WATER ACCESS POLICIES: PROBING WATER ACCESS POLICIES AND POSITIVE PEACE IN A ZIMBABWEAN RURAL SETTING

EVANS SHOKO (215078176)

Supervisor: Professor Maheshvari Naidu

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As the candidate's Supervisor, I agree/do not agree to the submission of this thesis.

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Professor Maheshvari Naidu

Declaration

I, Evans Shoko, declare that:

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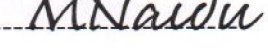
Signature: ---- 

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Dedication

This dissertation is dedicated to all the people around the globe who are working towards the achievement of positive peace in their fields of expertise.

Abstract

This study sought to establish the correlation between water access policies, informal practices and positive peace. The study was carried out in Village One, Ward 11, Mhondoro-Ngezi District in Mashonaland West Province of Zimbabwe. It was grounded in qualitative research using the Sequential Mixed Model method. Stratified purposive sampling was used to interview 20 Village One residents (10 men and 10 women) – from a total of 203 adults – to achieve a measure of gender balance and to make responses more representative. The study also interviewed 5 key informants from the Mhondoro-Ngezi Rural District Council. Participant observations, documentary analysis and questionnaires were administered to provide triangulation of data. Deductive content analysis and thematic analysis was used to discuss findings. The study used the theory of positive and negative peace, common property resource management theory and conflict transformation theory. Content analysis of texts revealed that Zimbabwe's water policy and related laws protect the rights of the citizens, encourage participation in their formulation but the provisions are hardly implemented. Findings revealed that participants understand some aspects of positive peace in relation to water access. Informal practices also shape people's access to water through the effective use of local rules, although most of these rules are now being disregarded. Findings showed that there remains a gap between water supply and access. Findings also revealed that the use of informal practices is more effective to water access for productive uses, while formal water institutions can usefully work towards drilling of boreholes. Participants lack information about water policies and institutions, as communications are always confined to political leaders and government technocrats.

Key words: Water access; Positive peace; Policies; Informal practices

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Chapter One
Introduction to Water Access Policies and Positive Peace

1.1 Background to the study

Musemwa (2010), argued that water is a major resource for peace, development and sustenance. Peace among communities has been promoted by common access to shared water sources. Edossa, Babel, Gupta, Seleshi and Merrey (2005) posited that the Oromo people of Ethiopia have used the Gadaa traditional conflict management system to collectively manage water. Access to water can be highly contested and often leads to conflict. AbuZeid and Abdel-Meguid (2006) pointed out that, historically, wars have been fought over water access. Competition over or change in the use of water resources may trigger conflicts between various source users. According to Mjwahuzi (1999), water use conflicts in the Pangani Basin of Tanzania exist because different people have different goals and interests regarding the same water source and these goals and interests may be incompatible to the extent that clashes are frequent. There are often also conflicts between big institutions (e.g. hydro-electric, manufacturing, mining and construction companies) and local users (local subsistence farmers, fisherman and rural communities in general). A study by Funder, Mweemba, Nyambe, van Koppen and Ravnborg, (2009) in Zambia's Ndalamba district, revealed that conflicts are mainly over watering of livestock, irrigation development and access to water for domestic uses, especially drinking water. Conflict over access to water can also manifest at the ward or village level. In Zimbabwe, there are inter-group conflicts, for example, in Chiredzi district where the Chibememe community deny access to borehole water to people from Tagurana village (see Mtisi and Nicol, 2003, p. 5).

Historically, Zimbabwe has witnessed contestation and structural violence linked to water access. Derman, Hellum and Sithole (2005) noted that the Rhodesian Water Act 1976, which was passed during the colonial period in Zimbabwe, neglected the rights to water access for the black population. Musingafi (2013) noted that under this Act, access to water was based on 'riparian' right – the right of the one who owns the land by the river, stream or creek, to have access to and use of the shore and water (see also Gate, Karambakuwa and Chigunwe, 2010). Manzungu, (2001, p. 2) emphasised that this linkage between water rights and land ownership meant that only holders of title deeds (mostly of European descent) could apply for water rights. Derman et al. (2005) contended that although the Act called for the government to guarantee that these so-called native population had a just and impartial ration of fountains or constant

stream water, a combination of lack of information and the dry terrain they were forced to relocate to, inhibited them from exercising their rights. Manzungu (2001) supported this assertion, when he posited that the black residents of the so-called Tribal Trust Lands – territories reserved for the blacks – could only apply for water through government officials. Control over water was used as a weapon, and this has remained a significant issue in the post-independence era. Musemwa (2010) posited that water was politicised when the Zimbabwe Water Act of 1976 discriminated against the Africans living in townships by providing limited water in order to make migrant labour temporary. Thus, the independence of Zimbabwe came against the backdrop of societal injustice of exclusion and marginalisation of the majority of the people from adequate water sources.

In an effort to bring positive peace to water access, the Zimbabwean government repealed the laws of 1976 and replaced them with the Water Act of 1998. According to Derman et al. (2005), the departure point of the Water Act of 1998 is that water is a public resource and a gift from God. Manzungu (2001) further stated that under the Water Act, unfair clauses such as the priority date system and the granting of water rights in perpetuity were removed and high priority was given to the right to livelihood in terms of water for basic needs. Walker (2006) posited that water rights were replaced with water permits and water came to be treated as an economic good. The Water Act of 1998 obliges the state to respect the residents' right to primary water.[1] However Walker (2006) asserts that the user pays principle, which states that the users of the water source should pay for its use and maintenance, in the Act views water as an economic good rather than as a social good. Thus, if the tariffs become too high, the poor will have difficulty in accessing fresh water. For instance, the Zimbabwe National Water Authority (ZINWA), a state owned entity in charge of dams increased water tariffs by tenfold in 2006 and started arbitrary disconnections (see Human Rights Watch, 2013; Musemwa, 2010). This resulted in residents in rural growth centres resorting to digging shallow wells which were prone to contamination and disease. This also affected smallholder co-operatives, mostly owned by rural farmers, with many having to forfeit their business ventures. This discrimination against those who struggle to pay is a form of structural violence.

To optimise water access as an instrument for peace and development, policies must be implemented that minimise structural violence on access for ordinary people. Structural

[1] Zimbabwe Water Act, Chapter 20: 24 (1998)

violence is when policies that channel resources to constructive efforts to bring development are absent or present but not enacted (see Vorobej, 2008; Anderson, 1985). In relation to provision of water, positive peace is tied with universal access to clean water or recognition of everyone's rights to access water. For instance, the Zimbabwean Constitution Chapter 4:2, subsection 77(a) stipulates that every person has the right to safe, clean and portable water.[2] This recognition of the rights of others has the potential of bringing positive peace if implemented to the letter. Participation by the institutions that provide water and protection of the environment or water policies is required for positive structural peace in the realm of water provision.

The effects of lack of water access are well known as well as those linked to access to contaminated water. Lack of access to clean water can lead to psychological stress, conflicts, loss of educational opportunities, illness and starvation (see Mtisi and Nicol, 2003; Gutierrez, 2007; Tapela 2002). Koppen (2003) claimed that access to contaminated water can result in outbreak of waterborne diseases such as cholera, dysentery and typhoid. Barash and Webel (2009) drew attention to the connection between access to clean water and positive peace, whereby people live healthy, disease-free lives, with a reduction in child mortality and poverty. Conca (2005) considered the provision of clean water as a positive right leading to positive peace. However, in most African countries, the lack of access to clean water has led to the emergence of conflicts. According to Montgomery and Elimelech (2007, p. 17), in Sub-Saharan Africa 42% of the population live without improved water, 64% have inadequate sanitation and deaths due to diarrhoeal diseases are greater than in any other region. In the rural areas and especially in the most remote villages, people have continued to depend on traditional water sources which are not even reliable for most part of the year.

There are a wide range of water sources in rural Zimbabwe, which are used for specific purposes and often people use the same sources to meet their multiple water needs. A knowledge of water sources is important in this thesis as this gives an insight into how formal policies and informal practices regulate access. It is around these water sources that the water policy provisions apply. Nemarundwe and Kozanayi (2010) listed water uses according to sources in Zimbabwe. Boreholes are used for domestic purposes (drinking, cooking and laundry, cleanliness), dams (livestock watering, brick moulding, laundry and community

[2] Constitution of the Republic of Zimbabwe, 2013

gardens), deep wells (cooking and laundry) and streams/rivers (laundry and bathing, livestock watering, brick moulding). In a study in the Maramba Pfungwe district in Zimbabwe, Katsi, Siwadi, Guzha, Makoni and Smits (2007) observed a wide range of water-dependent activities such as dairies, piggeries, poultry, brick making, beer brewing, gold panning, livestock watering, gardening, small-scale irrigation, banana plantations and orchard plantations. The collection of water in Zimbabwe is, in most cases, the responsibility of women and children, and this represents an additional burden. Montgomery and Elimelech (2007, p. 19) estimated that six hours in each day may be spent in fetching water to meet household needs, as hygienic supplies, for example boreholes and protected wellsprings are few in rural Zimbabwe. This time spent fetching water is a form of structural violence because it forces children to miss school and women to forgo potential opportunities to engage in small business endeavours, such as growing and selling vegetables or weaving mats.

1.2 Research problem

The objective of the study was to explore how the provision of water access policies in a rural Zimbabwean setting, by their formulation, implementation and implication are instruments for peace. The study examined the policy provisions that apply and their implementation mechanisms and institutions, taking into account formal policies and informal practices. Formal policy is located in a formal document outlining the ways in which the government intends to ensure access to clean water for rural people. Informal practice is a general practice, norms of behaviour or self-imposed code of conduct that is accepted in the community and is passed from generation to generation, but is not written down. Both formal policies and informal practices are important to water for peace access in that they ensure participation of end users and the development and sustenance of water resources. Studies on water access for peace that consider only formal policy instruments are limited in that findings are incomplete or incorrect because the water sector in rural areas is highly informal, and formal policies have a limited reach. Taking into account both formal and informal policies has the advantage of providing an in-depth analysis into the fulfilment of positive peace indicators in rural Zimbabwe. This study aimed at exploring the water access policies promulgated in Zimbabwe (including the constitution, subsidiary legislation and statutory instruments) as well as formal practices used by the rural people.

Policies that takes into account the involvement of users in water management brings positive peace, in the sense of feelings of inclusion and recognition of local people's contribution

towards managing their own resources. This brings self-esteem to individual actors, which is a necessary ingredient to inner peace. This occurs with a decentralised approach to water governance, which takes account of the views of the end users (see Makoni, Manase and Ndamba, 2004; Tapela, 2002). Mohan and Stokke (2010) posited that empowerment of marginalised groups requires a transformation of the prevailing economic and political relations in society, so that the structures become more open, representative and responsive to the needs of the people. However, there has been a tendency to consider local communities as a homogenous group, ignoring local social inequalities and power relations that disadvantage the powerless. This tilts water policy provisions in favour of powerful segments of society, for example, the chiefs, local powerful politicians, commercial farmers and industrialists. According to Nhapi (2009), the involvement of stakeholders in water access governance may be superficial since catchment councils, the administrative units in water management may be politicised, taking away from their transparency of decision making.

Informal practices, due to localisation and close connection to local myths and traditions provide more room for often marginalised groups to participate in water provision as compared to formal policies. Generally, these laws that relate towards common property resources, such as water sources, are not written down. Cleaver (1998) argued that water decisions are enforceable in situations where the whole community is involved and not through committees established by formal legislation. However formal policies usually clash with the customary law at the community level (see Edossa et al., 2005). Formal institutional arrangements, which are created by the state or by extension workers, tend to neglect the differentiated nature of community. Traditional power structures sometimes override the more recent state-driven institutions, which aim to create equitable use of water resources. For example, it is the customary arrangements that tend to prevail over state tenure arrangements in water arrangements (see Nemarundwe and Kozanayi, 2010). Tapela (2002) insisted that formal institutional arrangements often tend to reinforce the position of the traditional elites, as they ensure that the status quo of their power remains unchallenged. Planners often assume a homogeneous village, forgetting the different goals and priorities of the different village members.

1.3 Research hypothesis

Formal water access policies, if well formulated, implemented and take into account rural people's informal practices, have the potential to bring positive peace to Zimbabwe.

1.4 Key research questions

This research sought to obtain answers to the following research questions:

1. To what extent are formal policies for water access implemented in Zimbabwe?
2. What is the level of understanding of the meaning of positive peace in the context of water access among rural Zimbabwe, such as in Mhondoro-Ngezi District?
3. What informal water access practices are used in rural Zimbabwe?
4. What is the relative influence of formal and informal access to water on peace, development and livelihoods sustenance in Mhondoro-Ngezi District, Zimbabwe?
5. What is the impact of formal and informal water access on peace indicators?

1.5 Objectives

1. To examine how formal policies for water access are implemented in Zimbabwe.
2. To establish the level understanding of positive peace in the context of water access among community members of rural Zimbabwe
3. To demonstrate how informal practices are used by community members in rural Zimbabwe.
4. To determine the relative influence of formal and informal access to water on peace, development and livelihoods sustenance in rural Zimbabwe.
5. To illustrate the impact of formal and informal water access on peace indicators.

1.6 Study area

This study was carried out in Village One, Ward 11, Mhondoro-Ngezi District in Mashonaland West Province of Zimbabwe. Mhondoro-Ngezi District is to the South East of Mashonaland West Province. Ward 11 is geographically positioned to the west of the district, while Village One is to the north of the Ward. In terms of water management, the study area falls under Sanyati Catchment Council and CUF sub-catchment council as well as the Mhondoro-Ngezi Rural District Council. The people were resettled in the area in 1983, following the then government policy of 'willing seller-willing buyer'. Prior to independence, the area used mixed farming methods of livestock rearing and crop production, with ranching as a predominant activity. In Zimbabwe, generally areas which receive low rainfall are used for cattle ranching as opposed to crop production. Mhondoro-Ngezi district is in agro-ecological region 3 and receives an average of 650-800mm of rainfall annually. During mid-summer dry spells (June to October), surface water is scarce and most people are entirely dependent on groundwater

pumped through boreholes. Mhondoro-Ngezi sometimes experiences prolonged dry spells even during rain periods (for example the 2014-2015 summer). Muzvezve River, that passes through Village One experiences ephemeral flows and is reduced to sub-surface flows during the dry months. Smaller streams dry up soon after the summer season. The population is mostly composed of peasant farmers who survive on subsistence farming and remittances from ZIMPLATS Ngezi mine workers as well from farm activities such as selling agricultural produce to mine workers. The research setting was chosen because it represents a convergence of organisations involved in water provision from government departments to a private organisation (Zimbabwe Platinum Mines), donors and non-governmental organisations. The researcher became familiar with the area through previous educational tours to Zimbabwe Platinum Mines (ZIMPLATS), which is located in Ward 11.

