studies in water governance and highlights the knowledge gap filled by this study.

2.9.1 Research related to policies/legislation

Lebel *et al.* (2013: 18) state that successful environmental governance is determined by achieving the fit between ecosystem, social processes, and institutional arrangements and this has been the central thinking regarding the social-ecological systems. This study was conducted on river basins in Latin America targeting the national parts, in Asia, Africa and Europe using information obtained through the Twin2Go project. Lebel *et al. (*2013) did a study on "the Institutional Fit and River Basin Governance: A New Approach Using Multiple Composite Measures", which focused on measuring water governance sovereignty. This study intended to form a model or approach for quantifying fit that could apprise diagnostic analysis. First, a set of fit dimensions was selected according to perspectives of experts on transfer and best practices (Lebel *et al.* 2013: 1). *"The methodology of this study used the six measures to capture different but potentially important dimensions of fit: allocation, integration, conservation, basinization, participation, and adaptation"* (Lebel *et al.* 2013: 1).

They proposed "six dimensions of fit for water governance regimes", namely allocation, "integration, conservation, basinisation, participation, and adaptation", and they empirically explored the variation in measures of 28 case studies. They found that allocation highlights that the impoundment may be issued under the revisions done based on the 2003 Water Act; impoundment and conditional licenses for water abstraction may be issued (Lebel *et al.* 2013:18). "Integration becomes more significant as the complexity of water uses increases, it in turn, rely on ability to coordinate among government sectors and with other stakeholders. IWRM was viewed by experts as a significant approach to address multiple,

competing uses of land and water" (Lebel *et al.* 2013:17). Conservation outlines that embracement of good actions by industries is viewed as an action to enhance their capacity (Lebel *et al.* 2013:17) They add that, "Basinization- We have termed this dimension of fit 'basinization.' Visions and practice varied from committees that rarely meet to basin authorities with significant resources, mandate, and authority and in some places, councils and authorities both exist and were in competition with each other harder" (Lebel *et al.* 2013:18). On participation, Label *et al.* (2013: 18) submit that important driving factors of public participation involves exclusion of vulnerable stakeholders from multilateral agencies or histories of disadvantaged water users and nongovernmental organisations. Therefore, they indicated that more effort was required in engaging with stakeholders regarding the existing plans and best practices as well as the costs involved. Furthermore, under adaptation, Lebel *et al.* (2013:18) argue that stakeholder participation in planning was also viewed important for handling uncertainties such as those surfacing from climate change. The engagement result in improved and shared understanding of risks investment requirements for adaptation. In conclusion, Lebel *et al.* (2013:18) say that the idea of fit has motivated both practical efforts and theoretical scholarship aimed at improving institutional designs.

Another study was undertaken by Kabote and John (2017) on the matter of water governance in the Southern Agricultural Growth Corridor. Kabote and John (2017) submit that there is growing water shortage for many uses across the world and water governance is becoming fundamental. They further posit that the concept of water governance is not explored enough in developing countries including Tanzania, their area of focus. Kabote and John (2017) examined "water governance in the lines of governance structures and institutions in the Southern Agricultural Growth Corridor of Tanzania". They explored the influence of governance structures and institutions' operations in relation to decision making by policy makers and implementers for management of their water resources (Kabote and John 2017:16). These structures in this study refer to village governments, water committees of the village, district councils, private sector, water users' associations, natural resources committees and civil society (Kabote and John 2017:16). "*Findings showed that formal and informal institutions were interlinked in their operations. However, village governments and village water committees were unable to resolve water conflicts because of being colluded by those who breached the rules*" (Kabote and John 2017:15). Kabote and John (2017:15) conclude that collective effort in governance structures is needed to build capacity and enforce institutions for governance of water resources.

Yet another study on water governance was undertaken in Tanzania but it focused on the issue of the influence of Water Resource Governance. Engagement with the Wami/Ruvu Basin Water Office showed that it was experiencing many challenges that included a little understanding/knowledge of water resources management, that it based on the regulations among local people, and it had uncoordinated water resources activities (Masifia *et al.* 2017:150). They add that, "*Growing of water demands brings conflicts among water users and water sources pollution due to unsustainable human development activities close to water sources*" (Masifia *et al.* 2017:150). The Masifia *et al.* study was undertaken in the sub-catchment of Mkonda, and it examined two WUAs, one at Kisangata as well as the

other one at Ilonga in the district of Kilosa at Morogoro region, Tanzania. Masifia *et al.* *(*2017) assessed "the factors Influencing Water Resource Governance among Pastoral Community at Mkondoa Sub-Catchment, Morogoro Region, Tanzania". The study evaluated the role of policies on water governance in water resources by determining the role played by the local institutions such as WUAs and Non-state actors. The findings showed that the Wami River supplies more water for industrial uses (Masifia *et al.* 2017:157). The findings also showed that there are many challenges being faced by the Development (WRMD) and Water Resources Management in the sub-catchment of Mkondoa, and this is because of gap in the sub-catchment board. "*The challenges are inadequacy of financial and human resources and lack of community-based organization for WRMD*" (Masifia *et al*. 2017: 165). As a result, there is inadequate water resources management in this area (Masifia *et al.* 2017: 165).

Similarly, Pazvakawambwa (2018:7) states that the water pollution problem in the Upper Swakop Basin in Namibia, threatening the dam's water sources, is very serious and endemic. Pazvakawambwa (2018) aimed at assessing the water quality which may be caused by the pollution sources at major receiving water sources (discharge points, dams, rivers, and aquifers) in the Upper Swakop Basin with respect to the prevailing water quality regulations and standards. The study qualitatively assessed water governance structures, participation, and the overall assessment of water governance processes and outcomes in the USB based on institutional organograms, legal framework, and participation. The study focused on the water resources management and governance design regarding sustainable socio-economic, ecological effects on the Swakoppoort and Goreangab Dams, water quantity and quality aspects that are of concern and are negatively impacting the USB (Pazvakawambwa: 2018). Results showed that there was serious water pollution in the Upper Swakop Basin, and that water basin governance exists in Namibia as centralised water governance institutions, although there have been efforts to decentralise it into river basin management institutions (Pazvakawambwa 2018:246). Therefore, water quality monitoring programme strategy recommended the establishment of Standard Operating Procedures (SOPs), environmental standards, and Strategic Environmental Assessments (SEA) as well as developing a Water Supply and Quality Customer Care Centre (Pazvakawambwa 2018:46).

Moreover, Matiwane (2012) states that although South Africa established statutory bodies the Catchment Management Agencies after 1994, the effectiveness of Catchment Management Forums is questionable. Matiwane (2012) assessed "the Public Participation as governance: the role of catchment forums in water governance". The study was undertaken in South Africa and it mainly focused on developing an in-depth understanding of catchment forums and to detail their main role in water resources management. On methodology, the data were obtained through public participation using the public meeting minutes of Olifant-Doorn Water Management Area and field notes were taken as primary data. Matiwane (2012) found that catchment forums in this area operate in a collaborative manner.

Another study in South Africa that focused on water governance linked to Catchment Management Agencies was carried out by Förstera *et al.* (2017). According to Förstera *et al.*

(2017:1), the South African racial policies of societal segregation during apartheid era that occurred from 1948–1994, in which class, gender and race were the supreme factors in the country, also mirrored water access patterns among South African citizens. Accordingly, during this regime water access was highly unequal. This study was undertaken at Crocodile (West)–Marico river system on a sub-catchment in the Northwest Province. Förstera *et al.* (2017) examined "the structure, Agency and Power in South African Water Governance" and the study focused on agential dimensions and structural power displayed during the creation process of a Water User Associations (WUAs) in this province. "Portraying that the establishment process of this new institution was flawed due to power asymmetries of interacting actors, this article unmasks supposedly collective decision- making processes in collaborative water governance" (Förstera *et al.* 2017:2). The findings of their study showed that "the ambitious structures of South African water governance that were put in place by the post-Apartheid government have not found sufficient agential power in practice to successfully implement new collaborative institutions of water governance" (Förstera *et al.* 2017:9). Förstera *et al.* (2017:9) concluded that water governance in South Africa still need to be strengthened.

Furthermore, Tapele (2015) examined water governance in traditional rural communities of South Africa. Tapele's (2015) report was based on Policy Options for Effective Water Governance in Traditional Rural Communities. Tapele (2015:3) states that after the apartheid era, the government made commendable achievements in broadening access to water for historically disadvantaged people (HDIs) in rural, urban and peri-urban areas. However, as the deadline for the Millennium Development Goals (MDGs) targets arrived in year 2015, many women and men in South African traditional rural communities still endured inadequate access to water resources and services. This study was undertaken in South Africa. The aim of the study was to strengthen the traditional leadership and to determine limitations for traditional leadership to be beneficial in overall water governance. The project relied on both primary and secondary data sources. Field research methods included interviews with various traditional leaders in Limpopo and KwaZulu-Natal provinces (Tapele 2015:7). They found that although the South African Constitution and water laws indeed embrace principles of legal pluralism and recognise traditional leadership institutions, the roles of traditional leaders in water governance remain poorly defined (Tapela 2015:18).

Following the issue of water governance in the above studies, the first objective of the current study focused on water governance strategies designed for catchment management within the local government space. Kabote and John (2017) address a similar issue, as their study examined water governance in line with governance structures and institutions in the Southern Agricultural Growth Corridor of Tanzania. However, Kabote and John (2017) explored water governance based on agriculture, which leaves a gap of water governance understanding strategies designed for catchment management within the local government based on catchment management. Lebel *et al.* (2013) also carried out a study on water governance, but their study approached the issue of water governance in a broad manner, which creates another gap that the current study fills with a focus on local government strategies for catchment management. Similarly, Matiwane (2012) and Förstera *et al.* (2017)

also address the issue of water governance, but they mainly focus on Catchment Management Agencies in South Africa. Furthermore, Tapele (2015) examined "water governance in traditional rural communities of South Africa" whereas the current study focused on addressing water governance strategies designed for catchment management.

2.9.2 Research related to participatory processes for community involvement

Within water governance there is the other issue of public participation. Chikozho (2008) argues that the introduction of reforms in the water sector of Zimbabwe was based on the idea that public/local people would fully contribute to the water reform process. Chikozho (2008:28) adds that this approach had a view of improved water governance through strengthened stakeholder involvement in water management and redistribution of water management from local government down to catchment-based level/organisational structures. This study was undertaken at Mazowe River Catchment in Zimbabwe. Chikozho (2008) assessed the "Stakeholder Participatory Processes and Dialogue Platforms in the Mazowe River Catchment, Zimbabwe" and the study focused on analysing stakeholder participation processes implemented and assessing the communication platforms established to improve stakeholder interaction. Chikozho (2008:35) found that the participatory strategies and processes applied were generally unsatisfactory and the communication platforms were lessened by non-fulfilling functioning of water user boards and ineffective involvement of people at the grassroots level. In addition, engagement with the stakeholders had not been correctly planned; for example, it generally targeted all local people and resettlement areas in the place of farmers (Chikozho 2008:40). Furthermore, more resources should have been distributed to the community and community mobilisation work (Chikozho 2008:40). In addition, one important idea would have been to consider full-time community mobilisation officers to improve awareness in the community, and, "Participatory processes should begin with the grassroots and maintain the momentum gathered and the new water management structures in the Mazowe catchment were formed in top- down fashion and hence, they lack the appropriate grounding at local levels" (Chikozho 2008:40).

Mokiwa (2015:4) also addresses the issue by stating that different government departments or agencies that focus on various aspects of water resources management do that according to their own mandates and legislative provisions. There is a tittle emphasis that has been put on integration towards holistic basin-wide planning and management (Mokiwa 2015:4). This study was undertaken at Saaki spring, Hai District in Tanzania. Mokiwa (2015) examined "the community participation in water resources management: a case of Saaki Spring in Hai district, Tanzania" and the study investigated "community participation in the water resources management". It also sought to establish the challenges which affect the community's involvement in water resources management. The findings of the study showed that a majority (93.8%) of the respondents disagreed with the statement that community is always involved on the planning, decisions, implementation, and evaluation stages of running the Saaki Spring (Mokiwa 2015: 44). Moreover, 95% of the participants opposed the statement that said the community is clearly informed on the laws and regulations governing Saaki Spring (Mokiwa 2015: 45). Mokiwa (2015:58) recommends

that there is need to promote positive community perception and ensure sustainable community participation.

Moreover, Anokye (2013) states that many policymakers and scholars argue that centralised governance is a challenge because it does not meet people's needs efficiently and it disempowers local people by ignoring local realities. This issue of exclusive governance is also experienced in the water sector. "The water crisis that is confronting some regions in the world is attributed to poor water governance" (Anokye 2013: 11). Anokye's study was conducted at Densu Basin in Ghana, and it focused on stakeholder participation influence over water resources management and the interpretation of stakeholder participation in the policies and laws applied in Ghana. The study findings indicated that there was a problem of under-representation of some groups in participatory processes. The study recommended that the acceptance of participatory approaches that are more empowering is needed to be considered to improve participatory processes (Anokye 2013:16).

Therefore, while Chikozho (2008) assessed the "Stakeholder Participatory Processes and Dialogue Platforms in the Mazowe River Catchment, Zimbabwe", the current study touched on the similar issue of studying participatory processes Umzimvubu Catchment. The Umzimvubu key area covers a surface area of 20 060 km2 and it falls from an altitude of about 2 900m on the Drakensberg escarpment to sea level over approximately 200 km (Umzimvubu-Keiskamma Water Management Area, Umzimvubu Mbashe ISP Area Internal Strategic Perspective 2005: 43). Given this, the escarpment was formed by the geological processes. However, Chikozho's study focused on the participatory and dialogue platforms, whereas the current study evaluated the intensiveness of the public participation in catchment management. Furthermore, Mokiwa (2015) examined "the community participation in water resources management: a case of Saaki Spring in Hai district, Tanzania" and Anokye (2013) examined the Stakeholder Participation in Water Resources Management. All these studies focused on community participation and they are addressing more similar issues as the current study at Umzimvubu catchment. However, these studies were done outside South Africa, which then opens a gap.

2.9.3 Research related to implementation of participatory laws and policies

As much as water governance and public participation play a fundamental role, the execution of participatory laws and policies also plays a significant role. German *et al.* (2006) state that in several countries around the world it is anticipated that fresh water will become the scarcest resource in the coming years. Their study was undertaken on "ecoregional program operating in the highlands of eastern Africa". German *et al.* (2006) outline some different ways of watershed management emerging in the global arena, from their examination of the significant gap in the watershed management of literature by demonstrating how objectives of beneficiaries and states influence this approach to development of the methods for participatory watershed management. Results show a critical significance of socially-disaggregated problem diagnosis (German *et al.* 2006:2). "Moreover, issues that mirror female domains of activity such as domestic water supply receive a much higher rating by women than by men, while issues affecting male rights (i.e. rights to land and irrigation water) and responsibilities (road maintenance) are prioritized

more highly by men" (German *et al.* 2006:2). In conclusion, the position of landscape influences the relative irrigation water and access to drinking water (German *et al.* 2006:6).

Akpor & Boakye (2012) argue that through legislation, stakeholder engagement has become widely recognised as a crucial element in management of water resources in South Africa. However, fulfilling effective community involvement remains difficult particularly for the previously underdeveloped rural areas. The intention of their research study was to examine the effectiveness of the disadvantaged communities' involvement in the Forum of Catchment Management. They found that these communities do not see the community involvement effective because community expectations are not being met (Akpor & Boakye 2012: 551). Furthermore, the dependence on community organisations did not include greater number of the locals, since the community was not effectively involved (Akpor & Boakye 2012:551). "It is therefore important that more emphasis be placed on the development of skills and capacity of participants to understand and make meaningful contributions, especially participants from the disadvantaged communities" (Akpor & Boakye 2012:514).

Another relevant study was undertaken in South Africa by Förster *et al.* (2017:1), who state that "a new water governance framework with the aim of overcoming past racial inequalities in water access and addressing the critical challenges of water security in the country was developed by the post-apartheid South African government in the years following 1994". This study was undertaken at the Crocodile (West)–Marico Water Management Area (WMA) in the North West Province, South Africa. However, it focused on the adoption of ideas of collaborative governance and institutional devolution instead of community participation in Water Resources Management in South Africa. Nevertheless, Förster *et al.* (2017) and Akpor & Boakye (2012) focused on the matter of water legislation although they differ in objectives. Findings of the study by Förster *et al.* (2017:10) indicate that environments of asymmetrical agential power relations collaborative governance tend to be not very collaborative at all. Förster *et al.* (2017:10) concludes that the future of South African water governance is imperative to the future of South Africa to strengthen agential powers on all levels of water governance.

Yimenu (2016:8) state that the water problems are becoming more intertwined and interconnected with other development-related issues, as well as with economic, social, environmental, legal, and political considerations, at national and local levels, and even at regional and international levels. This study was undertaken in Ethiopia. Yimenu (2016) assessed water resource management in Ethiopia. The general objective was to analyse the water resources management legislations of Ethiopia and the efforts being made about IWRM. Yimenu (2016) found that the current water crisis basically lies on the governance more than physical scarcity, as water resources are not allocated efficiently, water pollution is unregulated, water providers fail to serve the public, and environmental and social concerns are left neglected (Yimenu 2016:14). Therefore, the government should try to have a legal frame work that is consistent with the water resources management policy of Ethiopia (Yimen 2016:14).

In addition, Meissner *et al.* (2016) state that during the apartheid time in South Africa black people were underprivileged because they were "deprived of most basic rights". This study was undertaken in Breede-Overberg Catchment Management Agency, South Africa. Meissner *et al. (*2016) assessed "the politics of establishing catchment management agencies in South Africa", and the aim of their study was to evaluate politics associated with the formation of the CMAs in South Africa. The establishment process of CMAs in South Africa can be linked effectively to institutional prescriptions that form part of adaptive management (Meissner *et al.* 2016).

The indication is that there are many studies on legislation and participation. While German *et al.* (2006) explored participatory integrated watershed management with specific focus on the significant gap in the management of watershed literature, Akpor & Boakye (2012) focused on community involvement in management of water resources in South Africa. And the intention of their research study was to identify if the participants from disadvantaged communities find their participation in the Catchment Management Forum to be effective. As highlighted above, several other studies (Förster *et al.* 2017; Yimenu 2016; Meissner *et al.* 2016) have been done about interest to the current study. All these studies address the issue of participation and legislation, which makes them align with the third objective of the current study that focuses on laws and policies. However, the current study closes the gap on implementation of laws and policies at local government, whereas these studies are mostly focusing on regional and catchment management levels.

2.9.4 Research related to understanding of local people about catchment degradation and management by local people

The understanding of local people about catchment degradation and management by local people is also of great significance to this study. According to Ananga (2015:1), the increase in global population has introduced new challenges to natural resources management. "In the near future the challenge will be phenomenal in emerging cities in Africa. It is predicted that that the urban population growth on the continent will double between 2000 and 2030" (Ananga 2015:1). Ananga's study was undertaken at Schemes in Kisumu, Kenya, and it examined the "role of community participation in water production and management". The study assessed and explored the invulnerability of community participation theory in demonstrating the management dynamics and water production in urban informal settlements. The findings affirm the need for the government and policymakers to work together with communities in urban water management in informal settlements (Ananga 2015:16). The difference between Ananga's (2015) study and the current study is that it focused on the invulnerability of community participation theory in urban informal settlements while the current study focused on addressing understanding of local people about catchment degradation and management.

2.9.5 Research related to extensiveness of the community participation in the decision making, implementation processes

The understanding of local people about catchment degradation and management should work hand in hand with the extensiveness of the community participation in the decision-making, implementation processes**.** Aluta (2016:1) states that the reinforcing the legal

framework of water supply in Nigeria has not been proven effective. "This is primarily due to the non-participation of a broad spectrum of stakeholders, particularly rural community members" (Aluta 2016:1). Aluta (2016) assessed "the participatory water governance in Nigeria: towards the development of an effective legal framework for rural communities". Findings indicated that community members have capacity to cooperate with the national government actors and donors in governing their own potable water (Aluta 2016:299). Therefore, the effective way for water governance is integration, decentralisation and coordinated decision-making, which are transformational trends of present time in the sector (Aluta 2016). Moreover, Aluta (2016) submits that, markedly, stakeholders' participation signifies a paradigm shift from centralised state coordinated systems to plurality.

Moreover, Kabogo *et al.* (2017:1) state that currently access to adequate quality and quantity of fresh water is a critical issue to the well-being of the human population of Tanzania. Kabogo assessed (2017) "the facilitating of public participation in water resources management", and focused particularly "on the role of the water user's associations and use case studies of three basins the Pangani, Wami/Ruvu, and Lake Victoria to examine their strengths and challenges" (Kabogo *et al.* 2017:1). They found that, concurrently, many factors such as number of members, geographic area and historical context seem to have similar challenges to both sustainability and functionality; therefore, there should be creation of spaces for shared learning and collaboration among WUAs across Tanzania (Kabogo *et al.* 2017: 22). Aluta (2016) and Kabogo *et al.* (2017:1) focused on assessing and facilitation of stakeholder engagement, but the current study focused extensiveness of the community participation in the decision-making, implementation processes and how stakeholder participation can be improved for Umzimvubu catchment management.

2.9.6 Research related to collaborative practices on catchment management
The extensiveness of the community participation in the decision-making, implementation processes relates to existing intergovernmental processes and their contribution to catchment management practices in water governance**.** Okello (2016) argues in general, the problems that are experienced by water resources management (WRM) in Uganda can be explained in two steps, namely inefficient governance, and increased competition for the finite resource. The international practices also play a significant role in catchment management. The main aim of Okello' study was to do a thorough study of the existing European Union (EU) river basin management guidelines and practices, was done to examine how these guidelines and practices may be applied/adapted in Uganda. It also sought to determine how effective the existing national policies and legal framework were in managing and protecting Uganda's water resources in a sustainable and integrated manner. Okello's (2016) study found that Uganda uses NEMA guidelines, which focus on the needs of the environment in the form of quality/environmental standards to help bring control on water in the environment. However, some local people are often oblivious to the legal structures of a democracy and their legal rights to water resources, as most of the rural people are illiterate (Okello 2016:131). Okello (2016) adds that the fact that most of the people who reside around the catchments are illiterate/poorly educated is going to be a big challenge to effective participatory IWRM in Uganda. The study by Okello (2016) relates to the sixth objective of the current study, through which the study sought to understand the existing

intergovernmental processes and their contribution to catchment management practices. However, Okello's (2016) study was undertaken in Uganda and it focused specifically on existing European Union (EU) river basin management guidelines, whereas the current study sought to understand the intergovernmental processes that are in place for catchment management in South Africa.

2.9.7 Research related to water governance and catchment management at local scale conducted in South Africa

There are various recent studies that have been conducted in South Africa which are related to water governance and catchment management. Pillay (2016) states that South Africa is recognised as a water scarce country, which is exacerbated by water-related challenges. In consideration of climate change, increased populations, human migratory patterns, aging infrastructure, increased urbanisation and increased industrialisation, the water crisis in South Africa becomes more visible and problematic (Pillay 2016:13). In Gauteng Province, South Africa, Pillay (2016) assessed "water resource management in South Africa: perspectives on governance frameworks in sustainable policy development". The aim of the study was to study was to understand how effective governance could contribute to the formulation of water resource management in South Africa in order to bring about sustainable development. Pillay (2016) found that many of the challenges exist within the domain of institutional structures and operations. Although there is a dualism within constitutional mandates, policies such as the Integrated Water Resource Management (IWRM) and National Water Resource Strategy (NWRS2) take cognisance of sustainable water resource management (Pillay 2016:75). Therefore, policy makers need to consider the adaptive water management approach to overcome internal institutional structures in the policy arena and water-related concerns (Pillay: 2016:102).

Chibwe *et al.* (2012:3) did a study in Inkomati Water Management Area (IWMA), South Africa, focusing on "understanding the water reform process by evaluating the factors that impact the outcome of decentralisation processes and performance. The results show that the establishment of IWMA, sub catchments and the engagement of river basin stakeholders have a positive role in the establishment of a decentralised river basin (Chibwe *et al.* 2012:3). However, depending on government funds and donors is a limiting factor for the decentralisation process and performance (Chibwe *et al.* 2012). "Given these limitations, the DWAF RO Mpumalanga should consider empowering basin organizations (ICMA, WUAs) with financial resources collected from water tariffs and involve these organizations in the management of these funds in order to improve decentralization process in IWMA" (Chibwe *et al.* 2012:7). In addition, DWAF should consider reviewing proposals to change the Irrigation Boards into Water User Associations and empower both the irrigation boards and water user associations with technical as well as legal knowledge that is needed to perform catchment activities (Chibwe *et al.* 2012:7).

Bourblanc (2011) undertook a study entitled, "Transforming water resources management in South Africa: 'Catchment management agencies' and the ideal of democratic development". The study addressed "the dilemma of the democratic development of water resources management in the context of Post-Apartheid South Africa and unequal access to water"

(Bourblanc 2011:1). The results of the study showed that this political dimension is refused by many members of CMAs as well as by staff and policy makers. A proposal for re-politicising analyses for management of water resources has been validated by an increasing number of contributions in the past few years, and these include contributions that are vital for the experience of South Africa (Bourblanc 2011:11). "However, most of these contributions have focused on stakeholders' selection for effective participation, that is, on an actor's approach, only little has been said on how these actors perform once being selected" (Bourblanc 2011:11).

In addition, Mofokeng (2017) outlines that since 1994, policy, legal and institutional reforms were introduced by the South African government to address the issue of poverty in disadvantaged communities and to address inequalities of the past, the apartheid era of 1948 - 1994. There have been growing concerns in the water sector as well. The introduction of water management institutions such as CMAs, has made a change. These institutions are progressing slowly since the act's implementation in 1998 (Mofokeng 2017). Mofokeng (2017) examined "the challenges in developing water management institutions: The case of catchment management agencies (CMAs) in South Africa". The study focused on the development and challenges of CMAs. "The objective of the study was to investigate and to explore the salient transformation issues related to the establishment of water management institutions in South Africa, identify the CMAs function within the existing policy and legislative framework in Department of Water and Sanitation (DWS), identify measures that are in place to resolve existing impediments to CMA formation and to identify additional strategies that can be introduced to achieve desirable outcomes" (Mofokeng 2017:10). The study found that there are many challenges that have been identified concerning the slowdown of CMAs (Mofokeng 2017:10). "The Department of Water and Sanitation is currently exploring different options of the institutional model that will be suitable for the water sector's need, minimising red tape and improving communications" (Mofokeng 2017:10). The findings indicated that the creation of CMAs is wholly supported and its activities are also supported by current networks as they also play a vital role in the institutional deepening of democracy in South Africa (Mofokeng 2017: 78). Therefore, the progress of democracy on legislations can never be fully appreciated until where the water policies and laws started from is perfectly understood (Mofokeng 2017:33).

These South African water governance related studies, particularly the catchment management studies, have been mostly conducted on issues revolving around the Catchment Management Agencies (CMAs) implementation as form of public involvement according to the new South African legislation. Therefore, so far, most catchment management related studies in South Africa have been conducted on CMAs formation and issues around them. This shows a limitation and a gap compared to the objectives of the current study, as the current study address more issues on catchment management by extending further down to local government and stretching abroad in terms of understanding intergovernmental and international processes and their contribution to catchment management practices that are currently in place for local government.

2.9.8 Literature on rural water management

The management of rural water management is of great importance in terms of decentralised water governance. Colvin *et al.* (2008:681) states that the National Water Act and National Water Resource Strategy of South Africa set out a determined vision to take into consideration the Integrated Water Resources Management that involves great focus on the redistribution of water resources towards the poor. This was also an aim of empowering historically disadvantaged communities. Colvin *et al.* (2008:682) argue that during the entire twentieth century water infrastructure was highly unevenly distributed. This resulted in large proportions of the population with inadequate or very poor access to water. In turn, this has resulted in serious repercussions on the health, resilience, and dignity of many of South Africa's communities. Colvin *et al.* (2008) assessed "Building capacity for co-operative governance as a basis for integrated water resource managing in the Inkomati and Mvoti catchments, South Africa". They found that the most important challenge that facilitator teams faced during the dialogue was the appropriate set of languages to use to facilitate; it was difficult to find a balance of language and style for involved tribal community members as well as the broad mix of environmental, economic, and social interests. The presentations tended to favour those with economic and engineering backgrounds over other people (Colvin *et al.* 2008:687).

Grecksch (2015) focused on adaptive capacity and water governance and states that as a semi-arid region, South Africa is going to continue experiencing climate change and this will lead to change in rainfall patterns, extremes of droughts and floods and the intensity of storms. These predicted impacts create serious challenges to municipalities; hence, solutions and various measures and flexible adaptation measures are required in all regional levels including local ecological, social, and economic circumstances (Grecksch 2015:359). While the studies above focused on capacity building of cooperative water governance, Masangu (2009) focused on rural water management, specifically on water allocation and how policy objectives are achieved at a local scale. Masangu's study explored water allocation in terms of how is it being affected by new water resource management and water services provision legislation and policies in the context of water reforms. Masangu (2009) found that the Siyandhani village, the study area, was facing water scarcity and the people from the village believed that the water scarcity was regardless of uncertainties in rainfall patterns, which indicates that this problem is caused by poor governance of the water resource. Therefore, although water reform processes are a priority in South Africa, reforms have not yet reached the rural areas of the Klein Letaba (Masangu 2009:197).