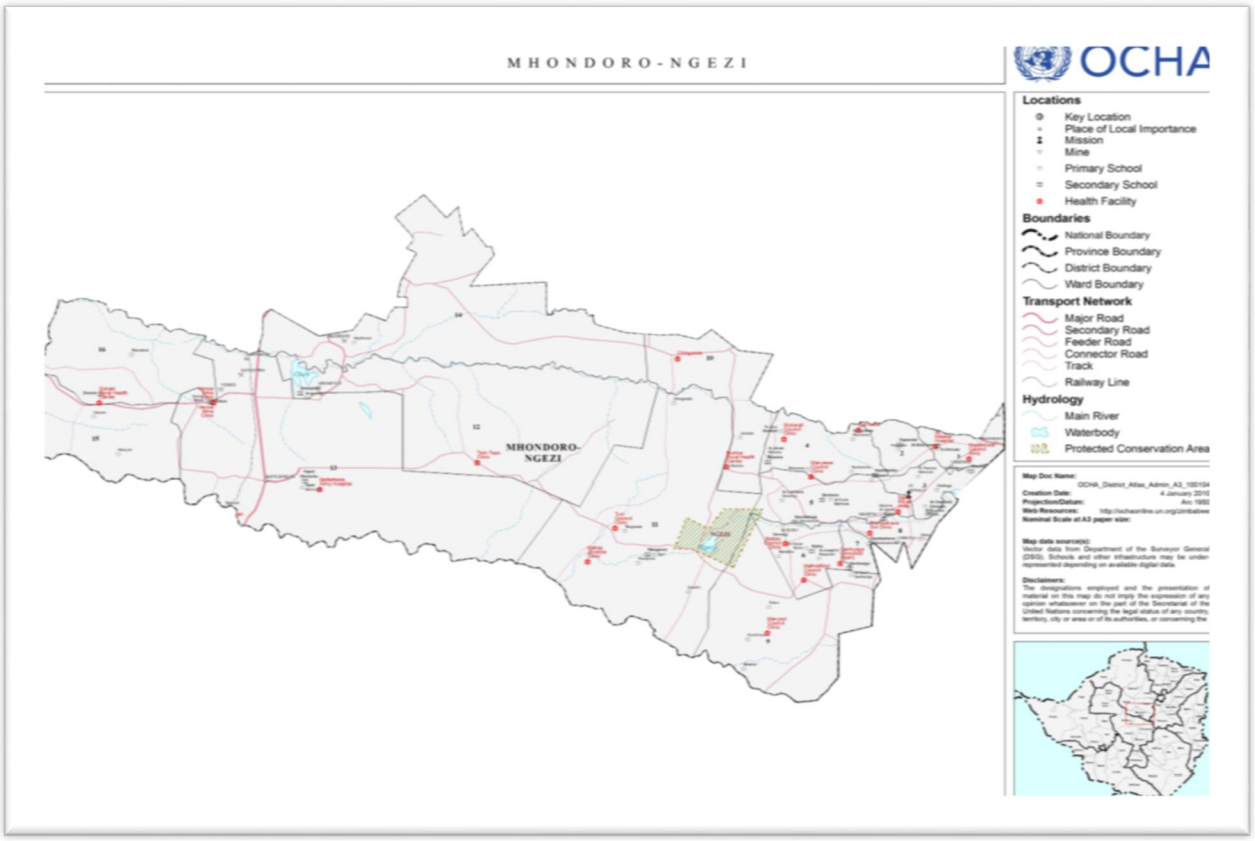

Figure 1.1: Mhondoro-Ngezi (Source: United Nations Office for the Coordination of Humanitarian Affairs)

1.7 Ethical considerations

Any study, particularly one concerned with peace, should evaluate the costs and benefits especially for the participants and their society. This particular research sought to eliminate risks through the observance of the following ethical considerations:

Informed consent and voluntary participation

Respondents who were adults from Village One in Ward 11 were given relevant information about the risks or harm that could arise from participating in the research. The purposes, procedures, risks, potential danger and consequences of research were thoroughly explained to the participants. Participants of semi-structured interviews could exercise voluntary consent, retaining the option of refusing to take part in the research or terminating involvement at any time. I prepared informed consent forms which were signed by every interviewee. They then chose to participate or not in the study. They were also allowed to pull out of the study at any point if and when they wished to, without any penalties. In addition, permission was sought and granted from the Mhondoro-Ngezi Rural District Council and the Ward Councillor to interview officials and ward residents. Participants were informed that they were being recorded, and the recorded conversations and field notes were be kept in a safe place.

Protection from harm

The study ensured that respondents were not exposed to any undue physical or psychological harm. According to Happner, Kivlihgan and Wampold (1992, p. 10) harm can be embarrassment, anger imitation, physical and emotional stress, low self-esteem, exacerbation of stress, delay of treatment, sleep deprivation, loss of respect from others, negative labeling, invasion of privacy, damage of personal dignity, loss of employment and civil or criminal liability. The researcher made every effort to be honest, respectful and sympathetic towards all participants and if participants required debriefing after an interview, the researcher provided this and made referrals whenever possible.

Confidentiality and privacy

The study also tried as much as possible to protect the anonymity of the research participants and the confidentiality of their disclosures by obtaining consent for the release of any personal information. Respondents' information and responses shared during the study were kept private and results were anonymously presented to protect the identities of participants. All research transcripts were kept in a safe box as soon as the research was complete. This study was

conducted following the issuing of an ethical clearance certificate by the College of Humanities, University of KwaZulu-Natal.

Personal Bias

The researcher made every attempt to not allow any personal prejudices or biases into the investigation. When carrying out documentary analysis, the researcher aspired to the highest standards of rigorous inquiry. Every document was checked for authenticity, credibility, representativeness and meaning. Findings were made available to the participants.

1.8 Structure of dissertation

Chapter One: Introduction to water access policies and positive peace

This chapter has presented the general focal point of the research, background of the study and statement of the problem in water access policies in relation to positive peace. It provides the key research questions to be answered in this study. The research objectives and hypothesis are also included. The chapter gives a brief description of the study area including a map of the Mhondoro-Ngezi District. Ethical considerations related to carrying out this study were also described.

Chapter Two: Review of related literature: Water policies and positive peace

This chapter provides an in-depth exploration of existing literature on water use in rural areas, water conflicts and peace indicators in relation to water access. By doing this, the chapter shows the need for this particular study by presenting the gaps in the existing literature on water access policies and positive peace. These gaps enabled the researcher to develop the rationale and motivation for this study and how it seeks to close existing gaps. An outline of water policies of randomly sampled SADC countries is provided i.e. South Africa, Tanzania, Namibia and Malawi. Finally, the chapter explores literature about informal practices to access water and how their widespread acceptability and use is important in providing better access to water in rural areas as compared to formal policies.

Chapter Three: Methodology and theory

Chapter Three discusses the methodology and theories used in this study. The aim of this chapter is to discuss the different tools employed to collect data. It discusses the theories used in this research, in relation to water access and positive peace. The chapter provides an in-depth

discussion on the theory of negative and positive peace, common property resources theory and conflict transformation theory. In all instances, it attempts to situate these theories in relation to water access, formal policies and informal practices to water. This will provide a basis for understanding the findings of this research described later in the dissertation.

Chapter 4: Water policies in Zimbabwe

This chapter explores the formulation, implementation as well as the impacts of water policies in Zimbabwe as instruments for peace promotion in an attempt to answer the first research question. Content analysis of documentary texts is used to analyse literature from primary and secondary texts. Primary documents included the National Water Policy, Constitution of the Republic of Zimbabwe, Water Act (1998), Public Health Act 2002, Environmental Management Act 2002, Traditional Leaders Act and National Census Report 2012. Secondary documents included newspaper reports, civil society organisation reports, and literature on water policies in Zimbabwe. Although the broader spectrum of formal water policies as they impact livelihoods of the general rural populace are discussed in this study, literature exploring the Mhondoro-Ngezi water sector specifically, is also used.

Chapter Five: Informal practices and access to water

This chapter presents findings for the research questions on the understanding of positive peace in the context of water access among community members of Village One, Ward 11 of Mhondoro-Ngezi District and how informal practices are used by community members in the area. Quantitative data is presented to show how the residents of Village One understand the concept of positive peace. It discusses the extent of the influence of informal practices on access to water for community members. It looks at the adaptation of the use of informal practices in the context of changing circumstances and technological advances.

Chapter Six: Water, development and sustenance

This chapter seeks to answer research questions on the relative influence of formal and informal access to water on development and sustenance in Village One, Ward 11 of Mhondoro-Ngezi District and the impact of formal and informal water access on peace indicators. It provides an overview on the influence of formal and informal water access on peace, development and sustenance in Tyron ward. It specifically explores how formal and customary institutions are related. Views of village residents, the councillor and RDC officials are solicited on how water

access relates to peace, development and sustenance in rural areas. The impact of formal policies and informal practices on local peace indicators is analysed.

Chapter 7: Summary and conclusion

This chapter concludes the study. It summarises findings from the study and how these have an impact on peace research, formal water policies and informal water practices. It synthesises the key issues discussed in the study and reaches conclusions based on its findings, focusing on the hypothesis. Conclusions deduced from data analysis are discussed. The chapter also discusses the political nature of water policy formulation and implementation.

Chapter Two

Review of Related Literature: Water Policies and Positive Peace

2.0 Introduction

Water is crucial to every form of life and multiple human activities. Various authors have researched water policies in Zimbabwe (see Mtisi & Nicol, 2003; Cleaver, 1999; Katsi et al., 2007; Nemarundwe & Kozanayi, 2010; Makoni et al., 2004; Tapela, 2002), Africa (Edossa et al., 2005; Movick, 2014; Anderson, 2005; Guttierez, 2002) and beyond (Solis, 2005). However, few have linked them to positive peace (see Eddossa et al., 2005; Chikozho & Latham, 2005). Many have researched water and conflict (see Nemarundwe & Kozanayi, 2010; AbuZeid & Abdel-Meguid, 2006; Mjwahuzi, 1999; Funder, et al., 2009) and individual peace indicators (Mtisi & Nicol, 2003; Cleaver, 1999; Katsi et al., 2007; Nemarundwe & Kozanayi, 2010; Makoni et al., 2004; Tapela, 2002) without referring to the term 'positive peace' as used in peace research. This chapter synthesises literature on different water uses in rural areas, water conflicts, peace indicators, formal water policies and informal practices to water.

2.1 Rural areas and the use of water

According to Dasgupta et al. (2014, p. 618), the word 'rural' means an exposed countryside typified by miniature communities. In terms of inhabitants, rural areas are sparsely occupied areas (United Nations Population Division, 2010 p. 5). Rural areas in emerging nations depend on agriculture and natural resources. Dasgupta et al. (2014, p. 618) described the key characteristics as follows:

- *Rural areas, even after significant demographic shifts, still account for 3.3 billion people, or almost half (47.9%) of the world's total population (UN DESA Population Division, 2013).*
- *The overwhelming majority of the world's rural population (3.1 billion people, or 91.7% of the world's rural population, or 44.0% of the world's total population) live in less developed or least developed countries (UN DESA Population Division, 2013).*
- *Rural dwellers also account for about 70% of the developing world's poor people. IFAD (2010) states that around 70% of the extreme poor in developing countries lived in rural areas in 2005. Ravallion et al. (2007), using 2002 data and poverty*

lines of US$1.08 or US$2.15, in each case with urban poverty lines adjusted upward to recognize additional non-food spending, give a figure of around 75% of people, under either poverty line, being rural.

- *Rural populations have, and will have, a variety of income sources and occupations, within which agriculture and the exploitation of natural resources have privileged, but not necessarily predominant, positions.*

Rural water supply set-up consist of a wide-ranging amenities that serve populations in communities and rural townships. Services comprise covered shared hand-dug wells with or without a water elevating device; communal boreholes outfitted with hand or mechanised pumps; piped water allocation techniques with purification, storage area and circulation systems with water pipes or household links; covered spring wells with or without supply systems or storage area; rainfall catchments.

According to Gleick (1996, p. 84), the designate water use has been variously treated to signify extraction of water (procuring water from a resource for use or stowage), gross water expenditure (water extraction and its resupply) and the consumptive expenditure of water (consumption of water that inhibit its recycle). Water expenditure in rural Africa is split into principal (domestic) water and productive expenditures. Water expenditures arrangements are fundamentally regulated by supply variety, closeness and accessibility of water. In a study of Mhondoro District in Zimbabwe, Derman and Hellum (2007, p. 667) found that water for ingestion, no matter what its location, is handled in a different way from water for irrigation. Water for home use is critical for decent wellbeing. Water is expended for imbibing, food preparation, showering and cleaning appliances (see Katsi, et al., 2007, p. 1159; Madulu, 2003, p. 915). Huggins (2000, p 100) noted that the obligation for family water gathering and in-house administration is commonly reserved for women and children. Cleaver (1995, p 314) posited that in Zimbabwe, a great deal of the rural public is reliant on man-made and covered water supplies in the type of wells and boreholes for domestic water requirements.

According to the Sphere Standards as cited by Reed and Reed (2011, p. 1), people should have non-toxic and impartial access to a satisfactory amount of water for ingestion, food preparation and individual and household sanitation. The standards suggested that the upper limit distance from any home to a water source be 500 metres and the upper limit hang around time to fetch water be 15 minutes.

In some villages, people have struggle to access drinking water. A water supply for a hamlet could involve a walk of 5-10 km from the settlement. A documentary analysis by Glietsman et al. (2007) found that in Mali, during the dry period, wells do not have enough water and women have to slumber in queues adjacent to these wells in order to fetch any accessible water as it becomes available; in severe situations they travel four kilometres to nearest communities to utilise other wells. They therefore lack peace of mind, as they are preoccupied with searching for water for the most part of their lives. Smallholder irrigation systems can increase food insurance and raise rural earnings. Activities which are dependent on water consist of dairies, piggeries, poultry, brick making, beer brewing, gold panning, livestock watering, gardening and orchard plantations (see Katsi et al., 2007 p. 1160, Derman et al., 2000 p. 12).

2.2 Water conflicts

Conflict refers to frictions, discords, squabbles, arguments and contests over water. Kidd (2011, p. 1) argued that conflict is any divergence that can lead to something from argument through legal action to aggression. According to the Conflict Transformation Theory, conflict is pervasive in society. Gizelis and Wooden (2010) contended that 'structural inadequacy' – the uneven dispersal of water – adds to the occurrence of water conflict. Hendrix and Saleyhan (2012, p. 36) argued that water insufficiency produces objections and stimulate conflict over their dispersal. Gleick (2000), in Mbonile (2005, p. 42), supported the view that quarrels around water supplies increase prevailing hostilities and frequently lead to fighting in semi-dry areas where water is particularly scant. Mpala (2004, p. 838) further noted that any medium of survival, such as water, when consumed by more than a one user in a specific catchment or river basin, have a tendency to invite conflicts about how it is apportioned and dispensed. Water is thus a precious resource and when it turns out to be increasingly inadequate to sustain demand within communes, water rights are aggressively defended. Consequently, as Mbonile, (2005, p. 51) posited, any additional demands of water supply, at the disadvantage of other consumer groups often lead to water disagreements. According to Ashton (2002, p. 236), given the present population drifts and configurations of modification in water use, African nations will reach and surpass the parameters of their cost-effective exploitable, land grounded water resources before 2025. The Oxford Research Group in Bowen (2008, p. 2) noted:

> *Water is a source of security and prosperity, and with water shortages likely to increase, with the potential to severely affect food production in some areas, some of these tensions could develop into full-scale armed conflict unless there is strict*

observance of water laws and a multi-lateral approach to developing water management agreements.

The above arguments show the conflict potential present in using water resources, especially when water is subjected to intense competing needs and its availability is diminishing. Groups will then try to exclude each other from using the resource, giving rise to conflicts. According to Katsi et al. (2007, p. 1160), in Zimbabwe conflicts are between those who want to water their stock and gardens or cast bricks at boreholes contrary to the aspiration of others. In Pangani, basin conflicts occur involving small scale and bulky scale irrigators and upstream and downstream irrigators (see Madulu, 2003, p. 916). In Tanzania, Mbonile (2005, p. 58) posited that bulky-scale cultivators and pastoralists think that water is misused in the highlands. As a result, proper synchronisation is mandatory to make sure that everyone has the right to get to water.