Similarly, Jiménez & Pérez-Foguet (2010) did a study on rural water management, specifically the challenges of water governance in rural water supply in Tanzania. They found that lack of reliable information is at the heart of some of the main problems of the sector, and the greatest challenges for targeting the poor are found at district level, which tends to help bigger villages that are better connected and more influential (Jiménez & Pérez-Foguet 2010:442). Therefore, a greater balance between the participation of end users in the management of services and an adequate support and control from government institutions needs to be achieved (Jiménez & Pérez-Foguet 2010:442).

On one hand, Masangu (2009) and Jiménez & Pérez-Foguet (2010) focused on water governance in rural water supply and water allocation and examined how policy objectives are achieved at local scale in relation to the context of water reforms in legislation. On the other hand, Sithole (2011) did a study in relation to emerging contradictions between the post-independence and post-apartheid water legislation and water related policies through a comparative study of rural water governance in the Limpopo Basin in South Africa and Zimbabwe. Sithole (2011) sought to establish whether diverse realities of rural economies including women and men in informal (and formal) backgrounds are inspired by Integrated Water Resources Management (IWRM), which aims to address the water reforms. This study was undertaken in Sekororo, South Africa and Ward 17 in Gwanda, Zimbabwe which are both in the Limpopo basin. Sithole (2011:3) states that like other South African countries, Zimbabwe and South African have embarked on water reforms such as IWRM which built up to the declaration of the National Water Acts in 1998 which took place after four years of the democratic era in South Africa and after eighteen years in Zimbabwe since its independence 1980. The aim of the study was to "explore the emerging contradictions between the post-apartheid and post-independence water legislation (and related policies) on the one hand, and the rural realities of informal water use on the other by employing the 'hydraulic property rights creation' to analyse how people, as individuals and/or as groups, assert rights over water, and how such claims become legitimised through multiple arrangements" (Sithole 2011:3). The results of this study indicate that the agenda and the focus of catchment management institutions only cover the needs of large-scale water users and ignore the small-scale users (Sithole 2011:3).

Another study on rural water governance was undertaken in South Africa by Nkuna (2012). Nkuna (2012) sought "to highlight the systems and processes that influence the delivery of water services within the Inkomazi and Makhado municipalities". Nkuna (2012:3) states that according to the Millennium Development Goals (MDGs) of achieving universal access to clean water, South Africa has made considerable progress, although recent reports revealed that a large portion of the population in the country is still stuck at the bottom of the 'water ladder' because of poor water governance systems that have been put in place. Therefore, "it is important that municipalities located in economically depressed areas are treated differently" (Nkuna 2012:69).

Further to this, Tesfaye (2012) undertook a comparative study focusing on two basic service delivery modalities as opposed to comparing two places like Sithole (2011) and Nkuna (2012) did. Tesfaye (2012) compared "Woreda-managed and community-managed rural water supply projects". This study aimed at representing comparative analysis to find out which manner serves the rural beneficiary communities, implementers, and financiers best in Amhara Regional State in the northern Ethiopia. Tesfaye (2012:4) states that there is high potential of ground water in Ethiopia, yet the access to safe drinking water remains a challenge in rural parts of the country, as water supply in Ethiopia is among the lowest in sub-Saharan Africa. Tesfaye found that there is significant linkage between community participation and the key goals of responsibility, management, reliability, functionality, and implementation of projects (Tesfaye 2012:70).

Tesfaye (2012) is of the same view as Sithole (2011) and Nkuna (2012) concerning improper water management in rural areas after reform of water policies in the African countries. As much as the reviewed studies focus on different key issues yet revolving around water governance in rural areas or at the local government level and public participation, there is a common issue that has been identified. Although African countries including South Africa have embarked on policy reforms and redesigned laws, policies, and legislation to embrace public participation, effective implementation of good water governance, especially in rural areas, remains an issue. Of equal importance is that even the studies of Colvin *et al.* (2008), Grecksch (2015), Masangu (2009) and Jiménez & Pérez-Foguet (2010) which relates to cooperative water governance in rural areas show similar findings, which is the exclusion of, and less coordination in, rural areas. This clearly shows that although in water reform processes South Africa are a priority, the rural populations still experience less public participation, and inadequate water infrastructure to harness water resources. In this regard, this study sought to understand the designed participatory processes of water governance and how are they being interpreted and implemented in the local government space.

2.10 Conclusion

This chapter reviewed water governance studies, mostly focusing on water resources or catchment management in local government level or rural areas. The researcher made remarks in the last section of the literature review that although the African countries including South Africa have embarked on policy reforms in water sector, literature shows a common view that an effective implementation of good water governance, especially in rural areas, remains an issue. The reviewed studies have addressed different important issues under the umbrella of water governance, but there is still knowledge gap that this study fills. Therefore, the key knowledge gap that this study sought to fill is understanding the water governance strategies that are designed for catchment management within the local government space, the participatory processes and how are they are being interpreted in the laws and policies applied in local government, and the extensiveness of community participation in the decision-making and implementation processes as well as understanding existing intergovernmental processes and their contribution to catchment management practices. Further to this, water scarcity is a major problem in the rural areas situated at Umzimvubu Catchment area although this area is close to the catchment. After reviewing the body of literature, it was discovered that participatory processes are also still a challenge in the catchment management. In conclusion, this research also intended to fill the knowledge gap in the policy implementation in terms of the processes used or measures used to ensure that rural communities are involved in water governance and decision making to enhance collective decision making to eradicate water poverty and improve rural livelihoods sustainability.

Chapter Three

Conceptual Framework

3.1 Introduction

The previous chapter discussed the key elements of the study that include catchment management, Catchment Management Agencies, water governance, public participation, Integrated Water Resources Management, and rural communities. It also reviewed the literature related to this study. Therefore, this chapter addresses the conceptualisation of governance, starting by outlining the history of the governance system and its growth or increase in focus up to good governance. The chapter moves on to discuss the different concepts of governance such as good governance, water governance and good water governance as well as related paradigm shifts. This is discussed pertaining to the rural water governance and catchment management; it also presents a conceptual framework of Integrated Catchment Management. In South Africa the history of water governance includes water governance during the colonial times and water governance in the post-apartheid era. Lastly, the chapter discusses water governance during the post-apartheid era in South Africa, in which the current legal framework is highlighted.

3.2 Conceptual framework

At present governance is one of the social science terms that are fashionable and frequently used in political, social and public administration fields. The weakening of the societal steering and the state-centric views of power that have been challenged by recent ideological and empirical developments has been part of attraction to the concept of governance. Ansell & Torfing (2016:2) state that another cause of attraction is that "governance" considers civil society and private actors as instruments and resources for conspired public policy making, rather than restraining them to passive targets in public regulation. They add that governance has been defined according to collective will out of a range of interests that include politics and policy. Ansell & Torfing (2016:2) define politics as a "system of rules shaping and regulating the actions of social and political actors" and policy is seen as a "political steering based on soft, cooperative policy instruments, such as persuasion, voluntary coordination and procedures for benchmarking public performance". However, these definitions do not create separateness of governance. Given this, governance can be linked to the concept of government.

3.2.1 Government

Government can be regarded as a political system that rules a nation or people in a state. The terms that are used to define government are monarchy (based on the single person and undivided power/sovereignty) and oligarchy (based on the government exercised by few or small group to achieve purposes of the few). These terms have existed for many decades and have not yet lost their usefulness. However, Baccaro (2009:2) states that the decrease of classic command-and-control mode in regulation has led to the involvement of the

democratically selected public actors by their national supporters to make decisions that involve everybody and implement these decisions through government institutions.

This involves a learning process that is needed to connect a crucial reflection on initiatives and management procedures focusing on sound deliberations. In this regard, Ansell & Torfing (2016:103) add that the decisions of government location changed from traditional public governmental institutions in particular. The 1960s and 1970s top-down "command-and-control" regulation spawned heightened interest group pluralist behaviour and capture (Ansell & Torfing 2016:103). In addition, there were inefficiencies and backlash of big political change and government at the congressional and executive of government levels, and a shift towards privatisation, liberalisation (free market capitalism) and devolution to the private sector was seen in the 1980s and 1990s (Ansell & Torfing 2016:103). *"Apart from the popular belief that regulation was abandoned when neoliberalism was adopted around the Western world in the 1980s, the empirical evidence shows that deregulation, privatisation and the nurturing of markets under neoliberal governments expanded and extended regulation across the world"* (Ansell & Torfing 2016:104). However, in the 1990s the number of regulatory agencies of decentralised government increased sharply.

"During the 1990s decentralization was seen as a way of opening governance to wider public participation through organizations of civil society" (Shabbir *et al.* 2007:3). During the early nineteen seventies and nineteen eighties globalisation necessitated some governments to acknowledge the limitations and constraints of centralised management (Shabbir *et al.* 2007:3). Therefore, globalisation has introduced growing interaction between private, government enterprises and organisations of civil society, and there has been growing pluralism in forming public policies within and among countries (Shabbir *et al.* 2007:3). Shabbir et *al.* (2007:3) further point out that that "all three of these entities, governments, private enterprise, and civil society organizations have come to be seen as institutions of governance, whose participation is crucial in mobilizing the knowledge and insight necessary to take advantage of the potential benefits of globalization and to mitigate or prevent its potential threats".

3.2.2 From government to governance

Shabbir et *al.* (2007:3) state that before the early nineteen eighties the state and government were normally not seen as distinct but interchangeably. Shabbir et *al.* (2007:3) further state that government was perceived as the dominant source of political and legal decision-making and the institutional embodiment of state sovereignty. As a consequence, debates revolving around functions, structure and roles of government concentrated on the efficiency of centralised authority and power in improving social and economic progress as well as the potential efficiency of decentralising authority to local governments, subnational units of administration and other state agents (Shabbir *et al.* 2007:3).

However, this led to decentralisation because of globalisation, and the change that took place in the government system, which is the ascendancy of new government system with regulation that is created in participatory fashion. "In the governance mode of regulation, non-state actors are not only involved in the implementation of public policy, but often also

in their formulation" (Shabbir et *al.* 2007:3). This also led to the introduction of new forms of participation in both rich and poor countries. The process redefined the government administration system in terms of responsibility for administration and decision-making from the central to subordinate administrative units. Another result was new dimensions of power sharing, sources of influence and forms of participation and decision-making (Shabbir et *al.* 2007:4).

Furthermore, Ansell & Torfing (2016) discuss the change of the concept of government and state that the purported deregulation and spirit toward free markets has led to a gradual re-regulation of free markets in the nature of soft regulation intended to improve market performance. As Ansell& Torfing (2016:104) note, "the proliferation and expansion of those new regulatory patterns is both shaped by market logics and has a tendency to introduce and diffuse market principles". For example, the "new public management" emphasises efficient results and treating core government functions with a more market-based, competition-driven philosophy (Ansell & Torfing 2016:104). This transformation from hard to soft rules led administrative law, constitutional law, jurisprudence and political science scholars across the world to pay less attention to "government" and more to "governance". Governance implies "the range of activities, functions, and exercise of control" by private and public actors in the advancement of political, economic and social ends (Ansell & Torfing 2016:104).

Therefore, the governance concept developed to involve other societal institutions such as the private sector and civil associations. Shabbir *et al.* (2007:1) state that "the debates around government also shifted from the proper allocation of responsibilities within government to how strongly the state should intervene in economic activities, whether central governments inhibited or promoted social development and economic growth and the appropriate roles of government in the civil society and private sector". As much as the political scientists embrace a new concept of governance, this concept is not yet universally understood. However, governance is regarded as a concept that contains change compared to government, which has a nature of monarchy and oligarchy. Governance is perceived as a concept that focuses on multi-sectoral approaches rather than undivided power. In addition, Shabbir *et al.* (2007:4) state that after a couple of decades of growing centralisation of government authority and power in the 1940s and the 1950s, around the world developed and developing countries began to decentralise hierarchical structures in an attempt to decentralise power.

3.2.3 Governance
According to Bingham (2005:548), many academic fields have explored the water governance concept, including policy making, political science, public administration and sociology and planning. Bingham (2005:548) argues that government and governance have different meanings, although these two terms share goal-orientation. "Government occurs when those with legally and formally derived authority and policing power execute and implement activities; governance refers to the creation, execution, and implementation of activities backed by the shared goals of citizens and organizations, who may or may not have formal authority and policing power" (Bingham 2005:548).

Furthermore, for the Commission on Global Governance, "governance" is defined as one of various ways in which institutions, individuals, public and the private run their common affairs; "It is the continuing process through which conflicting or diverse interests may be accommodated and co-operative action may be taken" (Commission on Global Governance, Our Global Neighbourhood and Oxford: Oxford University Press 1995:2). The Global Water Partnership (2003) explains governance as "comprising various social, political, economic and administrative systems that are available to develop and manage water resources and to ensure water services delivery in all levels of society". The literature reveals that governance rests on two core values in which the first one is inclusiveness and the second one is accountability. On one hand, inclusiveness focuses on "ensuring that all members of the group receive equal treatment" and accountability, on other hand, focuses on "ensuring that those in authority answer to the group they serve if things go wrong, and are credited when things go well".

Of great interest to this conceptualisation of governance is the fact that there are more definitions of governance. Ansell and Torfing (2016:3) indicate that the World Bank (2007) describe governance as "the process of selecting those capable of making authoritative political decisions; the capacity of the government to effectively manage its resources and implement sound policies; and the respect that citizens and governments have for the institutions governing their interactions". However, (Ansell and Torfing 2016:3) state that "the problem with this definitional strategy is not only its prescriptive character but also that it betrays the fundamental idea that governance implies a problematisation of the role and nature of unicentric forms of government". Even though it does align to institutionalised ways of interaction, this definition mainly focuses on the procedures and institutions of traditional ways of government (Ansell and Torfing 2016:3). Jessop (1998) cited in Ansell and Torfing 2016:3) described governance as "the hierarchy of reflexive self-organisation." This definition links governance with self-organised processes in civil society (Ansell and Torfing 2016:3). As Ansell and Torfing (2016:3) note, "the problem with this definitional strategy is that it gives rise to an unwarranted normativism, as it implicitly assumes that governance is more consensual, egalitarian, trust-based and deliberative than governing produced by State and markets because it reproduces the intrinsic values of civil society."

Furthermore, Kooiman (1993 cited in Ansell and Torfing 2016:3) equates governance with governance networks that are defined either as hybrid of hierarchy or market as a unique structure of governing hierarchies. Although it is fundamental for the governance to have networks, the combination of networks and governance results in a narrow definition of this concept; this definition excludes forms of control, steering and coordination that are not given by horizontal and stable networks (Ansell & Torfing 2016:3). Lastly, Bevir and Rhodes (2003 cited in Ansell & Torfing 2016:3) view governance as a neoliberal language game that guides to non-identical interpretations and institutionalisations in different cultural and political contexts. As Ansell & Torfing (2016:3) also note, "the problem with this post-foundationalist view is that it becomes difficult to put bounds on governance". It does not refer to specific institutions, processes of governing; thus, governance is limited to a

narrative advanced by selected actors managing specific dilemmas in a sense that depends on particular traditions (Ansell & Torfing 2016:3).

Based on the above discussion the expansion of governance, evolution in thinking, change in government administration and different definitions of the concept of governance, the current study focused on water governance in a participatory manner. The evolution of the concept of governance shows that government institutions have decentralised power by establishing new administrative levels from central to local governments. As Shabbir et *al.* (2007:4) note, this process also created new levels of power sharing, participation and new sources of influence over decision-making. The following section focuses on water governance by giving its historical background, exploring its definitions, and discussing the frameworks that are in place for water governance in a decentralised government system in South Africa.

3.2.4 The concept of water governance

The concept of water governance is still developing, and currently there is no globally agreed upon water governance definition and its political dimensions and ethical implications are still a matter of national, regional, and international debate. As a result, this concept is used in different ways by different people and various institutions depending on their socio-economic situations and cultural, political, and legal contexts. Although this concept is still evolving, it historically comes from the evolution of the concept of water management. The history of water management goes back to the prehistoric times. Therefore, the history of water management can thus be regarded as the history of human kind. From the origin of the species, surviving with or without water resources has always been a fundamental component of peoples' strategies for well-being and survival. Water has remained an important factor from the times of hunting-gathering, farming and into the transition to farming. It also became more crucial with the emergence of industries, cities, and towns and administrative centres. Mokoena (2015:9) states that water management became a matter of public concern after the emergence of towns and cities, as this caused large concentrations of human beings (Mokoena 2015:9).

It is indicated in the history that there are many paradigms of water management. "At present, just as in the past, water management systems have been embedded in attitudes and practices that constituted paradigms, which canonised and operationalised mental structures through methodologies of communication, conduct and interpretation" Hassan (2011:46). The need for a radical paradigm shift has been stressed by experts studying human-environment to replace the current technocratic and mechanistic strategies because they neglect the human dimension and complexity (Pahl-Wostl 2015:18). As a result, some of the old paradigms are still functioning but differ from emerging paradigms. Due to the existence of paradigms, water management kept evolving from pre-historic times to industrial revolution times where the water governance concept became popular. This concept originated from one of the different paradigmatic currents that uphold debates on water issues at present (Hassan 2011:46). According to Hassan (2011:46), these paradigms include the spiritual–religious, hydraulic engineering, scientific, industrial hydraulic engineering,

economic–financial, ecological, aesthetic-recreational, scientific–health, a legal and ethical and the managerial–governance paradigm which consists of water governance.

The managerial–governance paradigm, which is the focus of this study, outlines the establishment of institutions for water management both at national and international level. Hassan (2011:46) states that "management of river basins for irrigation, hydropower flood control, river channel dynamics, urban water supply, transboundary navigation and environmental protection provided the impetus for technical water commissions, integrated water basin management plans, inter-state water management institutions, and international water laws". According to Hassan (2011:46), the transformations in water technologies or trans-historical paradigms have led to changing paradigms of water. Therefore, Tortajada (2010:299) states that the water government concept is still developing, and that there is currently no globally accepted definition for this concept, and its apolitical dimensions and ethical implications are a matter of national and global debate. Tortajada (2010) further argues that different institutions and people use water governance in various ways, as dictated to by social, economic, cultural, political, and legal contexts. "Water governance can be perceived, in its broadest sense, as comprising all social, political, economic and administrative organizations and institutions, as well as their relationships to water resources development and management" (Tortajada 2010:299). It focuses on how regulations affect political actions and how institutions function as well as on societal concerns through formal and informal instruments (Tortajada 2010: 299).

In the light of the above, Tortajada (2010:299) regard water governance as involving political, institutional, social economic and processes, through cooperation with the civil society and private sector in decision making for water use and management of water resources. Therefore, water governance is "a range of political, social, economic, and administrative systems that are in place to develop and manage water resources and the delivery of water services at different levels of society and for different uses" (Tortajada 2010: 299). Tortajada (2010) further states that water governance consists of institutions, mechanisms, and processes where all stakeholders and citizens and interested groups exercise their legal rights to mediate their differences and meet their obligations.

The occurrence of a radical paradigm shift from water management has resulted in more participatory integrated models to adaptive management and water security. During the 1990s, major transformative water governance was underway (Hassan 2011:46). The transformation mainly involved a shift towards a crucial and major role in water management for administrative and transboundary technical institutions and the private sector. Multinational companies were also included. Hassan (2011:46) further states that although there are historical developments of water management, it is important to also consider the traditional water management methods, because these systems are still operational in many regions around the world. Notably, recent water management developments conflict with state and municipal polices and strategies as well as indigenous strategies. In addition, in the nineteenth century the idea of integrated river basin as a unit for water management increasingly obtained international momentum (Mokoena 2015:5).

In the twentieth century the emergence of national water laws, codes and acts was among the major developments. These developments aimed at integrating water resources, providing financial institutions and administrative functions for water management, conserving ecosystems, and facilitating public participation of water users. Such developments in Europe are exemplified by the case studies of Germany, France, and Spain (Hassan 2011:48). The encouragement of the urgency for establishment and strengthening of river basin authorities was outlined by the United Nations Water Conference held in Mar del Plata in 1977 (Mokoena 2015:12). This led to some individual water projects not being undertaken unless there were broad plans for the entire drainage basin (Mokoena (2015: 15). In this regard, the water sector has experienced the waxing of principles guiding the water governance reform hierarchical centralisation, coordinated river basin planning and management, devolution and decentralisation, markets and privatisation. There was a clear need to focus on the human dimension of water management, which had been largely ignored in the past. According to Pahl-Wostl (2015:4), IWRM moved to the centre as a model to bring about sustainable water resources management in the few past decades, to also overcome the inadequate approaches that greatly neglect human dimensions of the technocentric management models. Given this, IWRM promotes: (1) an integrated approach across sectors and different uses and users; (2) a balance of the three pillars of sustainability—economic, social, and environmental concerns, and (3) participatory approaches and the involvement of women (Pahl-Wostl 2015:4). IWRM thus clearly recognises the importance of the so-called 'soft' strategies and the need for governance reform. These changes experienced in water management paradigms have, in fact, initiated a path-breaking transformation towards significant improvement.

In contrast to the above, (Pahl-Wostl (2015:274) argues that global discourses on paradigm shifts in water governance and management have not yet translated into action and transformative change on the ground. Pahl-Wostl (2015:274) further argues that even when global discourse on, for example, IRWM have been taken up in policy circles and entering policy frameworks in many countries, this has not yet led to transformation in management practices and improvement in management outcomes. Furthermore, Global Water Partnership (2003:15) states that "the water crisis is often a crisis of governance, and identified making water governance effective as one of the highest priorities for action". The proclamation strengthened this view and called for effective water governance to ensure good governance in order to include public or stakeholders in the water resources. "The Dublin Water Principles bring water resources firmly under the State's function of clarifying and maintaining a system of property rights, and, through the principle of participatory management, asserts the relevance of meaningful decentralisation at the lowest appropriate level" (Global Water Partnership 2003:17).

3.2.5 Good water governance
As mentioned earlier, one of the highest priorities for action (Environment Matters 2006 — The World Bank Group) indicate that good water governance is based on many of factors, including, legal and regulatory frameworks, more effective implementing organisations, strong policy, civic determination to improve appropriate investments and water governance.

(i) Policy, legal, and regulatory frameworks

There is now an improved recognition of inclusive decision-making and bottom-up keys for the effective water governance. The formulation of policies is expected to contribute to effective water governance.

Tortajada (2010:300) argues that inclusiveness in policy formulation, cooperation, information exchange and communication between stakeholders and administrations at all levels would improve understanding of policies and bring on a better knowledge and understanding of one another's working modalities, policy objectives and mechanisms available for implementation. "However, decisions should first be coherent with a broad set of principles leading to a more progressive and efficient and equitable management of water resources" (Tortajada 2010:300). According to the Global Water Partnership (2003:20), government has a key task to introduce frameworks (administrative and institutional) within which people discuss their interest and cooperate in a peaceful manner. It is further stated that, this framework should reduce the cost that peruse the efficient water management (Global Water Partnership 2003:20).

Huitema *et al.* (2009:26) speak about the conceptualisation of adaptive management, stating that it can be labelled a non-technocratic variant that is compared with the technocratic variant in water management. The technocratic variant is based on learning through experimentation and learning only and the non-technocratic variant on its side already consists of both the linkage and learning dimensions now seen as typical for adaptive co-management (Huitema *et al.* 2009: 26). Given this Huitema *et al.* notes that "Adaptive management implied several institutional prescriptions: collaboration, experimentation, and a bioregional approach to resource management, collaboration refers, first, to the fact that different government bodies have to work together in order to manage issues that cross jurisdictional boundaries and fall into different policy sectors." Then, collaboration is based on the necessity for cooperation between non-governmental organisations and these bodies, such as individual stakeholders and interested parties (Huitema *et al.* 2009:26).

(ii) Implementation

According to OECD Principles on Water Governance (2015: 4), water governance can play an important part in the establishment of policies and implementation of these policies, in a cooperative manner as well as shared responsibilities in all government levels. This involves business, civil society and greater variety of stakeholders who have crucial function together with policy-makers to produce the economic, social, and environmental benefits of good water governance.

There are "three mutually reinforcing and complementary dimensions" of water governance that have outcome-oriented public policies, namely effectiveness, trust and engagement, and efficiency. OECD Principles on Water Governance (2015:3) indicates that, "Effectiveness relates to the contribution of governance to define clear sustainable water policy goals and targets at all levels of government, to implement those policy goals, and to meet expected targets, Efficiency relates to the contribution of governance to maximise the benefits of sustainable water management and welfare at the least cost to society and Trust and

Engagement relate to the contribution of governance to building public confidence and ensuring inclusiveness of stakeholders through democratic legitimacy and fairness for society at large."

In addition, Tortajada (2010:301) states that "at present, some of the common features required to achieve so-called good governance in the water sector are said to be functional institutions within a multi-sector, multi-level perspective in order to avoid major gaps or overlaps in policy, planning and funding as well as formulation and implementation of policies, laws and regulations".

Mirumachi & Wyk (2010:26) point out that there are dynamic power relations in water governance. Currently, water governance is not based on political boarders, but on natural resources such as catchments. In this regard, it also brings about multi-sectoral approaches such as the IWRM model (Mirumachi & Wyk 2010:26). "IWRM model emphasises the role of local actors, and implies how local governments are in touch with community needs, more empowering, more effective in cooperative practices, and more cost-efficient than higher scales of governance" (Mirumachi & Wyk 2010:26). In the past two decades the IWRM brought a paradigm shift on water management.

(iii) Water management paradigm

The ever-changing models and perspectives of water management among science and political science have led to the water management paradigm shift. Wostl *et al.* (2006:30) states that "water management paradigm refers to a set of basic assumptions about the nature of the system to be managed, the goals of management and the ways in which these management goals can be achieved". It is shared by an epistemic community of the actors that are part of water management. Moreover, it is manifested in planning approaches, technical infrastructure, regulations, engineering practices, models etc. (Wostl *et al.* 2006:30).

(iv) A paradigm shift in water management

There has been development of integrated models to water management in the past two decades. This was done with the purpose to address the shortcomings that were experienced in the past. According Wostl *et al.* (2006:39), the IWRM has been utilised as a structure to implement integrated approaches. However, the introduction and application of IWRM model that shows sufficient interdependencies and complexity of human-technology-environment has not yet been seen to function effectively in South Africa Wostl *et al.* (2006:39).

(v) Appropriate investments

According to Environment Matters — The World Bank Group (2006:23), it is not enough to invest only in water infrastructure. The literature states that if governments are to play significant roles in good water resources management and effective service delivery, it is important that they invest in their staff as well such as through developing effective information systems (communication and management and GIS-based tools), job training

and making the office infrastructure better to build-up communication and outreach to communities to give rise to broad-based consensus on water governance.

(vi) Civic determination to improve water governance

Theories that centre on the community and place have obtained growing practical support and refined denotations in recent decades. There has also been a growing understanding of the real effect of community and place on natural-resource management and politics. "A cursory glance at the literature on water governance reveals that stakeholder engagement has long been considered an integral part of sound governance processes" (Akhmouch & Clavreul 2016:1). There is emphasis these days on citizens' involvement and participation of a great variety of stakeholders in policy and decision-making processes (Akhmouch & Clavreul 2016:2). In addition, Akhmouch & Clavreul (2016:2) argue that the traditional top-down culture to policy formation and implementation has been replaced with more inclusive, deliberative, bottom-up approaches and processes and has growingly lost political legitimacy. "Although scholars have studied the transformation of governance through globalization, devolution, and networks and they have argued for a greater role in governance for the public, practitioners have developed a rich diversity of processes that use negotiation, mediation, facilitation, citizen and stakeholder engagement, deliberately" (Bingham 2005:552).

Huitema *et al.* (2009:26) state that the term public participation contains various meanings of things to different stakeholders varying from consultation to information supply and engagement with the public, co-decision making to a situation in which the "public" oversees parts of natural resources management. Moreover, Huitema *et al.* (2009:26) argue that the "public" may indicate the unorganised "general public" to indicate different classification of water users and to their organisations. In the light of the above, Huitema *et al.* (2009:26) state that public participation would enhance the standard of decision making by improving the creativity that is available in society, use of the information and by verbalising the decision-making process. "It would improve public understanding of the management issues at stake, make decision making more transparent, and might stimulate the different government bodies involved to coordinate their actions more in order to provide serious follow-up to the inputs received, management itself would become less controversial, less litigation would take place, and implementation of decisions would be much smoother, public participation could improve democracy" (Huitema *et al.* 2009:26). In addition, Huitema *et al.* (2009:26) also state that the importance of public participation would be the cooperation when there are insufficient resources in government such as power, finance, information, etc. to run effectively, as it is always experienced in water management.

While people should be responsible and accept accountability in management of water resources, governments need to take up the responsibility for good catchment management. Consequently, the catchment management process should become integrated instead of merely being technical as in the past. The subsequent impacts of water resources degradation show that catchments cannot easily be managed by the government alone, which implies that integrated catchment management is required. Coordinated planning and

action is needed from national, provincial government authorities down to individual landowners, the public in general as well as involvement of other sectors. "The new policy on water resource management in South Africa (DWAF 1997) was drafted in this context" (Claassen 2015:32).

The subsequent National Water Act (Act 36 of 1998) draws attention to decentralised water resources management from national level down to catchment levels. Specific provisions are created by this act with the intention of designed mechanisms to ensure efficient and equitable water use and protection of water resources (Claassen 2015:32). "These mechanisms also placed a premium on participative management, thus supporting the Dublin Principles of social and economic benefit, community participation, a policy framework and the role of communities and women" (Claassen 2015:32).

The hydro-geographical boundaries such as the catchments provide spaces for modern governance networks, because it enables people to reach an agreement on government systems of water issues. "Although basins cut across formal jurisdictional boundaries and thus local government and other government entities which do not necessarily work together, the basin society (a river basin agency or commission) could require them to do so" (Global Water Partnership 2003:21). Therefore, the society may have a specific governing capacity and needs.

The Global Water Partnership (2003:22) states that acting exclusively, national governments cannot easily achieve the allocation and regulation of water in catchments, as they are unlikely to appreciate local interests. "Government should, however, provide the rules and regulations and establish a framework for local people to meet" (Global Water Partnership 2003:22). In the literature it is stated that regulation within a catchment must focus on quality issues and allocate quantity to water users.

This is a clear indication that good water governance, particularly catchment management, needs an Integrated Catchment Management or an integrated management manner. The ICM integrate environmental, socioeconomic and factors and institutional processes through coordinated stakeholder participation in catchment management. The conceptual framework in Figure 3.2.5 below indicates the objective that this study is sought to achieve.
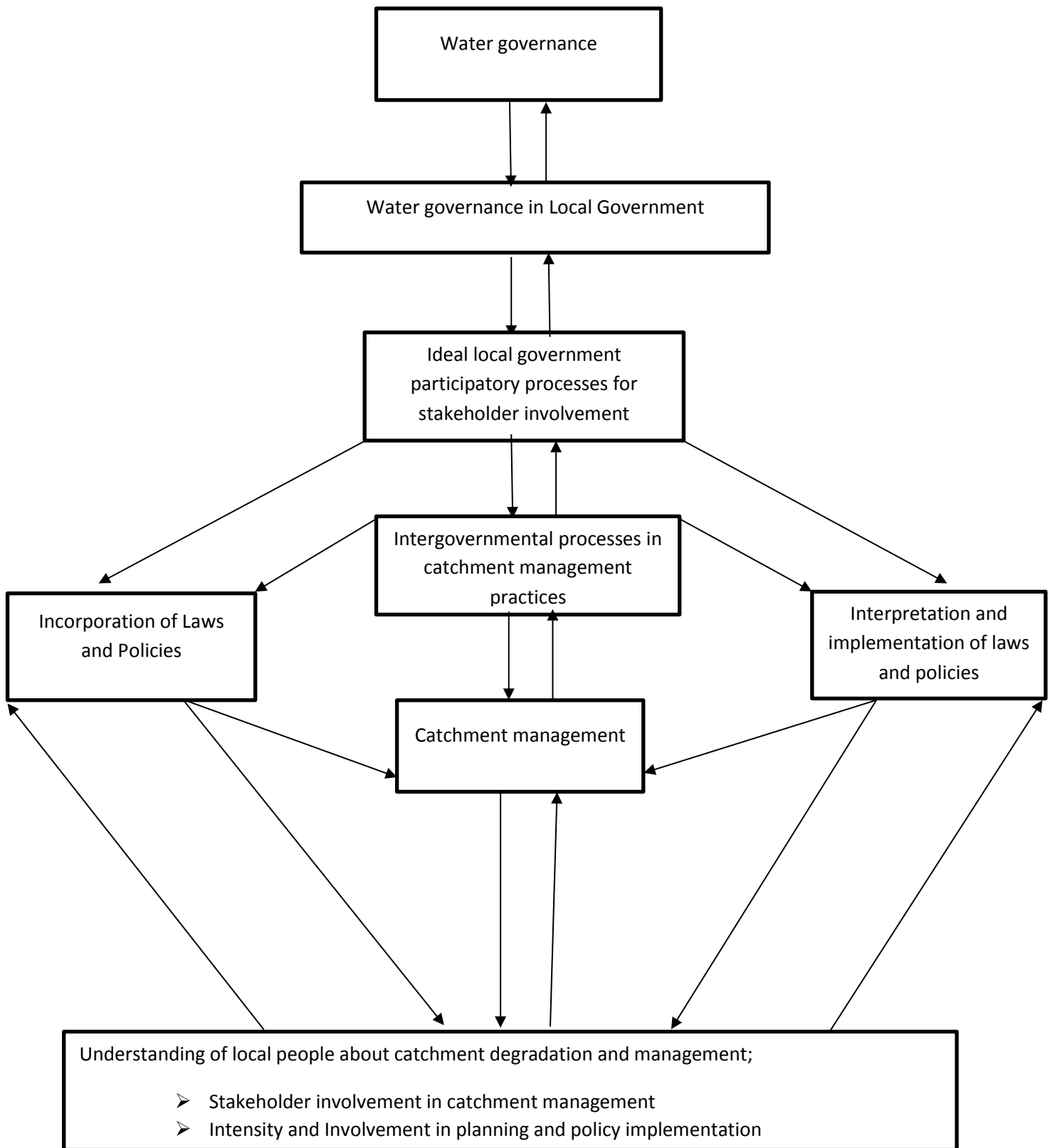
Figure 3.2.5: *Conceptual framework of Integrated Catchment Management*

3.2.5.1 Water governance

The water governance theme is increasingly used, and water sector forms part of broader developments such as political, social and economic developments and it also involves actors outside the water sector. As previously mentioned, there are still debates revolving around the concept of water governance. However, there is a commonly or widely referenced definition of water governance. As also indicated earlier on in this chapter, according to Tortajada (2010:299), "Water governance can be perceived, in its broadest sense, as comprising all social, political, economic and administrative organizations and institutions, as well as their relationships to water resources development and management". In this regard, water governance involves different stakeholders or/and different actors from other sectors.

Due to continuous evolution in water governance, some new governing methods and processes and changed conditions of actions in which all concerned parties are accountable have come into place. Therefore, good water governance has become a prominent theme under the umbrella of governance. Good water governance is regarded as inclusive governance that involves strong regulatory frameworks, policy and more cooperation in formulation and decision making that embraces relationships between societies and governments.

3.2.5.2 Water governance in local government

Given that there has been evolution or an increased focus on governance, after the democratic elections in South Africa the political power was decentralised. This has also been experienced in the water sector. Many policies have been redesigned, which involved the introduction of public participation to accommodate water governance at a local level. Water governance at local government occurs at the local sphere of government, and this comprises local government institutions, namely district and local municipalities. These institutions are regarded as very important places for effective community water service function. Amongst other functions, this includes implementing local by-laws and monitoring the quality of drinking water.

According to DWA (2003), the WSAs, namely the municipalities, have to maintain a register of water services infrastructure assets and put in place a system to manage these assets in terms of a maintenance and a rehabilitation plan. In addition, the National Department of Water Affairs (DWA) and local government institutions are two main actors involved in facilitating this process. Nkuna (2012:4) points out that as overall policy maker and regulator of the water sector, the DWA has a duty to be in charge of all water activities in the water sector both for national and international allocation. The institutions of local government institutions have a duty to facilitate water services provisioning to communities in the form of local/district municipalities (LM/DM) (Nkuna 2012:4). In this regard, in terms of local government support, all communities can have the water required for basic needs, even those who cannot afford to pay. Of equal importance is the decentralisation of power in catchment management to the local sphere through the Water Management Areas (CMAs).

3.2.5.3 Ideal local government participatory processes for stakeholder involvement
In the past years, water governance has gone through a remarkable paradigm shift. The new paradigm has embraced the stakeholder participatory processes that is associated with decentralised management structures. In this regard, the ideal local government participatory processes for stakeholder involvement relates to the transparency, accountability and involvement of more voices in formulation and decision making (Akhmouch & Clavreul 2017:29). This study sought to understand the participatory processes and how they are being interpreted and implemented in the local government space.

3.2.5.4 Intergovernmental processes in catchment management practices
As South Africa has embarked on policy reforms, it is implementing collaborative governance and has adopted international initiatives and approaches within the water governance sector (Pähle 2014:4). The intergovernmental processes in catchment management practices relate to the cooperation of different government spheres. This study examined intergovernmental processes that are in place at local government space.

3.2.5.5 Incorporation of laws and policies
Under water governance in local government it has been pointed out that local government institutions are responsible for implementing local by-laws and monitoring drinking water quality (Haigh *et al.* 2010:475). Therefore, this section relates to the incorporation of water laws and policies at local government space**.**

3.2.5.6 Interpretation and implementation of laws and policies
Given the above, this section relates to the interpretation of these laws and policies.

3.2.5.7 Catchment management
The catchment management refers to the management of water resource, which includes governance and management of hydrological functioning of the catchment**.**

 3.2.5.8 Understanding of local people about catchment degradation and management
The poor management of natural resources, which is caused by both natural factors and human activities, led to this section focusing on analysing the following concepts with regards to catchment degradation and management;

Stakeholder involvement in catchment management and intensity and involvement in planning and policy implementation.

 3.2.5.9 The concept of water governance in South Africa
Having discussed the evolution of the concept of water governance, the discussion on good water governance and related paradigm shift to a human centered dimension now turns to the historical perspectives on water governance in South Africa.

3.3 Water governance during the colonial times in South Africa
Drawing from the international water history, water governance in South Africa has a history that can be traced back to colonial times. This is discussed below;

 3.3.1 Historical perspective of water governance in South Africa
The rise of environmental conversations that occurred during the period of 1770 to 1850 came along with the emphasis on water management. This occurred after environmental

degradation was observed. According to Beinart (2003:89), the colonial regime is associated with the colonial science which had botany along with zoology as the strongest scientific knowledge spheres of the early nineteenth-century. The development of fields such as geology became a significant starting point in consideration of environmental change. They involved discussions that amongst other major factors included the water issue. Therefore, the richness of the Cape Flora and threats to that natural wealth started to be explored. Beinart (2003:89) states that water, veld, forests, and wild animals were important natural resources for African people, the Khoisan and landowners who were the backbone of colonial economy (Beinart 2003:89). Given this, the colonial era was aware the risks and dangers of overexploitation. The Cape's effort at regulation in in line with European standards started immediately after company rule was passed (Beinart 2003:89). Beinart adds that great stress of water management was laid by officials as part of broader efforts for conservation of natural resources. However, this seemed not to be separated from efforts of colonial development because water conservation played a fundamental role in agriculture. (Beinart 2003:89).

In 1896 irrigation boards were recommended by the Irrigation Committee, but it was hardly realised under the 1878 Act. In 1906 the Irrigation Department started a survey of water resources and formed a legislation in 1906, the similar Act was passed in 1908 in the Transvaal. Kanthack's preoccupations involved the revision of water acts. Beinart (2003:185) states that he took major responsibility for the national Irrigation and Conservation of Waters Act of 1912. This Act was prepared for large-scale storage systems and underlined the newly established authority of experts, the bureaucracy, and the courts (Beinart 2003:185). It further emphasised the government's view that the most significant use of water was for irrigation of agricultural crops and for supply of water to emerging industries and towns.

Based on global trends connected to the green revolution, in the 20th century modern agricultural practices were introduced (Claassen 2016:326). These monoculture methods were intensive and they required vast amounts of water (Claassen 2016:326). This marked the start of construction of numerous large water storage reservoirs (e.g. Hartbeespoort, Darlington, Van Rynevelds Pass) that were designed to provide water primarily for irrigation purposes. The construction of large dams started off again in 1929 because the World War was associated with capital expenditure on bulk water infrastructure (Ashton *et al.* 2012:11). However, the construction of large dams and irrigation schemes was a way of reducing white unemployment by the government of the day (Ashton *et al.* 2012:11).

3.4 Water governance during Apartheid Era in South Africa

The establishment of the apartheid policy in South Africa also affected the water governance of South Africa. Ashton *et al.* (2012:11) argue that in 1948 the official apartheid policy of statutory racial differentiation and segregation was promulgated and it immediately had fundamental effects on the management and use of South Africa's aquatic resources. In 1956, the Water Act (Act 54 of 1956) was promulgated which was South Africa's first Water Act (Ashton *et al.* 2012:11). In the same period the Department of Irrigation become Department of Water Affairs (Ashton *et al.* 2012:11). This transition was the result of the

recommendations contained in the report by the Hall Commission of Enquiry into the state of water in South Africa. The recommendations of this Commission laid the groundwork for rapid economic growth until the end of the 1960s (Ashton *et al.* 2012:11). Therefore, this policy focused more on the economic growth of the country than public involvement. This act also introduced many standards for the quality of treated effluents that may be discharged into surface water resources which was going to be enforced by the Department of Water Affairs. Ashton *et al.* (2012:11) state that effluents must be treated to meet the uniform effluent standards and then be discharged into the 'stream of origin' so that natural purification processes can further improve the water quality and enable the water to be reused safely by downstream users. However, this approach showed that water supplies were becoming increasingly scarce as demands for water grew and water quality continued to deteriorate (Ashton *et al.* 2012:11).

Since water supplies were becoming increasingly scarce as demands for water grew and water quality continued to deteriorate, in 1966 a "Commission of Enquiry into Water Matters" was launched and it published its final report in 1970, which then led to the establishment of the Water Research Commission (WRC) and the Hydrological Research Institute (HRI) at the Department of Water Affairs. This report also focused on the need to ensure the security of water supplies and their quality (fitness for use) into the future, as well as improving relations with neighboring states that share river basins with South Africa (Ashton *et al.* 2012:11). Furthermore, in 1980 the Department of Water Affairs had predictions of environmental impacts when planning new bulk water infrastructure projects. Therefore, in subsequent years, DWA started to introduce water governance strategies such as the 'Red Book' on "*Management of the Water Resources of the Republic of South Africa*", which was published in 1986. Therefore, DWA declared its intent to allocate water to sustain the natural environment.

During the1990s, the water demand increased and the social and economic issues became increasingly complex and this led to the need of shift in thinking. Claassen (2016:326) states that the global paradigm of management of water resources experienced a chance, as it was shifting from supply side engineering solutions to demand side management. "Previous approaches used population growth and per capita water use to determine future demands and focused on capturing a larger portion of the hydrological cycle to meet these demands" (Claassen 2016:326). It was seen that the use of the engineering solutions to increase water supply were not sustainable anymore. In this regard, resource managers turned to efficiency improvements and demand management in a holistic strategy to meet future needs (Claassen 2016:326). In 1991 the Water Quality Management Policies and Strategies in the RSA by the Department of Water Affairs (DWA 1989) were published (Ashton *et al.* 2012:30). This is a clear indication that the apartheid regime had a central government because the implementation of policies was not talking about public involvement, especially about the citizens who are based in rural areas. The political system isolated those residing in rural areas.

3.5 Water governance during post-apartheid era in South Africa

In 1994, South Africa saw the dawn of democracy following the first democratic elections in South Africa. The legal framework thus experienced a shift.

3.5.1 Current legal framework of South Africa

After the first democratic elections in South Africa, the Constitution became the supreme law of the Republic of South Africa, and it guides and provides for the foundation and existence of the Republic. The purpose of the Constitution is to set out the rights and duties for the citizens. As the constitution sets out many rights and duties, it is also specific about water. Under Chapter 2, section 27 of the Bill of Rights the constitution purely touches on water. It guarantees the right to water for every citizen. According to the Republic of South Africa (1996), "everyone has the right to have access to (…) sufficient food and water". The Constitution further obliges the state to "achieve the progressive realisation of each of these rights" (Republic of South Africa 1996).

In addition, the first Water Affairs Minister after post-apartheid South Africa Minister was Prof Kader Asmal, a South African legal academic who had returned from exile in Dublin. There were urgent equity issues in South Africa, some of which hinge on the private ownership of water. The minister lost confidence in his technically strong senior public servants regarding their societal intent. This led to a strongly stakeholder-driven water law review process, side-lining many experienced public servants, and including innovative thinking and recent research results (Ashton *et al.* 2012:52). In 1994 the Overview of Water Resources Availability and Utilization in South Africa was published by DWAF (Ashton *et al.* 2012:52). Furthermore, the White Paper on a National Water Policy for South Africa was accepted by the Cabinet in May 1997. The founding principles were equity and sustainability, with a focus on redressing past inequalities, while the notion of equity for future generations was important. In addition, the Water Services Act (Act 108 of 1997) was promulgated (RSA 1997; Ashton *et al.* 2012:52).

The national Department of Water Affairs (DWA), which later became the Department of Water Affairs and Forestry and in 2010 reverted to the DWA was responsible for an intensive programme of dam building throughout the country (Ashton *et al.* 2012:30). After the abolishment of apartheid and a radical change in the political system, South Africa introduced one of the world's most innovative regulatory frameworks on water. Unfortunately, the limited capacity to implement change has meant that the lofty goals of the new water legislation have not been met (Pahl-Wostl 2015:18). The new government introduced policies that allow the right to access of water resources by all citizens such as the National Water Act (Act 36 of 1998), Water Services Act (Act 108 of 1997) and the National Water Resources Strategy of 2004.

Moreover, South Africa has made great development by reforming the country's water sector. Pähle (2010:20) states that "It has established a highly ambitious body of water legislation and is now struggling with its implementation". Pähle further argue that this situation shows how challenging is it to delineate water management areas and implement basin management in the face of administrative, social, biological, economic realities.

3.6 Conclusion

This chapter provided the conceptual framework of the research study. It started by outlining the conceptual framework. After that is analysed all the concepts of this study, starting from the concept of government, then governance, and afterwards water governance and good water governance. It further displayed the conceptual framework of Integrated Catchment Management that this study intended to achieve. Lastly, the chapter discussed the evolution of water governance in South Africa, starting from colonial times until post-apartheid South Africa. The following chapter discusses the research methodology of the study.

Chapter Four

Research methodology

4.1 Introduction

The methodology is an important part of a research work. It is also regarded as the main part of the research structure. It provides the types of procedures, research processes and tools that were utilised in the study. This chapter provides the research methodology of this study. It indicates the research paradigm, research design, research approach as well as the appropriateness of the research method chosen for this research study. Lastly, the chapter describes the study area and unpacks the strategy of the research, including data collection methods, data analysis procedures and data trustworthiness.

4.2 Research paradigm

According to Kamal (2019:1388), the paradigm is a term that has been derived from the Greek pattern and it has been widely used by various academics. Shah & Al-Bargi (2013:253) state that "the term paradigm was first introduced by Kuhn in his seminal work *The Structure of Scientific Revolution*". As mentioned earlier, a paradigm is regarded as a set of beliefs that directs a researcher's inquiry (Rehman & Alharthi 2016:51). Likewise, Kamal (2019:1388) states that a paradigm is perceived as "a way of seeing the world that frames a research topic" and "sets of beliefs that guide action" while Guba and Lincoln (1994 cited in Shah & Al-Bargi 2013:253) call paradigm "a basic system or worldview that guides the investigator".

Moreover, Rehman & Alharthi (2016:51) describe paradigm as a "basic belief system and theoretical framework with assumptions about 1) ontology, 2) epistemology, 3) methodology and 4) methods". According to Shah & Al-Bargi (2013:253), a paradigm is defined as "an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools". (Fraser and Robinson 2004) Kamal (2019:1388) also states that argue that a paradigm is "a set of beliefs about the way in which particular problems exist and a set of agreements on how such problems can be investigated".

Shah & Al-Bargi (2013:253) state that it is largely accepted that that a paradigm there are five components of paradigm, namely "explicitly stated laws and theoretical assumptions, standard ways of applying the fundamental laws to a variety of situations, Instrumentation and instrumental techniques that bring the laws of the paradigm to bear on the real world, general metaphysical principles that guide work within the paradigm and general methodological prescriptions about how to conduct work within the paradigm". Therefore, a research is undergirded by paradigm (Kamala 2019:1388). In this regard, there are three main research paradigms, namely positivist, constructivist, and interpretivist.

4.2.1 Positivist paradigm

Shah & Al-Bargi (2013:253) state that positivism is considered as "scientific method" or "science research" and is "based on the rationalistic, empiricist philosophy that originated with Aristotle, Francis Bacon, John Locke, Auguste Comte, and Emmanuel Kant". They add

that positivism is connected to many schools of thought that include empiricism, scientism, behaviourism, naturalism, reductionism, and determinism. Further to this, Creswell (2003 cited in Shah & Al-Bargi 2013:253) views positivism as a "deterministic philosophy in which causes determine effects or outcomes". Rehman & Alharthi (2016:53) believe that positivism speculate that reality prevail independently without humans. In the same sense, Alharthi (2016:53) states that it is not perceived by our senses; rather, it is governed by immutable laws. In this regard, Scotland (2012:10) speaks of "scientific paradigm" by stating that "scientific paradigm rose to prominence during the Enlightenment. Scotland (2012:10) adds that, *Comte popularized the term positivism when he sought to apply the scientific paradigm, which originated studying the natural world to the social world.*" According to Rehman & Alharthi (2016:53), Positivists try to understand the natural world and social world same way and their ontological position is like that of realism.

In addition, Shah & Al-Bargi (2013:253) state that, "Positivist paradigm takes realism (naïve realism) as its ontological stance, assuming that reality exists and is driven by immutable natural laws and mechanism." Their nature of knowledge is objectivist and dualist, in which the investigated information and investigator are regarded as independent entities and the object or the investigated can be studied independently without influencing each other. Methodology and methods of the positivist paradigm are concerned with explaining relationships among various phenomena and the paradigm is related to quantitative methods (Shah & Al-Bargi 2013:255).

However, Rehman & Alharthi (2016:53) state that the positivist approach has been critisised by many scholars. While scientific and objective methods are suitable for studying natural objects, but they are not very effective when they are put to the social phenomena. As a result, criticism of the positivist paradigm resulted in other paradigms.

4.2.2 Constructivist paradigm
As previously mentioned, Shah & Al-Bargi (2013:253) state that the constructivist paradigm strives to unlock beliefs and practices that shackle human freedom and it challenges both the positivist and interpretivist paradigms. Scotland (2012:13) states that, "Social constructionism argues that we are born into a world in which meaning has already been made; we are born into culture; we come to inhabit a pre-existing system and to be inhabited by it". Furthermore, Creswell & Creswell (2018:46) believe that people seek understanding of the world in which they live and work. People construct subjective meanings according to their experiences of certain things or objects, and these meanings are multiple and varied, leading the researcher to look for the complexity of views rather than narrowing meanings into a few categories or ideas (Creswell & Creswell 2018:46).

Furthermore, Scotland (2012:13) states that "the ontological position of the critical paradigm is historical realism. Historical realism is the view that reality has been shaped by social, political, cultural, economic, ethnic, and gender values; reality that was once deemed plastic has become crystallized". The epistemology of the constructivist paradigm is subjectivist and transactional, which is associated with societal knowledge and is based on real world phenomena. The methodology and methods of the constructivist paradigm aim to interrogate assumptions and values to reveal injustice and hegemony, to engage in social action and to

challenge conventional social structures (Shah & Al-Bargi 2013:260). This study relied on constructing from various subjective meanings of many people.

4.2.3 Interpretive paradigm

As noted previously, Shah &Al-Bargi (2013:253) state that "this paradigm is considered as constructivist, naturalist, humanistic and anti-positivist which emerged in contradistinction to positivism for the understanding and interpretation of human and social reality". Similarly, Rehmann& Alharthi (2016:55) state that "it is not possible to know reality as it is always mediated by our senses" and interpretivism is a "response to the over-dominance of positivism. Interpretivism rejects the notion that a single, verifiable reality exists independent of our senses". In addition, Crotty (2003 cited in Shah & Al-Bargi (2013:253) shows that this approach "looks for culturally derived and historically situated interpretations of the social life-world". In addition, Rehman & Alharthi (2016:54) state that "interpretivists believe in socially constructed multiple realities, truth and reality are created, not discovered".

Further to this, the ontology of interpretive paradigm is relativist; the realties exist in various forms and tangible mental constructions that are based on experience, local and specific in nature and dependent for their form and content on the persons or groups holding the constructions (Shah & Al-Bargi 2013:253). Scotland (2012:11) also state that "the ontological position of interpretivism is relativism. Relativism is the view that reality is subjective and differs from person to person". The epistemology of the interpretive paradigm is subjective. Interpretive methodology and methods require that social phenomena be understood "through the eyes of the participants rather than the researcher" Rehman & Alharthi (2016:53). This study interpreted the different views in real world.

This study was informed by the constructivist and interpretive paradigms. This study relied on constructing from various subjective meanings of many people following the constructivist paradigm. In addition, drawing from definitions of interpretive paradigm given by Shah & Al-Bargi (2013), Rehman & Alharthi (2016) and Scotland (2012), it can be generally said that the interpretive paradigm focusses on recognising individuals' understanding and interpretation of the social world. Therefore, the nature of this study was interpretive because the researcher's intention was to understand social reality. In addition, in the interpretive paradigm tradition, this study was a case study of Umzimvubu catchment area within Matatiele Local Municipality. In addition, Creswell & Creswell (2018:46) believe that people want to understand the world which they work and live in.

4.3 Research design

On one hand, Yin (2018:59) defines a research design as a "logical plan for getting from here to there, where here may be defied as the set of questions to be addressed, and there is some set of conclusions these questions". On other hand, Leedy & Ormrod (2015:91) state that "research design provides the overall structure for the procedures the researcher follows, the data the researcher collects, and the data analyses the researcher conducts". A research design is regarded as a plan of how the research is going to be undertaken; and it articulates what data is required and it provides a framework for collecting data as well as addresses how all this process answers the research question.

The research approach that was followed by this research was the qualitative research. This research approach is the one found appropriate for this study because the data were collected through participants and it related to the constructivist and interpretivist paradigms. It was also found appropriate because it uncovers the unexpected and explores new avenues. In this regard, Khan (2014:225) outlines that a "qualitative research is an inquiry process of understanding based on distinct methodological traditions on inquiry that explore a social or human problem". Khan (2014:225) add that the researcher analyses words, reports details of informants, builds a complex, holistic picture, and conducts the study in a natural setting.

Therefore, the study used the case study research design. Merriam and Tisdell (2016:37) state that "*a case study is an in-depth description and analysis of abounded system*" and Yin (2014 cited in Merriam and Tisdell 2016:37) defines case study in terms of the research process. "A case study is an empirical inquiry that investigates a contemporary phenomenon (the 'case') within its real-life context, especially when the boundaries between phenomenon and context may not be clearly evident" (Merriam and Tisdell 2016:37-38). As Merriam and Tisdell (2016) observe, a case study is a design specifically suitable for situations in which it is impracticable to separate the phenomenon's variables from their context.

In addition, the research methods involved direct observation, document analysis and overview, participant observation and open-ended unstructured interviews. Twenty-nine participants were interviewed.

4.4 Research strategy

The approach of this study was a case study. Shah & Al-Bargi (2013:253) view case study as an approach that employs in-depth investigation of any social phenomenon, using various sources of data. Jupp (2006 cited in Shah & Al-Bargi 2013:253) believes that a "case" may refer to an individual, an event, a social activity, group, organisation or institution, and it could be a descriptive, explanatory, or exploratory form of research inquiry. According to Yin (2018:33), a case study design focuses on explaining contemporary circumstances such as "how" or "why" some social phenomenon works, and case studies are also relevant the more your questions require an extensive and "in-depth" description of some social phenomenon. In addition, the value of case study is its ability to use a variety of sources of data and in-depth description of social phenomenon. Case studies are recommended when the desire is to study some contemporary event or set of events ("contemporary" meaning a fluid rendition of the recent past and the present, not just the present) (Yin 2018:42). Most importantly, "the case study's unique strength is its ability to deal with a full variety of evidence documents, artifacts, interviews, and direct observations, as well as participant-observation" (Yin 2018:42), and this study benefited from this. Therefore, a case study was used as the research design for this study, because the study relied on investigating a contemporary phenomenon in social context of the water governance matter in rural areas. It also used multiple sources of data and relied on evidence of documents, observations, and interviews. The study used a case of KwaSibi Administrative Area (A/A) at Maluti within Matatiele Local Municipality boundary, conducted a research through the qualitative approach.

4.5 Data collection and tools

The data were collected through semi-structured and loosely structured questionnaires, interviews (in-depth and Focus Group Discussions (FGDs) and observations. The standard consent forms were provided to the participants as shown in Appendix 1, and ethical clearance was obtained as shown in appendix 2. A summary of the semi-structured questions is also shown in Appendix 3.

4.6 Population

The population for this study included both males and females of KwaSibi Administrative Area (A/A), but the numbers differed; females were more because they are the ones more responsible for water harvesting in rural areas. The ages were between 19 to 70 years. Municipal officials responsible for water management and environmental issues were drawn from the local municipality, the district municipality, provincial government, and the national government. Traditional leaders and headmen in the catchment area were also part of the study. The population also comprised Non-Governmental Organisations (NGOs) and civic structures that are active in the research area and whose work aligns with ecological conservation and general environmental management.

4.6.1 Sampling strategies

The following sampling methods were used for the various categories of respondents;

I. This study used probability-sampling method to get respondents from the general community.
II. It used purposive sampling to identify respondents from the municipal, provincial, and national offices using the inclusion criteria shown in Table 4.6.1 below.
III. The researcher used purposive sampling to identify the traditional leaders since they held social positions that gave them specialist knowledge in study.
IV. Lastly, the researcher used snowball sampling to identify relevant NGOs and civic structures.