Neo-Malthusian authors argue that reducing access to water supplies intensifies feelings of displeasure, which in turn produces complaints against the state, deteriorates the state and civil society and escalates the chance for stimulating a violent rebellion (see Collier and Hoeffler, 2004; Ross, 2004; Fearon & Laitin, 2003; Le Billon, 2001). Homer-Dixon (1999), in Bernauer et al. (2012 p. 2), identified three types of water shortage: 'supply prompted shortage', which is the reduced obtainability of water resources due to consumption and deterioration of water bodies that foster faster than renewal processes; 'demand prompted shortage', which is a result of population growth and/or amplified consumption per person and 'structural shortage' caused by an imbalanced apportionment of access to water resources. Thus, rules as a cause of 'structural shortage' increase the distribution of water to advantaged groups such as manufacturing companies, at the expense of the local people. Fearon and Laitin (2003) maintained that these three components lead to two social processes labelled in Figure 2.1 as 'resource capture' and 'ecological marginalisation'. 'Resource capture' occurs when water resource exhaustion and population growth induce lop-sided access to water resources. In such cases, powerful political aristocrats — in a determination to secure water resources that may turn out to be insufficient in the future — sway a nation's policies in their own favour. This diminishes the state's responses to social injustices and increases the risk of aggressive conflict. 'Ecological marginalisation' takes place when unequal water access and population growth affect resource disintegration and depletion. Under those circumstances, groups facing water inadequacy may move to areas that are by this time environmentally stressed. This increases the risk of violence between the insiders and novices.

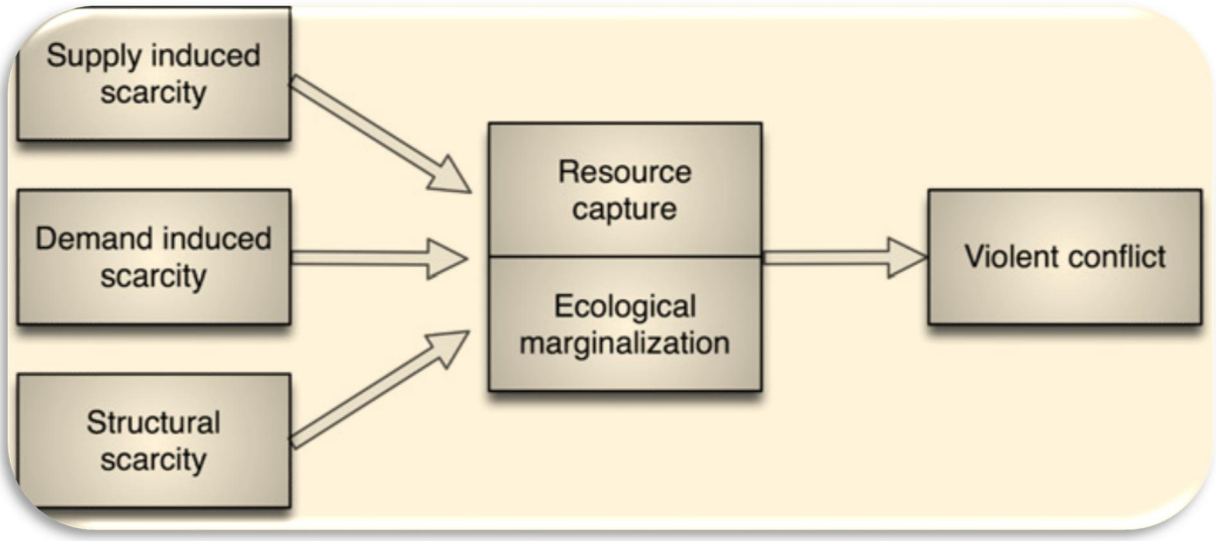

Figure 2.1: Water scarcity and violent conflict (Source: Bernauer et al., 2012)

As Figure 2.1 shows, structurally induced water scarcity, combined with demand induced scarcity and structural scarcity, leads to water resources capture by the elites and ecological marginalisation of the poor rural inhabitants. Deprived of their livelihoods, the people may confront the unjust system, which sometimes ends up in violent conflict.

Rapid population growth of people and livestock can lead to conflict over water. In a study in Pangani River Basin, Mbonile (2005, p. 49) found that the number of livestock had become a threat to the available water resources. This led to an increase in conflicts between farmers and pastoralists, as a high number of cattle put a strain on Nyumba ya Mungu Dam due to heavy consumption of water. Mbonile (2005, p. 49) further states that livestock population in the basin amounted to about 3 million, with an estimated consumption of 750 million litres of water per day and 8.6 million m^3 per year. This has a negative impact on the basin. Migrants also settled in the area and new villages began to sprout. Reuveny (2007), in Hendrix and Salehyan (2012, p. 38), observed that migration can create friction between locals and new arrivals and intensify inter-communal conflict. From the example given by Mbonile (2005 p. 49), it can be noted that villages, which have been formed in areas that were reserved for livestock, interrupted the traditional lives of livestock keepers. Hendrix and Salehyan (2012, p. 37) contended that rainfall deviations increase conflict among consumers of water, as they depend on water as an input for their products. As water stores decline, users may come into conflict with one another over access to wells, riverbeds and so on (Kahl, 2006, in Hendrix & Salehyan,

2012 p. 37). Consequently, population pressure and unsteady rainfall patterns combine to create scarcity, which may lead to conflicts between users to access water.

Wolf, Kramer, Carius and Dabelko (2005, p. 88) stressed that conflicts between communities and government also commonly arise in relation to relocation due to dam construction or in the development of irrigation schemes. For example, during the construction of Nyumba ya Mungu dam in the 1960s, 12 000 people were displaced (see Mbonile, 2005, p. 53). A historical analysis of Dutch water conflicts by Boonstra and Frouws (2005, p. 3) revealed considerable resentment by farmers to computerisation of floodgates by the water board. Farmers protested and showed aggression during meetings with the District Council. Wolf et al. (2005) argued that without extensive public participation, the local communities can reject infrastructural projects. The Herald, of 1 July 1995, reported that in Zimbabwe, Guruve District, villagers resisted the construction of a German funded irrigation scheme and threatened to beat up anyone who visited the area in connection with the project. This was as a result of the government's failure to consult the people so local communities believed they were about to be moved from their ancestral area for these developments. Locals may respond violently to structural violence of exclusion from decisions that have a direct bearing on their welfare. SIDA (2000) pointed out that conflicts can be increased to a certain extent by factors such as lack of public information and education about water issues, lack of adequate consultation with stakeholders, unclear and/or contradictory national development and sectorial policies and insufficient human and financial resources.

As in the case of irrigation and dams, the development of hydroelectric power can lead to water conflicts. Mbonile (2005, p. 52) provided an example of Pangani River Basin in Tanzania, where the establishment of power stations had an influence on the population redistribution along the river and other parts of the country. The establishment of a hydroelectric dam with fish attracted migrants from the fishing community. This led to expansion of the population by about 20 000 people, leading to pronounced water conflicts. Hendrix and Salehyan (2012, p. 37) reiterated that farmers, herders, manufacturers, miners and other producers may come into conflict over water rights and access. Thus, the establishment of a water body, such as a hydro-electric dam, can lead to competing access among subsidiary users leads to disputes.

Throughout the world, examples abound of water related disputes that have led to acts of sabotage, civil disobedience and violent protests. Wolf et al. (2005, p. 88) posited that in the

Chinese province of Shangdong, thousands of farmers clashed with police in July 2000 because the government planned to divert agricultural irrigation water to cities and industries. According to Solis (2005, p. 1), from 1907 to 1913 in California's Owens Valley, farmers frequently blasted a conduit pipes re-routing water to the town of Los Angeles. Stewart et al. (2008) in Ratner et al. (2013, p. 189) carried out a comparative case analysis and concluded that the risk of violent conflict is increased where multiple parallel inequalities align, such as where ethnicity aligns with type of resource use of historical claims for resources. Where diverse claims or institutions overlap, there are increased cases of lack of co-ordination among various social groups, especially where each group appeals to a different type of regulation as the basis of their claim. Local communities rely on customary tenure as the basis of their claims to water, while modern companies rely on state laws which may often not be in tandem with each other. According to Hall and Lobina (2012, p. 6), agriculture is the largest consumer of water resources, for irrigating fields and it can consume over 80% of the total available. A growing proportion is in the hands of companies and investors. The water demands of agribusinesses can conflict with other users of water, such as local farmers. They pointed out that in Peru, there are over 148 conflicts between indigenous rural communities and mining companies over the use of water and the pollution caused by these mining companies.

Increasingly intense competition between the urban and rural areas lead directly to conflict (see Huggins, 2000; Katsi et al., 2007 p. 1160; Madulu, 2003, p. 916). Huggins (2000, p. 10) argued that there is competition between rural and urban populations in water utilisation. Kalwani, (2001) in Mbonile (2005, p. 61) pointed out that urban centres also contribute to water conflicts due to the generation of both solid and liquid waste that pollute the major sources of water. As most households who live downstream are forced to boil water for drinking, they use firewood and this leads to other land use conflicts such as deforestation and soil degradation. Ashton (2002, p. 240) maintained that governments can exacerbate this by putting much emphasis on the growing needs of the urban communities at the expense of rural areas. Thus, even in high-precipitation areas, competition for water is intense. Ponds or streams which are prone to great seasonal variation can possibly lead to minor or violent disputes between individuals in dry seasons. Huggins (2000) stressed that in East Africa, the total precipitation comes in short summers which make containment of water a challenge, and this makes equitable allocation of water between the urban and rural areas more onerous.

Water conflicts can be between or within certain government ministries, competing for power to control water resources and the revenues that are generated from the same. SIDA (2000, p. 11) observed that in a sector with so many different players, the division of responsibility for certain aspects of water resources development or management may be unclear or overlapping, causing tension and conflict between agencies. Ashton (2002, p. 240) held the view that local authorities within a single province or regional authority in country may challenge the rights of a neighbouring provincial authority in the same country to water that is not located within the geographical area of jurisdiction. Different management approaches may serve diametrically opposed objectives. Formal and customary management practices can also be contradictory as demonstrated in Cochabamba where formal provisions of the 1999 Bolivian Water Services Law conflicted with customary groundwater use by farmers' associations (see Wolf et al., 2005, p. 90). Cleaver (1995, p. 322) emphasised that water can also be used as a weapon for government control. This can be done by withholding water supplies or access to water during periods of political conflict. Hendrix and Salehyan (2012, p. 37) argued that conflicts therefore arise over the distribution of water rather than its absolute level and distributional issues are part of a political bargaining process.

Turner (2004), in Gizelis and Wooden (2010), argued that conflict will not always occur in water scarce nations; instead what matter is how ruling governments respond to the pressure of natural and structural scarcity. Conflicts are driven by social tensions and reflect institutional failures and mismanagement at the local and community level. Wolf et al. (2005, p. 90) contended that many countries require stronger policies to regulate water use and enable equitable and sustainable management plans and ensure their implementation. Ashton (2002, p. 239) refers to "the coping capability" or "social adaptive capacity" of a society to harness its available water resources. Bernauer et al. (2012, p. 2) argued that this capability depends largely on human ability to adapt and adopt plans, strategies and tactics that advance the promotion of more effective and efficient use of water. A society with low levels of "social adaptive capacity" will be unable to deal effectively with water scarcity. Low levels of coping skills will prevent a society from making full use of abundant resources and therefore it can enter a condition of "structurally-induced scarcity". High levels of "social adaptive capacity" allow society to develop and implement a series of coping strategies that will lead to "structurally-induced water abundance". Ratner (2013, p. 191) concluded that "institutional innovations that enable diverse people to assess and manage resource competition equitably

can help build resilience, including the capacity to adapt to current and future sources of conflict".

Funder et al. (2010) suggested that water scarcity does not only lead to conflict but can also lead to co-operation among stakeholders. Co-operation can start at the international level and cascade down to the local level. Ashton (2002 p. 241) argued that if the demand for water outstrips the ability to manage water as a focus for co-operation and the achievement of common goals, there is a risk that a community enters chronic poverty, with negative consequences to societal fabric. However, concurrently, in many dry land areas with fluctuating rainfall, the poor physical environment has created pressure for people to develop higher-level arrangements such as mutually reciprocating water access (see Ratner et al., 2013 p. 189). Suwatan (2000), in Ratner et al. (2013, p. 189), gave an example in Bali where water shortages prompted efforts to get traditional *subaks* (irrigation groups) to federate and negotiate with each other for equitable water allocation along a shared river. Appelgren and Klohn (1998) posited that co-operation can be in areas like joint construction of wells or agreements on time schedules for access to boreholes in response to increased pressure on water resources. Wolf et al. (2005, p 91) argued that co-operative water management can preclude conflict and solve disputes, provided that all stakeholders are included in the decision-making process and empowered to act as equal partners. Ratner et al. (2013, p. 184) believed that water resources offered more opportunities for collective gains through cooperation and collective action, as this could increase productivity. Consequently, there is a need for support in the collaborative development and implementation of new water management policies and strategies that are specifically shaped to cope with the pressures of economic growth in situations where water supplies and water demand are unevenly distributed (see Ashton, 2002, p. 236).

Wolf et al. (2005, p. 92) argued that policies and strategies concerning water must be guided by the values of sustainability, equity, mutual cooperation and the attainment of favourable benefit for society. Ratner et al. (2013, p. 190) stressed the importance of governance arrangements, which include mechanisms of representation of diverse groups in decision making, distribution of power and mechanisms of accountability. These are mediated by formal (statutory) legal and political structures as well as customary and informal institutions. Therefore, considering broad water governance characteristics such as state capacity and legitimacy, rule of law, freedoms of expression and political organisation and protections on human rights is essential in conflict sensitive environments (see Lemos & Agrawal, 2006 in Ratner, 2013 p. 191). Franke et al. (2007), in Ratner (2013 p. 191), carried out quantitative

analysis across multiple countries which reaffirms the importance of water governance for reducing the likelihood and intensity of conflict and as investment in peace maintenance. Ait-Kadi (2016 p. 110) emphasised that in cases where water resources are limited and growing demand begins to exceed supplies, it is the state's responsibility to determine water allocations within the country's frontiers in a way that balances the objectives of high growth and a diverse economy with societal sentiments of fairness and equity. From the above discussion, it is clear that the state must co-ordinate the actions of different water users and resolve water allocation conflicts among citizens. Failures of coordination and conflict resolution are perceived as failures of the state.

2.3 Peace indicators

Peace indicators in relation to water access refer to participation of the rural population in water management, fulfilment of the human right to water and development and sustenance, as well as the protection of the environment. According to Bowen (2008, p. 5), the United Nations has identified areas of fostering a culture of peace, for example through the promotion of sustainable development, respect for human rights, gender equality, nurturing democratic participation, advancing understanding, tolerance and solidarity and supporting participatory communication and the free flow of information and knowledge. Harvey (2008, p. 116) posited that a holistic approach to water management incorporates financial, institutional and community issues, and technological and environmental considerations and is largely driven by government policies. The organisational structure in water is widely defined by government policy which commands stockholder roles and responsibilities, be they governmental, private sector, community-based or civil society. Similarly, financing mechanisms for cost-recovery and operation and maintenance of water systems is often defined by sectorial policies. The choice of water supply technology available to the community is affected by government standardisation policies.

2.3.1 Stakeholder participation in water management

Legal and policy provisions should be as detailed as possible in setting out the institutions and procedures that will enable participation at the various stages of decision-making. De Albuquerque (2014, p. 4) posited that governments must develop programmes and policies that assure and motivate the participation of all people affected by a decision, with a concrete focus on those individuals and groups who are poor or marginalised. Participation in water supply

at the local level has been recognised as integral to water management. Community organisations such water users' associations are viewed as important in democratising water management. Chapter 18 of Agenda 21 of the Rio agreement stressed that water resources should be managed at the lowest appropriate levels.[3] This is because local people have developed a scientific knowledge of their area which spans generations. Dublin Principle 2 stated that water development and management should be based on a participatory approach involving users, planners and policy makers.[4] In most countries, water authorities view the water users associations as the lowest appropriate level of management. Hoko and Hertle, (2006, p. 699) pointed out that in Arusha, Tanzania, about 50 % of villages have an active water committee. Derman et al. (2000, p. 4) argued that the rationale for participation is that those who are dependent on resources manage them better; those whose livelihoods depend upon resources should have greater decision-making power over them; the knowledge of local users is more contextualised than that of government bureaucrats; and the efficiency of resource use will be improved through local management. Participation by citizens and potential beneficiaries in activities on their own behalf would be more effective than government control. Participation promotes increased equity, efficiency and development in water management.

Top-down approaches to water management have limited effectiveness. Derman et al. (2000, p. 4) further stated that, state endeavours to force management from the national level, because they are not privy to local resource characteristics and institutions. Community based approaches to water management, where roles and responsibilities are devolved to local bodies, have significant advantages. These are summarised by Bruns (2005, p. 2). According to him, water users have thorough home-grown comprehension about how they use water, their requirements, and the potential magnitudes of modifications. These associations form a social capital of faith and mutual acceptance that enables collaboration. As part of their day-to-day undertakings, it is customarily comfortable for water consumers to notice if fellow citizens are accomplishing the community requirements in expending water. The community members are able to observe and spot destruction immediately using moderately slight energy. Societies may selectively effect penalties unobtainable through prescribed institutions. The risk of being humiliated or of dropping one's status may induce amenability. Water users have considerable

[3] United Nations Conference on Environment & Development, Rio de Janerio, Brazil, 3-14 June 1992, Agenda 21, Section III (26). Retrieved from www.cawater-info.net>library>eng>d.

[4] 1992 Dublin Statement on Water and Sustainable Development. Principle No. 2 - Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels. Retrieved from www.wmo.int>hrp>english>icwedece.

motivation to battle for their rights to use water. Group-grounded methodologies may be able to put an end to discord in the community, as they are largely affected, and this is done with negligible effort and barriers. This decentralisation, tailored to the village environment, decreases the operational expenses when managing water consumption and fulfilling bargains.

Gleitsmann et al. (2007) argued that local people must be supported to negotiate, learn and arrive at joint decisions that reflect community choices and parameters. A genuine participatory programme is one that makes combined efforts to bring all voices into carefully considered decision-making at all points in the decision-making process. Gozo (2011, p. 161) reiterated that integrating stockholders through participation ensures that all aspects of water resources planning, development and management are identified and dealt with appropriately. Participation generates a sense of ownership for water development projects which helps to construct the cohesion necessary for the achievement of peaceful co-existence in rural communities. Participation incorporates indigenous knowledge systems and circumstances leading to better designs and lower costs as demonstrated in Orangi Scheme in Karachi, Pakistan (Serageldin, 1995, in Gozo, 2011, p. 162). In Orangi, communities participated in the development of water and sanitation facilities through providing labour and management. Maathi (2008, p. 24) claimed that setting a foundation for peace and development requires that citizens feel vested in a common future and empowered to realise their own potential in addressing the problems they face. Mbonile (2005, p. 63) observed that no sustainable water management can be achieved without the involvement of the stockholders.

Consultative participation takes place when people participate only by being consulted or asked to answer questions on decisions that have already been taken by a minority of political elites who have decision-making power. Structural violence in the context of access to water includes lack of consultation or participation opportunities for vulnerable members of the community (for example, the elderly, young people, women, and those with disabilities) by both the government and community leaders. Peace can only be ensured if citizens participate in water management and have a place at the decision-making table. Pinera and Reed, in Weinthal et al. (2011, p. 145), proposed the establishment of dialogue among stockholders under the direction of a relevant water utility to provide space to coordinate water service provision. A documentary analysis by Weinthal et al. (2011, p. 145) in Afghanistan revealed that without integration and coordination in water management, there are higher risks of unsustainable results. Bond (2014, p. 165) argued that where consultations are only announced at very short

notice, or with unrealistic registration rules, or only announced in writing or in a majority language, or are scheduled at inconvenient times or locations, people will not be able to participate.

(i) Women's participation

Women should be involved in decision-making related to water management, as they are important stockholders of water in rural communities. Figueiredo and Perkins (2013, p. 188) noted that this is because they have tremendous ecological knowledge derived from their gender role. In most developing countries, women are primary users of water and their families rely on it for their livelihoods. The Dublin Statement on Water and Development, Principle number 3 states that:

> *Women play a central part in the provision, management and safeguarding of water… Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation in ways defined by them.*[5]

This calls for recognition that women are resource users and managers (see Meinzen-Dick & Zwarteveen, 1998 p. 339). There are several factors which impede women's participation in water management. Current stereotypical ideas about the gender division of labour and about acceptable male and female behaviour act as a deterrent to inclusive water management. A study by Figueiredo and Perkins (2013, p. 189) in Sri-Lanka, Nepal, Pakistan and India, found that ideas that only men are farmers and interested in irrigation, along with the traditional male domination in public decision making, are factors leading to women's absence in water users' organisations. Meinzen-Dick and Zwarteveen (1998, p. 340) posited that social norms confining women to activities to a small geographical area may also exclude women from participating in water related activities. Policies should integrate gender and poverty issues, which recognise women as the primary users of water and within which equity participation is consciously achieved through clear processes and information flow and exchange. Fishbein (2002, p. 10) stressed the need to set rules that target poor, unserved areas and vulnerable groups and the development of affordable systems to respond to the demands of the women.

[5] 1992 Dublin Statement on Water and Sustainable Development. Principle No. 3 - Women play a central part in the provision, management and safeguarding of water.

Drilling wells at or near homesteads can promote gender equality as women are freed from the often difficult task of collecting water from a source far from the home.

(ii) Pro-participation policies

Mohan and Stokke (2010) argued that in terms of its political images of participation, development tends to treat 'the local' as an egalitarian community. They maintain that there is a tendency to patronise the poor and the social systems by which they operate. The 'poor' are set against an unspecified 'elite' whose only defining feature is their 'non-poorness', with the former group operating through affective ties of kinship, ethnic group, and the latter utilising the 'modern' methods of state channels. Scholars of participatory research and development assume that local knowledge will reverse the previously damaging interventions which treated locals as passive recipients. Although traditional norms of development have been repudiated, this has seen the individual agent emerge as a key political site. Bruns (2005, p. 3) argued that access to water is subject to a competition between politicians, therefore water administration is not an impartial scientific practice, but subject to struggle among competing claimants.

In water management, the state should enable the local populace to manage the improvement of water resources in the immediate vicinities. Instruments including the 'hands-on decision-making', 'hands-on monitoring and evaluation' have to be harnessed to encompass local perspectives into local resolutions. De Regt (2005, p. 3) posited that prior knowledge indicate that in cases where water enhancement programmes are tailored towards community goals, the feeling of proprietorship is engendered. At the same time, it is highly likely that the local populace put an effort into the maintenance of the progress, leading to the potential of sustainable results. Montgomery and Elimelech (2007, p. 22) argued that emphasis should be placed on implementing demand-based rather than supply-based systems, where communities commit to partnering in the development of locally based systems. Once local partnerships and management structures have been established, government institutions and non-governmental organisations should assist in establishing an effective monitoring programme in conjunction with a financial system that uses both local and government funds to pay for ongoing maintenance and improvements of water sources. For Hall et al. (2016, p. 727), public engagement should be viewed as a research opportunity which provides important insider views for consideration in planning criteria. Hall et al. (2012) noted that, when treated as data, public comments may be sorted with contemporary and geographic specificity for integration

throughout the planning process. After compilation, the area data can inform technocratic water resources planning as well as local strategies for communicating policy and decision making. Fishbein (2001, p. 9) described a favourable national policy environment as one where the national technical principal shifts its role from one of direct provider of rural water supply, to one of facilitator and regulator, while the local communities become the clear owners and managers of the water assets. This involves the enactment of the legal conditions for full community ownership of assets; the empowering of the private sector to provide technical and management support services to communities and the formulation and giving full confidence that quality norms for service-level, technology and financing abilities are available to the communities. The community management is based on the principle of empowering communities to take ownership of, and responsibility for, their own water supplies. Harvey (2008, p. 126) drew attention to the fact that it might be unethical to leave communities to manage and sustain their water supplies, since they may be unwilling or unable to do this. Community management has been adopted by many as a convenient mechanism to 'pass the buck' when it comes to the challenging issue of ensuring sustainability. A study by Harvey and Skinner (2002) of 57 rural communities across nine districts in Zambia indicated that all communities required a supporting institutional framework at district level to enable them to manage operation and maintenance effectively.

Harvey (2008, p. 124) posited that decentralisation provides opportunities for better local management of water services since greater local authority self-government provides potential for closer links to user communities. It is important to provide appropriate support to communities to manage their own water supplies, since in almost all cases community management systems are sustainable only where there is continued local institutional support (see Harvey and Reed, 2004, p. 10). Harvey (2008, p. 124) maintained that Uganda and Ghana are ahead of many other African countries in the decentralisation process, but as observed in both countries, the push to decentralised implementation utilising the private sector has been too rapid. Local government institutions require time to build up the necessary physical and human resources and develop appropriate institutional mechanisms. Mogale (2005, p. 100) argued that local governments are pivotal in reshaping and strengthening local communities, and intensifying water service delivery, especially to the poor, but require capacity building and reflective establishment of water service delivery instruments.

Hall et al. (2015, p. 726) argued that:

Public participation has been characterized along a variety of spectrums, each highlighting the nuances across differing forms of citizen engagement. A noteworthy gradient is the distinction between treating public engagement as: (A) a procedural requirement, the checkbox approach; decide, announce, defend; placation where communication is one-way from agency to public; (B) a means of gathering information used to improve managerial practices; and (C) a way to collaboratively engage citizens in designing and implementing decisions. The gradient reveals that the form and structure of engagement has the potential to define the degree to which it improves the quality of the decision making. It is useful, then, to consider the challenges faced by water managers when seeking to integrate stakeholders into planning.

The above argument reflects that there are various strategies for involving communities in water projects. Each strategy depends on the situation on the ground. Thus, there are challenges to involving the community as the situation is fluid, i.e. there might be complex emergencies for example, outbreaks of water epidemics with little opportunities for consultation.

2.3.2 Human rights and water

Positive peace means the people's rights to water, where everyone has sufficient, safe, acceptable, physically accessible and affordable water for personal, domestic and productive use. Water is a basic need for human societies. Water is to be governed by human rights, not corporate strategies. The right to water is enshrined in statutes of the international law. It is recognised in Article 24, Section 2(c) of the Convention on the Rights of the Child (CRC), clearly stating that the child has a right to clean drinking water.[6] Article 14.2 of the Convention on Elimination of All Forms of Discrimination against Women (CEDAW) states that rural women have a right to enjoy adequate living conditions particularly in relation to water supply.[7] Article 15 of the Protocol to the African Charter on Human and People's Rights obliges States Parties to provide women with access to clean drinking water.[8] The United Nations Committee

[6] Convention on the Rights of the Child. (1990). Retrieved from www.ohchr.org>professionalInterest>crc
[7] Convention on the Elimination of All Forms of Discrimination against Women. Adopted and opened for signature, ratification and accession by General Assembly resolution 34/180 of 18 December 1979. Entry into force 3 September 1981. Retrieved from www.un.org>daw>cedaw
[8] African (Banjul) Charter on Human and Peoples' Rights. Adopted 27 June 1981, entered into force 21 October 1986. Retrieved from www.humanrights.se>uploads>2012/01

on Economic, Social and Cultural Rights commented that the right to water is indispensable for leading a life of human dignity.[9]

The UN Committee on Economic, Social and Cultural Rights, General Comment 15 (2003), gives further useful guidance on how the right to water is to be interpreted. According to the comment, while adequacy of water required for the rights may vary according to different conditions, there are certain minimum standards that should not vary:

- *the water supply for each person must be sufficient and continuous for personal and domestic uses [availability],*
- *the water must be safe; that means, amongst other things, that it should be of acceptable colour, odour and taste [quality], and*
- *the water must be accessible to everyone without discrimination [accessibility], and accessibility includes physical, economic and informational accessibility.*[10]

The International Conference on Water and the Environment, held in Dublin, Ireland in January 1992, issued the Dublin Statement on Water and Sustainable Development.[11] This document laid the groundwork for, and reflects the thinking on, freshwater resources found in Chapter 18 in Agenda 21. The Dublin conference identified four guiding principles for action at the local and national levels: 1) Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment; 2) Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels; 3) Women play a central role in the provision, management and safeguarding of water; and 4) Water has an economic value in all its competing uses and should be recognised as an economic good. Based on the above principles, various action scenarios were envisaged to fulfil the human right to water. Such actions as capacity building, alleviating poverty and waterborne diseases and enhancing agricultural production of the rural population, were deemed necessary for the realisation of this right.

International humanitarian law also makes provision for the right to water during armed conflict. It is stated in Article 21 and 25 of the Geneva Convention (1949) that sufficient

[9] General Comment No. 15: The Right to Water. Adopted at the 29th Session of the Committee on Economic, Social and Cultural Rights, on 20 January 2003. Retrieved from www.refworld.org>pdfid
[10] ibid.
[11] 1992 Dublin Statement on Water and Sustainable Development. Principle No 1-4. Retrieved from www.cawater-info.net>library>eng>d

drinking water is to be supplied to prisoners of war and other detainees.[12] Prisoners of war and other detainees are to be provided with shower and bath facilities and water, soap and other facilities for their daily personal toilet washing requirements. WHO and UNICEF in the global water supply and sanitation report (2000), set a minimum of 20 litres of safe drinking water per person per day and water sources must be located within reasonable distance from the household.

The United Nations Conference on Sustainable Development in 2012 emphasised that every state has the responsibility to "respect, protect and promote human rights".[13] Goal Six seeks to, "ensure availability and sustainable management of water and sanitation for all". Target 6.3 states that by 2030, water quality must be improved by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials. Knox (2015, p. 530) argued that these targets are important, but they need more specific indicators. Harvey (2008, p. 116) reiterated that in relation to the human right to water, providing sustainable access to safe water through appropriate services has the potential to promote justice and dignity, and to empower the poor.

Local constitutions provide the most reliable overall assurance in fortifying the right to water within the context of national legal structure, as they delineate the dominant law of the State within which all subordinate knots of the legal support beams must be compliant, and which cannot easily be changed. De Albuquerque (2014, p 3) noted that constitutional guarantees serve as a reference for drafting and interpreting subordinate laws, regulations and policies. Hall and Lobina (2012, p. 16) posited that in 2004, Uruguay became the first nation to include a specific assurance of the human right to water and sanitation in its Constitution. In Argentina, the constitutional rights to health and a clean environment have been interpreted as including the human right to clean water.[14]

In Africa, the right to water is an integral part of national constitutions. Huggins (2000) noted that in Tanzania, access to domestic water is a constitutional right. The right to water is in the

[12] Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949. Retrieved from https://www.icrc.org>eng>icrc-002-0173
[13] United Nations Conference on Sustainable development. (2012). Retrieved from www.un.org>disabilities>documents
[14] Constitution of the Argentine Nation. Retrieved from www.wipo.int>wipolex>details

South African Constitution[15] where it obliges the state to protect the citizens' right to access water in sufficient quantities. According to Kidd (2011, p. 5), the Constitution requires the state to take "reasonable legislative and other measures within its available resources, to achieve the progressive realisation of the right to water". To ensure the equitable provision of water, a country must assure the rule of law and basic human rights – including the right to water. Barker (2010), in Monrivile and Rodina (2013, p.152), argued that "human rights are not the solution but rather a strategy for creating the context in which claims for social justice can be pursued".

De Albuquerque (2014, pp. 13-25) summarised general human rights principles that relate to the process of accomplishing the specific mandate of human rights to access water. These are: non-discrimination and equality, information, participation and accountability. Participation mechanisms as a major peace indicator, have already been considered in sub-section 2.3.1. De Albuquerque (2014, p. 13) argued that states should assure non-discrimination and equality in its constitutions, laws, regulations and policies. Courts should be used to ensure that specification mechanisms are adhered to.