Government organisations and Nongovernmental Organisations				
Organisation	Criteria	Knowledge	Role	number of years they have been employed
National Department	The researcher selected the officials that were in management positions.	Researcher selected officials with knowledge of management of natural resources from national level to local level.	Management of natural recourses including upper Umzimvubu catchment	More than 5 years
Provincial Department	The researcher selected the officials that were in management positions at the provincial level.	The researcher selected the officials with knowledge of water resources management and public participation processes.	Public participation and water resources management at local level	More than 5 years
Local government	The researcher selected the	The researcher selected the officials with knowledge of	Technical and administrative	More than 5 years

	officials that were on the technical and administrative side.	technical and administrative water resources management and public participation processes.	Management of water resources at local government level	
District Municipality	The researcher selected the officials that are on the technical and administrative side.	The researcher selected officials with knowledge of public participation processes.	Technical and administrative management of water resources at local government level	More than 5 years
Local Municipality	The researcher selected officials that were on the technical and administrative side.	The researcher selected officials with knowledge of technical and administrative water resources management and public participation processes.	Environmental management and public participation at local municipality	More than 5 years
Nongovernmental Organisations (NGOs)	The researcher selected NGO members that were involved in water resources management.	The researcher selected members with knowledge of water resources management and public participation processes.	Water resources management	More than 3 and 5 years
Traditional leadership				
Traditional Leaders	The researcher selected the traditional Authority of KwaSibi that leads the villages under KwaSibi Administrative Area.	The researcher selected the traditional Authority of KwaSibi that leads the villages of KwaSibi Administrative Area, as the upper Umzimvubu (quaternary T31) is under the jurisdiction of KwaSibi.	Traditional leadership	Hold social positions that give them specialist knowledge in study
Chiefs	The researcher selected a chief from each of the selected villages under KwaSibi Administrative Area.	The researcher selected the chiefs of the villages under KwaSibi Administrative Area with knowledge of Upper Umzimvubu Catchment.	Traditional leadership	Hold social positions that give them specialist knowledge in study
Headmen	The researcher selected headmen of selected villages under KwaSibi Administrative Area.	The researcher selected headmen of the villages under KwaSibi Administrative Area with knowledge of Upper Umzimvubu Catchment	Traditional leadership	Hold social positions that give them specialist knowledge in study
Community members	The researcher selected community members of different villages	The researcher selected community members of different villages under KwaSibi Administrative	Community members	Hold social positions that give them specialist

| | under KwaSibi Administrative Area. | Area with knowledge of Upper Umzimvubu Catchment | | knowledge in study |

Table 4.6.1: *Respondents from the municipal, provincial, and national offices*

4.6.2 Sample size

The initial intended sample size was thirty people. However, the sample size ended up being twenty-nine people that participated in the study. The population for participation was selected as shown in Table 4.6.2 below.

Institution	Participants	Gender		Total number of participants in each organisation
		Male	**Female**	
National Department	Participants from Department of Environment, Forestry and Fisheries (DEFF)	1	0	1
Provincial Department	Participants from Eastern Cape Provincial Department of Water and Sanitation (DWS)	1	0	1
Local Government Agency	Participants from Eastern Cape Provincial South African Local Government Agency (SALGA)	1	1	2
District Municipality	Participants from Alfred Nzo District Municipality (ANDM)	1	1	2
Local Municipality	Participants from Matatiele Local Municipality	1	1	2
Institutes/NGOs	Participants from South African National Biodiversity (SANBI) (Living Catchments)	0	1	1
Traditional leaders and community members	Traditional Leaders and community members of KwaSibi A/A	5	15	20
		Total number of all participants		**29**

Table 4.6.2: *Sample size*

4.6.3   Data collection methods

The data were collected through semi-structured and loosely structured questionnaires, interviews (in-depth and FGDs) and observations. The focus was analysis of the relationships between the national and provincial government and the linkage to the intergovernmental processes and analysis of the networks between district and local municipality and the linkages to the local authorities, community members, NGOs and other stakeholders as shown in Appendix 4. Moreover, document analysis, such as of the Integrated Development Programmes (IDP), Intergovernmental Relations (IGR) frameworks, Water Resources Management Strategies Frameworks, legislation such as the National Water Act (Act 36 of 1998) and others were done.

It is worth noting that the primary data collection of this study was done amid the COVID-19 pandemic. South Africa was under a national lockdown with many movement and gatherings restrictions. The South African national government implemented five different alert levels of national lockdown. Therefore, the primary data of this study was collected under alert level 2 where social gatherings of a maximum fifty people were allowed under precautionary measures. Therefore, primary data from the KwaSibi community was done through a gathering. The researcher interviewed twenty participants and held two separate focus group discussions, and social distancing was maintained. The researcher provided masks and hand sanitisers for each. As for the organisations, the researcher visited the offices where national lockdown precautionary measures were adhered to. In addition, the researcher conducted virtual meetings with other participants.

4.6.3.1 Semi-structured questionnaires

Semi-structured questionnaires were used for the respondents as shown in Table 4.6.3.1 below.

No.	Instrument	Interview with participant	Month	Place
1.	Semi-structured questionnaires	Participant from Department of Environment, Forestry and Fisheries (DEFF)	July 2020	Department of Environment, Forestry and Fisheries at Eastern Cape Offices
2.	Semi-structured questionnaires	Participant from Eastern Cape Provincial Department of Water and Sanitation (DWS)	December 2020	Department of Water and Sanitation at Eastern Cape Region Offices
3.	Semi-structured questionnaires	Participants from Eastern Cape Provincial South African Local Government Agency (SALGA)	October 2020	Eastern Cape Provincial South African Local Government Agency at Eastern Cape Region Offices
4.	Semi-structured questionnaires	Participants from Alfred Nzo District Municipality	December 2020	East London in the Eastern Cape province via virtual meeting
5.	Semi-structured questionnaires	Participants from Matatiele Local Municipality	November 2020	East London in the Eastern Cape province via telephone and email communication and written questionnaires
6.	Semi-structured questionnaires	Participant from South African National Biodiversity (SANBI) (Living Catchments)	November 2020	East London in the Eastern Cape province via email communication and written semi-

				structured questionnaires
7.	Semi-structured questionnaires	Traditional Leaders and community members of KwaSibi A/A	September 2020	KwaSibi Administrative Area at the open space at the village

Table 4.6.3.1: *Semi-structured questionnaires*

4.6.3.2 Loosely structured questionnaire

The loosely structured questionnaire were also used with community members during in-depth and FGDs.

4.6.3.3 Focus group meetings

There were two FGDs were held with the community members of KwaSibi as demonstrated in Table 4.6.3.3 below.

No.	Instrument	Interview with participant	Month	Place
1.	Focus Group Discussion one	Headmen and community members of KwaSibi A/A	September 2020	KwaSibi Masakala on the open space at the village
2.	Focus Group Discussion two	Chief and community members of KwaSibi A/A	September 2020	KwaSibi at the royal house of the Masakala Chief

Table 4.6.3.3: *Focus Group Discussions*

4.6.3.4 Observations

The researcher also used observations during the interviews with community and Focus Group Discussions as well as the visit to the headwaters of the upper Umzimvubu Catchment. It is discussed in detail in the next chapter on findings of the study.

4.7 Data quality

According to Korstjens & Moser (2018:120), "the quality criteria for all qualitative research are credibility, transferability, dependability, and confirmability". In this regard, there are many strategies used for data trust worthiness in general in qualitative research. This study used triangulation, that is, drawing information from multiple sources of data such as website posts, social media posts from reliable pages, annual reports for example the Integrated Development Programmes, Intergovernmental Relations Frameworks, government strategies, i.e., Water Resources Management Strategies frameworks and legislation such as the National Water Act (Act 36 of 1998), Water Services Act (Act 108 of 1997), and others. The researcher also confirmed the accuracy and validity of the data with the participants of the study.

4.8 Data analysis

Data for this study were analysed through thematic and content analysis. Moira & Brid (2017) define thematic analysis (TA) as generally regarded as a flexible, accessible and well-known qualitative data analysis method. Furthermore, Ibrahim (2012:40) views a thematic analysis as a type of qualitative analysis utilised to analyse classifications and present themes (patterns) that relate to the data. It illustrates the data in detail and deals with

diverse subjects via interpretations. Given this, before data analysis, the researcher considered the review of relevant literature on data analysis. In analysing the data or transcripts of the primary data, the study considered the six stages of thematic analysis as defined by Moira & Brid (2017:4). Table 4.8 below details the 6 stages of thematic analysis.

Step	Description
Step 1:	Become familiar with the data- The first step focuses on reading and re-reading the transcripts.
Step 2:	Generate initial codes- This step focuses on organising data in a meaningful and systematic way. Coding also reduces lots of data into small chunks of meaning.
Step 3:	Search for themes- This step focuses on capturing something interesting/significant about the research question/data
Step 4:	Review themes- This step focuses on reviewing, modifying, and developing the preliminary themes. At this point, it is useful to gather together all the data that is relevant to each theme.
Step 5:	Define themes- This is the final refinement of the themes and the aim is to 'Identify the 'essence' of what each theme is about. What is the theme saying? If there are subthemes, how do they interact and relate to the main theme? How do the themes relate to each other?
Step 6:	Write-up- Usually the end-point of research is some kind of report, often a journal article or dissertation.

Table 4.8: *Six stages of thematic analysis*   **Source:** *Moira & Brid (2017)*

4.9 Study area

The research study area is the upper catchment zone of Umzimvubu in Matatiele Local Municipality boundary within the jurisdiction of Alfred Nzo District Municipality in the Eastern province as shown in Figure 4.9 below. The ANDM is both the Water Service Provider (WSP, with full delivery functions) and Water Service Authority (WSA, with full regulation and oversight functions) of this study area.
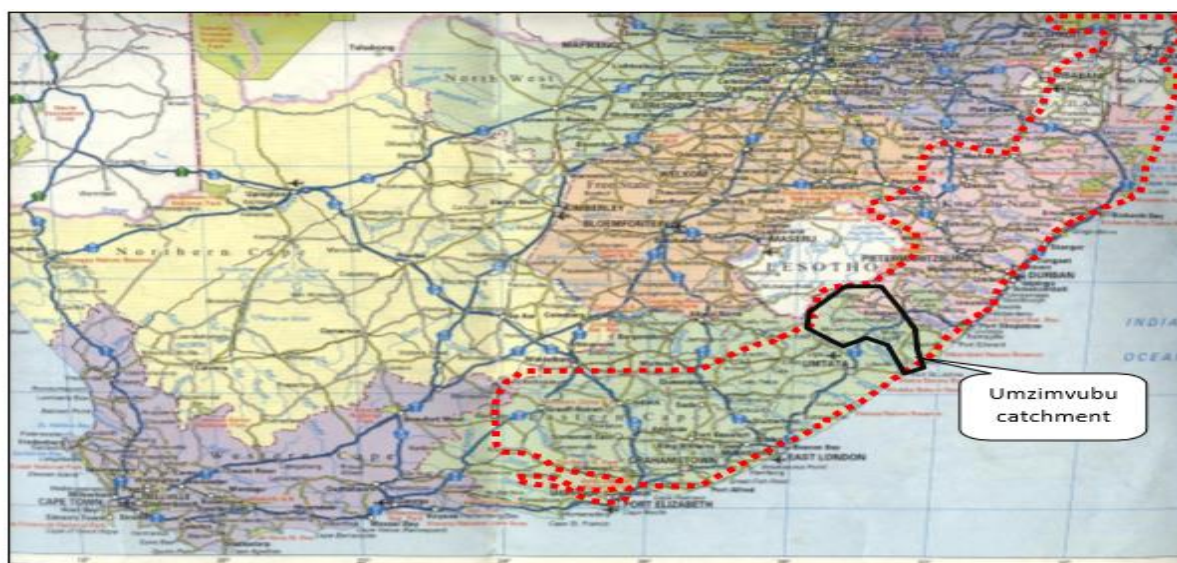
Figure 4.9: *Location of Umzimvubu catchment in South Africa*   **Source:** *Umzimvubu Catchment Overview (2011)*

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4.9.1 Administrative description of the study area
The study area is under Matatiele Local Municipality, situated along the foothills of the Drakensberg Mountains. Its administration can be traced to both democratic government and traditional administration.

4.9.1.1 Democratic administration
The study area forms part of the former Transkei homeland. Transkei was administratively established in 1959 by the South African government as a non-independent Bantustan designated (see Figure 4.9.1). Under apartheid system and racial separation, Transkei was made officially independent in 1976. This was done for it to serve Xhosa-speaking blacks who had lost their South African citizenship because of apartheid. In 1994 South Africa transitioned from the apartheid government system to the one of majority rule and in the 1996 Constitution of the Republic of South Africa (Act 108 of 1996) dismantled homelands and established nine new provinces, following the first democratic elections in South Africa in 1994. Notably, the local government was adopted in the Constitution of the Republic of South Africa (Act 108 of 1996) and municipalities were established and local government was elevated to a sphere of government. Transkei, which was part of the Cape homelands, was renamed Eastern Cape. Matatiele is a small town within ANDM in the northern part of the Eastern Cape Province. However, before the 2006 local government elections Matatiele and its rural areas of Maluti located under the ANDM were cross-boundary municipalities administered jointly by the KwaZulu-Natal and Eastern Cape provinces (Parliamentary Monitoring Group 2020). "The enactment of the Twelfth Constitution Amendment Act, 2005, had abolished cross-boundary municipalities and these municipalities were now exclusively administered by the Eastern Cape Provincial Government" (Parliamentary Monitoring Group 2020). Given this background, the study area itself is at Maluti, KwaSibi Administrative Area (A/A) under municipal wards 4 and 7 of Matatiele Local Municipality boundary.

4.9.1.2 Traditional administration
This area is culturally diverse and it includes the Sotho, Phuthi, Xhosa, and Hlubi cultural groups. The different cultural groups found in the area have not always or historically resided in the Alfred Nzo region. For instance, the BaPhuthi were forced into the Transkei in the nineteenth century after a British and Basotho enforced siege that occurred in Basutoland now known as Lesotho, owing to conflicts that were taking place in the region. This Administrative Area consists of 36 villages, although the study covered those areas that are close to Upper Umzimvubu Catchment of quaternary T31. This area is a rural area in nature and it is under the Traditional leadership of KwaSibi Traditional Authority.

The "KwaSibi" traditional administration can historically be traced back to 1934 under the leadership of Chief Vangendaba Masakala who was son of the Chief Masakala. Chief Masakala was killed in 1913 when Boers were taking over the land. The apartheid government then implemented the Group areas Act where they allocated people according to their tribes. The Sothos were shifted to KwaSibi area and became under Chief Sibi. However, they were initially under Chief Masakala. The Masakala sons were demoted to headmen because of the demarcation of the apartheid laws of that time. Therefore, the

traditional administration of KwaSibi has been inherited by the sons of the royal blood to date.
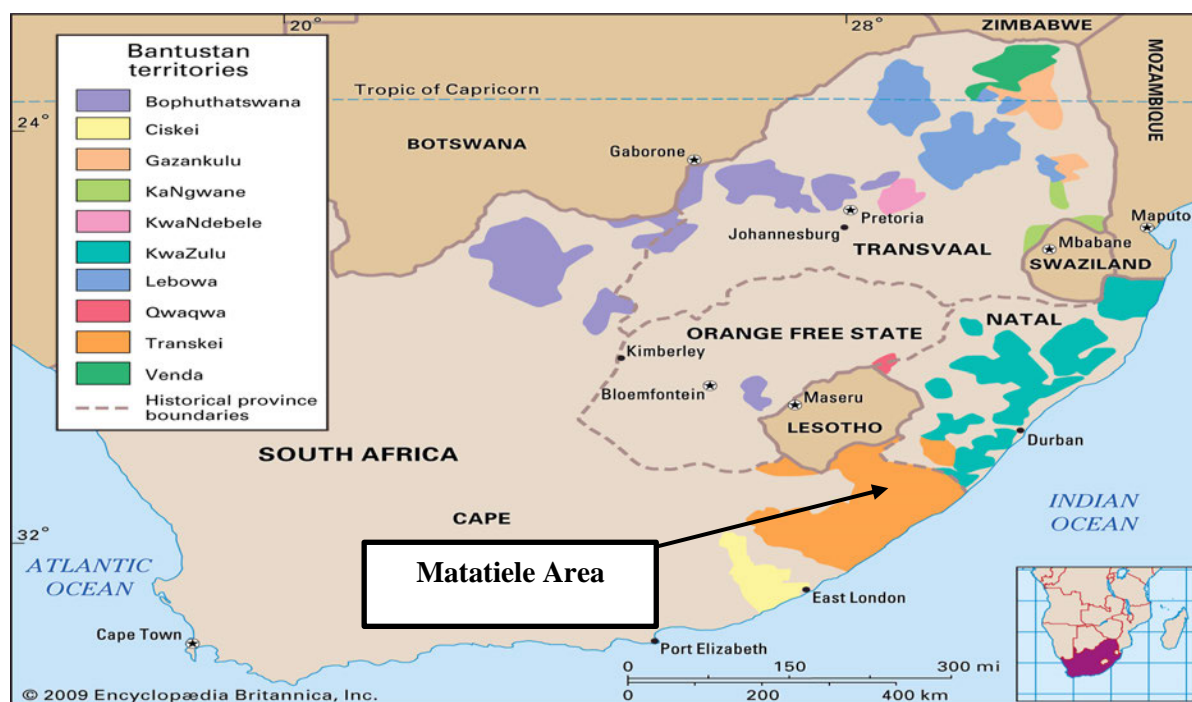
Figure 4.9.1: *Former homelands of South Africa*   **Source:** *Google Maps (2020)*

4.9.2 Physical description of the study area

The study area is located at the upper zone of Umzimvubu along the Maluti Mountain Range. According to Mucina & Rutherford (2011: 45), this area generally falls under Sub-Escarpment Grassland Bioregion on East Griqualand Grassland in particular. However, the Catchment itself is situated at Drakensberg Grassland Bioregion.

4.9.2.1 Topography and vegetation of the study area

The study area is situated within central and a high plateau ascending to the Drakensberg Mountains. Matatiele has a character of very steep and gradient slope and topography. Mucina & Rutherford (2011: 425) define it as a hilly country with hilly slopes covered by grassland with patches of bush clumps. The central plateau has good soils and lower population density with intermediate rainfall while the high plateau is characterised by high rainfall and relatively good soils that support agricultural activities. Matatiele is largely characterised by indigenous grass vegetation.

The Drakensberg Grassland Bioregion and Sub-Escarpment Grassland Bioregion within which Matatiele generally falls, are characterised by high species richness, altitude and environmental conditions and a high rate of species variation associated with dynamic gradients (Matatiele Local Municipality IDP 2017-2022:254). The grasslands experience shrinking of basal cover over time, which exposes the soil to erosion. "This result in extensive sheet erosion over large areas. Loss of productive plant biomass as palatable, nutritious species is replaced by unpalatable, non-nutritious species" (Matatiele Local Municipality IDP 2017-2022:254).

The catchment area of upper Umzimvubu that covers the study area (Quaternary T31) combines the highest lying mountain ranges of the Maluti-Lesotho Drakensberg escarpment with very steep gradient slope and topography and undulating to flat landscape as it descends to kwaSibi Area. The higher lying areas are characterised by Drakensberg Grassland. However, the River Basin is characterised by Black Wattle from the source and as it descends. The middle to lower sections are characterised by the combination of grassland and intense encroachment of alien invasive Black Wattle.

4.9.2.2 Climate of the study area

According to Matatiele Local Municipality IDP (2017-2022: 254), the "Matatiele climate is considered to be Cwb according to the Köppen-Geiger climate classification. The average annual temperature is 15.9 °C in Matatiele and the average annual rainfall is 710 mm". The climate of this area is mild, warm and temperate with a good deal of rainfall during summer, while winter experiences little rainfall.

4.9.2.3 Land cover of the study area

Matatiele is composed of subsistence farmlands and commercial farmlands. It is predominantly characterised by dispersed rural settlements. Matatiele Local Municipality IDP (2017-2022:254) outlines "that it is, however, concerning that 43.9% of the area is in a non-natural, transformed or degraded state". The study area itself is characterised by subsistence farmlands, rural settlements, and grazing lands, and natural and near-natural landcover.

4.9.2.4 Surface water and Groundwater

This area generally relies on rainwater and rivers and the water resources that this municipality accumulates water from are mainly the catchment area, springs and wetlands. In addition, Matatiele falls under the Umzimvubu–Tsitsikama Water Management Area in terms of the Department of Water and Sanitation guidelines as shown in figure 4.9.2. The study area itself is characterised by Umzimvubu tributaries and mainly relies on rainwater and boreholes.
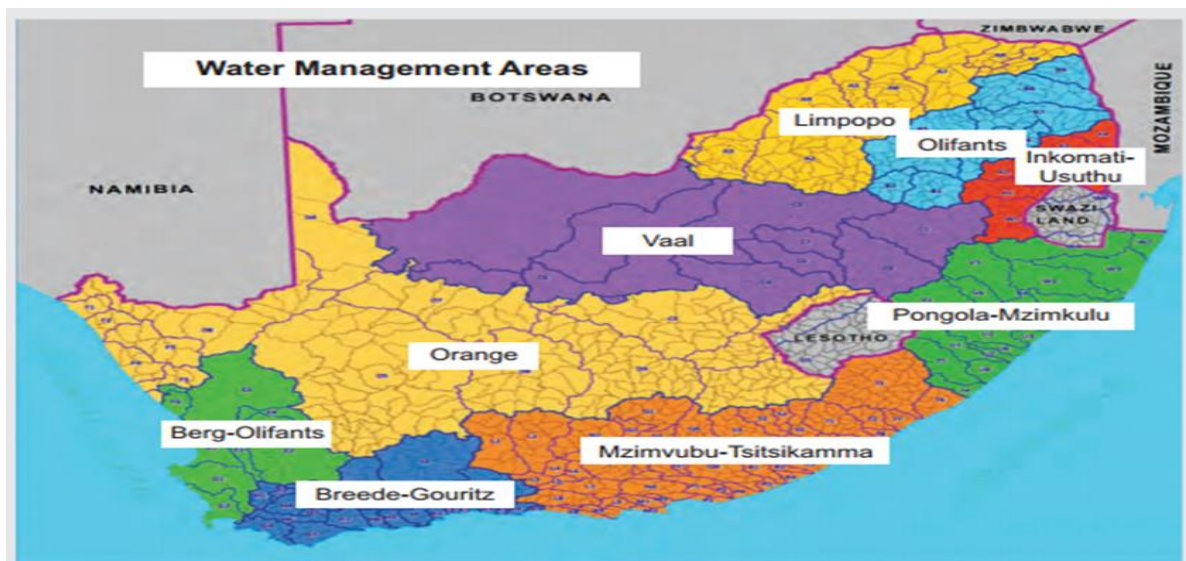
Figure 4.9.2: *Surface and groundwater of the study area*   **Source***: National Water Strategy 2 (2013)*

4.9.2.5 Geology and soils of the study area

This area is situated in the south western portion of Karoo sediments, and it is characterised by sandstone, grey and reddish-brown adelaide mud. "The south western portion on grey and reddish-brown adelaide mud and sandstone, and in a north-westerly direction has a fine-grained Tarkastad sandstone" (Matatiele Local Municipality IDP 2017-2022:254). Soils generally found in this area are highly erodible. The landscape of the study area has highly erodible soils, and it is characterised by Dongas on certain parts, which are a result of soil erosion.

4.10 Conclusion

The research methodology forms the most important part for the research study, as it focuses on the research process and the types of procedures and tools to be used during the collection of primary data and analysis. This study was informed by constructivist and interpretivist paradigms, because the researcher's intention was to construct subjective meanings of many people and to understand and interpret social reality. In this regard, the study used a qualitative research method and case study approach since case study is relevant to "in-depth" questions, description of some social phenomenon and use variety of sources. This study drew information from various sources through questionnaires using semi-structured questions, interviews, focus group discussions, observation, and document analysis. Data were analysed through thematic analysis.

Chapter Five

Data presentation, analysis, and discussions

5.1 Introduction

The previous chapter discussed the research methodology that guided this study. This chapter presents data and key findings of the study. The study focused on rural communities and water governance, and it sought to understand participatory processes for catchment management in the Upper Umzimvubu Catchment. This chapter starts by presenting the research strategies, the approach used, and the datasets and participants' codes. It starts by analysing strategies of water governance in the local government space, followed by the participatory processes. It carries on to analyse the interpretation of laws and policies applied at catchments and in the local government space. Afterwards, it analyses the understanding of local people about catchment degradation and management and the extent of involvement of the community in the decision-making in the management of Upper Umzimvubu Catchment (Tertiary catchment T31). It ends by analysing intergovernmental processes that contribute to catchment management practices.

5.2 Findings

This study took place at KwaSibi Administrative Area, which is under a traditional leadership and predominantly characterised by the scattered rural settlements. This study area is under Matatiele Local Municipality within the Alfred Nzo District Municipality, which is a Water Service Authority and a Water Service Provider of this area. It focused on the Upper Umzimvubu Catchment (Tertiary catchment T31) unit. Tertiary catchment refers to the hydrological unit of catchment levels according to their hierarchical order from primary, secondary, tertiary to quaternary level. The data were collected using a case study as its strategy and a qualitative research approach. This was done through semi-structured and loosely structured questionnaires, interviews (in-depth and Focus Group Discussions (FGDs), and observations. In this regard, the primary data collection of this study came from four datasets, namely the participants, official documents, and sources (including websites) to triangulate and complement one another in data analysis. The participants from KwaSibi Administrative Area, government officials and non-governmental structures are shown in table 5.2 below.

Participants	Participants Codes
Eastern Cape Provincial Department of Water and Sanitation (DWS)	Participant A
Eastern Cape Provincial South African Local Government Agency (SALGA)	Participant B and Participant C
Participants from Matatiele Local Municipality	Participant D and Participant E
Participants from Alfred Nzo District Municipality (ANDM)	Participant F and Participant G
Traditional Leaders and community members of KwaSibi Administrative Area	Participant H to Participant S
Participants from Department of Agriculture, Forestry and Fisheries (DEFF)	Participant V
South African National Biodiversity (SANBI) (Living Catchments)	Participant U

Table 5.2: *Participants and participant codes*

The total number of participants was 29, which included Matatiele Local Municipality (2), Alfred Nzo District Municipality (2), Department of Water and Sanitation (1), Department of Agriculture, Forestry and Fisheries (1), South African Development Agency (2), South African National Biodiversity (Living Catchments) (1), KwaSibi Traditional leaders (2) and community members (18) in the catchment area. The experience of the government officials were individuals with five years of working experience and above and the ages of the community participants were between 19 to 70 years and all participants were black.

Therefore, this research study had six objectives: to explain the water governance strategies that are designed for catchment management within the local government space; to explore the local government participatory processes for stakeholder involvement; to understand how participatory processes have been interpreted in the laws and policies applied at the local government; to explore the understanding of local people about catchment degradation and management; to understand how extensive is the community participation in the decision-making and implementation processes and to assess how stakeholder participation can be improved for Umzimvubu catchment management, and to understand existing intergovernmental processes and their contribution to catchment management practices.

In this sense, the data analysis of this study consists of key themes and sub-themes. The key themes of this study were organised according to the research objectives of this study. This became the best approach for the study as the study's research questions were aligned to the study's objectives. The sub-themes were drawn from the data of the study.

Therefore, the findings of this study consist of six themes, namely (1) water governance strategies that are designed for catchment management within the local government space, (2) local government participatory processes for stakeholder involvement, (3) interpretation of participatory processes in the laws and policies applied at local government, (4) understanding of local people about catchment degradation and management, (5) extent of the community participation in the decision-making, implementation processes and assessment of how stakeholder participation can be improved for Umzimvubu catchment management, and (6) existing intergovernmental processes and their contribution to catchment management practices.

5.3 Strategies of water governance that are designed for catchment management within the local government space

The findings showed that there are strategies of water governance in place for catchment management at the local level in South Africa. This is regarded as water governance at the catchment management scale where stakeholders manage water resources at the local level. However, it is essential to point out that the National Department of Water and Sanitation (DWS) oversees and regulates the water resources in South Africa, even though there are strategies for water governance at the local level.

While explaining the existing strategies of water governance designed for catchment management at local government, and the role of DWS in water resources of South Africa, participant A from the DWS (Eastern Cape Region) pointed out that:

The Department of Water and Sanitation is a custodian of water resources in South Africa, it is also primarily responsible for the formulation and implementation of policy through National Water Act (Act 36 of 1998) and Water Services Act (Act 108 of 1997).

In terms of available strategies for water governance at the catchment management scale, the results further established that Section 78(1) of the National Water Act (Act 36 of 1998) has a legislative requirement to develop National Water Resource Strategy for the transformation of institutions. The NWRS is a primary strategy that sets out the road map for the implementation of the National Water Act (Act 36 of 1998) and a strategy for water resources management in South Africa to support sustainable development. The World Commission on Environment and Development (1987:14) describes sustainable development as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Participant A from the DWS (Eastern Cape Region) said that:

Before the local catchment management strategies, there is a national strategy for water governance in South Africa. It is a National Water Resource Strategy that solely responds to water governance strategies for water resources management from national to catchment scale.

Given this, the findings also revealed that the Upper Umzimvubu Catchment area has an existing non-statutory organisation focusing on catchment management at the local scale. In this regard, Participant A further stated that:

It is a catchment management forum which can be regarded as a local strategy. It is called Umzimvubu Catchment Partnership Programme (UCPP). It was established in March 2013, and it is a voluntary institution in terms of decentralisation of catchment management.

As mentioned above, the findings of this study consist of key themes which were drawn from the main objectives of study and the sub-themes which were drawn from the data of the study. Therefore, the findings of the strategies of water governance at local government space from the data derived the sub-themes shown Table 5.3 below.