> *States must monitor the implementation of measures that aim to ensure equality. Policies and plans should use or develop appropriate indicators and benchmarks to assess both the steps taken and the results achieved in their attempts to eliminate discrimination in access to water (…) services.* (p. 16)

Ashton (2002, p. 236) remarked that the major challenge is hidden discrimination, whereby discriminatory practices are concealed in practices claimed to be neutral. In the United States of America, regulation of water services in certain rural areas provides for water quality standards lower than those that in urban settlements. This has a negative impact on poorer rural populations, who are not necessarily in a position either to purchase safe water or to remain informed about water quality standards (Special Rapporteur on the Human Rights to Water and Sanitation, Mission to the United States of America, 2011). Mbonile (2005, p. 62) argued that it is the role of decision makers like chiefs and clan leaders to ensure that specific rights are granted to every person in the community. From the above discussion, it is clear that it is

[15] Constitution of the Republic of South Africa No. 108 of 1996. Retrieved from www.gov.za>sites>files>images

necessary to ensure that every community has equitable access to available water resources to meet their basic human needs.

Policies should ensure that sufficient resources are dedicated to ensuring accessibility to information, and that access to information concerning water services is available to all (see De Albuquerque, 2014, p. 17). States need to design policies and plans for more transparency, and increase chances of access to information. This includes the designing of processes that ensure operative and appropriate answers to information requests, and propagating information through channels that are accessible to all, for example, pamphlets, posters, radio and TV programmes, social media, booklets and manuals translated into local languages. Accountability and access to justice should involve judicial, administrative, regulatory and other statutory bodies, as well as a range of other processes (p. 26). Many constitutions also establish constitutional bodies that hear individual complaints, by means of ombudspersons (appointed officials to investigate complaints on behalf of individuals such as water users) or human rights commissions. This can help ensure that remedial mechanisms are accessible. For example, the Constitution of Argentina, 1994, Section 86 states that:

> *The Ombudsperson is an independent authority created within the sphere of the National Congress, operating with full autonomy and without receiving instructions from any other authority. The mission of the Ombudsperson is the defence and protection of human rights and other rights, guarantees and interests contained in this Constitution and the laws, in the face of deeds, acts or omissions of the Administration; as well as the control of public administrative functions. The Ombudsperson has the capacity to be a party in a lawsuit. He is appointed and removed by Congress with the vote of two-thirds of the members present of each House. He has the immunities and privileges of legislators. He shall hold office for the term of five years and may only be re-appointed once. The organisation and operation of this body shall be ruled by a special law.*[16]

Multi-National Companies (MNCs) can limit local people's rights to water. Investors look for available land with sources of water. They ensure that this access is included in the lease contracts to ensure the profitability of their investments. These guarantees effectively give the

[16] Constitution of the Argentine Nation 1994, Section 86. Retrieved from www.wipo.int>wipolex>details

investor priority over other users, and customary users rarely have any formal rights. A report on Mali by IIED (2011, p. 2) found that contracts gave investors more than half of the dry season critical reserve of water while local residents were left out of the negotiating process and their customary rights were ignored. Therefore, "African governments are signing away water rights for decades with insufficient regard for how this will affect millions of local users, including fishing, farming and pastoralist communities" (Hall & Lobina, 2012, p. 6). In other African countries, successful campaigns have forced some governments to back down. According to Hall and Lobina (2012, p. 8) in Madagascar, local protests forced the government to cancel a deal by South Korean Multi-National Daewoo to physically export 1 % of Faraony River's flow to Saudi Arabia. It also forced the government to resign.

2.3.3 Development and livelihoods sustenance

Water is important in human development and sustenance. Ashton (2002, p. 37) noted that of all natural resources, water is absolutely necessary, and no social and economic development can take place in its absence. Human beings can only survive a few days without water. According to Henken (2002, p. 1), water is important in the body's activities such as carrying of blood, lubrication of joints, digestion controlling of body temperature and waste removal.

Gleick (1996, p. 84) posited that human beings require three litres of drinking water per day under average temperate climatic conditions and this should be of adequate quality to prevent waterborne diseases. Henken (2002, p. 2) argued that the amount of water the body needs, varies according to body size, amount of physical activity, age, overall health and climate. The UN recognises that a key challenge in the implementation area to promote sustainable economic and social development is the availability of clean water worldwide, including in the less developed and densely populated regions, as well as providing the infrastructure for its equitable distribution (see Bowen, 2008, p. 5). Ait-Kadi (2016, p. 108) argued that achieving sustainable development will be the result of a composite mixture of multiple economic, social, psychological, cultural, ecological, political and legal mechanisms.

There is a direct link between the provision of clean water, adequate sanitation services and improved health. Gleick (1996, p. 85) observed that the provision of adequate clean water is the most direct determining factor of child health after providing a minimum amount of water for replenishing of body cells and hand washing. There are also economic benefits to improving water quality. According to a SIWI report by Sanctuary et al. (2005), a cholera epidemic in

Peru cost USD 1 billion to treat. It estimated that USD 100 million could have prevented the epidemic. Adding to the monetary expenses, the value of lost working days, and the lives lost, and the cost-benefit ratio of preventive investments in water and sanitation became colossal. The United Nations General Assembly argued in its 2004 High-Level Panel Report:

> *Development and peace are inextricably linked. A more peaceful world is only possible if poor countries are given a real chance to develop. Extreme poverty and infectious diseases threaten many people directly, but they also provide a fertile breeding-ground for other threats, including civil conflict. Even people in rich countries will be more secure if their Governments help poor countries to defeat poverty and disease by meeting the Millennium Development Goals.* [17]

Isakovic (2001, p. 39) supported the above view and posited that, to understand peace and violence, one needs to take into account basic human needs — for survival, freedom, well-being, and identity. Development aims to promote those needs; violence insults them; peace preserves them.

The United Nations Sustainable Development Goals (SDGs) have also positioned water at the centre of economic development.[18] Ait-Kadi, (2016, p. 107) argued that the Water Goal will only be achieved if the other goals are attained, and in turn other SDGs will only be achieved if the Water Goal is attained. Below is an excerpt from SDG6 on water and its eight targets.

SDG6 Ensure availability and sustainable management of water and sanitation for all
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

Achieving the SDGs vision is the obligation of countries, national governments and stakeholders such as civil society and local communities (see Ait-Kadi, 2016, p. 108).

Water is the key to human development. Hope (2005, p. 168) contended that people with poor access to water are often the poorest, hungriest and most vulnerable in the community.

[17] United Nations General Assembly High-Level Panel Report, 2004.
[18] Transforming Our World: The 2030 Agenda for Sustainable Development. Retrieved from www.un.org>disabilities>documents

According the UN Human Development Report (2004, p. v), "human development is first and foremost about allowing people to lead the kind of life they choose – and providing them with the tools and opportunities to make those choices". Spending money on water development provides children with the chance to spend more time in school more productively. Gleick (1996, p. 86) posited that when children spend most of their time fit, they are able to devote more time to learning and also better health increases their cognitive abilities. A study conducted by WHO in 2004 and cited by Sanctuary et al. (2005) revealed that in Jamaica, children posted improvements in the tests of auditory short-term memory and of scanning and retrieval of long-term memory after the reduction of trichuriasis, a water related disease. Using cross-sectional samples from eight countries, Esrey (1996) in Ngure et al. (2014, p. 120) estimated that an improvement in water access was associated with 0.06cm to 0.65cm increases in height for age in children. In a longitudinal survey design by Checkley et al. (2004) in Ngure et al (2014, p.120), Peruvian children at two years of age with the worst conditions for water source, water storage, and sanitation were 1.0 cm shorter than children with the best conditions.

Water resources development is the key to the improvement of rural communities. Gozo (2011, p. 159) acknowledged that the development of water resources improves the quality of lives in rural areas through unlocking the irrigation potential of their respective areas. Accessibility of water dictates how well a human society is. Policies which guarantee equitable access to water for rural people for productive uses contribute to the advancement of their livelihoods obtained from the use of their water. Maathi (2008, p. 26) maintained that a country cannot develop where there is no peace; peace in turn will not prevail if water resources are incompetently managed or put in the hands of a few at the expense of many. Molden (2006, p 7) argued that achieving access to water requires a policy and institutional environment that aligns the incentives that encourage the uptake of new technologies. Water can be made available for agricultural purposes, for example, through effective rain water harvesting and storage for use in drier and more erratic climates. The Food and Agriculture Organization (2005), in Mugagga, and Nabaasa (2016, p. 3), stated that 7% of the arable land in Africa is currently under irrigation. This shows a lack of capacity to harness water resources for the development of communities. Increasing the land under irrigation can ensure uniform and continuous supply of water to the fields throughout the seasons.

Molden (2006, p. 7) posited that employment of water and energy-efficient methods and techniques of irrigation can also ensure agricultural productivity and consequently economic

growth. Examples of energy and cost-efficient techniques applicable to rural farmers seen first-hand by the researcher in Zimbabwe include drip irrigation, ridge and furrow and the bucket system. In drip irrigation, water is pumped from the source into a reservoir until it is full. The pump is switched off to save energy and water drips by force of gravity into supply laterals, and then into small polythene tubes with tiny nozzles from which water is finally dripped onto plant stations all the time to keep them moist. In ridge and furrow irrigation, a similar technique is used for a greater volume of water used. With ridge and furrow, water is pumped from the source into a reservoir, which is usually a tank. When the tank is full, water moves by gravity and gradient into crop stations by means of defined channels which are mostly furrows; row spaces are kept wet due to osmosis. When the field reaches capacity, the outlet is switched off. The bucket system is sometimes called overhead irrigation: water is drawn from the water source by means of buckets and applied unto crops by sprinkling lightly until the bed reaches field capacity. No energy is used either in pumping or supply. However, these irrigation techniques are few in proportion to the population of communal farmers in Zimbabwe and therefore have limited impact.

Weinthal et al. (2011, p. 144) argued that if water was supplied in sufficient quantities, there is surety of food security and basic livelihood. The General Assembly of the United Nations drew attention to the importance of water for sustainable development and poverty alleviation by declaring 2003 the International Year of Freshwater.[19] In that same year, the Millennium Development Goals targeted reducing by half the proportion of people without access to safe drinking water and sanitation by 2015.[20] According to Akhmouch (2012, p. 11), as much as 70% of the world's water is used for agricultural purposes; therefore efforts to promote global food security and reduce poverty worldwide require successful water policies. Securing water universally is a matter of human investment and an indication of a government willing to deliver other important services. It is also an indication of good governance. Hanjira et al. (2009, p. 1063) pointed out that investments in farming alone will not eradicate poverty. Public and private investments that increase access to water are essential but may not be enough. They therefore urged governments to improve human capital so as to reform rural practices that may limit water access for the poor and to initiate technological changes. Consequently, improvements in human capital in the form of education and health are needed to ensure that

[19] UN General Assembly. (2003). International Year of Freshwater 2003. Retrieved from www.wateryear2003.org
[20] United Nations (2003) The Millennium Development Goals. Retrieved from https://www.oecd.org>dac

lack of information or poor health does not limit advances in land productivity. Investments in roads and communications are also needed to augment access to markets necessary to create motivation for improved production of crops and livestock. Investments in these complementary forms of rural infrastructure will raise returns in poverty reduction by investing in farming. Weinthal et al. (2011, p. 144) posited that water apportionment policies, agricultural support programmes, introduction of new techniques and learning, governance, and the national economic framework also dictate the poverty diminishing influence of agriculture.

Kemp et al. (2010), in Khan et al. (2013, p. 94), posited that different developmental activities such as mining, damming and hydro-electric development pose great risk to human access to water. Ashton (2002, p. 236) argued that the continued deficiency of water supplies leads to a necessity to redistribute the valuable resources from less yielding sectors to those that are able to obtain greater returns in proportion to the water used. A mixed method research by Okuku et al. (2016, p. 275) in Kenya revealed that a total of 56% of the respondents observed that flooding occasioned by unexpected release of water from the reservoirs (during reservoir management operations) which led to loss of crops was a negative impact of damming. The other impacts of damming were reported as the emergence of human-wildlife conflicts (hippo and crocodile attacks leading to crop destruction and loss of life) and the emergence of an informal settlement due to inappropriate relocation plans. Damming also altered the Tan River's natural flow, thus reducing the frequency, extent and duration of floodplain inundation and productivity. It further increased salt intrusion into Ozi village resulting in unfavourable farmland for rice farming. River Tana damming is forcing pastoralists to settle in floodplains, leading to growing incidences of social disorder, civil and ethnic conflict between pastoralists and agriculturalists.

A documentary analysis by Hall and Lobina (2016, pp. 9-10) showed that industrial activities by Coca-Cola in India, led to deterioration in groundwater levels, so that local people, in particular farmers, were left with less water for their own requirements. In Palakkad, Kerala, there were complaints and protests from the local community that the plant was using excessive amounts of groundwater, causing depletion and contamination in local wells. These protests were taken up by the *panchayat* – local council. The *panchayat* filed a Public Interest Litigation (PIL) in the Kerala High Court, which ruled in the *panchayat*'s favour. The Minister of Water gave an order for the plant to close. In Uttar Pradesh, the Coca-Cola plant depleted groundwater levels so that levels fell by 7.9 metres in 11 years. The Lok Sabiti (people's committee) held

protests, with the slogan *"coca cola pani chor"* ('Coca-Cola steals water') and police were called in to arrest protestors. The two examples show the importance of rightly informed and guided water policies, as well as the negative effects of ill-informed policies. The former can turn the situation around and set the world on a better development path.

2.3.4 Water, the environment and health

This section deals with structural violence of pollution brought about by various human related activities around the world. It then deals with positive peace oriented policies which seeks to eradicate the scourge of pollution and its consequence on human lives. Wang and Yu (2014, p. 100) drew attention to water as a key to the sustenance of both humans and environmental health. Environmental declarations like the Dublin Principals and Chapter 18 of Agenda 21 also recognised that the environment itself has basic needs which must be respected if human life and well-being are to be sustained. This is reflected in the following quote from Provision 18.2 of Agenda 21:

> *Water is needed in all aspects of life. The general objective is to make certain that adequate supplies of water of good quality are maintained for the entire population of this planet, while preserving the hydrological, biological and chemical functions of ecosystems, adapting human activities within the capacity limits of nature and combating vectors of water-related diseases..."*[21]

Water pollution is a major impediment to environmental health and a leading contributor to diseases. Azizullah et al. (2011, p. 480) posited that many substances which are regarded as water pollutants are classified into categories. These are pathogens (bacteria, protozoa and viruses), inorganic pollutants (acids, salts and toxic metals), anions and cations, water soluble radioactive substances and organic compounds such as oil and pesticides. If these substances (inorganic pollutants) exceed a threshold level they cause dangerous health problems in humans and other organisms in the ecosystem.

Farooq et al. (2008) contended that the presence of bacterial fecal coliforms and protozoa E. coli is an indicator for water contamination with human or animal wastes. According to the WHO standard for public drinking water, total and fecal coliforms must not be present in 100

[21] United Nations Conference on Environment & Development Rio de Janerio, Brazil, 3 to 14 June 1992, Agenda 21, Section III (18.2). Retrieved from www.cawater-info.net>library>eng>d

ml of water samples i.e. 0 counts/100 ml of water sample (WHO, 1993). A survey by Azizullah et al (2011, p. 481) revealed that in Khairpur in the Sindh province, Pakistan out of 768 drinking water samples 567 (73.83%) and 351 (45.70%) were contaminated with total coliform and fecal coliform, respectively. Bacterial contamination is much higher in rural areas compared to urban areas. In a rural area of Punjab, 91.30% and 95.83% of samples from tap and domestic pumps, respectively, were found contaminated with bacteria compared to 42.85% of tap water samples from Lahore (see Anwar et al., 1999 in Azizullah et al., 2011 p 481). According to Montgomery and Elimelech (2007, p. 18), bacterial contamination of drinking water is a major contributor to water diseases such as diarrhoea, nausea, gastroenteritis, typhoid, dysentery and other health-related problems especially in children and people with weak immune systems.

Table 2.1: Categories of water and hygiene-related diseases (Source: Montgomery and Elimelech)

Category	Description/disease
Waterborne	Caused by the ingestion of water contaminated by human or animal excreta or urine containing pathogenic bacteria or viruses; includes cholera, typhoid, amoebic and bacillary dysentery, and other diarrhoeal diseases.
Water-based	Caused by parasites found in intermediate organisms living in water; includes dracunculiasis, schistosomiasis, and some other helminths.
Water-related	Caused by microorganisms with life cycles associated with insects that live or breed in water; includes dengue fever, lymphatic filariasis, malaria, onchocerciasis, and yellow fever.
Excreta-related	Caused by direct or indirect contact with pathogens associated with excreta and/or vectors breeding in excreta; includes trachoma and most waterborne diseases.
Water collection and Storage	Caused by contamination that occurs during or after collection, often because of poorly designed, open containers and improper hygiene and handling.
Toxin-related	Caused by toxic bacteria, such as cyanobacteria, which are linked to eutrophication of surface-water bodies; causes gastrointestinal and hepatic illnesses.

Montgomery and Elimelech (2007) provided a summary of water and hygiene related diseases as shown in Table 2.1 above. Most of the categories will be covered in this section. According to UNESCO (2003) in Montgomery and Elimelech (2007, p. 19), nearly 60% of infant

mortality is linked to infectious diseases which are water related. These diseases account for 14% of illnesses in children below five years old and for 7% of all diseases in people of all ages in Pakistan (see Rosemann, 2005 in Azizullah et al., 2011, p. 493). In October 2004 an outbreak of typhoid fever was documented in the area of Nek Muhammad village near Karachi which claimed three human lives and left more than 300 people infected within one week (Farooqui et al., 2009). The outbreak has been linked to the contaminated water of a reservoir well, the only source of drinking water in the village. Ngure et al. (2014, p. 124) pointed out that long-term effects of diarrhoeal diseases can cause malnutrition and reduced cognitive abilities in children. Interaction with the environment through play supports the development — social, cognitive, affective, emotional, and physical — of all children. Yet, for many young children in poor households, the environment is a substantial microbiological threat to health. Clean water is the precursor of a clean environment and disease-free lives.

Faecal contamination of water sources may be common, for example 95% of the surface water in Tanzania is bacterially contaminated (see Huggins, 2000). Water contaminated with animal and human faeces is the major route of transmission of pathogens to human beings (see Khan et al., 2013, p. 94; Gleick, 1996, p. 84). Khan et al. (2013, p. 93) argued that contaminated water sources have a negative effect for the environment and people's health. Madulu (2003, p. 915) argued that the poor are forced by circumstances to rely on contaminated water sources like ponds, rivers and surface run-offs, increasing the risks of waterborne diseases like typhoid and diarrhoea. Estimates by Gleick (1996, p. 85) revealed that more than 1.7 billion people lack access to adequate sanitation, while over 1.2 billion lack adequate clean drinking water.

Drinking water containing heavy metals has significant side effects on people's health either through deficiency or toxicity due excessive intake (see Khan et al., 2013, p. 93). Clark (2003, p. 396) argued that heavy metals in water may be beneficial to the body, but excessive amounts cause water pollution and result in severe health problems in living organisms including humans. Fosmire (1990) emphasised that these metals are introduced to both surface and groundwater through various human activities like large scale use of chemicals in agriculture and improper disposal of mining, industrial and municipal wastes. Singh et al. (2006) posited that although zinc and copper are essential ingredients to the survival of the human body, an overconsumption has an adverse reaction to the biological set up of the human body (see also Osman et al., 2012). In terms of water consumption, WHO put highest appropriate absorptions of 3 milligrams per litre and 2 milligrams per litre for zinc and copper respectively. Weiss and

Wright (2001) stressed that mercury, which is a naturally occurring element, is added to the environment through various natural processes as well as different human activities, especially mining. They added that being a potential cellular toxin, mercury adversely affects various important processes within nerve cells. Azizullah et al. (2011, p. 484) affirmed that mercury disrupts neurotransmitter production and also decreases the production of important hormones including thyroid hormones and testosterone in the body. Overconsumption of arsenic may "cause a decrease in white and red blood cells production, gastrointestinal irritation, disrupt the heart rhythm, damage blood vessels and cause "pins and needles" sensation in hands and feet" (Abernathy et al., 2003, p. 200). They further contended that extended consumption of arsenic can lead to "melanosis, leuko-melanosis, hyperkeratosis, cardiovascular disease, black foot disease, neuropathy and cancer".

The following discussion is based on the work of Azizullah et al. (2011). Cations including sodium, potassium, calcium, magnesium are necessary for various biological processes in the body and their presence in water is necessary in an adequate amount. However, at higher concentrations these cations may make the water unfit for human beings. Anions nitrates, nitrites, carbonates, bicarbonates, sulfates, phosphates, chlorides and fluorides naturally occur in water but are also linked with high probability to bladder and ovarian cancer, insulin-dependent diabetes mellitus and genotoxic effects at the chromosomal level (Ward et al., 1996 in Azizullah et al., 2011, p. 488).

Azizullah et al. (2011, p. 489) claimed that an estimated 0.1% of pesticides applied to agricultural land reach the target organisms and the remaining 99.9% are dispersed through air, soil and water, thus resulting in the pollution of natural ecosystems and affecting human health and other living organisms. It becomes a huge threat dangerous pesticides are present in and around water resources. Tariq et al. (2007, p. 1109) acknowledged that in Pakistan, cases of pesticide poisoning have been observed regarding organisms living in water, fowls and people. Baker et al. (1978) in Tariq et al. (2007, p. 1119) recorded, "methyl parathion poisoning symptoms in rural population i.e. cramps in limbs, feeling dizziness, chest pressure, change in defecation and eye tearing", in Pakistan. They documented "acute malathion poisoning in 40% of spray workers of a malaria control programme in the late 1970s". Their research, recorded the passing on of 5 people. It further recorded that, "severe depressions of red blood and cell activity have appeared among 2800 affected people due to malathion".

Water pollution is mostly caused by human activities. The major activities are thoughtless disposal of industrial, mining, municipal and domestic waste in water channels, rivers, streams and lakes (Azizullah et al., 2011, p. 491). Montgomery and Elimelech (2007, p. 18) estimated that in developing countries over 90% of raw sewage and 70% of untreated industrial wastes are dumped into surface water sources. Rural industries can also cause pollution. Wang et al. (2008, p. 650) posited that in China, rural industries consume huge quantities of water and pollute many rural water bodies. Rural industries are seen as responsible for waste of water resources, due to substandard equipment and basic technology. Water pollution and consumption by China's rural industry are related to the type of industrial activity. The major water polluters include industries such as paper and pulp milling, chemical manufacturing, metal casting, and brick making that produce large quantities of wastewater, adding nitrogen, phosphates, phenols, cyanide, lead, cadmium, mercury, and other pollutants to the water near rural residential areas — the same water that is used for drinking (see Xu, 1999, Azizullah et al., 2011). According to Schmidt (2002), in Wang et al. (2008, p. 652), water pollution is now a public health risk in China. An estimated half of China's population drink water contaminated with chemical and biological wastes such as petroleum, ammonia, nitrogen, volatile phenols and mercury (see Wang et al., 2008, p. 652).

Mining processes also pollute water, as a result of adding chemicals such as cyanide in gold mining or arsenic in uranium mining as well as waste products from the mining processes, which may also obstruct and block rivers and streams. Outflowing disposal from gold mines is characterised by raised levels of toxic heavy metals, especially sodium of cyanide, silver, mercury, and arsenic. Adler and Rustler (2007) in Jerie and Sibanda (2010, p. 52), posited that their availability in effluent water is not only associated with ground and surface water contamination, but is also responsible for the destruction of organisms living in water, animals, as well as death and infection of human beings. Even modern mines in the USA pollute "neighbouring streams with cyanide, selenium, copper arsenic and thallium" (Hall and Lobina, 2012, p. 7). The mining of oil and gas also introduce impurities to water. Andrew et al. (2009), in Hall and Lobina (2012, p. 7), argued an oil well uses about 10 000 m^3 of water in the mining process. Some is lost underground, and may contaminate groundwater and the wastewater returned to the surface may include chemicals that could contaminate land and surface water.

Water pollution increases risks of retarding economic activities. A household survey in Andra Pradesh by Reddy and Behera (2006) revealed that water polluted with arsenic caused the death

of cattle. It was reported by the villagers that around 149 cattle died due to drinking polluted water in five years with the majority of the cattle becoming sick over the years. Another serious problem observed in the village was that some cows had lost their reproductive capacity thus becoming a handicap to their owners. Grazing contaminated grasses and drinking polluted water have resulted in poor quality of milk and dung. In addition, for fear of further deaths of cattle, people have sold their cattle at very low rates. The incidence of sickness among people has also increased. This has a negative influence on the socio-economic conditions of people due to huge amounts of money spent visiting the doctors. Working days are also lost due to illness. Montgomery and Elimelech (2007, p. 19) argued that a lack of water may prevent people from practising proper hygiene habits, such as washing their hands before eating. Wang et al. (2008, p. 652) contended that in China, the health impacts of water pollution have been estimated by the World Bank at US$ 3.9 billion annually. Water deficiency may also limit the ability to grow and water vegetables, thus depriving individuals of important nutrients needed to fight diseases.

According to Reddy and Behera (2006, p. 532), pollutants affects crop production and damage the agricultural machinery like pump sets that come into direct contact with water. Apart from the decline in agricultural productivity, the polluted water imposes huge costs on agricultural activities, like corrosion of agricultural equipment, damage of pump sets, and repairing costs of machines. Pearce et al. (1978) maintained that large amounts of suspended solids in the water requires frequent cleaning of filters and nozzles. As a result, people incur extra costs in the form of repairing and servicing of electric motors, damage of pump sets, which reduce their economic potential.

There are various alternatives that can prevent pollution of water sources. Wang and Yu (2014, pp.102-103) divided these into three i.e. physical, chemical, ecological and biological techniques. Physical measures include using soil baskets as substrates for plant growth hence self-purification. Another physical measure is the dredging of contaminated sediment; careful dredging and off-site disposal can greatly reduce the input of secondary pollutants from the release of sediments into the water column and can create suitable habitat conditions that promote restoration. Zhong et al., 2007 in Wang and Yu (2014, p. 102), posited that chemical measures are undertaken by adding chemical compounds to rivers. Chemical techniques include the addition of flaky compounds to improve deposition, limestone to remove nitrogen, various chemical compounds to remove algae, and chemicals to adjust pH values to reduce the

effects of heavy metals and other pollutants (see Scholz, 2006). Ecological restoration measures emphasise strengthening the capability of natural self-purification and supporting succession of the water ecology. The addition of bacteria is one of the commonly used methods, which uses microbes to decompose organic pollutants, thus improving water quality and ecology. Typical aquatic restoration methods include, "biological floating bed techniques (e.g., artificial floating island technique), biological submerged bed techniques, and biological manipulation techniques" (Scholz and Lee, 2005 in Wang and Yu, 2014, p. 103). They further contended that water plants are supported by joining molecules' materials and use soilless cultivation technology to establish efficient artificial ecosystems for reducing the load of water pollutants. The above processes of course need support from the government's scientific research departments, or universities.

According to Montgomery and Elimelech (2007, p. 19), point-of-use (POU) household water treatment and improved sanitation lead to reduction in diarrhoeal diseases. POU treatment provides a barrier to pathogen exposure immediately before consumption. Even when source water is deemed "safe", poor hygiene during collection, storage, and handling of water, results in contamination. A review of POU technologies concluded that "simple, acceptable, low-cost interventions at the household and community level are capable of dramatically improving the microbial quality of household stored water and reducing the attendant risks of diarrhoeal disease and death" (Sobsey, 2002 in Montgomery and Elimelech, 2007, p. 21).

Reddy and Behera (2006, p. 535) discussed weaknesses of institutional policies towards water pollution. They provided an example of the Sangareddy Pollution Control Board (local PCB), officials in India who visited the villages where pollution complaints were received and surveyed the area. They took various water samples for testing, but never returned. They concluded that political interference cannot be excluded from the factors hindering implementation of environmental laws. It is believed that there was a connection between the PCB officials and the industrialists and hence the matter was conveniently ignored. This connection was further strengthened by the support of the politicians to the industrialists. The loopholes in the regulatory system assisted this process. In the end, villagers often become apathetic and are more concerned about their day-to-day livelihoods and hence they are not in a position to join the fight for justice.

> *This indicates that homogeneity/heterogeneity in the interest or stakes in the resources makes/mars the collective action strategies. Here the heterogeneity of*

> *interests is mainly due to the availability of employment opportunities in the industry to majority of the population. Also, the large and medium farmers who are losing more due to pollution are in the minority. Besides, their social status prevents them from taking up the jobs in the industry.* (Reddy & Behera, p. 536)

Laws are one of the basic ways to manage water sources and are a standard test of governmental and social behaviours. Wang and Yu (2014, p. 104) argued that passing of laws and creating organisational structures are necessary but not enough to address the environmental problems. Policies should be implemented from their right perspective. Reddy and Behera (2012, p. 536) supported the above assertion and posited that institutions should be strong enough, with more freedom and powers, to deal with the problems at hand. Bui and Kapon, (2012) in Wang and Yu (2015, p. 104), observed that laws and regulations for managing and protecting water sources have slowly been enhanced, and legislation has become more autonomous, specific, methodically based, and targeted, mostly in developed countries, such as the US, Germany, and Japan. Developed countries have started to focus more on local needs and have enhanced operational processes. Ibok and Daniel (2014, p. 70) provided an example of mechanisms such as the Water Protection Fund in New York and the funding of counter measures in areas of water sources that reflect the importance of local interests. Hall and Lobina (2012, p. 8) gave an example of the protection of local needs such as the case of the Supreme Court in Ecuador which confirmed an award of USD $18 billion in damages against the oil company Chevron for contamination of water in the Amazon basin as a result of oil drilling activities in the 1990s by a joint venture including Texaco, now owned by Chevron. The oil drilling spilled more than 30bn gallons of toxic wastes and crude oil into Ecuador's Amazon basin, putting the indigenous communities at risk.

The Chinese government has also taken important steps towards pollution control. According to Wang et al. (2008, p. 652), the government punishes whoever is in violation of state environmental regulations and causes serious pollution of land, water or the atmosphere. The penalty is up to three year’s imprisonment and a fine. Up to seven year’s imprisonment can be imposed in the most serious cases. The central government cuts off all state funding for rural businesses that are considered environmental hazards. The Government has warned that it may revoke business licenses, cut off power supplies and state funding or detain managers.

2.4 Water policies in SADC countries

Policies constitute the general moral rules a government follows in its management of public water. Huggins (2000, p. 190) posited that they are used to shape the 'plan of action' that the executive branch uses to put its vision into practice. As with regulations, policies must be in tandem with laws. De Albuquerque (2014, p. 5) contended that policies also have a role in shaping future laws; for example, by recommending the revision of laws to bring them into line with positive peace. Unlike statutory instruments, legislation and the constitution, policies are hard to enforce judicially, as they are used as a declaration of intentions rather than as a portraiture of rights and obligations. The Constitution is the dominant and leading law that sets out the State's basic form, including the exercise of political power and the connection between political institutions and between the State and the people (see Gozo, 2011 p. 159). Parliament, in most countries has the sole power to create, amend and repeal laws. De Albuquerque (2014, p. 5) suggested that Parliament therefore sets the demarcations within which the executive branch of government has to act. Laws contain more detail than a constitution does, including provisions for governing the country. Ostrom (1990), in Ratner (2013 p. 191), identified three sets of rules: operative rules that govern day-to-day decisions, such as who has rights for withdrawing of water from a certain source; collective choice rules which affect how operative rules are to be changed, and who can change them; and constitutional choice rules which are used in crafting collective rules that in turn regulate the operative rules. The entities of collective action for water access and use such as water groups, embody collective choice rules, and help to set operational rules for water use.