Number	Sub-themes
5.3.1	Water resources management strategies
5.3.2	Umzimvubu Catchment Partnership Programme (UCPP)

Table 5.3: *Sub-themes about Strategies of water governance*

5.3.1 Water resources management strategies

The South African government has national strategies for water governance. First, the National Development Plan (NDP) 2030 is a national plan that focuses on the long-term. It identifies the various roles that must be played by different sectors in the society and it defines those roles according to each sector. The water governance and water governance strategies also form part of the NDP. The NDP reveals that out of 148 countries, South Africa ranks last in terms of water availability per capita. Again, it outlines that greater attention should be paid to management of water in South Africa. One other point, Chapter 4

of the National Development Plan 2030 outlines the urgent need for protection of water resources and water resources management, in which it puts emphasis on effective planning of available water resources that cut across all spheres of government by 2030. From the fact that water planning should cut across all spheres of government, the NDP also speaks about the effective administration where it outlines that effectiveness in South African water resources should be accounted through involvement of users so that they understand constraints within water resources management. Another priority in water governance that this plan emphasises is clear and coherent legislation and policies, research and development capacity and the correct technical tools. The NDP also indicates that the nation's water resources are extensively interconnected. Therefore, the administration and its oversight should remain national. However, the National Development Plan 2030 (2012:178) states that decentralisation of water resources management is imperative because it can be effective to users since it is at a local level.

The NDP outlines the actions to be taken for effective water resources management, including the local government space, as it emphasises decentralisation of water resources management that cut across all spheres of government by 2030. Although the NDP outlines the priorities of water resources management that must be met by 2030, the NWRS has also been established as a strategy to address the water resources management from national to catchment level in South Africa.

Section 78(1) of the National Water Act (Act 36 of 1998) has a legislative requirement to develop NWRS for the transformation of institutions. This led to the birth of NWRS. The NWRS1 was formulated in 2004 and was later replaced with NWRS2 in 2013 (RSA DWS 2013:3). Chapter one of the NWRS2 notes that this strategy solely responds to priorities that are within the NDP and the National Water Act (Act 36 of 1998) imperatives, which were set by the South African Government to support sustainable development.

In this sense, effective planning and administration is also aimed at involvement of the catchment management within the local government space as it addresses the involvement of all government levels. As a result, the National Development Plan 2030 (2012:178) outlines that:

> *As the nation's water resources are extensively interconnected – often flowing across political boundaries – oversight of their management and administration should remain national. But some decentralisation of responsibilities is necessary, because it is at local level that users can best be involved.*

Similarly, the NWRS2 outlines the decentralisation of water resources management. On this point, the NWRS2 further indicates that establishment of the institutional arrangements will help coordinating activities related to efficient water resource management within a defined geographical area or catchment boundary. Therefore, NWRS2 indicates that the institutions will be required to perform their duties within a developmental management approach that values the involvement of all stakeholders in defining strategies and plans for management within their defined areas. Notably, since the enactment of the National Water Act (Act 36

of 1998) and the Water Services Act (Act 108 of 1997), an institutional framework for water resource management and water services has been established RSA DWS (2013:56).

Therefore, the NWRS2 notes that statutory systems have been ordained by the National Water Act (Act 36 of 1998). These statutory bodies were ordained with the intention to play a vital role in effective solutions and sustainable integrated water resource management. They include Catchment Management Forums (CMAs), Water User Associations (WUAs) and Catchment Management Committees. Given this, there are also Catchment Management Forums (CMFs) which are regarded as non-statutory bodies.

I.   Catchment Management Agency

In terms of Chapter 7 of the National Water Act (Act 36 of 1998), a Catchment Management Agency is regarded as a statutory body that facilitates water resources management at the local scale. This is believed to improve stakeholder involvement and local decision-making in water resource management and local decision-making.

II.   Water User Associations

Water User Associations are also developed under the National Water Act (Act 36 of 1998). They function in a restricted area at the local level. They are represented by a cooperative association of water users who are willing to undertake an activity of their mutual benefit.

III.   Catchment Management Forums

Catchment Management Forums non-statutory bodies established through the NWRS. They are established with the purpose to become vehicles that create cooperative governance between local government Catchment Management Agencies and other stakeholders in the interest of integrated water resources management.

In addition, the NWRS2 speaks about the WSAs that are in place for regulation of the water services within their local jurisdiction. In terms of Section 12 of the Municipal Systems Act of 2000, the WSAs are the municipalities that are mandated by the constitution to ensure planning and access and to regulate provision of water services. Given this, WSAs are responsible to comply with the National Water Act (Act 36 of 1998) for water resources management. Therefore, RSA DWS (2013:68) notes that WSAs are responsible to form a CMA where such duty has been assigned.

Given this, and as the NDP notes, water resources management should cut across all government spheres for effective involvement of local government. Thus, the National Water Act (Act 36 of 1998) also promotes public participation by being committed to the concept of Integrated Water Resources Management (IWRM) through the White Paper on National Water Policy of 1997. IWRM is a global paradigm that came with principles for the standardisation of water policies around its main principles, which also include river basin management and stakeholders' participation. Therefore, the South African government also adopted this global paradigm into its national system as the best practices of decentralised water resources management. This took place through water policy reforms in

which the new National Water Act (Act 36 of 1998) was adopted and translates this paradigm into decentralised water resources management through NWRS.

It is also argued that although IWRM is not mentioned comprehensibly in the new National Act, the Act recognises the significance of IWRM and the need for the integrated water management that covers all aspects of water resources. Where appropriate, there should be delegation of management functions to a regional or catchment level to enable every stakeholder to participate (Claassen 2015:328). Importantly, the Act changed the tradition of water ownership by abolishing the private ownership of water, and after that it established that the (public and private) benefits as well as the implementation of the Act has yielded mixed success (Claassen 2015:328). On this detail, the NWRS2 speaks about the statutory systems in place and that have been ordained by the National Water Act (Act 36 of 1998) to play a vital role in effective solutions of integrated water resource management. These involve statutory bodies and non-statutory bodies for the management of water resources at catchment management scale, which is the local level that is already discussed above. In addition, the NWRS2 and Municipal Systems Act also speak about the WSAs, which are the municipalities that regulate the water services and form CMA where such functions have been delegated at local government level.

The findings show that through institutional reform, the South African government has existing water governance strategies for management of water resources from the national to local government space. The upper Umzimvubu Catchment area is within Matatiele Local Municipality under Alfred Nzo District Municipality, which is a WSA for this area. As previously indicated, this study took place within the Upper Umzimvubu catchment area (Tertiary catchment T31) at the KwaSibi Administrative Area of Upper Umzimvubu catchment. Therefore, there is an existing CMF in this area. Although the National Water Act (Act 36 of 1998) has mandated the establishment of CMAs as a concrete solution to decentralised water resources management institutions, findings showed that there is no existing CMA within this catchment area. However, there is an existing CMF, namely the Umzimvubu Catchment Management Partnership (UCPP). Noteworthy is that CMF does not make decisions, rather only influence decision making on water resources management.

5.3.2 Umzimvubu Catchment Partnership Programme (UCPP)
The UCPP is a collaborative concept that was established in 2008 in Matatiele by the local development group with the intention to tackle alien plant infestation in the upper catchment. Given this, this partnership was formulated under an initiative supported by the Critical Ecosystem Partnership Fund (CEPF) and driven by the Environmental Rural Solutions (ERS) and Conservation South Africa (CSA) which are non-governmental organisations based in Matatiele town.

On this subject, participant A reiterated that:

> *UCPP works hand in hand with the Department of Water and Sanitation and bring sister departments together such as the Department of Agriculture Forestry and Fisheries (Eastern Cape), Department of Environmental Affairs, Department of Economic Development, Environment Affairs and*

Tourism (DEDEAT Eastern Cape) and Department of Rural Development and Agrarian Reform (Eastern Cape). However, in terms of the National Water Act, the Department of Water and Sanitation promotes Integrated Water Resources Management. Therefore, it takes the leading role of water resources management.

Given this, the UCPP is a Catchment Management Forum for water resources management at the upper Umzimvubu catchment area including the Tertiary catchment T31 which is the study area of this study. A Memorandum of Understanding (MoU) was signed by various government departments and nongovernmental structures at the local level to commit to collective action to establish and implement a catchment management strategy and restoration plan for the Umzimvubu River corridor (Umzimvubu Catchment Partnership Programme n.d.). These government departments and non-governmental structures include Alfred Nzo District Municipality and NGOs and private sector organisations such as African Solutions for African Problems (ASAP), Alfred Nzo Development Agency, Amazawa Agricultural Co-op, Bakoena Traditional Council, The Cedarville Conservancy, Conservation South Africa (CSA), Eastern Cape Parks and Tourism Agency (ECPTA), Eastern Cape NGO Coalition, Endangered Wildlife Trust (EWT), Environmental and Rural Solutions (ERS), Freedom Challenge, LIMA Rural Development Foundation, Maloti Drakensberg Transfrontier Project (MDTP), Matatiele Local Municipality, Mehloding Trust, Moshesh Traditional Council, Mount Currie Community Development Organisation, South Africa National Biodiversity Institute, Save Act, Sikhululiwe Bawo Women's Co-operative, Sustaining the Wild Coast (SWC), Wildlife and Environment Society of South Africa (WESSA) and Wildlands Conservation Trust (Umzimvubu Catchment Partnership Programme n.d.).

The findings further showed that the South African government has water governance strategies from national to a local level. For this reason, the NDP sets priorities for decentralised water resources management, and National Water Act (Act 36 of 1998) contains mandates for decentralised water resources management and demonstrates them through the targets of NWRS. The NWRS2 also talks about good governance in the water sector. It emphasises various stakeholders' involvement within the sector. It further indicates that good governance in the water sector has different dimensions such as administrative, political, and economic dimensions. Given this, the National Water Strategy (2013:15) also notes that, "Good water governance requires predictability, participation, transparency, equity, accountability, coherence, responsiveness, and integrated and ethical decision making."

Therefore, the South African government has reformed water policies and the new policies promote multi-stakeholder involvement for good water governance as described in the National Water Strategy (2013:15). In the case of KwaSibi area, this has been demonstrated by the existing CMF, which is one of the NWRS institutional reform targets to decentralise water resources management for stakeholder' participation. Now the focus of the second key finding is on participatory processes at local government for stakeholder involvement.

5.4 Local government participatory processes for stakeholder involvement

Findings revealed detailed decentralisation of water resources management by providing the different laws and policies guiding participatory processes and the participatory processes for stakeholder involvement at the local level. Notably, the findings showed that the participatory processes start in laws and policies. First, there are laws and policies where public participation is mandated for participatory water governance. Table 5.4 below shows the sub-themes of these key findings.

Number	Sub-themes
5.4.1	Policy and legislative framework at catchment level for participatory processes
5.4.1.1	Participatory processes at catchment level
5.4.2	Policy and legislative framework at local government level for participatory processes
5.4.2.1	Participatory processes at local government level

Table 5.4: *Local government participatory processes for stakeholder involvement*

5.4.1 Policy and legislative framework at catchment level for participatory processes

As mentioned above, the participatory processes are mandated by laws and policies. Notably, findings indicated that the post-apartheid South African government reformed policies to decentralise water resources management and for participatory government. In this regard, participant B from the South African Local Government Agency (SALGA) (Eastern Cape) pointed out that:

> *The participatory processes at local government space are guided by laws and policies. However, before the local government laws and policies, there is a supreme law which is South African Constitution that mandates the cooperation in all government spheres.*

Therefore, Chapter 3 of the Constitution of the Republic of South Africa (Act 108 of 1996) speaks about cooperative government and it mentions three spheres of Government. It states that:

> *In the Republic, the government is constituted as national, provincial and local spheres of government which are distinctive, interdependent and interrelated.* (*Constitution of the Republic of South Africa Act, Act 108 of 1996:* RSA 1996.)

Further to this, there are many policies and laws that were established and adopted after the inception of the Constitution of the Republic of South Africa Act (Act 108 of 1996) in 1996 which accommodate stakeholder involvement. As a result, participant B further raised that:

> *In the water sector there is national water policy which came before other laws and policies that mandate participatory processes at local government within the water sector. This policy provides the direction to be taken on the establishment of water law of democratic era.*

In the same way, participant C from SALGA added by saying that:

> *This paper is a primary document on national water policy that provides direction on establishment of subsequent South African water laws that embrace stakeholder involvement.*

Notably, Karodia and Weston (2001:13) point out that the water policy in South Africa is on a period of rapid changes after the country has experienced radical political changes since the early 1990s. Karodia and Weston (2001:13) further submit that the new National Water law prescribes processes by which management institutions and strategies and will evolve. They state:

> *The new National Water law has divided the country into Water Management Areas using the principle of stakeholder participation to ensure that each area can develop its Institutional and management systems to satisfy its specific situation … the White Paper on National Water Policy (DWAF 1997) set out new integrated policy positions for protection, use, development, conservation, management and control of South Africa's water resources and this remains a remarkable document".* (Karodia & Weston 2001:13-14.)

Participant B indicated that, "As water resources are of national competency, the administration of participatory processes for stakeholder involvement at local level includes both Department of Water and Sanitation and municipalities." As indicated above, the White Paper is a primary document on national water policy that provides direction on the establishment of the subsequent South African water laws and policies that embrace stakeholder involvement. Therefore, Water and Sanitation (DWS) constitutes the participatory processes through the laws and policies following the White Paper on national water policy.

Furthermore, Participant A submitted that:

> *The participatory processes are contained and guided by water laws and policies. These laws and policies include Water Services Act (Act 108 of 1997), National Water Act (Act 36 of 1998), National Water Resource Strategy and Water Resource Commission (guidelines) which play a vital role in stakeholder involvement as they establish participatory processes.*

In this context, the Water Services Act (Act 108 of 1997) provides for the establishment and disestablishment of water boards and water services committees and their powers and duties. It also provides for the monitoring of water services and intervention by the Minister or by the relevant province. The National Water Act (Act 36 of 1998) provides a framework within which water is managed at regional or catchment level, and in defined water management areas. As mentioned before, National Water Act (Act 36 of 1998) translates the IWRM Integrated River Basin Management principle by decentralisation of water resources management in South Africa. This is done through the targets that are set out by the NWRS.

In this respect, Department of Water and Sanitation speaks about the participatory approach to strengthen community participation and other stakeholders. It reads:

> *Water management operates within a social, economic and ecological environment, and for effective and integrated management of water resources, top-down consultation should be replaced by citizens' participation, which will be facilitated through community forums and civil society organisation structures to achieve the required balance in the decision-making process within a developmental water management agenda.* (RSA DWS 2013:15.)

This participatory approach involves the establishment of CMAs in Water Management Areas (WMA) as the institutional base for stakeholder involvement.

5.4.1 Participatory processes at catchment level

In this case, the results show that participatory processes at catchment level are done through CMAs using a catchment management strategy to ensure public participation in management of water resources.

The purpose of the establishment of these CMAs was to manage the water resources in a decentralised manner. One of the major principles of the National Water Act (Act 36 of 1998) is its aim to implement decentralisation. Similarly, the decentralisation of power places an emphasis on public participation in water management processes and related decision-making processes. "It also rests on the subsidiary principle, which is encapsulated in the South African Constitution (RSA 1996)" (Meissner *et al.* 2016:2).

In this context, Donkor (2007:8) states that the new National Water Act mandates the national implementation framework and divides the country into 19 WMA. Meissner *et al.* (2016:2) also states that the South African government established 19 WMA in October 1999, and South Africa's existing CMAs were established in terms of section 78(1) of the National Water Act (Act 36 of 1998), and they are now reduced into 9 WMA. In this regard, the National Water Strategy (2013:59) notes that on the 19th of March 2012, the Minister announced the establishment of nine CMAs in 9 WMAs. The WMAs are Limpopo, Olifants, Inkomati-Usuthu, Pongola-Umzimkulu, Vaal, Orange, Umzimvubu-Tsitsikamma, Breede-Gouritz and Berg-Olifants. It also notes that:

> *The role of CMAs is to ensure that water resources are managed following national policies, guidelines and standards in their jurisdiction, through the active participation of local communities and other stakeholders in the water resources.* (RSA DWS 2013:64.)

Therefore, this study was conducted within the Administrative Area that falls under Umzimvubu-Tsitsikamma WMA as shown in Figure 5.4.1(a) below.

Figure 5.4.1 (a): *The Water Management Areas in South Africa*   **Source:** *National Water Strategy 2 (2013)*

The National Water Strategy (2013:65) outlines that communities and stakeholder groups will be empowered by the establishment of CMAs and by participating in structures such as catchment forums, catchment committees and water user associations. However, a slow delegation of functions, with the associated authority and responsibility and delays in the transfer of funds, have impeded the effective functioning of CMAs (National Water Strategy 2013:59). Thus, more than a decade after the inception of the new National Water Act (Act 36 of 1998) of South Africa only two CMAs were set up out of the 19 that were intended. In addition, there is only 111 irrigation boards out of 279 that were established before the new legislation that have been transformed into 59 WUAs (Claassen 2016:324). Given this, the decentralisation of power in the water sector of South Africa has not yet reached the desired levels, and this is due to capacity constraints (Claassen 2016:324). The national interest is a political driver (Claassen 2016:324). Given this, two existing and currently operational CMAs are the Inkomati CMA in Mpumalanga and the Breede-Overberg CMA in the Western Cape (National Water Strategy 2013:59). Importantly, there is no existing CMA within the study area, which falls under Umzimvubu-Tsitsikamma Water Management Area. However, there is an existing CMF.

In addition, participant A also revealed that "there is also a Water Resource Commission with guidelines for participatory processes of catchment management". The Water Resource Commission (WRC) was established in terms of the Water Research Act (Act 34 of 1971). After a period of serious water shortage, a WRC was established. In this regard, WRC's mission is to be South Africa's premier water knowledge hub and global water knowledge node.

> *The Commission's mandate includes: promoting coordination, cooperation and communication in the area of water research and development;*

establishing water research needs and priorities; stimulating and funding water research according to priority; promoting effective transfer of information and technology; and enhancing knowledge and capacity building within the water sector. (Water Resource Commission n.d.)

Given this, Munnick *et al.* (2016:8) provide the following policy recommendations in a report that was prepared for WRC as shown in figure 5.4.2(b). This project was designed to accompany the DWS revitalisation of CMFs, which are currently in progress and taking place on the roll-out of CMAs (Munnick *et al.* 2016:8).

In this regard, Munnick *et al. (*2016) talks about CMFs. They outline that:

> *From the perspective of DWA, the role of Catchment Forums (CFs) is to act as a communication channel between catchment residents and local government, municipality and other institutions. Catchment Forums can also be educational bodies, watchdogs, and initiate organisational structures for activities in various catchments within South Africa. It is proposed that CFs become appropriate vehicles to foster cooperative governance between the CMA, local government and other stakeholder interest groups, in the interests of integrated management to support Water Resource Management (WRM).* (Munnick *et al.* 2016:8.)

In two policy deliverables, a set of twenty key recommendations was produced. The recommendations are:

1. ***Establishment approach:*** *There should not be a one-size-fits all, or blanket, approach to the establishment of forums. This recognises their differing functional and geographic contexts. However, there is a need to stipulate certain key requirements.*

2. ***Recognition in the legislation:*** *There should be clearer recognition of forums and their role in the legislation. This will strengthen their position in the institutional framework. Regulations, as made possible by the NWA, should be developed, and should stipulate key basic requirements for a forum.*

3. ***Clarify other catchment-based institutions:*** *It is important in this process of re-energising forums that the institutional framework is fully understood and described as a complete governance framework. The role of forums needs to be clarified.*

4. ***Finalise the policy on forums:*** *This policy needs to be finalised as a matter of urgency and in partnership with key forum actors. DWS needs to be very clear about the support that will be provided.*

5. ***Developing a business case for forums:*** *This does not need to be onerous, but in effect, a 'Theory of Change' is needed in the first instance to provide the basis for establishing any forum. This will indicate the outputs, outcomes and impact that are expected.*

6. ***Develop updated guidelines:*** *Based on the revised policy an updated suite of guides needs to be developed. These need to be practically focused around the institutional, functional and organisational dimensions of forums.*

7. ***Communications materials:*** *A range of communications materials are needed to explain*

forums, their roles and to assist in making forums more accessible.

8. ***Forum of Forums:*** *The role that such a forum could play would be extremely useful in bringing meta-issues to the DWS, in providing inputs on strategic matters that impact upon forums and in support the development of capacity across forums.*

9. *Three key roles: In effect, forums are seen to be by nature either:*

   9.1 ***Informative:*** *Acting as a hub of information, providing a vehicle for dissemination.*

   9.2 ***Advisory:*** *Providing inputs and comments on issues at hand.*

   9.3 ***Operational:*** *Being more engaged in operational matters, debating courses of action, providing technical inputs, acting as a watchdog.*

10. ***Functions can change:*** *The roles and responsibilities of forums, and DWS and CMAs in supporting them, can adjust with time and may indeed vary from project to project.*

11. ***Provide functional focus:*** *There are four key functional areas that forums should support, namely:*

    11.1 *Institutional Development,*

    11.2 *Water Resource Management Consultation,*

    11.3 *Support to Water Resource Management Activities, and*

    11.4 *Supporting Integrated Planning and Development.*

12. *The concept of '**balancing power'** which in effect is the function of holding institutions accountable, providing evidence, and sharing information and advocating is an important cross-cutting role that we would expect forums to play across all four of the functional areas highlighted above.*

13. ***Functions between meetings:*** *Whilst much of the focus in terms of guidance and support is on the forum meetings, in effect the forum functions between meetings. Guidelines do need to address how forums function beyond forum meetings.*

14. ***Inter-sectoral roles:*** *Forums play a critical role in connecting the water sector to a broader array of environmental matters. Clear guidance is required by DWS and CMAs as to how forums engage in these various inter-sectoral planning instruments.*

15. ***Communities and networks of practice:*** *In support of these functions there is a meaningful opportunity to develop forums as 'communities of practice'. To do this DWS and CMAs will need to share information (requires a protocol), develop networks and exchanges, provide peer support and mentoring (through such platforms as indabas, for example) and will have to trust/engage with the expertise and agency of forums. Citizen science and cultural/spiritual aspects are important considerations, as is the use of these forums to advocate for actions to support emergent and developmental sector.*

16. ***Organisational pragmatism:*** *A forum should limit the temptation to become more structured or legalised than is necessary, as this imposes greater resource requirements on the forum.*

17. ***Long term vs Short term efficacy:*** *Forums with a temporary issue-based interest may*

not need to formalise themselves. This may be the case where a specific project or need requires a platform for engagement. For longer-term issues, the forum needs to consider longer-term sustainability, and that then requires formalisation and more organisational requirements.

18. ***Formalise through a Charter:*** *Forums that are in for longer-term interventions towards advisory and operational roles require some degree of formalisation and should develop a Charter/Constitution. Beyond the broader issues of strategic intent, the Charter must reflect on matters such as representation, language and access to information.*

19. ***Consider sub-structures:*** *Depending on the functional issues there may be a need to ensure that there is full water management area coverage in terms of functioning forums. This could be via larger forums or several smaller forums.*

20. ***Open and closed membership:*** *The membership of forums should be based on clear and transparent principles and the appropriateness of open and closed memberships need to be well articulated. There is an immediate concern when membership requires a fee that may just marginalise certain groups.*

Clarity of support: *DWS and CMAs will need to provide support throughout the lifecycle of the forum. This support may take different formats over time and as such need to be articulated so that the forum understands what support it can expect. This must include administrative, technical, and financial aspects.*

Figure 5.4.1(b): *Policy recommendations*   **Source:** *Munnick et al. (2016)*

As mentioned above, the findings showed that the administration of participatory processes for stakeholder involvement at the local government space includes DWS and municipalities. The DWS is a custodian of water resources from regional to catchment level through the establishment of CMAs which operate through the Catchment Management Strategy and municipalities operate as WSAs at local government level.

5.4.2 Policy and legislative framework at local government level for participatory processes

It is important to point out that this study area was under Alfred Nzo District Municipality as the Water Service Authority of KwaSibi Administrative Area within Umzimvubu-Tsitsikamma WMA. There are other policies for water management in the district municipality.

Given this, Participant A stated that:

> *At local government there is Municipal Systems Act of 2000 that guides the processes of municipalities. The Municipal Systems Act provides necessary core principles, mechanisms, and processes to ensure progressive movement of municipalities. It also provides legal guidance on municipal administration and clarifies duties of municipal council and communities for the upliftment of communities to ensure universal access to essential services. Although there are also other existing policies for water related management matters such as municipal indigent policies and indigent register. It is the Municipal Systems Act that regulates the functioning of the municipalities.*

Therefore, Chapter 4 of the Municipal Systems Act of 2000 speaks about the development of a community participation culture where it states that, "A municipality must develop a culture of municipal governance that complements formal representative government with a system of participatory governance." It also speaks about mechanisms, processes, and procedures for community participation where it notes that community participation must be placed through political structures and there must be processes and procedures where the municipality considers everyone, including people who cannot read and write, women and people with disabilities.

5.4.3 Participatory processes at local government level

Since there is a Municipal Systems Act in place to guide the municipal processes including the community participation processes, participant B said that:

> *There is an Integrated Development Plan (IDP) process plan which is a strategy as led by Municipal Systems Act. There are outreach programmers to form IDP as formulated by the Municipal Systems Act. There is Service Delivery Budget and Implementation Plan (SDBIP) - it is a contract that is signed by the senior management of the municipality with the council and the community at large. There are also District Mayoral Forums (DIMAFOS) whereby the District Mayor convinces the mayors of the local municipalities. In addition, National Environmental Management Act (NEMA) of 1998 constitutes the public participation process.*

As a result, participant B further submitted that:

> *At local government sphere, there is public participation that involves; Mayoral Mbizos and outreach programmes which fall under the public participation section where the councillors led by Mayor go out to different communities and talk about government systems and allow the communities to raise their needs.*

Concerning water resources related matters of the Alfred Nzo District Municipality as the WSA of study area, the results established that there is a public participation unit that covers the outreach programmes and the Mayoral office is leading that. However, there are challenges of policy implementation in local government and public participation is affected. Participant B stated that:

> *Although there are designed laws and policies at local government level for public participation, they do not become effective as written on papers when it comes to practical side. There are certain challenges such as ineffective management resulted by politics within the governance space that eventually overpower proper policy implementation and certain local government functions.*

Moreover, the study established that Matatiele Local municipality, the local municipality within the boundary of the study area, does have a unit that mainly deals with public

participation under the municipal department of community services. Participant D from Matatiele Local Municipality (MLM) stated that:

> *The municipality does have public participation unit that focuses on the public engagement with the public and all relevant matters such as community outreach. Also, municipalities have public participation policy and have different ways of implementing their public participation policy, as for the Matatiele Local Municipality; they are reviewed and implemented independently".*

Another participant E from MLM stated that "*there is also an Environmental Unit within the municipality, which also actively work hand in hand with the local non-governmental structures in communities especially in the issue of water resources management and landscaper management.*

Furthermore, on the NWRS2, the Department of Water and Sanitation speaks about partnerships of all stakeholders such as the Strategic Water Partnership Network (SWPN) between the private sector and the South African government which is regarded as innovative. This partnership aims to promote the efforts of coordination to close the water volume gap in the country by 2030 (RSA DWS 2013:15)**.** Furthermore, the Department of Water and Sanitation also speaks about the formation of a "Water Sector Leadership Group (WSLG)", which is regarded as a strategy for engagement that is sector wide and is led by the DWA. Therefore, on the NWRS2, the Department of Water and Sanitation also indicates that this is prepared for engagement forum on policy and other key sector programmes. "Provincial water sector forums are created to broaden participation, address water challenges, align plans and strengthen collaboration at the provincial level between all stakeholders in the water sector" (RSA DWS 2013:15).

On the same subject, RSA DWS (2013:15) outlines that "government and companies increasingly have to forge new types of partnerships and rethink relationships with stakeholders". The Department of Water and Sanitation further outlines that sectors must be committed to effective water resource planning, management, and use, and they must become strategic partners and allow accountability for protection of water resources as well as necessary actions. Therefore:

> *Taking the lead from the UN-driven CEO Water Mandate and the experience of several large corporations in managing water risk, the private sector in South Africa has mobilised to manage water risk effectively.* (RSA DWS 2013:15.)

Given the above, RSA DWS (2013:15) indicates that, "All local governments, irrespective of whether they are water services authorities and/or providers, are thus responsible for aligning their functions to water resource management functions and institutions." In addition, the reformed laws and policies of post-apartheid South Africa accommodate and guide the participatory processes of participatory water governance from national to local government.

In contrast, as a participatory process for stakeholder involvement consist of two elements of the participatory processes at the catchment level and the participatory processes at the local government level, but there seems to be a lack in public participation in water governance still. This is because even though there is a holistic approach which is a basic principle that embraces participatory processes both in catchment level and local government, public participation remains a challenge. Except for the CMF in this area, there are no statutory systems within this study area provided for by the targets and expectations of the institutional reforms of water sector in South Africa. This reveals that there seems to be a lack of intense communication in the water sector although there has been reform within the water sector in South Africa.

Further to this, Elke (2010) explores the transition from administrative into hydrological boundaries in South Africa. On the one hand, hydrological boundaries refer to the management of the water resources at the catchment level by the Department of Water and Sanitation such as Catchment CMAs, WUAs and Catchment Management Committees (CMC). On the other hand, administrative boundaries refer to the management of water resources at the local government level by the municipalities as WSA and Water Service Providers (WSP). Elke (2010:7) states that the transition into hydrological boundaries is afflicted with several trade-offs. For example:

> *These are firstly the trade-off between the improved fit between the social and the ecological system and the misfit between scales within the social system, secondly a trade-off exists between a correct classification along hydrological boundaries (holistic approach) and a feasible size for effective management, meaningful stakeholder participation and financial viability, which may require a splitting and merging of hydrological entities and thus a violation of the hydrological principle.* (Elke 2010:7.)