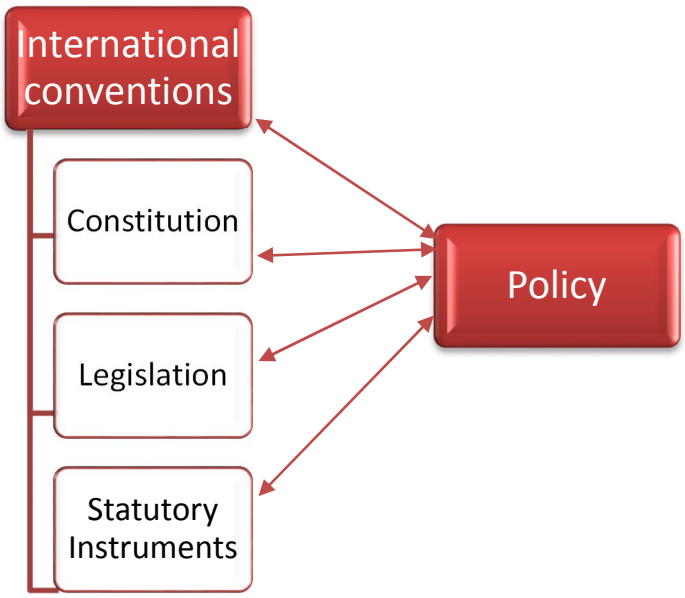

Figure 2.2: Interaction between policy and legal instruments (Source: author)

As shown in Figure 2.2 above, policy has a binary relationship with international law, national constitution, legislation and statutory instruments. Policy can be influenced by international or regional conventions, various pieces of law such as the constitution and legislation (Acts of parliaments as well as statutory instruments). In turn, policy can be a source of reference for legal provisions governing the management of water. For a policy to be effective, it has to be supported by legal provisions making it mandatory to achieve certain benchmarks that are provided by the government.

This section that follows reviews literature on water policies in selected SADC countries. SADC countries where chosen, because the climate in the member states are similar and states are interlinked within this regional organisation. The examples were also used to explore whether lessons could be learnt (both positive and negative) in Zimbabwe from its neighbouring countries in terms of formulating and implementing policies which bring positive peace in the realm of water provision. Some SADC countries (i.e. South Africa, Tanzania, Malawi and Namibia) were considered.

2.4.1 South Africa

Water policy is illustrated by the new water law of South Africa, whose Principle 9 states that:

> *The quantity, quality and reliability of water required to maintain the ecological functions on which humans depend shall be reserved so that the human use of water does not individually or cumulatively compromise the long term sustainability of aquatic and associated ecosystems.* (Sullivan, 2002, p. 5).

This shows that the national government of South Africa have taken a proactive approach towards a positive peace approach to water policy and development.

The National Water Act 1998 (NWA) posits that national government is the trustee of the country's water resources and thus is tasked with ensuring that water is "protected, used, developed, conserved, managed and controlled in a sustainable manner, for the benefit of all persons and in accordance with its constitutional mandate". [22] According to Kidd (2011, p. 6),

[22] South African National Water Act (1998). Retrieved from https://www.dwa.gov.za>nw>act>NWA

this Act provides the background and framework within which the Water Services Act (WSA) is implemented. Heleba (2011, p. 15) argued that the NWA mandates the State, acting through the Minister, as the trustee of the nation's water resources. Stein (1999, p. 10) also posited that the Act stipulates, clearer than elsewhere, that water is essentially a tool to transform society towards social and environmental justice and poverty eradication. According to Schreiner and Van Koppen (2002, p. 969), in 2000 the government decided to provide the first 6000 litres per household free. Sullivan (2002, p. 5) maintained that the South African policy has a clear emphasis on the need for strong horizontal and vertical co-operative governance between the various government agencies. Better collaboration between the Department of Water Affairs and Forestry and the National and Provincial Departments of Agriculture led to a new national policy to increase productivity of agricultural water use by smallholders that encompasses water, access to land, markets, credits and skills development.

According to Derman et al. (2005), the Constitution of South Africa influenced a state shift towards enshrining public rights. Its composition guarantees everyone the human right to access enough water and specifies that every South African must enjoy the right "to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".[23] In Section 7 of the Charter, the state is obliged to "respect, protect, promote and fulfil the rights in the Bill of Rights". Consequently, "Section 7(2) of the Constitution forms a progression, from the 'traditional' application of the rights provided in the Bill of Rights as a protection of the freedom of individuals from obstruction by the state (and to some extent other individuals), towards a requirement for the State to proactively create conditions that ensure the achievement of these rights for all" (Derman et al. 2005, p. 12).

The courts have interpreted this right, and posited that legal, organisational, operational and economic obstacles to fulfilling the right to water should be scrutinised and where conceivable, lessened over time, but the state must take actions that bring about permanent improvement in the implementation of the right, and there must be yardsticks that show this progress. The government is not obligated to do more than its funds warrant, but it has an onus to safeguard the comprehensive imaginable satisfaction of the right under the existing situations (see

[23] South African Constitution (1994). Retrieved from www.gov.za>sites>files>images

Sullivan, 2002, p. 7). Thus, the State bears the onus of proving that any restriction is fair, reasonable and necessary. Because the right to water is such an integral right, it would be difficult for the State to prove any restriction is justified.

Within these circumstances, the National Water Act specifies that the state "must ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate".[24] Kidd (2011, p. 6) argued that "Principle 23 of the Water Policy White Paper states that the responsibility for the development, apportionment and management of available water resources shall, where possible and appropriate, be delegated to a catchment or regional level in such a manner as to enable interested parties to participate". Heleba (2011, p. 16) challenged the principle of public participation and argued that it has some gaps. The Act makes admissions by remarking that the rule ought to be effected "where possible and appropriate", providing room for circumspection as to the limitation of practical public involvement. This rule (Principle 23) also talks of permitting "interested parties" to participate in decision-making, but is vague on the 'interests'. The principle is vague as to what mechanisms the State anticipates involving stakeholders that are unable to participate. Anderson (2005) noted that there are no clear mechanisms of participation and feasible motions for a manner of incorporation of every stakeholder are not enacted. Consequently, obligations for the involvement of the public continue to be unclear.

The Catchment Management Agency is the institution responsible for implementing many provisions of the National Water Act. The National Water Act, (Section 80(e)) stipulates that the domain of a Catchment Management Agency seeks "to promote community participation in the protection, use, development, conservation, management and control of the water resource". The National Water Act, (Section 80(e)) states that the administering panel of the Catchment Management Agency should be chosen "with the object of achieving a balance among the interests of water users, potential water users, local and provincial government and environmental interest groups". Other representatives can be selected so as to "achieve representation of disadvantaged persons or communities which have been prejudiced by past racial and gender discrimination in relation to access to water…" (NWA, 2004). The Department of Water Affairs and Forestry (DWAF) (2001, p. 6) argued that some essential

[24] South African National Water Act (1998). https://www.dwa.gov.za>nw>act>NWA

parts were, "added to the principles by the guidelines of the national policy for the implementation of catchment management and, in these guidelines, the principle of local participation by stockholders has been stressed and representation and inclusion of all stakeholder interests, needs and values are considered as part of the catchment management process, particularly of marginalised communities such as women and the rural poor".

Movick (2014) posited that South Africa's Water Services Act of 1998 (WSA) extended basic services to the millions of people that lacked access during the Apartheid era. The WSA in section 3(b) gives everyone the right to access a minimum amount of water of twenty five litres every day or six thousand litres per family every month. According to Heleba (2011, p. 15), many households have access to clean water in South Africa. However, many households cannot afford enough water to cover their needs. Anderson (2005, p. 15) carried out field interviews on participation in Inkomati Catchment Management Agency (CMA). He found that the Inkomati Catchment Management Agency was set up following extensive stockholder engagement and public participation process on the structure and its functions. He also noted that disadvantaged communities have weak networks and therefore limited participation.

2.4.2 Tanzania

According to the 1974 Water Utilisation Act (amended in 1981), all water in the country is vested to the United Republic of Tanzania (see Kashaigili et al., 2003, p. 841). The Water Utilisation (Control and Regulation) Act No. 42 of 1974, provides for the regulatory and institutional framework for water resources. Overall, with regard to water resources management, the National Water Policy (NAWAPO) requires the creation of a "comprehensive framework for promoting the optimal, sustainable and equitable development and use of water resources for the benefit of all Tanzanians based on a clear set of guiding principles".[25] Its founding philosophies are "subsidiarity through decentralization, equity amongst diverse stakeholders, and participation of stakeholders in use and decision making and sustainability of the resources" (Doering, 2005, p. 35). These are "social principles, economic principles, environmental principles and sustainability". The social principles of the NAWAPO envision water as a fundamental human right and therefore priority must be given to provision of water supply and sanitation services. This document requires the government to invest in water services in areas with scarce ground water supply for both humans and domestic animals.

[25] Tanzania National Water Policy (2005). Retrieved from www.egov.go.tz>documents>WaterPolicy

NAWAPO states that the, "objective is to achieve sustainable development and delivery of rural water supply services". It calls for division of roles and duties of different stockholders. The Tanzania National Water Policy (2005, p. 6) established conditions for a sustainable rural water supply which include the distribution and administration of water schemes at village level, beneficiary administered water schemes, a conduit for maximum expense upturn, preservation as well as substitute including accelerating accessibility of standby parts for timely repairs, maintenance of water equipment and encouragement of private sector engagements. It also encourages protection of water sources areas and promoting the role of women as principle actors in the provision of rural water supply services.

The extent of community participation in Tanzania has shifted from users being passive service recipients to becoming active service managers. According to Mandara et al. (2013, p. 82), this is reflected in the naming of water service users through time. From the 1970s to the early 1990s, they were called beneficiaries, while from the early 2000s to date, they have been referred to as users, owners and managers of the rural water schemes (see Therkildsen, 1988; Maganga et al., 2002). As a condition of the decentralisation process, the current National Water Policy (NAWAPO) requires villagers to provide money or physical labour to the capital investment, to manage their water schemes, and to take responsibility for operation and maintenance. An evaluation of the Tanzania rural water supply by Therkildsen (1988) considered capacity building and clearly defined roles of the different actors as important to improving the sector's policies from the village to the national level. Local communities need suitable knowledge and skills to perform their roles and responsibilities, including operation and maintenance. However, the 2005 NAWAPO and 2008 National Water Sector Development Strategy (NWSDS) do not clearly describe the roles and responsibilities of the actors at the lowest levels and do not clearly indicate who will train the communities. Mandara et al. (2013, p. 82) argued that continuous capacity building of the management entities at the village level and users at the household level is rarely considered in the implementation of decentralised rural water supply in Tanzania, which threatens the sustainability of the whole system.

The Tanzania Water Resources Management Act states that at least half of all village water committees should be female.[26] However Huggins (2000, p. 8) argued that women's

[26] Tanzania Water Resources Management Act (2009). Retrieved from theredddesk.org>sites>default>files

involvement increases the demands on women's time without actually giving them a voice. To avoid this, women need to be in key positions. They tend to contribute more labour-time to water-related activities than men; they are more likely to press for improvements to water systems.

The discussions below are based on a review by Mandara et al. (2013, p. 86). According to the review, "few attempts were made to develop rural water supply legislation following the Water Utilisation (Control and Regulation) Act, 1974". This Water Utilisation Act, gave the Minister power to generate statutory instruments specifying whatever affect the Act. The Water Minister used the authority to provide for the establishment, purpose and management of the Water Point Committees. Under these regulations, the functions of the water user associations are to govern conservation and maintenance of works in rivers. The Local Government (District Authorities) Act, 1982, brought about some progress in the regulation of rural water supply. Mandara et al. (2013, p.86) further stated that, "under the Act, all waterworks that were previously owned by the Government and institutions were vested with the District Councils and rural water supply operations and management became vested under the District Council Authorities".

Lein and Tagseth (2009, p. 155) posited that District Councils a responsibility to do certain duties under the "First Schedule to the Act". The District Councils were given power to, "provide, establish, maintain and control public water supplies and foist water rates, regulate the sinking of wells, the construction and use of furrows and preventing the pollution of water in any river, stream water course, or well". This empowerment of local level water institutions ensured effective administration of boreholes, wells, rivers and dams because local authorities are nearer to the communities and have a quicker response rate.

Kashaigili et al. (2003, p. 841) pointed out that in order to ensure that communities become legal owners of water supply schemes, there needs to be legal registration of water entities and ownership of water supply schemes including water wells needs to be given to the communities. The national water policy set a target of providing clean and safe water for domestic use to all people within a distance of 400m by the year 2010 (see Madulu, 2003, p. 914). This target is to be achieved through the use of simple technology in developing new sources and improving old ones, encouraging people's participation, rehabilitating water schemes, and by introducing adequate and selected water charges. Although notable attempts

have been made at different levels, the target is yet to be achieved. Failure to achieve this target can be linked to poverty, both at the national and local levels.

2.4.3 Malawi

Gutierrez (2002) carried out a study on the Poverty Reduction Strategy Paper (PRSP) in Malawi. Through documentary analysis, it was found that the role of water in poverty reduction is recognised in Malawi Poverty Reduction Paper (MPRSP). But this role is not defined and not fully understood – a fundamental conceptual problem that leads to a lack of prioritisation as well as difficulties in making specific policy choices within the strategy. Recognition came as an afterthought. Interviews carried out revealed a variance between authorised provision and actual spending. Less than a fourth of projects and budget items passed by the Malawian Parliament are implemented. There is also lack of accountability in decision making at the central level. A review of literature by Mulwafu and Msosa (2005, p. 963) revealed that in the MPRSP, water is viewed from the supply side and it is part of the pillar that seeks to promote sustainable pro-poor economic growth. The goal is to increase poor people's access to good drinking water and sanitation through infrastructural development.

According to Mulwafu et al. (2003, p. 788), "the Malawi Water Resources Act (1999), as amended, was the legal instrument for the regulation of water resources management. This Act made provision for the control, conservation, apportionment and use of the water resources of Malawi". It consisted of six parts which deal with "ownership of water resources which rests with the State President; recording of water rights that existed before the Act; granting of water rights; … diminution of water rights, pollution of public water" It also provided for, "miscellaneous powers to declare controlled areas; and schedules for the establishment, composition and modus operandi of the Water Resources Board which assisted the Minister responsible for water resources in the implementation of the Act and administration of water resources". This Act was criticised for its inadequacies, chiefly its lack of provisions on clear penalties, human right to water, conservation and allocation of water, lack of stockholder involvement and silence on new international accords. A new Act which addressed these insufficiencies was prepared.

Malawi's vision in the water sector is clearly stated as the provision of ''water and sanitation for all, always'' (see Mulwafu and Msosa, 2005, p. 964). GOM (2004) in its water policy

posited that "It is generally acknowledged that water has the potential value of catalysing the socio-economic development of the country. In order to realise that vision it is necessary to ensure that every Malawian has access to water and sanitation services".[27] The principal target of government policy is to provide clean potable water to all people so as to reduce the incidence of waterborne diseases. For all rural communities, the target is to provide clean but untreated borehole water supplied at a maximum distance of 500 metres. Fergusson and Mulwafu (2005, p. 10) contended that this vision of the water sector is founded on the central policy of poverty alleviation and economic growth and prosperity. "This vision is a situation where every Malawian individual and entrepreneur has equitable access to water for his/her social and economic welfare and the advancement of the country's sustainable growth and prosperity" (GOM, WRMPS, 2000, section 5.1).

Water use in the country includes: reservoirs and dams for agricultural use, large scale irrigated rice schemes, estate farm irrigation, dams for drinking water, urban water supply, hydroelectric power and domestic use system (Mulwafu & Msosa, 2005, p. 964). However, intensification of these activities is likely to increase demand for water which would in turn affect the quantity and quality of water. The 1999 policy proposed the creation of Catchment Management Authorities (CMAs) which were to integrate water users and other stakeholders. However, the CMAs have not been established yet partly because of the lack of resources and the absence of the necessary enabling legislation. However, once they are established, they would provide a useful and practical opportunity for implementing IWRM. The government created the National Water Resources Authority which will work as an autonomous body responsible for controlling, monitoring and managing the water resources of the country and coordinating all water related activities at the national level (GOM, 2003).