Figure 5.4.3 below shows the mismatch between administrative and hydrological boundaries.
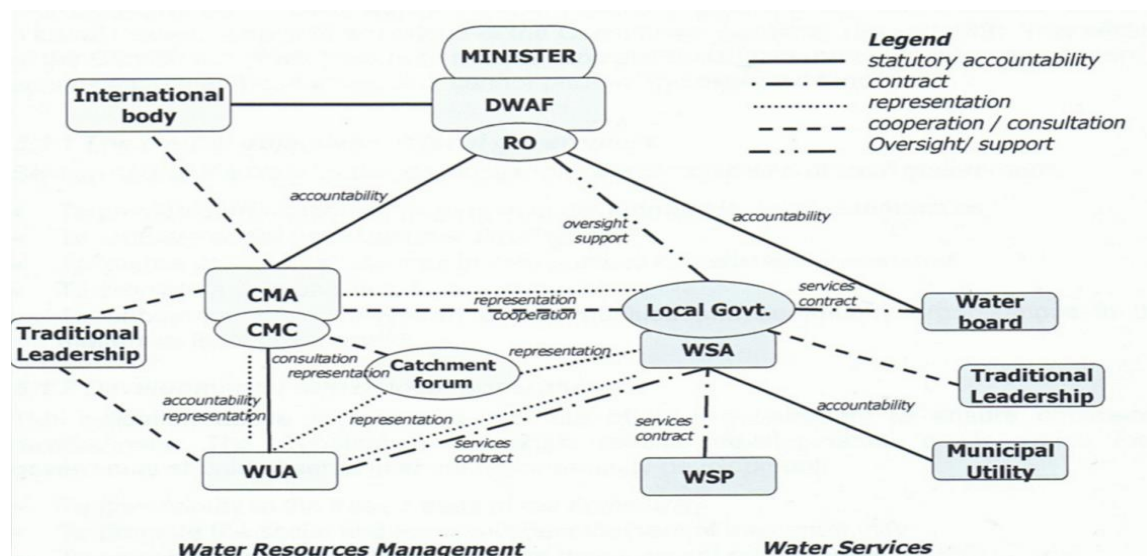

Figure 5.4.3: *Institutional relationships of water sector institutions*   **Source:** *Elke (2010)*

Therefore, there is still a lack of intense communication and integration in government. "Not surprisingly, a lack of coordination and communication has been detected within DWA between divisions dealing with water services and water resource management and between DWA and WSA" (Elke 2010:14).

5.5 Interpretation of participatory processes in the laws and policies applied at the catchment level and local government level

The responses provided by DWS outlined that the laws and policies at the catchment level are interpreted in the National Water Act (Act 36 of 1998), although they do not stipulate it. Since the National Water Act (Act 36 of 1998) does not detail the laws and policies, participant A raised the point that, "A National Water Resource Strategy under the National Water Act is the how part of the National Water Act in terms of the implementation."

Responses from SALGA and Alfred Nzo District Municipality established that the laws and policies are interpreted through an Integrated Development Plan (IDP) at the local government level. Regarding the IDP, Participant F from Alfred Nzo District Municipality stated that, "The IDP is a plan that provides an overall framework for development at local government."

Table 5.5 below shows the sub-themes of the results on interpretation of law and policies at local government space and local catchment management level.

Number	Sub-themes
5.5.1	National Water Resource Strategy (NWRS)
5.5.2	Integrated Development Plan (IDP)
5.5.3	Challenges water policy implementation at local government

Table 5.5: *Themes about the interpretation of laws and policies*
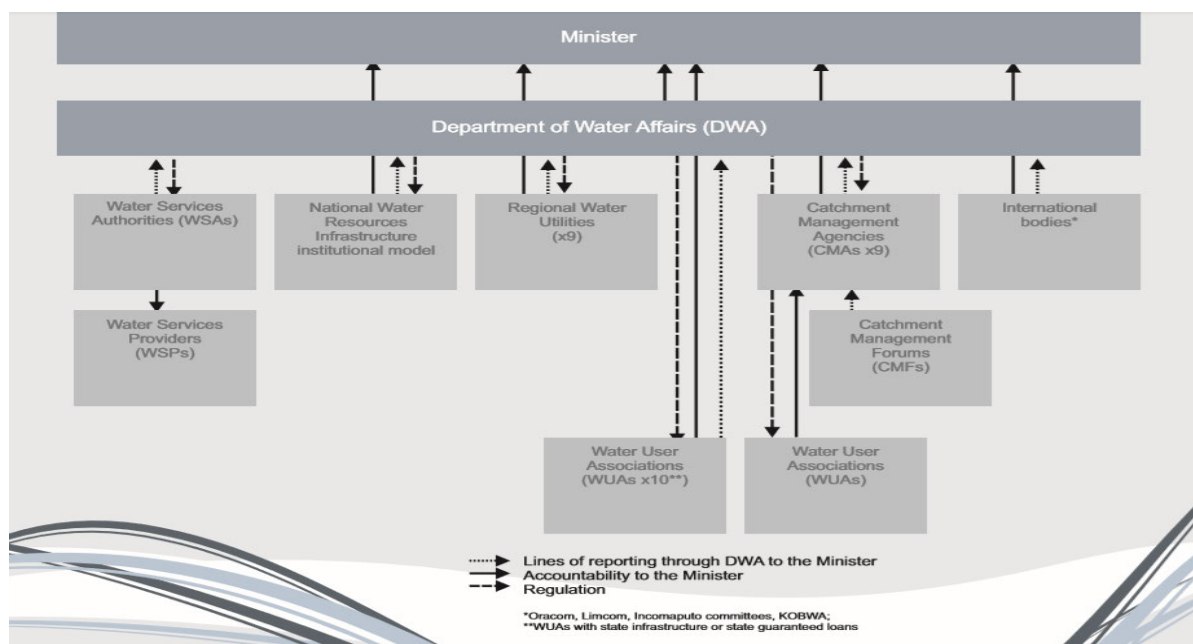
5.5.1 National Water Resource Strategy

According to the responses that were provided by the DWS, the laws and policies at the local catchment level are interpreted in NWRS. As a result, Participant A stated that:

> *It is the National Water Resource Strategy that interpreted the establishment of the forums which form part of the participatory process. Catchment Management Forum reports to the Catchment Management Agency as a statutory body. However, in the absence of the Catchment Management Agency, those forums report under the DWS. CMA is a public entity; the Department of Water and Sanitation is called Proto CMA.*

Further to this, the RSA DWS (2013:15) speaks about integrated and effective management of water resources and indicates citizens' participation should replace top-down consultation. The RSA DWS (2013:15), in the NWRS2 document, outlines that these will be facilitated through community forums and civil society organisation structures to accomplish a balance in the decision-making process within the agenda of water management development. Given this, Chapter 8 of NWRS2 interprets the institutional arrangements and further details the institutional framework. Figure 5.5 below shows the institutional vision regarding the institutional reform. This involves the establishment of

statutory and non-statutory bodies on 19 March 2012 (RSA DWS 2013:15). It also demonstrates the CMFs, WUAs, WSAs and WSPs. The RSA DWS (2013:68) outlines that:

> *Water services authorities (WSA) are municipalities that in terms of Section 12 of the Municipal Systems Act have the constitutional responsibility for planning, ensuring access to and regulating provision of water services (water supply and sanitation) within their area of jurisdiction, WSAs may provide water services themselves or contract external Water Services Providers (WSP) to do this on their behalf.*

Figure 5.5: *Institutional vision*   **Source:** *National Water Strategy 2 (2013)*

As mentioned above, results also showed that the IDP is in place at local government for the interpretation of laws and policies.

5.5.2 Integrated Development Plan

It aims to organize the work of the three government spheres to enhance the quality of life for all people residing in that area. The Municipal Systems Act (Act 32 of 2000) (MSA) (RSA) defines Integrated IDP as a "principal strategic planning instrument which guides and informs all planning and development, and all decisions concerning planning, management and development, in the municipality".

On this subject, the establishment and implementation of IDP has been raised in several pieces of the South African legislation such as the Constitution of the Republic of South Africa, the White Paper and Municipal Systems Act for direct guidance and for directions on the way to be followed in establishing and implementing IDPs. Given this, Harrison (2019:175) indicates that the Constitution of the Republic of South Africa Act (Act 108 of 1996) clarified the way for a fundamental local government. Harrison (2019:175) further explains that the shift from apartheid-based local government structures had started in 1990 with the Local Government Negotiating Forum, which led to the agreements of local government to bring about the process of racially-based structures, but the principles under

which the new system would operate was the Constitution of the Republic of South Africa Act (Act 108 of 1996). The IDP formulation consists of various stakeholders and the IDP overview process has different phases. Importantly, after all the phases of IDP, the public participation programme remains a fundamental part where local people are being consulted. Therefore, it is being undertaken both for monitoring the implementation of the IDP and the revision of the IDP process.

Regarding the use of IDP, participant A stated that, "The formulation of IDP is therefore guided by the legislation to incorporate governance at the grassroots. Water governance at local government space is also taken into consideration on a super plan which is IDP." As a result, amongst the list of the water issues to be addressed by the Alfred Nzo District Municipality IDP, the Alfred Nzo District Municipality Integrated Development Plan (2017 2022:64) indicates that "ANDM meets DWS regulatory requirements as a WSA (in terms of the Regulatory Performance Management System, RPMS)". Notably, the Alfred Nzo District Municipality's IDP touches very little on participatory processes, as it purely focuses on water governance. However, the participants indicated that there are sections within the municipality that deal with water related issues and policies, and there is also an environmental section in the Alfred Nzo District Municipality that deals with environmental issues where there are plans in place that address the environmental issues involving the water resources issues. On this subject, Participant F stated that:

> *Although the laws and policies are interpreted in the IDP, the municipality has the environmental section with existing plans and strategies that focuses on environmental management including the water resources management such as Environmental Management Plan which is guided by the National Environmental Management Act (Act 107 of 1998).*

The National Water Act (Act 36 of 1998) mandates participatory governance and the participatory processes which are detailed out through NWRS. The results further show that the upper Umzimvubu catchment as a water resource is also accommodated in the National Environmental Management Act (Act 107 of 1998). The NEMA is an environmental act that provides for co-operative environmental governance. In this sense, it establishes the principles to promote cooperative governance on the matters that affect environment and institutions. Therefore, the Alfred Nzo District Environmental Management Plan (2010:6) states that, "The National Environmental Management Act of 1998 makes provision for all local authorities to develop and implement a strategic environmental management framework which is referred to Environmental Management Plan (EMP)."

5.5.3 Environmental Management Plan (EMP) as NEMA framework at local government level

Therefore, since NEMA promotes cooperative governance, it is interpreted through EMP at the local government level. In this regard, Alfred Nzo District Municipality has an existing EMP which was formulated in 2009. The Umzimvubu Environmental Management Plan (2010:6) outlines that:

> *The process was guided by and closely consulted with a project steering committee comprised of representatives from the District, the two local municipalities in Alfred Nzo District, relevant Departments in the District, including Environment Affairs, DME, Agriculture, Health and other stakeholders such as the Working for Water programmer implementers.*

The instruments for the interpretation of laws and policies at the local government level show the cooperation of different stakeholders and emphasise cooperative governance. For example, the NWRS talks about citizens' participation in managing water resources. The processes of IDP involve many stakeholders as well. Lastly, the EMP also involves many stakeholders. Therefore, these results show that there is cooperative water governance from the national to local sphere in South Africa.

Moreover, although there are strategies, plans and frameworks that interpreted the laws and policies at catchment level and local government level, which are designed in a participatory manner, the results further revealed that, however, there are challenges in the implementation of the of laws and policies at local government.

5.5.4 Challenges of water policy implementation at local government

The responses from the participants revealed that policy implementation is fraught with challenges. One of the participants asserted that, "Unavailability of funding delays the targeted implementation processes." Participant F added that:

> *The demographic dynamics in terms of human settlements cause the implications in terms of policy implementation such as population growth imposes challenges in policy implementation. Also, the meeting places create disputes because it happens that each traditional leader wants the meeting to be held in his/her village. And another challenge is the interest of local people, some people are not purely interested in water resources management rather on what they are going to benefit out of the process of Catchment management meetings there must be sort of incentives".*

Participant a further said that, *"During the IDP public participation programme with communities, local people sometimes show poor attendance, which then creates a problem because certain communities feel excluded by local government."*

In addition, the results also revealed that the municipalities run at a loss when it comes to water issues because local people steal water by adding more pipes on existing municipal infrastructure and directing them into their households. This puts pressure on water resources. Moreover, infrastructure (pipes and taps) get stolen by local people, which also becomes a drawback to the municipality in terms of water resources management.

The findings show the existence of a NWRS that guides the implementation of institutional arrangements to achieve multi-stakeholder involvement for water resources at the catchment scale. They also show that there is also an IDP at the local government level, which also involves community outreach, and there is an EMP in place to guide cooperative environmental governance. The findings have also revealed that both district and local

municipalities have existing public participation units to ensure stakeholder involvement. The section below focuses on the understanding of local people about catchment degradation and management.

5.6 Understanding of local people about catchment degradation and management

Responses from local people regarding their understanding of catchment degradation and management came with different perspectives consisting of natural, social, and institutional factors that eventually link to the water governance at the upper Umzimvubu catchment management. The findings reveal management and mismanagement of this water resource and dissatisfaction of local people with local government. The community members' perceptions included change in rainfall patterns, which is a natural factor, degradation of grazing lands due to increasing stock theft, which is a social factor, and inadequate governance of their water resources by local government, and institutional factor. Table 5.6 below shows sub-themes of the findings regards this thematic area.

Number	Sub-themes
5.6.1	Catchment degradation through a change in rainfall patterns
5.6.2	Catchment management in change in rainfall patterns
5.6.3	Catchment management in infestation of Black wattle
5.6.5	Degradation of catchment grazing lands due to spike in stock theft
5.6.6	Inadequate management of water resources by local government

Table 5.6: Sub-*themes about the understanding of catchment degradation*

5.6.1 Catchment degradation through a change in rainfall patterns

First, the community members revealed that the issue of change in the rainfall patterns is one of the factors contributing to catchment degradation due to decreased rainfall in this area. It was mentioned that in recent years the area of KwaSibi has experienced changes in rainfall patterns and the rainfall continues to gradually decrease. As a result, there are regular extreme occurrence of drought in this area. In this regard Participants H indicated that, "Since from the 1980s, there has been a noticed change in rainfall patterns of this area to date".

It was further stated that the source of the upper Umzimvubu catchment area (Tertiary Catchment T31) is located at the highest lying Maluti Drakensberg mountain range that forms part of the Lesotho escarpment. In this regard, the community members stated that Lesotho is the heart of the water source in this area and in South Africa. The headwaters of this catchment have a river called Little Umzimvubu River. It was also revealed that the little Umzimvubu River has abundant water, but it used to have more abundant water in the past. Therefore, the community stated that the flow of the Little Umzimvubu River has decreased significantly in recent years. As a result, Participant I said that:

> *The Little Umzimvubu used to have abundant water, but we have noticed the change in the recent years. We have even noticed the change in the sound of the flowing water. Traditionally, water resources are not just natural but are believed to be living substances. Now this change is spiritually and culturally*

a symbol of change in the life of the catchment system. This assured us that there is a change in the catchment itself and the volume of water in the young stage of the catchment which is the little Umzimvubu River.

Another Participant (Participant J) added that, "Our area has become dry. In the olden days, the Little Umzimvubu River used to have abundant water, it still has abundant water; however, the stream flow has decreased in recent years" while Participant said, "Although we are situated close to the source of upper Umzimvubu catchment, the rivers are becoming drier and drier, rain scarcity has stricken this area."

5.6.2 Little Umzimvubu River

As previously indicated in the first chapter, this study area falls under the upper Umzimvubu catchment. The catchment has quaternary catchments, the quaternary catchments are regarded as hydrological units that are hierarchically nested from the primary drainage basin, through to secondary, tertiary, and quaternary levels. On average they are about 650 km^2 in size (Nel *et al.* 2011:14). This study area is situated within a catchment area that stretches from the origin of the source to the KwaSibi Administrative Area (A/A), which is covered by Tertiary catchment T31 on the upper Umzimvubu catchment area. This catchment area (Tertiary Catchment 31) is divided into 3 distinct land-use sections. The upper basin consists of the Maluti Drakensberg mountain range where the upper Umzimvubu catchment (Tertiary catchment T31) originates. The second section is characterised by grazing lands and the third by rural settlements that also consist of subsistence agricultural lands. Thus, the headwaters of upper Umzimvubu catchment (Tertiary catchment T31) is called Little Umzimvubu River. The arrows in Figure 5.6.2(a) below show the highest lying mountains of the primary basin which lead to the young stage of the source: The Little Umzimvubu River within Tertiary catchment T31.
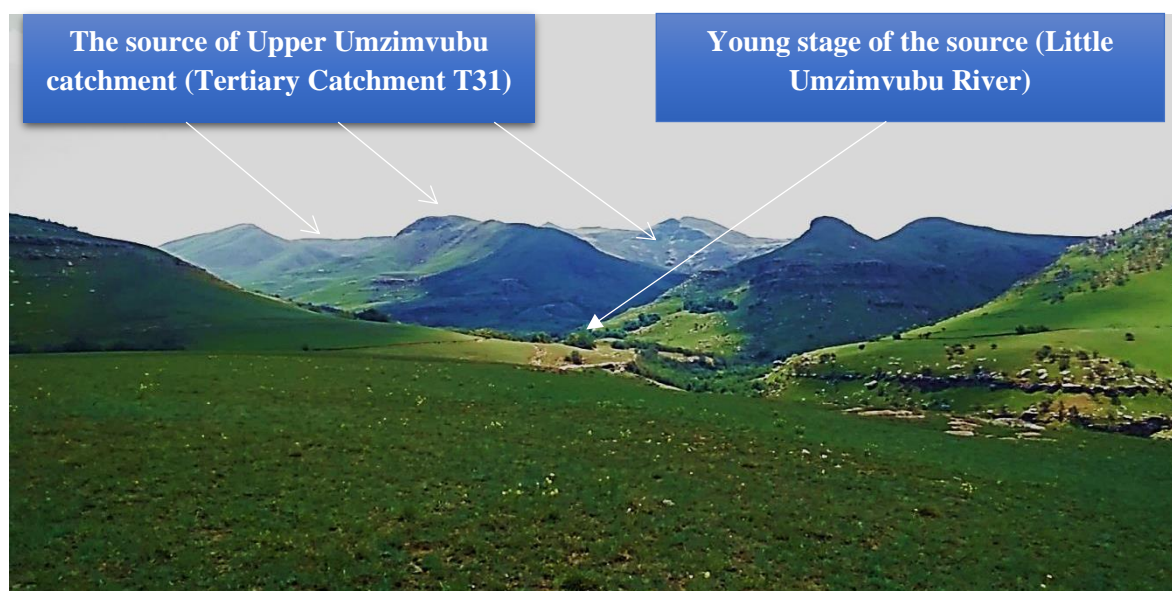
Figure 5.6.2(a): *Source of upper Umzimvubu catchment (quaternary T31)* **Source:** *Photo by Researcher (2020)*

As mentioned above, the results from the community members about the catchment degradation revealed that change in rainfall patterns contribute to the catchment degradation.

Given this, a researcher physically visited the highest lying Maluti Drakensberg mountain range where the upper Umzimvubu catchment (Tertiary catchment T31) source is situated. The physical observation was undertaken in this area by the researcher. Besides the data provided by the community, the researcher's observations of the upper Umzimvubu catchment (Tertiary catchment T31) headwaters revealed that the Little Umzimvubu River is heavily infested by a black wattle scientifically known as *Acacia mearnsii*. Figure 5.6.1(b) shows the infestation of Black Wattle at the source and Black Wattle is known to consume a lot of water.

Figure 5.6.2(b): *Heavy Wattle on Little Umzimvubu River*   **Source:** *Photo by Researcher (2020)*

The participants indicated that drought had negatively impacted their water resources and rural livelihoods. It was indicated by the community members that in the past they had indigenous practices to manage their water resources. These practices were regarded as a spiritual heritage in which the community would perform rain-asking rituals and ceremonies asking for rain from the Supreme Creator of all things living. These practices were performed when there were severe droughts and when water resources were at risk of degradation due to water scarcity.

5.6.3 Catchment management in a change in rainfall patterns

The community members revealed that these traditional practices were religious and cultural responsibilities that traditional leaders administer. This is because when there is drought in the village, community members would stage rain rituals and ceremonies upon instruction from the chief of the village. In this regard, the community stated that rainmaking is an ancient science and part of traditional water governance. On this matter, Participant K said that:

> *As part of traditional African society, we used to perform the rain-asking rituals and ceremonies where the leader of regiments would take a lead. The regiments would ascend to the mountain to pray with the intention to invoke God and to request him to send down rain.*

The community members further stated that although the community had their traditional strategies to enhance rainfall occurrence, the current westernised Africans are grappling with climate change and it is not promising that effective rainfall and proper management of their catchment would be experienced these days because these practices are considered as of no value and backward practices. Participant L voiced that:

> *The new technologies that have been developed and the current system of water governance policy and laws in practice leave out the indigenous meteorological science. That is why we are going to experience unending issues of catchment degradation and severe water scarcity.*

The findings also revealed that this catchment is further experiencing degradation since the traditional practices are not being considered.

5.6.4 Catchment management in infestation of Black wattle

It is worth noting that, apart from the Catchment source that is heavily infested by black wattle (an alien plant), the landscapes of the area of KwaSibi are generally invaded by the black wattle. Therefore, discussions were held with the community members and the responses were provided regarding the management of the black wattle invasion. The community members stated that although the black wattle is known for consuming a lot of water, it is their source of energy as rural people as it provides firewood. However, some programmes are in place for wattle removal in the community.

The responses from the community members showed that the community does understand catchment degradation by providing different perceptions that show different factors that involve natural, social, and institutional factors. The participants further raised other perceptions that further revealed other factors, namely the social and institutional factors. The community members also raised the spike in stock theft that leads to grazing lands degradation of catchment area. Lastly, the issue of inadequate governance of their water resources was highlighted. These two are discussed in detail below.

5.6.5 Degradation of catchment grazing lands due to a spike in stock theft

The community members also revealed the issue of a spike in stock theft leads to grazing lands degradation in the catchment area. This happens due to the veld fires that stock thieves typically start. The community members stated that there is a regular occurrence of uncontrolled burning of veld in the catchment area. This leads to degradation of the grazing lands, which leaves bare soils and causes soil erosion within this catchment area. On the issue of veld fires, Participant M stared that:

> *Burning of the veld is not purely done by community people rather the people who come from Lesotho for stock theft, now this burning of the veld is being done as they move to hide the direction that they are taking with the livestock.*

In this detail, the personal observations by the researcher showed that the catchment area is no longer in its pristine state. It was observed that the grasses of the catchment area are overgrazed. Figure 5.6.5 shows the overgrazed area at headwaters of the upper Umzimvubu catchment (Tertiary catchment T31).

Figure 5.6.5: *An overgrazed landscape of catchment area*   **Source:** *Photo by Researcher (2020)*

Given this, the community members stated that the community made attempts to intervene to stop this activity for catchment management. However, the issue gets out of hand during veld burning season. The community also indicated that there is a section of the Public Safety unit in the local municipality that also deals with fire. However, when the community tries to request the municipality's fire department to assist with stopping the fire, the municipality does not show up. This sometimes leaves these fires unattended and they spread to a wide space within the catchment area and beyond it.

As a result, the ever-increasing incidence of stock theft makes it difficult for the community to manage the grazing lands in the catchment area. The community also stated that there is an existing anti-stock theft organisation to assist in curbing stock theft and these uncontrolled veld fires. However, the organisation itself faces challenges because the stock thieves target the cold and misty days to easily disappear without being recognised when they go away with the livestock. In addition, the community stated that the police also assist a lot by tracking stock thieves. When it comes to controlling veld fires, it remains a challenge because the issue of the high lying mountain rages also becomes a challenge for people to reach there quickly. Due to the terrain and poor roads, by the time help arrives, the fire would have already spread to a wide area.

5.6.6 Inadequate management of water resources by local government
The community members indicated that there was also the issue of inadequate water governance in their area because the government does not consider their indigenous knowledge and practices of rainmaking. In addition, the municipal water section fails them when they request it to curb the spread of fires in the catchment area.

Furthermore, the community members raised that, as the community, they felt that the local government is also not managing their water resources properly and as the community, they are not involved enough in water resources matters and the governance of these resources. For example, it was stated by the community members that the Alfred Nzo District Municipality which is the Water Service Provider and Water Service Authority of this area

came to install the boreholes without public consultation about the boreholes before installation. In this regard, the community members stated that they felt excluded by the local government in participation that pertains to their water-related issues. They also complained that there is no proper water governance in their municipality because the municipality did not consult with them to get their views as the community. They cited the installation of boreholes as a case in point. The municipality installed boreholes without consultation, so the boreholes are now drying up due to inadequate maintenance. On this matter, Participant N revealed that:

> *There is no proper water management at the municipality, we do not have water, and the municipality provided us with the boreholes that are drying up. And the boreholes are not maintained well. We contribute money towards the diesel for running the pumping machines as the community.*

In addition, Participant O said that "The municipality only consulted the traditional authority after the installation of boreholes, otherwise they were not consulted before the installation of boreholes." Another Participant (Participant P) said that "even the chiefs show to have no information if we inquire from them about installing boreholes in the community". On the same matter, Participant Q revealed thus, "When we take complaints to the municipality, our complaints are not being attended to."

The level of community participation in the upper Umzimvubu catchment was also investigated. The following section discusses the extent of the community participation in the decision-making and implementation processes and assesses how stakeholder participation can be improved for Umzimvubu catchment management.

5.7 Extent of the community participation in the decision-making, implementation processes and assessment of how stakeholder participation can be improved for Umzimvubu catchment management

Interviews with the DWS established that there are local-based structures which are regarded as non-statutory bodies. As mentioned earlier, the non-statutory bodies do not make decisions; rather, they influence the decision making. The decision making is done by the National Department of Water and Sanitation. The results revealed the sub-themes as shown in Table 5.7 below.

Number	Sub-themes
5.7.1	Department of Environment, Forestry and Fisheries in implementation processes
5.7.2	Forms of dialogues used for community or stakeholder involvement
5.7.3	Improvement of community participation
5.7.4	Community Conflicts with the local government

Table 5.7: *Sub-themes about the extensiveness of the community or stakeholder participation*

5.7.1 Institutions involved in catchment management implementation processes

It is important to note that water resources such as the upper Umzimvubu catchment, which is the context of this study, are part of environmental elements, which then must be managed. In this regard, an interview with the National Department of Environment, Forestry and Fisheries (DEFF) was done.

Firstly, the responses from DEFF established that DEFF has a responsibility to look after environmental protection, conservation, and natural resources management. DEFF is guided by the National Environmental Management Act of 1998. As previously mentioned, it is a statutory framework to provide cooperative environmental governance.

Therefore, the mandate of DEFF at upper Umzimvubu catchment management is based on Natural Resource Management to practice integrated landscape management to support sustainable livelihoods for local people, which strives for a resilient social-ecological system and which fosters equity in access to ecosystem services in which a Memorandum of Agreement (MoA) is signed. Participant U highlighted that:

> *The role of DEFF is to ensure the consultation of the local municipality. And also the DEFF projects that are being done by the service providers are captured at the IDPs, Development Forums, and Chiefs. And also, the DEFF follow Intergovernmental Relations (IGR) framework for the interaction with other stakeholders.*

Importantly, the responses from DEFF revealed that upper Umzimvubu Catchment management is one of the DEFF projects as it looks at the protection of the environment and natural resources management. In this regard, it appoints the service providers for catchment management such as LIMA, Environmental Rural Solutions (ERS) and Conservation South Africa (CSA), which are Non-Governmental Organisations (NGOs) based in Matatiele where the boundary of the upper Umzimvubu Catchment (quaternary T31) is situated. The projects being operated by these service providers focus on rangeland management, removal of alien vegetation, protection of seeps and ensuring a balanced ecosystem. On these activities these organisations work collaboratively with the communities, especially in the alien vegetation and rangelands management.

The South African Nation Biodiversity Institute (SANBI) is also involved in the upper Umzimvubu Catchment Management. SANBI also has a project under it called SANBI Living Catchments. Participant V explained the role of SANBI by stating that:

> *The key role of SANBI living Catchment Project is to essentially support and maintain ecological infrastructure in the Umzimvubu Catchments through the collaboration of all stakeholders who are involved in the landscape. This is a project that cannot be implemented by a single organisation alone but requires a collaborative and participatory approach. SANBI acknowledges this and has invested in the development and support of a community of practices that already exist that deal with land management and ecological infrastructure. This work is of course to reinforce the work that partners and stakeholder have created in the landscape, to encourage more resilient catchments through collaborative work for water security, supporting livelihoods and restoring biodiversity. This project selected the Umzimvubu Catchment because of its high biodiversity and water importance, as we all know that the Umzimvubu falls within the Strategic Water Source Areas*

SWSA. Through SANBI LCP collaborative work about healthier landscapes and water delivery is supported, and better resourced.

It was further stated that SANBI Living Catchment Project has cooperation with local government in terms of water governance policy implementation at local government level/ local catchment management. In this regard, Participant V also stated that:

The SANBI LCP supports collaborative work that already exists in the catchment, local government is very much involved in ecological infrastructure work through the Umzimvubu Catchment Partnership (UCP) platform. The UCP has several representatives from the local and district government and is signatories to the UCP MoA. The LCP is designed to support some of this work which involves local government and other local stakeholders. This is to encourage local context-driven solutions to some of the issues we see in the landscape. It is therefore imperative to have local government unlock some of the critical concerns raised by the group of stakeholders in the communities of practice that the project supports.

Notably, the findings also revealed that there are challenges of water resources management in rural areas. Participant A indicated that there is need for establishment of models to finance people who come to meetings for public participation in rural areas such as KwaSibi area. The findings further showed that in these areas some people are poor, and to have full representatives in public participation, a model to finance these people is important for good public participation. Participant A stated that, "The Department of Water Affairs made efforts to establish reinvestment policy to allocate funds for public participation although it did not materialise. Now good public participation and full implementation of IWRM remains a challenge." Moreover, there is the issue of public participation does not solely lie on the issue of finance, but the culture is also a challenge. Participant A said that:

Different cultures have different norms and values which becomes a challenge when it comes to public participation. In other cultures, it is mandatory to clan praise the Chief when conducting as a sign of respect. On other hand people are influenced by western culture in urban areas.

Given this, the findings further revealed that this creates dynamics on water governance in different rural areas, because these values are also placed on water resources and the management of water resources starts from spiritual level before other factors such as social, institutional and political.

The participants further revealed that there are also forms of dialogue that are being used for stakeholder involvement.

5.7.2 Forms of dialogues used for stakeholder involvement
Firstly, the response from DWS showed that conferences that encourage Water Resources Management are regularly held, and an example is the Water Institute of Southern Africa (WISA). The WISA is responsible for bringing experts together from a wide range of disciplines to discuss water-related issues. CMFs are also used as forms of dialogue. In the

discussion of forms of dialogue that are used for stakeholder involvement, Participant A indicated that, "In the case of KwaSibi area a form of dialogue that is used for catchment management are the workshops and forums that are held regularly by UCPP as a CMF based in Matatiele where the traditional leaders are also invited". Moreover, the response from SALGA revealed that media platforms such as radio stations, newspapers and social media platforms are also used as forms of dialogue. Alfred Nzo District Municipality stated that community outreach reach is used by the district municipality to ensure participation.

The findings also showed that there is SANBI Living Catchment Project in place that is quite new. Participant V revealed that:

> *The UCP uses regular quarterly meetings where all representatives are invited to get an update on the projects that are taking place in the landscape. There are also regularly emails to inform stakeholders of upcoming events, projects, and partner-led meetings. These interactions and dialogues are to mainly give updates on projects, to co-create and co-learn with partners for securing ecological infrastructure. As well as it is an opportunity to link stakeholders to encourage collaborative work, to also update stakeholders on students that are researching the landscape.*

Lastly, MLM responses showed that community dialogue, community meetings and awareness campaigns, and community-IDP campaigns are also used as a dialogue for community involvement.

In contrast, although there is community involvement through the forms identified above, the findings showed that the community felt like there is less community participation when it comes to issues of water governance. The participants gave different suggestions on how community participation can be improved.

5.7.3 Improvement of community participation

Although the organisations at local government and catchment management scale have the forms of dialogue for community involvement, the community and some NGOs still felt the need for stronger public participation. The participants therefore expressed their different perceptions. Participant R from the community stated that, *"Government must come to us so that we discuss the water issues"*. Participant S further raised the issue that:

> *Community should build the structure that is focusing on water governance. However, at the moment the existing community structure is focusing on water issues. But then, it is mainly focusing on the contribution of R10.00s by community members for buying of diesel for the operation of diesel machine because the municipality does not provide it.*

Another Participant said that, *"Community is neglected the local government should improve community consultation. The local government should also improve the consultation with the traditional leaders"* (Participant T). Participant T added that:

> *There is a need to hold more regular meetings, invite more stakeholders from the middle and lower catchment, rotate hosting of the event to different locations to*

allow other stakeholders to feel like they are part of the platform (decentralize processes), hold lessons learnt workshop with all stakeholders to understand some of the challenges that the partners are experiencing.

Therefore, on one hand responses from the government officials showed that there were some forms of dialogue used for stakeholder involvement with communities involved. On the other hand, the community members provided different perceptions on how community participation can be improved, expressing dissatisfaction about community participation at the local government level. Thus, sometimes there are conflicts encountered between local government and community.

5.7.4 Community conflicts with the local government

In the case of KwaSibi and Matatiele Local Municipality as well as Alfred Nzo District Municipality, it was revealed that protests and petitions are the most common nature of conflicts encountered. Although this area commonly experiences protests and petitions, it was further revealed that generally conflicts are being encountered in water governance at the local space with the rural communities. First, it was revealed that the meeting venues become problematic among chiefs because each chief wants the meeting to be held in his or her place. It was also revealed that the absence of water and bad terrain led to conflict with communities. Refusal to move to good terrain becomes a problem as well, as people do not want to relocate to good terrain and they complain that the government is ignoring them. Bad terrain is a rough landscape that is generally characterised by dramatic landforms or undulating to a steep slope which makes it difficult for a smooth installation of water infrastructure. This is caused by the human settlement that took place in a haphazard manner. Then, good terrain has a character of flat landscape that allows easy movement of water infrastructure.

In addition, it was raised during the interviews with the government officials that communities have high expectations from the local government. These aspects lead to conflicts. But then, as indicated above, in the particular case of this study area the nature of conflicts that are commonly experienced within Matatiele Local Municipality and KwaSibi area are protests and petitions.

Although these findings show some challenges of public participation, they demonstrate cooperation in water governance from national to local government as well as community participation in the catchment management. For example, the national Department of Environment, Forestry and Fisheries appoints the service providers which are local organisations that work hand in hand with the communities for the management of the catchment area. These findings also indicate that there are forms of dialogue in place for stakeholder involvement. These forms of dialogue display that there is cooperation between local government and community in the sense of having platforms to engage the community even though the perceptions from community members provide dissatisfaction. Further to this, section below focuses on existing intergovernmental for processes catchment management practices**.**

5.8 Existing intergovernmental processes and their contribution to catchment management practices

Interviews with participants established that there are various forums that deal with intergovernmental relations. It was revealed that there is collaborative governance and there is an Intergovernmental Relations (IGR) framework. Table 5.8 below shows the sub-themes in this section.

Number	Sub-themes
5.8.1	Existing forums for collaborative governance
5.8.2	Collaboration of Administrative levels in water governance
5.8.3	Intergovernmental Relations (IGR) framework *for* promotion of intergovernmental relations

Table 5.8: *Sub-themes about intergovernmental processes*

5.8.1 Existing forums for collaborative governance.

The findings revealed that there are different forums in place that play a vital part in intergovernmental processes with different stakeholders and community members. The DWS revealed that cooperative governance plays a role in intergovernmental processes and some forums are being established in this regard. On this matter, Participant A stated that:

> *The intergovernmental process that contribute to catchment management is cooperative governance. There are forums that are being established to deal with various matters and for the Terms of Reference (ToR). However, there is a water resources committee which sits and evaluates the issue of water resources allocation in the entire country.*

SALGA also revealed that there is a Provincial Water Forum (PROWAF) for intergovernmental processes. It was stated that a PROWAF is one of the collaborative structures that have linkage to Intergovernmental Relations (IGR) framework and that the main objective of the PROWAF is to provide guidance on the transformation of the water sector and to oversee the programmes of support in the water sector of the province. As a result, participant B stated that:

> *There is an IGR-PROWAF, it is held at the provincial level. It is PROWAF that eventually takes decisions (Challenge is that water is a national competency, it is challenged by the absence of provincial MEC of Water Affairs).*

Furthermore, Matatiele Local Municipality revealed that there is the Batho Pele Forum Champion forum in place for intergovernmental processes. One of the participants from the Matatiele Local Municipality stated that, "Batho Pele Champion Forum- it is a forum that involves all the municipalities under Alfred Nzo Local Municipality." Apart from the available forums for cooperative governance, it was also indicated by the participants from the government departments that government administrative levels work collaboratively.

5.8.2 Collaboration of administrative levels in water governance

DWS responses showed that the administrative levels work collaboratively. In this regard, Participant A stated that:

All the administrative levels work collaboratively, The National, Provincial and Local administrative level including the other stakeholders such as the traditional leaders are also involved. And in terms of the National Water Act of 1998 chapter 8 on section 91 to 98 Water User Associations (WUA) which were previously water irrigation boards are also involved in terms of policy instruments. Water User Association is a group of water users that have common interests in terms of water resources management. If those particular groups are intending to open a Water User Association, the Department of Water and Sanitation work with them to form that particular WUA and they are government's structures because it could be a single sector or multi-sector.

Equally, Förstera *et al.* (2012:2) state that WUAs were designed as institutional vehicles for collective water governance at a local level. Förstera *et al.* (2012:2) further argue that these are defined as "cooperative associations of individual water users who wish to undertake water related activities for their mutual benefit".

Although it was pointed out that there are WUAs in place as the National Water Act (Act 36 of 1998) mandates, in KwaSibi there are no WUAs. However, the administrative levels work together in various platforms and the traditional leaders are also involved in KwaSibi. Regarding the collaboration of administrative levels in KwaSibi, participant A stated that:

For example, this is done through annual workshops, quarterly meetings and forums that are normally held by Umzimvubu Catchment Partnership Programme which is the existing voluntary Catchment Management Forum in Matatiele and that embraces the KwaSibi area.

Furthermore, it was mentioned that there is also a linkage and collaboration with other departments for cooperative governance. On the contrary, it was also indicated that the linkage and collaboration with other departments do not happen all the time because of certain challenges such as internal challenges in that or those departments and that leads them to fail to accommodate certain events. The issue of different mandates that departments have is also a factor. Thus, Participant A stated that:

There is a linkage with other sister departments such as Department of Agriculture because in terms of policy instruments such departments must be consulted for example AFASA, NAFU. Because they are interdependent as much as there is linkage and collaboration with other government departments, the situation does remain uniform. For example, when a particular department has got its challenges and also since each department is pushing its own mandate.

Lastly, it was also indicated by the participants that there is also an Intergovernmental Relations Framework (IGR) in place for the promotion of intergovernmental relations.

5.8.3 Intergovernmental Relations framework *for* promotion of intergovernmental relations

SALGA and DEFF's responses showed that there is a collaboration between the different levels of government through the IGR. The *Intergovernmental Relations Framework Act* (Act 13 of 2005) (IGR) (RSA 2000) provides for the national government, provincial governments, and local governments framework to facilitate and promote intergovernmental relations. Participant B stated that:

> There is an Intergovernmental Relations Framework place that guides the collaborative governance among departments and levels of government. "As for water governance, the water is a national asset nobody owns water except for the national government. Intergovernmental Relations Framework helps in linking all spheres in discussing water issues.

5.9 Discussion of findings

In South Africa there was a transformation and reform of laws and policies following democratic elections in 1994, and the water governance sector also experienced the same, and laws and policies were thus redesigned and adopted. South Africa has undergone comprehensive economic and political reforms processes since the end of the apartheid era. The first objective of this study focused on explaining the strategies of water governance that are designed for catchment management within the local government space. Findings in this regard show that there is localised water governance through democratic laws and policies, plans and strategies that were established after the 1994 democratic elections. These laws and policies accommodate stakeholders' participation and promote participatory water governance.

5.9.1 Strategies of water governance that are designed for catchment management within the local government space

First, the findings of this study relating to the above objective revealed that the National Water Act (Act 36 of 1998) was formulated to replace the Water Act of 1956 which favoured centralised government. The NWA promotes public participation and decentralised water governance from regional to catchment level. The NWA has adopted and implement the international approach, namely the IWRM, and which focuses on standardisation of water policies to promote stakeholders' participation. In South Africa water resources managed and regulated by the national government. The Department of Water and Sanitation (DWS) is a custodian of water resources management in South Africa. However, since South Africa has adopted the IWRM into its system, then NWA provides for a balance from the national level (Minister and Director General) to catchment level, which are CMAs, WUAs and CMFs.

The NWRS is the strategy that is used for water resources management in South Africa. The establishment of NWRS is mandated by the new National Water Act of 1998 to delegate the responsibility of water governance to the local level. The NWRS details the institutional arrangements (CMAs, WUAs and CMFs) which are statutory and non-statutory bodies. They have been established to serve as decentralised water resources management institutions for public participation. In this regard, this was done as a concrete translation to achieve effective participation from national to local water governance. In the same sense,

the first key findings also showed that the South African government has the NDP in place which focuses on long-term goals that must be met by 2030. It identifies the various roles that must be played by different sectors in the society and it defines those roles according to each sector. Water governance and water governance strategies are priorities in the NDP. It promotes cooperation in water resources management from the national to the local sphere of government. It does this through emphasising an effective water planning of available water resources that cut across all spheres of government by 2030 and effective administration. As pointed out above, the South African government established the institutions for decentralised water resources management that were ordained by NWA, which include the CMAs, WUAs and CMFs. There are also WSA, which are municipalities that have constitutional responsibility for ensuring access, planning, and regulating provision of water services. They are responsible for forming a CMA where such duty has been assigned. In the upper Umzimvubu Catchment area, the ANDM is the WSA.

In addition, in the Upper Umzimvubu Catchment area, there is an existing non-statutory body that is in place as a strategy at local level. This is the Umzimvubu Catchment Management Partnership (UCPP) CMF. This CMF works with different departments. The CMF supports and informs the CMA for a water region and it is also a voluntary institution that does not make decisions, but only influences decision making on water resources management.

Bourblanc (2012:4) states that South Africa became the first country in the world to have a constitution that provides a right to water. Bourblanc (2012:4) further states that the new Water Act of South Africa is widely known for constituting one of the most progressive laws in the world. In this regard, the South African government has indeed decentralised its water governance through the new water law that has the NWRS. The NWRS sets out the targets for institutional reforms such as the establishment of CMAs and CMFs. The NWRS also outlines that in the water sector good governance consists of different dimensions which involve the administrative, political, and economic dimensions. The water resources in South Africa are managed from the national to the local level through the mandates of the NWA of 1996 and NDP priorities. However, practical implementation of statutory systems experiences inconsistencies such as the local strategies of water resources management in South Africa. Although NWA mandates the establishment of the institutions for decentralised water resources management, this catchment area has no existing CMA.

In addition, the South African government adopted the global IWRM paradigm into its national system as international best practices of water resource management. Therefore, the NWA adopted IWRM principles by promoting public participation through the creation of CMAs. However, Bourblanc (2012:3) believes that, IWRM is a 'one-size-fits-all' toolbox approach, because IWRM principles are too much of a Western concept. Considering their mandate, Bourblanc (2012:3) observes that the CMAs are basically political arenas although most of their members and policy makers view them from a managerialist viewpoint only. Therefore, South Africa's existing Catchment Management Areas were established in terms of section 78(1) of the National Water Act (Act 36 of 1998) (RSA 1998). One of the main principles of the National Water Act is its focus on decentralisation. The decentralisation

places an emphasis on public participation in water management and related decision-making processes. Decentralisation also rests on the subsidiary principle (Meissner *et al.* 2016:19). In contrast, Meissner *et al.* (2016:19) argue that although the National Water Act of 1998 consists of the of water management resources decentralisation, the implementation of the legislation has been slow and problematic.

In this essence, CMAs are service delivery agencies and they are listed in the Public Finance Management Act (Act 1 of 1999). The CMAs are also linked to Treasury Regulations to ensure financial viability and good governance. Catchment Management Agencies also have a mandate to develop a catchment management strategy (Meissner *et al.* 2016:19). Moreover, CMAs are mechanisms designed for the stakeholder involvement. Meissner *et al.* (2016:19) state that when it comes to the involvement of various stakeholders, the results of previous research studies conducted on the Breede-Overberg CMA have indicated that it is not always feasible to include all stakeholders in a water management area in the development of the CMA. This is one of the major hidden variables in the establishment of CMAs.

Also worth of noting is that the implementation of CMA turned out to be very complex and demanding, because it requires the creation of a whole set of new organisations and institutions (Meissner *et al.* 2016:19). Consequently, the Water Management Areas were ranked according to priority, i.e., those with an already relatively high level of stakeholder capacity and willingness to get involved and the most urgent water management problems that needed to be solved. The priority catchment areas (among others the Inkomati and the Crocodile) now serve as pilot projects (Meissner *et al.* 2016:19).

5.9.2 Local government participatory processes for stakeholder involvement
The findings show that the participatory processes start in laws and policies. There are laws and policies where public participation is mandated for participatory water governance. In addition, the post-apartheid South African government reformed policies to decentralise water resources management and for participatory government. First, there is the South African Constitution. Chapter 3 of the Constitution of the Republic of South Africa Act (Act 108 of 1996) talks about cooperative government and it mentions three spheres of government, namely the national, provincial and local spheres of government which are distinctive, interdependent and interrelated. Given this, within the water sector, the national water policy was established in 1997, and it provides the direction to be taken in the establishment of the water law of a democratic era. Subsequently, a National Water Services Act was introduced in 1997, the National Water Act in 1998 and the National Water Resource Strategy approach in 2004 under the National Water Act. These acts were established and adopted after the inception of the Constitution of the Republic of South Africa Act (Act 108 of 1996) in 1996, which provided for stakeholder involvement. In addition, the Water Resource Commission was established in terms of Water Research Act (Act 34 of 1971) and it provides the guidelines on catchment management.

The Constitution of the Republic of South Africa Act (Act 108 of 1996) introduced cooperative governance through the establishment of three spheres of governance, namely the national, provincial, and local government. This was done to decentralise governance in South Africa and to promote participatory governance, since the apartheid regime had had a

centralised governance system. In the same vein, the water sector gave effect to the constitution of South Africa by introducing a decentralised water governance through the establishment of the National Water Policy in 1997, which set out new integrated policy positions that are found in the National Water Act of 1997. Further to this, the laws and policies of post-apartheid South Africa promotes public participation. For example, the findings showed that the WSA provides for the establishment and disestablishment of water boards and water services committees and their powers and duties and provides for the monitoring of water services. Findings further showed that NWA provides a framework within which water can be managed at regional or catchment level, in defined water management areas.

Given this, the findings showed that there are two elements of the participatory processes for stakeholder involvement at local government level in South Africa. The two are participatory processes at the catchment level and the participatory processes at the local government level. Since NWA mandates institutional reforms, the participatory processes at the catchment level are done through CMAs using a catchment management strategy to ensure stakeholder involvement in management of water resources. It is indicated on the NWRS that the establishment of CMAs will empower the communities and result in stakeholder participation. Although there are laws and policies at catchment level and local government level for water governance in South Africa, the findings showed that there seems to be a lack of public participation and intense communication. The study established that there are only two established CMAs out of the 9 targeted CMAs on the NWRS. Nonetheless, findings further showed that a slow delegation of functions, with the associated authority and responsibility and delays in the transfer of funds, have impeded the effective functioning of CMAs. This study was under Umzimvubu-Tsitsikamma Water Management Area. The findings further showed that since there are CMAs at catchment scale for water resources management, there are also WSAs at local government level which are the municipalities that are responsible for water related matters including water resources management. This study was under Alfred Nzo District Municipality as the Water Service Authority of KwaSibi Administrative Area. Given this, the findings revealed that there is the Municipal Systems Act of 2000 that guides the processes of municipalities. Therefore, this act speaks of the development of a culture of community participation. It was also revealed that there are also forums in place for community participation such as District Mayoral Forums (DIMAFOS) and Mayoral Imbizos. In addition, the Matatiele Local Municipality as the boundary of the study area also has a public participation unit. However, the findings also revealed that although there are designed laws and policies for local government, there are challenges when it comes to implementation of these laws and policies. These challenges are caused by politics of governance space and eventually they overpower proper policy implementation and certain government functions.

Elke (2010) views the decetralisation of water governance as the cause of several trade-offs. Elke (2010:7) states that the transition of water resources management improves the fit between the water resources and the governance regime. However, it creates several problems such as interplay, fit and scale. Because the CMAs largely disregard municipalities, other sectors of government that are related to water resources management

are not sufficiently addressed. This creates a lack of cooperation in water governance. In the same vein, Meissner *et al.* (2016:19) state that the National Water Act and the Constitution of South Africa are two structures of rule that are constitutive in the establishment of CMAs. Nevertheless, they are not the only causal mechanisms in establishing CMAs. In October 1999, the government of South Africa established 19 water management areas (WMAs). The boundaries of these areas are along catchment divides and they do not coincide with the administrative boundaries of local and provincial government spheres (Meissner *et al.* 2016:19).

Further to the above, Malzbender (2014) examined a more similar issue to participatory processes at local government, namely traditional water governance and water supply in South Africa after transition from apartheid era to democratic government. Their study found that in former homelands the water delivery remains inadequate which are the poorest areas of the country.

5.9.3 Interpretation of participatory processes in the laws and policies applied at catchment level and local government level

The findings showed that laws and policies at the local catchment level are interpreted in the NWA, although it does not detail it or stipulate it. However, there is the National Water Resources Strategy in place for the interpretation of laws and policies at local catchment management level. In this regard, the findings showed that there has been an institutional reform through which the public participation could be implemented through establishment of WMAs, CMAs, CMFs and WUAs. The findings also showed that in the context of KwaSibi these systems are not effective because there is no CMA or WUAs in the area. There is only a CMF.

The laws and policies at local government space are therefore interpreted in IDPs. The findings showed that the Alfred Nzo District Municipality's IDP includes the water resources under Alfred Nzo District Water Services Development Plan (WSDP) – IDP Water Sector Input Report section. However, the findings showed that the Alfred Nzo District Municipality's IDP touches very little on participatory processes; instead, it purely focuses on water governance. Nonetheless, the participants revealed that there are sections within the municipality that deal with water related issues and policies and there is an environmental section in the ANDM that deals with environmental issues where there are plans in place addressing the environmental issues involving the water resources issues such as EMP. This act established the principles to promote cooperative governance on the matters that affect the environment and institutions. Therefore, EMP gives effect to NEMA in terms of implementation of its principles. The findings also showed implementation of laws and policies is faced with several challenges, including the unavailability of funding that delays the targeted implementation processes, the demographic dynamics in terms of human settlements which cause complications in terms of policy implementation.

5.9.4 Understanding of local people about catchment degradation and management

Findings in relation to the fourth objective showed that the community does understand catchment degradation and management. The community members provided different perspectives that consist of natural, social, and institutional factors that eventually link to

water governance at the upper Umzimvubu catchment management. In this regard, the community indicated that there is increased irregular rainfall patterns in the recent years. The Little Umzimvubu River and tributaries within this catchment area are becoming drier compared to the past. The findings also showed that there is uncontrolled burning in the catchment area due to stock theft and in the encroachment of black wattle. However, when it comes to technical aspects of the catchment management, the researcher observed that there is still less understanding by community members. At the political front, the community showed the understanding of the participatory governance of the democratic era where communities must be included in water governance. However, community members complained about less community consultation from the local government.

In this regard, Neysmith & Dent (2010) sate that the local people do not seem to be taking full advantage of political pressure and potential public in terms of developing networks of contacts.

5.9.5 Extent of the community participation in the decision-making, implementation processes and assessment of how stakeholder participation can be improved for Umzimvubu catchment management

In terms of decision making, findings related to the fifth objective show that non-state entities only influence the decision making and do not determine the decision making or participate in it. It is the DWS that is responsible for policy and regulation of water resources management in South Africa. However, DWS practice public participation through community engagement on water related matters; the department has an existing unit that focuses on community engagement. The findings revealed that there is a challenge of models to be implemented. For example, in rural areas such as KwaSibi, you need a model to finance the people when they come to the meetings, because some are poor.

In this regard, the Department tried to establish a reinvestment policy in which funds are allocated for public participation. However, the policy did not materialise, and funding remains the major challenge of full implementation of IWRM. One challenge is that there is a process when it comes to engagement with the local authorities. The results indicated that meeting places led to disputes as each traditional leader would want the meeting to be held in his/her village. Another challenge is the interest of local people; some people are not purely interested in water resources management but in what they were going to benefit out of the process of catchment management, such as incentives. The greatest challenge lies in funding and cooperative governance for the sustainability of existing strategies. There are also dynamics that affect the implementation of water governance. Cultural beliefs and cultural diversity are the significant triggers of practical implementation of water governance. Such as a manner of approach and how those people of particular ethnic group express themselves. Different ethnic groups have different norms and values. You find that in certain cultures when you hold meeting with the chiefs it is mandatory to clan praise the Chief as a sign of respect, whereas in certain areas like urban areas people are influenced by the Western culture. This creates dynamics when it comes to water governance, because there are different values placed on water resources and their management ranging from spiritual to other factors such as social, institutional and political.

However, when it comes to the implementation processes, the findings also showed that there is community involvement in the management of upper Umzimvubu Catchment (Quaternary T31) in the form community meetings and employment of local people for management of landscapes. As the responsible authority for environmental protection and management of natural resources, the Department of Environment, Forestry and Fisheries as a Department that is responsible has a running project in this area. The project focuses on Natural Resources Management to practice integrated landscape management to support sustainable livelihoods for local people. This strives for resilient social-ecological system and which fosters equity in access to ecosystem services in which a Memorandum of Agreement (MoA) is signed. The findings further showed that the purpose of Natural Resources Management is to support sustainable livelihoods for local people to achieve equity in access to ecosystem services. This is done by appointing service providers for catchment.

In addition, the findings further showed that, SANBI has a project called SANBI living Catchment Project that focuses essentially on supporting and maintaining ecological infrastructure in the Umzimvubu Catchments through the collaboration of all stakeholders who are involved in the landscape. It was also revealed that this project is not standalone but cooperative in nature, and with various stakeholders. Therefore, SANBI invested in the development and support of community of practices that already exist and that deal with land management and ecological infrastructure. In line with this, Meissner *et al.* (2013:2) state that the decentralisation of water resources in South Africa has not only taken place only within the legislative domain but so on the grassroots level as well. "The involvement of these actors suggests a broader, dynamic and decentralised water sector where water resource management no longer only takes place at the bureaucratic, engineering or legal level" (Meissner *et al*. 2013:2). Although South Africa has experienced the decetralisation of water resources management after a new dispensation came into power in 1994, according to findings, the KwaSibi community is currently experiencing water scarcity. The findings further showed that the community still feels neglected by the government, as they cite less community engagement by local government. Therefore, there is no intense cooperation when it comes to the catchment management. The catchment ends up not being helpful towards water availability in this area.

In terms of improvement of the participation, the findings revealed that there is little communication and consultation between the community and government. The community still desire stronger engagements with the government. In addition, SANBI also revealed that community participation can be improved through more meetings being held regularly and invitation of many stakeholders from the middle and lower catchment. Another strategy is rotation of hosting the event to allow other stakeholders to participate, and another is decentralisation of the process to understand the challenges that other partners are facing.

In this regard, Meissner *et al.* (2013) evaluated the "status quo of research on South Africa's water resource management institutions". Meissner *et al.* (2013) found that great focus is predominantly on catchment management agencies and their organisational functionality and institutionalisation and less focus is directed at other entities. These entities are

international water management bodies, advisory committees, water tribunals, irrigation boards and water user associations. Therefore, the current study filled this gap by focussing on community participation in water resource management.

5.9.6 Existing intergovernmental processes and their contribution to catchment management practices

The sixth objective focused on intergovernmental processes. The findings showed that there are forums that deal with intergovernmental relations, and there is collaborative governance and an intergovernmental relations framework. The forums are undertaken by different institutions to discuss the matters of water governance issues and water resource management. There is also collaborative governance where there are integrated strategies to deal with water resource management. However, the findings showed that cooperative governance remains a challenge within water governance. This is caused by the different mandates that departments are pushing.

Having discussed findings in relation to all the objectives of this study, it is important to outline that there are main gaps that the study desired to fill. Meissner *et al.* (2013:2) argue that the literature review shows that water resource management research has predominantly been conducted by scientists from natural sciences. Importantly, Meissner *et al.* (2013:2) outlines that the focus should also be on new theoretical developments, informal aspects of water resource governance and from other disciplines than the natural sciences, such as the fields of water resource governance and politics. Therefore, the focus of this study was on rural communities in water governance.

As previously mentioned, the NWA was introduced in 1998 to replace the Act of 1956, which favoured the centralised government. The NWA intended to bring forth fundamental reforms in water law and water resources by repealing certain laws of the apartheid government, which include public participation. In this regard, this study was about understanding participatory processes in upper Umzimvubu Catchment (Quaternary T31). The purpose behind was to understand the water governance strategies at local government level and how policies and laws are interpreted and implemented, who are the role players, how intensive they are involved, mainly to understand the role of rural communities in water governance. The findings showed that there is linkage in all government spheres regarding the water governance. After 1994, the three spheres of government were created to link all spheres of government. This was done to create accountability for people at the grassroots.

5.10 Conclusion

This chapter presented and analysed data. The data were analysed through themes and sub-themes. Key findings of the study were also discussed in this chapter. The Recommendations and conclusions of the study are presented in the following chapter.

Chapter Six

Conclusions and recommendations

6.1 Introduction

This chapter outlines the key findings of the study and evaluates whether the research problem has been accurately addressed. This research study investigated the participatory processes in catchment management in the Upper Umzimvubu Catchment focusing at KwaSibi Administrative Area, which falls within the Tertiary Catchment 31(T31). It further addresses whether the research study has answered the research questions, achieved, and satisfied the objectives of the study. This chapter also contains the recommendations suggestions for areas of further studies.

6.2 Research problem

The study focused on the degradation of the Upper Umzimvubu catchment (Tertiary catchment T31). It is situated in the rugged Maluti-Drakensberg watershed of the Lesotho escarpment, which is known for having abundant water. This catchment falls within the boundary of Matatiele Local Municipality under Alfred Nzo District Municipality as its Water Service Provider. Notably, there is a huge water provision backlog within this municipal area; even villages close to Umzimvubu headwaters experience the same challenge.

The degradation of this catchment is caused by the invasion of alien plants such as Wattle, which is even found on the river basin itself. It is known for taking up more water from the riparian zones. Human activities such as frequent veld fires, burning and general poor landscape management contribute to compromising catchment and affect rural livelihoods.

Therefore, it was essential to undertake this study to understand the participatory water governance processes and the community's views in the upper Umzimvubu catchment management (Tertiary catchment T31) for improved water availability and water conservation for the future within Alfred Nzo District Municipality. As mentioned earlier, the central thinking behind this study was that the management of catchments in a participatory approach should improve the water resources quality and reduce the water shortages in rural communities because both local people and government will manage the catchment.

6.3 Research questions and objectives

This study's research questions and objectives gave a direction to the researcher on how data collection should be conducted. The research objectives helped to shape the actions taken to assist in answering the research questions. Both research questions and research objectives are a guide that assists direct the study in identifying the gaps. In addition, they are fundamental in the study as they are the basis for analysis. The objectives provide the reflection on what the research intends to get from the research study. In this regard, the research questions and objectives are revisited before the conclusion and recommendations.

Given this, each research objective in this chapter will be discussed with reference to the literature and findings of the study.

Research Questions	Research Objectives
What are the water governance strategies designed for catchment management within the local government space?	To explain the water governance strategies that are designed for catchment management within the local government space.
What are the government participatory processes for stakeholder involvement?	To explore the local government participatory processes for stakeholder involvement.
How have participatory processes been interpreted in the laws and policies applied in local government?	To understand how participatory processes have been interpreted in the laws and policies applied to local government.
What is the understanding of local people about catchment degradation and management?	To explore the understanding of local people about catchment degradation and management.
How extensive is community participation in decision-making and implementation processes and how stakeholder participation can be improved for Umzimvubu catchment management?	To understand how extensive community participation is in the decision-making, implementation processes and to assess how stakeholder participation can be improved for Umzimvubu catchment management.
What intergovernmental processes contribute to catchment management practices?	To understand existing intergovernmental processes and their contribution to catchment management practices.

Table 6.1: *Research questions and objectives of the study*

Objective 1: Explaining the water governance strategies that are designed for catchment management within the local government space

Before democratic elections of 1994 in South Africa, the country has been governed by colonial to apartheid system. From 1948 until 1994 the country embarked on apartheid regime. This regime was bureaucratic in nature and the laws of this regime were centralised as well; it forced the different racial groups in the country to develop and live separately. This regime favoured the minority in the population of the country and racial groups were grossly unequal. However, after the apartheid regime, the South African government underwent a political transformation in which laws and policies were reformed to redress the inequalities of the past. The water sector also experienced this transformation. A new National Water Law was introduced in 1998 to bring forth the fundamental reform in the water sector laws relating to water resources.

Given this, the findings first revealed that in 1998 the South African government introduced the NWA to reform water law and redress the inequalities of the past in the water sector. This law recognises integrated management of water resources and emphasises water management from national to catchment levels to enable participation even at the local level. Secondly, the findings also showed that this act has exclusively placed participatory management, which is supporting the IWRM Dublin Principles of social and economic benefit and community participation. The NWA also mandates for the formation of the NWRS as a concrete solution to decentralised water resources management. Thirdly, the findings showed that the NWRS sets out the targets for establishment of catchment-based institutions. These institutions are statutory and non-statutory systems which include CMAs, WUAs and CMFs, which are established for decentralised water resources management in which communities will effectively participate in water resources management at the catchment level. It further speaks about the municipalities as WSA for water resources

management at the local government level. This showed that the South African government has strategies for catchment management within the local government space. Lastly, the findings revealed that at KwaSibi Administrative Area, there is an existing CMF, a local strategy for catchment management that is called Umzimvubu Catchment Partnership Programme (UCPP). This local strategy is a non-statutory body. As discussed in Chapter five, the UCPP is a collaborative concept that was established in 2008 in Matatiele by the local development group with the intention to tackle alien plant infestation in the upper catchment. This partnership was formulated under an initiative supported by supported by the Critical Ecosystem Partnership Fund and is driven by the Environmental Rural Solutions and Conservation South Africa, which are non-governmental organisations based in Matatiele. This CMF also works hand in hand with other sister departments including the Department of Water and Sanitation and other departments as discussed in Chapter five. In addition, this CMF also works with researchers of different institutions like the University of KwaZulu-Natal under a research SARChi chair that focuses on sustainability of rural livelihoods. It holds regular quarterly meetings with stakeholders, annual workshops, and other seminars to ensure engagement with stakeholders. However, there is no existing CMA or WUA within this area.

Considering these findings this study recommends the following:

- Although the role of CMFs cannot be downplayed, they cannot function alone since they are non-statutory systems. They carry no weight in determining the role players; instead, they are voluntary institutions. The South African government should finalise the establishment of the CMA in all 9 existing WMAs to give effect to the NWA to materialise the targets of the NWRS.
- It should also ensure that CMA plans are achieved.

Objective 2: Exploring the local government participatory processes for stakeholder involvement

First, the findings revealed that the administration of participatory processes for stakeholder involvement at the local government level includes both the Department of Water and Sanitation (DWS) and municipalities. As for DWS, there is the White Paper on National Water Policy of 1997, which guides new integrated policy positions found in the 1998 National Water Law. The NWA creates a structure where water resources are managed at the catchment level in defined WMA. This is done through the targets that are set out by the NWRS, which include CMAs, WUAs and CMFs. In addition, the findings also revealed that there is also a Water Resource Commission with guidelines for participatory processes of catchment management. Secondly, the findings revealed that there are also municipalities in the administration of participatory processes for stakeholder involvement. In this regard, at local government there is the Municipal Systems Act of 2000 that guides the processes of municipalities. It provides for community participation and mechanisms, processes, and procedures for community participation. In this regard, there is an IDP process plan, a strategy set by the Municipal Systems Act. There are also DIMAFOS and Mayoral Mbizos for public participation at local government space. In addition, there is NEMA, which also

constitutes the public participation process. Given this the new policies and laws of South Africa embrace participatory processes from national to local government and guide them.

The findings also showed that due to a slow allocation of duties and delays in funds, the strong operation of CMAs has impeded. Regarding the local government level, there is IDP in place and there are IDP campaigns that are undertaken annually for community participation. However, the findings revealed that the very few community members attend, yet at the same time the community complains that they feel excluded in many functions of government and they feel demotivated even to attend the IDP campaigns.

Considering the above findings, the study recommends the following:

- The South African government, the national Department of Water and Sanitation in this context, should establish the CMA in all nine existing WMAs to give effect to the NWA to materialise the targets of the NWRS.

Objective 3: Understanding how participatory processes have been interpreted in the laws and policies applied to local government

The findings relating to this objective showed that NWA also mandates public participation in its provisions. The NWRS set targets for decentralised water resources management through involvement of communities. Furthermore, the findings revealed that South African legislation, such as the Constitution of the Republic of South Africa Act, the White Paper and MSA speak about the cooperative government and public participation and have raised the IDP. Therefore, at local government these laws are interpreted through IDP and it embraces community participation during its processes. The findings further revealed that water governance is consolidated at the local government level in the super plan, which is the IDP. The ANDM, as the WSA of KwaSibi, also deals the water governance. However, it touches very little on participatory processes purely focusing on water governance. However, the findings revealed that the municipality also has an environmental section with other plans focusing on environmental matters including water resources management. There is an EMP in place as an environmental management framework that translates NEMA principles since NEMA promotes cooperative environmental governance and provides the municipalities with establishing such a framework. In this regard, ANDM has an EMP formulated in 2009.

The findings indicate that the new South African legislation displays a participatory governance including water governance. This is being evidenced by the interpretation of national legislation provisions for participatory approaches at the local level. In contrast, there are challenges encountered when it comes to implementation of these policies. Although the new legislation promotes public participation, the implementation policies is not as perfect as they look on paper. For example, there is no funding to perform all the implementation tasks accordingly. Another example is the impatience of local people, which can be connected to organisational failure to provide adequate basic services and dissatisfaction of the local people about the government's performance. Even though the participatory processes are interpreted in local government laws and policies, local people feel discouraged when it comes to water governance matters and feel excluded since there is no intense practical public participation, especially in rural communities.

Considering the above finding, this study makes the following recommendation:

- Since the new legislations make provisions for community participation, public participation should therefore promote participation ownership, where local people are intensely involved and given an opportunity to come up with their own ideas. The traditional leaders and community people should be fully involved in all matters pertaining to water governance. The local people need to own the public participation and feel extensively involved in establishing strategies for management of water resources.

Objective 4: Exploring the understanding of local people about catchment degradation and management

Concerning this fourth objective, the study established that the community has some understanding of catchment management and degradation. It provides different perceptions and factors such as natural, social, and political factors. Although there are various factors, the findings showed that the political factors seem to major in water governance within this area. The findings showed an issue of inadequate water governance in the KwaSibi area. In addition, the findings revealed that community people still feel excluded in water governance-related processes in their area. In addition, the local indigenous knowledge and the science of rainmaking are not considered by the government. The findings also revealed that they are not adequately consulted by the local government when there are specific ongoing water-related processes in their area.

Considering the above findings, this study makes the following recommendations:

- Communities should take the lead in the development of strategies related to water.
- Traditional leaders should be fully involved in catchment strategies as the stewards of the land.
- Indigenous meteorological science should be taken into consideration and be incorporated into water policies such as the current National Water Act and be incorporated in guiding the water resources management strategy: The National Water Resources Strategy.

Objective 5: Understanding community participation in the decision-making and implementation processes and how stakeholder participation can be improved catchment management in Umzimvubu

The study established that the DEFF is responsible for environmental protection, conservation, and natural resources management. It is guided by the NEMA as a statutory framework to provide cooperative environmental governance. Therefore, the findings revealed that Upper Umzimvubu Catchment is one of the DEFF projects of Natural Resource Management that support sustainable livelihoods for local people. DEFF appoints local service providers to perform this work, and these selected organisations work collaboratively with the communities, especially in the alien vegetation and rangelands management. The findings further revealed that DEFF ensures the consultation of various stakeholders about the projects being undertaken. The results also established that there is the South African National Biodiversity Institute (SANBI), which is also involved in the

upper Umzimvubu Catchment Management. It also has a project under it that is called SANBI Living Catchments. This project supports collaborative work that already exists in the catchment. The findings further revealed that local government is very much involved in ecological infrastructure work through the UCCP, an existing CMF within this area. It was also revealed that there are forms of dialogue, such as conferences, workshops, forums, stations, newspapers and social media platforms, ccommunity dialogue, community meetings and awareness campaigns, which are being used for stakeholder involvement. Nonetheless, the findings also showed that the community felt like there is less community participation when it comes to issues of water governance and their involvement in decision making and implementation processes.

Recommendations

- There is a need to establish community structures led by community people that purely focus on water resources management.

Objective 6: Understanding the existing intergovernmental processes and their contribution to catchment management practices

Since the enactment of the Constitution of the Republic of South Africa Act (Act 108 of 1996), South Africa has established a refined network of intergovernmental relations to link the national, provincial and local spheres of government and, where applicable, to involve the traditional authorities.

The findings revealed various existing structures for collaborative governance such as PROWAF in the water sector. PROWAF, the Eastern Cape Water Sector Intergovernmental Forum, is a collaborative structure that has linkage to the Intergovernmental Relations Framework Act (Act 13 of 2005). The main objective of PROWAF is to provide direction on the transformation of the water sector in the province and oversee the programmes of support in the province's water sector. This forum is chaired by the MEC of Cooperative Governance and Traditional Affairs, mayors, the portfolio councilors of the 6 distict municipalities, the Buffalo City Metropolitan Municipality and all Cacadu local municipalities, SALGA. There are also PEC representatives, senior officials from the following institutions: Cooperative Governance and Traditional Affairs, provincial Department of Health, DWAF, district municipalities, provincial Department of Environmental Affairs, provincial Department of Education, SALGA, Eastern Cape NGOs' coalition as well as well as public entities and other organisations that may be identified by the forum.

However, the findings also revealed that water is a national competency, it is challenged by the absence of the provincial MEC of Water Affairs. Findings also revealed that on top of collaborative governance, there is cooperation in administrative levels; they work together. The national, provincial, and local administrative levels, including the other stakeholders such as the traditional leaders, work collaboratively. As a result, in the existing CMF that covers the area of KwaSibi, traditional leaders are involved in quarterly meetings and other workshops being regularly held. Under Chapter 8 of NWA (Section 91 to 98), Water User

Associations (WUAs) are also involved in terms of policy instruments. However, the findings showed that in KwaSibi there are no existing WUAs.

Recommendations

- There is need for improvement of collaboration between the national Department of Water and Sanitation and other sister departments such as the Department of Forestry, Fisheries and the Environment, Cooperative Governance and Traditional Affairs as well as agencies (i.e SALGA) in different levels of government through prioritising water issues.

6.3 Other recommendations

- Strong consideration of indigenous knowledge in policy making by the National Department of Water and Sanitation, and Cooperative Governance and Traditional Affairs, and SALGA.
- Intense involvement of traditional leadership in water governance to bring back old indigenous practices of water governance into practice.
- Cultural experts should take lead in the development of water governance strategies.
- Co-learning should play an integral part, and knowledge sharing that include different government departments agencies, NGOs, traditional leaders and local people should be strongly considered in the management of water resources.

6.5 Suggestions for future studies

- Future studies should look at administrative and political challenges that affect good public participation in water governance in rural communities.
- Future research could focus on incorporating indigenous practices into new models and incorporating traditional administrative knowledge of water governance into legislation.
- In future, the research could focus on government challenges that cause delays in the full implementation of CMAs.

6.6 Conclusion

The main thinking behind this research was that the management of catchments in a participatory approach should improve water resources quality and reduce water shortages in rural communities because both local people and the government will manage the catchment. This research focused on the upper Umzimvubu catchment within Tertiary catchment T31, and it sought to understand the participatory processes for the upper Umzimvubu catchment management. This study showed that the South African government has strategies for catchment management. However, there are still gaps in public participation in terms of fulfilling the mandates of the new water legislation in South Africa. The National Water Act (Act 36 of 1998) and NWRS target a full implementation of the institutions to decentralise water resources management and achieve good water governance. The study showed no existing and effective CMAs in the study area, with only a CMF which is not a statutory body but rather a voluntary institution. The study also found that the South African government has decentralised power and accommodated participatory processes guided by the South African legislation of the post-apartheid era. However, there is still little public participation, especially in rural communities, because the study also showed that

people feel less involved in local government. Traditional leaders get involved in specific forums, but they are not fully engaged in decision making. Further findings from this study showed that community people understand catchment degradation and management. Still, due to less involvement by local government, they feel powerless to implement their indigenous practices in total capacity. Lastly, even though the study also releveled that there are intergovernmental processes to promote cooperative governance, it also revealed that challenges are being encountered.

In conclusion, the researcher believes that the findings and recommendations of this study will contribute to the improvement of community participation in water governance. This will be possible through a shift in thinking to revisit and revise the existing laws and policies to accommodate the intense involvement of traditional leaders in policymaking and consideration and incorporation of indigenous practices of water governance into pieces of water legislation, strategies and frameworks. This provides platforms and spaces for communities to also participate in decision-making instead of merely providing views. The international community hailed the South African government for its progressive water legislation globally and a significant step ahead in transitioning the Integrated Water Resources Management (IWRM) concept into its legislation system. However, this study showed that the IWRM is not yet effective in this area. Thus, in the local context, there is still a strong need for adjustment in the implementation of international approaches such as IWRM. The IWRM should not be a blanket approach; instead, it should be defined according to the local context. For example, during the implementation of the best practices of water governance, the indigenous knowledge should be accommodated in pieces of legislation; geographical differentiation should be determined, and culture should be considered so as to achieve good water governance and sustainable rural livelihoods.

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Appendices
Appendix 1

Ethical clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

09 April 2020

Miss Siyasanga Mbele (208520129)
School of Management, Info & Governance
Westville Campus

Dear Miss Mbele,

Protocol reference number: HSSREC/00001206/2020
Project title: Rural communities and water governance: Understanding participatory processes for catchment management in the Upper Umzimvubu Catchment
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 23 March 2020 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**

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

This approval is valid until 09 April 2021.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,
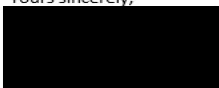
Professor Dipane J Hlalele (Chair)

/ms

Humanities & Social Sciences Research Ethics Committee
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Tel: +27 31 260 8350 / 4557 / 3587
Website: http://research.ukzn.ac.za/Research-Ethics/

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

INSPIRING GREATNESS

Appendix 2

Informed consent (English version)

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL
For research with human participants

Information Sheet and Consent to Participate in Research

Date: 24 November 2019

Greetings,

My name is (Siyasanga Mbele) from University of KwaZuluNatal a researcher under the School of Management, Information Technology and Governance. Contact no.: (072) 0615819, email address: 208520129@stu.ukzn.ac.za /siyasanga89@gmail.com

You are being invited to consider participating in a study that involves research Rural communities in water governance: Understanding participatory processes for catchment management in the Upper Umzimvubu Catchment. The aim and purpose of this research is to to understand the water governance strategies designed for catchment management within the local government space as well as the intergovernmental processes that affect catchment management practices. This, with a view to establish how stakeholder participation can be improved to ensure good quality water and availability in the catchment. The study is expected to include thirty participants eighteen from various organisations and twelve from KwaSibi Area. It will involve the following procedures; face to face interview/online platforms due to Covid-19 pandemic outbreak with various government officials,NGOs and local people where they will be given semi-structructred questions regarding water governance. The duration of my participation if I choose to participate and remain in the study is expected to be 1 hour. The study is funded by National Research Fundation (NRF).

The study will not expose paricipants in any form of physical or phycological risks. The study will not provide any direct benefits to the participants. The study will contribute to the public administration as well scientific fields of knowledge regarding water gevernanve and water resources management. The semi-structured questions will be used for the data collection as it provides indepth understanding phenomena to the participants and researcher. And the chosen data collection strategy is useful to(what and how) questions. Therefore, there are no other considered alternatives.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number: HSSREC/00001206/2020).

In the event of any problems or concerns/questions you may contact the researcher at (provide contact details) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban 4000   KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study.

All data, both electronic and hard copy, will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above.

Sincerely

Ms. Siyasanga Mbele

CONSENT TO PARTICIPATE

I (...) have been informed about the study entitled (provide details) by (provide name of researcher/fieldworker).

I understand the purpose and procedures of the study (..).

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

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

I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (Contact no.: 072 061 5819, email address: 208520129@stu.ukzn.ac.za /siyasanga89@gmail.com)

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557 - Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

I hereby provide consent to:

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

The researcher will record the interviewees on focus group meetings, recording their responses and the recording will be necessary for keeping all original responses for the use of data analysis later.

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

The researcher will video-record participants on the focus group discusson for the purpose of using that information during presantations of the research.

Use of my photographs for research purposes   YES/NO

The researcher will take photographs of participants during the focus group discusson with purpose of using that information during data analysis on later stage.

_____   _____
Signature of Participant   Date

Informed consent (Xhosa version)

IKOMITI EMALUNGA NENDLELA YOKUZIPHATHA KUPHANDO LWAZI PANTSI KOBUHLAKANI BENZULULWAZI YEZOLUNTU NEZENTLALO KWIDYUNIVESITYI YAKWAZULU-NATALI.

ISICELO SEMVUME MALUNGA NENDLELA YOKUZIPHATHA NGEXEXESHA LOPHANDO LWAZI KUBATHABATHI NXAXHEBA

Iphepha elinolwazi malunga nemvume yabathabathi nxaxheba kuphando lwazi.

Usuku: 02 KwekaTshazimpuzi 2020

Imibuliso,

Igama lam ndingu (Siyasanga Mbele) ndisuka kwiDyunivesithi yaKwaZulu-Natali, ndingumphandi lwazi phantsi kwesikolo solawulo, ezobuchwepheshe kunye nezoburhulumente. Iinckukacha zam zezi zilandelayo umakhala ekhukhwini.: 072 0615819, idilesi yemeyile: 208520129@stu.ukzn.ac.za/siyasanga89@gmail.com.

Uyacelwa ukuba uthabathe inxaxheba kwesisifundo sophando lwazi esimalunga noluntu kulawulo lwamanzi: esigxile ekuqondeni iinkqubo zokuthabatha iinxaxeba ezilungiselelwe uluntu malunga nolawulo lwesitya samanzi Umzimvubu.Injongo yoluphando lwazi imalunga nokuqonda amacebo okanye ubuchule bokulawula amanzi obuyilwe ngurhulumente wasekhaya kunye nokuqonda inkqubo eziphakathi koorhulumente ezibandakanya ulawulo lwesitya somfula. Eli nyathelo limalunga nombono wokujonga ukuba kungaphuculeka njani ukubandakanyeka koluntu kulawulo lwesitya somfula kunye nokuphuculeka kokubakho kwamanzi ndawonye nomgangatho wawo. Esi sifundo kulindeleke into yokokubana sibe nabathabathi nxaxheba abangamashumi amathathu abasibhozo izakuba ngabasuka kwimibutho eyahlukeneyo. Kuze abalishumi elinesibini ibe ngabahlali bakwaSibi.Olu phando lwazi luzakubandakanya lenkqubo ilandelayo; udliwano ndlebe lobuso ngobuso oluquka amagosa karhulumente wamasebe ahlukahlukenyeyo,imibutho engekho phantsi kukarhulumente,kunye nabantu bendawo.Bazakunikwa imibuzo eyakhiwe kancinci kancinci malunga nolawulo lwamanzi.Ixesha lam elilindelekileyo lokuthabatha inxaxheba kulindeleke ukuba libe yiyure.Esi Sifundo sixhaswe yi*National Research Fundation (NRF)*.

Esi sifundo asizukubeka impilo yabathabathi nxaxheba esichengeni nokuba kungokwasemzimbeni okanye ngokwengqondo.Esi sifundo akulindelekanga ukuba sibe nezibonelelo eziqonde ngqo kubathabathi nxaxheba. Kodwa esi sifundo ulundeleke ukuba sibe negalelo kwezoluntu kunye nakwicandelo lwezenzululwazi malunga nolawulo lwamanzi kunye nolawulo lwezixhobo ezivelisa amanzi. Imibuzo eyakhiwe kancinci kancinci izakusetyenziswa kwingqokelela yedatha nanjengoko izakube ibanikaika ukuqonda banzi ngesisifundo abathabathi nxaxheba. Kwaye indlela yokuqokelela idatha eluncedo yezakusebenzisa imibuzo enje ngo(Kutheni kunye no kanjani).Ngexa yoko,azikho ezinye iindlela ezicingiweyo.

Esi sifundo sipononongwe kwaye savunywa yi *UKZN Humanities and Social Sciences Research Ethics Committee* (inani lwemvume_____).

Xa unemibuzo okanye kukhona into onqwenela ukuqonda ungatsalela umphandi lwazi kule nombolo (072 061 5819) okanye uxhumane ne *UKZN Humanities & Social Sciences Research Ethics Committee*, kwezinkcukacha zoqhakamshelwano zilandelayo:

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Email: HSSREC@ukzn.ac.za

Ukuthabatha kwakho inxaxheba kwesisifundo akusosinyanzelo kukuzithandela nanjengoko ukunika kwakho umphandi lwazi ithuba kwesisifundo kuzakuncedisana naye ekufumaneni ulwazi ngeempendulo zakho. Unalo ilungelo lokungavumi ukuthabatha inxaxheba kwesi sifundo lonto ayizuba nagalelo libi kuwe njengoko ingasosinyanzelo ukuthabatha inxaxheba.Kumthabathi nxaxheba igama lakho lizakugcinwa liyimfihlo ngumphandi lwazi kunye necandelo esiphantsi kwalo esisifundo *iSchool of Management, I.T. & Governance* neempendulo zakho azizukusentyenziwa kwenye into engasiqukathi esisifundo.

Yonke idatha eqokelelweyo equka esemaphepheni nekwi computer izakugcinwa ngokukhuselekileyo ngexesha lokwenziwa koluphando nasemva koko ixesha elingaka ngeminyaka emihlanu. Izakude itshatyalaliswe emva kwelixesha.

Ukuba unemibuzo okanye unomnye umdla omalunga nokuthabatha inxanxheba kwesi sifundo,nceda uqhakamshelane nam okanye nomphathi wam koluphando lwazi kwezinkcukacha zoqhakamshelwano zingentla.

Ozithobileyo

Ms. Siyasanga Mbele
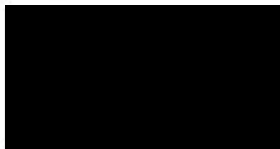
IMVUME YOKUTHABATHA INXAXHEBA

Mna (Igama) ndiye ndaziswa ngesi sifundo sisihloko silandelayo (*Rural communities and water governance: Understanding participatory processes for catchment management in the Upper Umzimvubu Catchment*) ngu (Siyasanga Mbele).

Ndiyayiqonda injongo kunye nenkqubo yesi sifundo kukuqonda iinkqubo zokuthabatha inxaxheba malunga nolawulo lwamazi ezakuqukatha udliwano ndlebe lobuso ngobuso oluzakubandakanya amagosa karhulumente, imibutho engekho phantsi kukarhulumente kunye nabantu bendawo apho bezakunikwa imibuzo eyakiwe kancinci kancinci malunga nolawulo lwamanzi.

Ndiye ndanikwa ithuba lokubuza imibuzo malunga nesisifundo ndazifumana iipendulo ezindonelisayo.

Ndiyabhengeza ukuba ukuthabatha inxaxheba kwam kwesisifundo kukuzithandela ngokupheleleyo yaye ndingarhoxa nangeliphi na ixesha ngaphandle kokuchaphazela ithuba lokuxhamla ebendilinikiwe ngokufanelekileyo.

Ukuba ngabe ndineminye imibuzo okanye okanye omnye umdla omalunga nesisifundo ndiyayiqonda ukuba kufuneka ndiqhakamshele umphandi lwazi kwezi nkcukacha zilandelayo (072 0615819, imeyile yedilesi: 208520129@stu.ukzn.ac.za /siyasanga89@gmail.com)

Ukuba ngabe ndinayo nayiphi na imibuzo emalunga namalungelo wam nje ngomthabathi nxaxheba kwesisifundo, okanye ndinomdla malunga nokuqonda umxholo wesisifundo okanye abaphandi lwazi ngoko ke ndingaqhakamshelana:

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Imvume eyongezelelweyo apho inokusenza khona

Ndiyaleza ukunika imvume:

Lungalurekhodo elumanyelwayo udliwano ndlebe lwam/ingxoxo yeqela okugxilwe kulo EWE/HAYI

Umphandi lwazi uzakulurekhoda udliwano ndlebe lwengxoxo yendibano yeqela okugxilwe kulo. Irekhode iimpendulo zapathabathi nxaxheba yaye ukurekhoda kubalulekile ngokuba kuqcina impendulo zoqobo ezinikeziweyo ukwenzela into yokokubana zisetyenziswe xa kuhlalutywa idata kamva.

Lungalurekhodo olubukelwayo udliwano ndlebe lwam/ingxoxo yeqela okugxilwe kulo
EWE/HAYI

Umphandi lwazi uzakwenza urekhodo olubukelwayo kudliwano ndlebe ngenjongo yokusebenzisa olu lwazi lwemiboniso yophando lwazi.

Zingasetyenziswa iifoto zam ngenjongo zopando lwazi EWE/HAYI

Umphandi lwazi uzakuzithabatha iifoto zabathabathi nxaxheba ngexesha lwengxoxo yeqela okugxilwe kulo ngenjongo yokuzisebenzisa xa ehlalutya ulwazi kamva.

_____   _____
Utyikityo lomthabathi nxaxheba   Usuku

Appendix 3

Summary of research questions

Policy and processes

- What is the water governance strategies designed for local catchment management?

- What are the **policies** in place for the participatory processes at local government/catchment level specifically for water governance?

- What are the local government participatory **processes** for stakeholder involvement in water governance?

- How have participatory processes been **interpreted** in the laws and policies applied in local government?

Government Relations

- In terms of policy instruments which **administrative levels** are involved in water governance at local government, do they work **independently or corroboratively** with other stakeholders?
- What **intergovernmental processes** contribute to catchment management (Umzimvubu) practices/water governance in local space?
- How are they being **incorporated and implemented** at local government space?

Community involvement/stakeholder involvement

- What are **forms of dialogue** in place for stakeholder involvement in water governance?

- How **extensive** does this organisation involve **other stakeholders** in water governance (specifically management of Upper Umzimvubu Catchment) as a water service provider of this area?
- What is the **role of stakeholders** in the decision-making, implementation processes at local government regarding water governance?

- If are there any nature of conflicts what are the **conflicts** with the stakeholders?
- How can community **participation be improved** for Umzimvubu catchment management?
- What is the **understanding** of community about catchment management and degradation?

Appendix 4

Conceptual diagram of Integrated Catchment Management

Appendix 5

Editor's Letter