The 2005 National Water Policy makes explicit mention of Integrated Water Resources Management (IWRM). Together with CBM (Community Based Management), IWRM is recognised as an important mechanism for the efficient and effective conservation and management of water resources in the country. In rural areas, enhanced community participation and empowerment, called for in the policy, requires rural people, NGOs and other organisations to progressively assume costs of installation, maintenance and repair of boreholes and gravity-fed piped water systems as government redefines its responsibilities and withdraws

[27] Malawi National Water Policy (2005). Retrieved from www.300in6.org>uploads>2014/07

from these roles (see Fergusson & Mulwafu, 2001, p. 13). According to the Government of Malawi (GOM) (2005) policy document, the water policy seeks to empower the community or beneficiaries to own, operate, maintain and manage their own water facilities and services, with the involvement of the public and private sectors, NGOs and donors as well as galvanise the community to invest in water resources development and management schemes.

There are problems in regards to the actual fulfillment of water policy instruments on the ground. Mulwafu and Msosa (2005 p. 964), summarise several challenges to water management which may affect the successful implementation of Malawi's National Water Policy. These include shortage of funds streaming into the Ministry of Water Development, political influence on the allocation of water points and a growing habit within the villages that the state will solve their water struggles. There is lack of proprietorship of water amenities and this has an adverse effect, on the durable sustainability of the water points and this is compounded by insufficient human resource capacity in the government at all levels. Finally, the diverse group of actors in the water segment often has conflicting regulations and directives.

Ferguson and Mulwafu (2001, p. 12) argued that the partition of rights and responsibilities in water between the State and the user is somewhere on a continuum bounded at one extreme by total state control and at the other, by total community control. Between the two extremes lie various options for co-management in which both rights and responsibilities are shared by the state and the users. The policy, with its broadened focus on water in economic production and environmental conservation, is silent on issues related to gender equity and representation.

2.4.4 Namibia

The Namibia Water Supply and Sanitation Sector policies aim at combining efforts of the government and beneficiaries to improve water and sanitation services through participation of the community (Republic of Namibia, 2009). Falk et al. (2009) argued that in 1997, the government decided to gradually devolve the responsibility of managing and paying for water services to community organisations. The Water Management Act established the Water Point User Associations (see Republic of Namibia, 2004).[28] These are composed of community members who permanently use a particular water point. The WPAs have the right and duty to operate and maintain their water points in order to foster a sense of ownership. Falk et al. (2009) maintained that water reforms also aimed at capacity building in issues related to

[28] Namibia Water Resource Management Act (2004). Retrieved from www./ac.org.na>laws

infrastructure operation and maintenance as well as water conservation. With regard to communal farmers, the Water Act proposed that they should be responsible on an individual or communal basis for their own water and sanitation facilities. They should own and operate their own installations (Werner, 2007, p. 15). In 1997, approval was given to introduce community based management of rural water supplies.

The Namibia Water Supply and Sanitation Sector policies aim at combining efforts of the government and beneficiaries to improve the water and sanitation services through community involvement and participation of the community (Republic of Namibia in Falk, Bock & Kirk, 2009). Extension officers from the Ministry of Agriculture, Water & Forestry (MAWF) and/or NGOs contracted by the government were responsible for overseeing the early phases of transition in water management. During this phase, both organisational and the institutional arrangements were negotiated. At the organisational level, two bodies were established. The Water Point Association (WPA) includes all adult individuals who live in a place and want to use the public water point (Schnegg & Linke, 2015 in Schnegg & Bollig, 2016, p. 66). In terms of administration, the WPA is established to ensure the sustainable management and utilisation of the water point, the fair distribution of water to members, and the recovery of costs of operating and maintaining the water point from members and other users. In 1997, the government decided to gradually devolve the responsibility of managing and paying for water services to community organisations. The Water Management Act established the Water Point User Associations (WPA) (Republic of Namibia, 2004). They are composed of community members who permanently use a particular water point. The WPAs have the right and duty to operate and maintain their water points in order to foster a sense of ownership (Falk et al., 2009). The Water Act does not confer any rights to WPCs to exercise control over open water in pans during and after rainy seasons. These open water points are important for livestock owners for as long as they last, usually until from about August-September in the north-central regions. Werner (2007, p. 17) argued that open access to these water points may limit the powers of WPCs to plan and control the use of communal land that falls within the 'jurisdiction' of a Water Point Committee.

Water reforms also aim at capacity building of issues related to infrastructure operation and maintenance as well as water conservation. The day to day management of a water point – maintenance, control of access, and payment is being carried out by Water Point Committees. Werner (2007, p. 17) reiterated that these consist of five or more members which are elected by the Water Point User Association. Schnegg and Bollig (2016, p. 66) emphasised that

membership in the group gives usage rights, but at the same time this does not imply that outsiders have no access at all. They may apply for temporary use rights with the Water Point Committees. The differentiation between people inside and outside is crucial, especially when examining the contributions to be made for the maintenance of the water point. Falk et al. (2009, p. 123) maintained that

> *The contributions are an essential and often the most debated and conflict-laden part of the entire water-point arrangement and communities found different solutions for how to deal with them. Users are required to pay the diesel for pumping the groundwater and to cover the maintenance costs involved. In the end, these costs determine the price of water for the household.*

Recent assessments by Werner (2007, p. 18) in the north-central regions suggested that communities are generally satisfied with the operations of their Water Point Committees. As members of the Committees are elected, Water Point Committees were broadly representative of the communities they served. In some instances, Water Point Committees lacked sufficient skills and capacities to manage their affairs efficiently. However, interactions with Land Boards are non-existent, and traditional leaders do not play a role in Water Point Committees. Traditional leaders do not have any role to play in the management of water points, as ownership rests with Water User Associations.

In terms of dissemination of information and the provision of knowledge on water issues, the Namibian National Sanitation Strategy (2009, pp. 42-44) Sanitation Balanced Scorecard, Theme C on Community seeks to:

> *Develop general IEC [Information, Education and Communication] materials, including all media, e.g. pamphlets, posters, radio and TV programmes, booklets and manuals (technology and health); Translate IEC materials in[to] local languages (considering illiterate communities); and develop participatory guidelines and IEC tools for rural and urban areas.*

2.6 Informal practices

Informal practices to water access are entrenched in informal establishments. Informal establishments gradually become part of their formal equivalents and some formal organisations take informal practices. Nhundu et al. (2015, p. 2) reiterated that informal

establishments are contemplated additions and local level versions of formal bodies and are not deliberately planned but change through natural exchanges. According to Strauch and Almedon (2011, p. 93), they are occasionally referred to as Traditional Resource Management (TRM), which is the real-world application of indigenous environmental understanding through traditions, routines and shared standards, leading to fair exploitation, circulation and management of water. Rurai (2007) argued that villagers grasp habitual rules finer than conventional government regulations, and are more agreeable to fulfil the former.

Walker (2006) urged planners to take into deliberation the home-grown 'social capital'. 'Social capital' refers to "structures of social administration, such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit" (Mohan & Stokke, 2010, p. 10). Connecting 'social capital' (collective interconnection within units based on traditions, place, mutual principles, strengthened by working together) can lessen conflicts at the most local echelon (see Ratner, 2013, p. 190). Linking 'social capital' through organisational relations or systems that cross communal alliances, involving harmonisation or partnership, social sustenance, or information distribution can reduce conflict amongst communities. Networking 'social capital' that is engaging bureaus such as poor groups and those in power can diminish social conflicts (see Pretty, 2003, in Ratner in 2013, p. 190). According to Walker (2006), such 'capital' is confined at the district or community level and thus clarifies diverse levels of success in reaction to the same macro-policy atmosphere. For Putnam, as cited by Mohan and Stokke (2010, p. 10), "social capital fosters reciprocity, facilitates information flows for mutual benefit and trust and, once it exists, tends to be self-generating as successive generations are socialised into the localised norms which create success". Pearce (1997), cited in Bond, (2014, p. 165), argued that for sustainable positive peace to be created and conserved, practices need to be put in position which promote and improve community capabilities to deal with the past, to connect with the present day, to influence the outlook in methods which do not leave others out in the cold, repress or split.

Edossa et al. (2005) documented the Gadaa traditional conflict management system among the Oromo of Ethiopia in relation to water provision. Using observations and interviews, they found that *haroo* (hand-dug shallow ponds) are administered by an assembly of the kin group. The societal interactions of the Boran community are grounded on *Nagaa Boran,* 'the peace of Boran'. Oromos defined 'peace' not as the non-existence of combat but as an accurate association of the locales with God. Associations amongst distinctive kinfolks, villages or any

other grouping are grounded on collaboration and reciprocal reverence. The study found there was a conflict between legislative and traditional institutions. Kebele administrators occasionally operate against the counsel of the elders, causing conflicts.

Chikozho and Latham (2005) carried out a case study on Shona customary law and water management in the Dande area of Zimbabwe. They defined informal practices as dictates passed by ancestral tradition, acknowledged and instructed from time immemorial and handed over by the forefathers. Informal practices adjust as the community acclimatises to fluctuating societal and party-political situations. Among the Shona, all legal processes was and is still directed towards compromise. Through observing workshops, Chikozho and Latham (2005) discovered that the Shona people have conviction in the capacity of traditional structure to resolve their water consumption and administration difficulties. However, there is no stipulation for customary regulation and tradition in the Zimbabwe Water Act. Therefore, local people resisted their marginalisation from formulation and operation of the Dande Irrigation Scheme. The Dande Irrigation Scheme included a fight between local Dande people and a state owned entity, the Agricultural and Rural Development Authority (ARDA), over schemes by the latter to form an irrigation system envisioned for Dande Valley. This was done without earlier discussion with the local people.

Historically, administration of water was a central part of the general customary laws and rules of each ancestral society. According to Huggins (2000) in Kenya and Tanzania, water sources were so extremely treasured they were considered sacrosanct. Some of these conducts are still functioning, while some have been disregarded or adjusted. Pooled water resources are good inducements for better intra and inter-community interactions. Water rules vary between different cultures. For example, according to Suarja and Thijssen (2003, p. 25) on the Indonesian island of Bali, community organisations known as the *subak* control the water irrigation system to guarantee consistent, fair and impartial delivery. The *subak* also provide social benefits including reinforcing the options of its members to maintain social contacts.

Indigenous institutions can provide useful instruments for the resolution of water access conflicts, though they may need legal backing to ensure enforceability. In Tanzania, Huggins (2000) observed that some village-level native systems have been so effective at dealing with community conflicts that the country courts have been shifted to a different area due to lack of necessity. When creating bodies, consideration must be paid to the opinions and clarifications

of rules at the local level. Mbonile (2005, p. 62) studied local rules used by the Chagga in Mount Kilimanjaro. According to the rules, fellow citizens could draw water for local use from clan troughs but only clan associates used it for irrigation. The desecration of regulations, for example, washing at the cradle of water used for domestic purposes was considered as a wrongdoing and the lawbreaker was punished, thrashed or hounded out from the community. These regulations ensured that there was no over-exploitation as water was carefully managed and it was an open resource. Thus, to resolve some of the conflicts related to water, it is important that these traditional methods of water conservation be revived and maintained.

In Zimbabwe, customary laws govern extraction of water from different sources. A survey by Katsi et al. (2007, p. 1160) revealed that in Mashonaland East Province, repeated visits to the boreholes with large vessels or tugging carts is prohibited. A repeated abstraction of water from boreholes is only authorised for large congregations such as funerals with approval from village powers that be. Village leaders (water point committees and village headmen) make sure that no one disobeys the water point rules. A case study by Twikirize and Manzungu (2005) of Sibasa dam found out that the 'neighbourhood police' keep an eye on people washing their clothes within 50 metres of the water source. The 'neighbourhood police' were vote for by the people and are volunteers (not paid any salary). In cases of conflict over water resources (though they are marginal), the village head, the headman or the chief will attempt to solve within the *dare* system. The *dare* system is a Shona traditional assembly designed to manage conflicts at the village to ward levels. People build their means of support around water and consequently create interactions of collaboration and mechanism to obtain and run water systems. Customary water controlling systems have been long in survival and are vital to rural people in terms of water control.

In efforts to understand the importance of informal rules on water access, Lam (2001) in Nhundu et al. (2015, p. 3), examined gender issues and women's participation in irrigated agriculture in Carchi, Ecuador, using a combination of qualitative and quantitative methods of analysis. The findings showed that women's participation in water user associations is low, and beliefs plays a strong role in terms of their decision-making power. Women tried to solve their irrigation related difficulties through informal ways where they had decision-making power. Conflict transformation measures are also beneficial in cases where open disputes over water occur. Interconnected parties such as elders, women or water specialists, have effectively introduced teamwork when conflicting parties could not meet. The women-led Wajir Peace

Initiative assisted reduce violent conflict among pastoralists in Kenya where access to water was one dispute in the conflict.

Malzbender et al. (2005) found that dwellers of the village of Tshikombani, a previous native country of Venda in South Africa, have mounted an autonomously bankrolled and controlled water allocation scheme that is supervised by the local customary leader. This system make certain a steady provision of water to the village. The reticulation method that has been built by the village dwellers is a system of hose pipes that redirects water from the highland stream into the village gardens and that bring in water to the homes. Because the stream runs above the village, water is moved by processes of gravity and no pump is needed. The creation and repairs of the system is sponsored by the residents themselves and funds were gathered from each family in Tshikombani by the traditional leader, if and where dwellers were both prepared and able to fund. The funds that were amassed were used to procure the raw supplies necessary to sustain the system in operational order. The traditional leader is the individual responsible for running and overseeing this water system. Decision-making around running issues that might arise or how the co-operative funds will be spent, is shared by the village members who have made monetary inputs to the water reticulation system.

Malzbender et al. (2005, p. 4) explained that most of the folks who have power to decide no longer live in the village but however continue to subsidise money-wise to the upkeep of the water scheme. The village head's power over water matters is wide-ranging and comprises conflict management in water concerns and the division, running and regulation of water assets in the village. When formal hierarchies to enforce rules governing relations of state and remote and agricultural communities are missing or inadequate, new institutions are required to bridge these gaps (Ratner et al. 2013, p. 192). In East Timor, when the government lacked the capacity to enforce its own environmental laws, communities resuscitated a traditional system of land management known as Tara Bandu that had been replaced by the forestry code during the Indonesian occupation (see Miyazawa, 2010, in Ratner, 2013, p. 192).

In Tshikombani, the role of the village elders is to settle disagreements amongst villagers and between villages. Malzbender et al., (2005, p. 5), argued that an example of inter-village conflict arose when a nearby village claimed parallel access to water from a shared stream and disputed that because the resource was shared, they also had to benefit from the water scheme. Occupants from Tshikombani rebuffed the assertion and their traditional leaders were unable

resolve the water dispute. Consequently, the case was transferred to the local magistrate's court, which was also powerless to reach a determination. In the non-existence of an 'official' political solution, customary elders had to use the traditional means of conflict management. Nevertheless, this scenario increases trepidations because, in the absence of solid traditional guidance and in the nonexistence of either the capability or the aspiration to resolve conflict over collective water, a disagreement of this nature could spiral into acrimony. Shared norms and ethics, the webs and interactions of people within a community, denoted to as the 'social capital' of a village, influence and bring up-to-date the way in which acute resources are consumed, operated, defended, sustained and spent.

Social and ecological data gathered by Strauch and Ameldon (2011, p. 97) in Tanzania revealed local environmental knowledge used by the *mwanamijie*, a local traditional elite. The *mwanamijie* are responsible for outlining the margins of the catchment forest crucial for the fortification of water resources as well as classifying particular areas that are sacred. The forest confines are branded based on the distance upstream from the village, the types of flora, and the slope of the adjoining catchment region. The *mwanamijie* also spend time actively preserving the forest by reforestation and trimming trees. Dead or dying tree branches and shoots are detached to prevent them from stockpiling on the forest floor. Seedlings are also uprooted along the river to boost continued existence and water preservation. Their grasp of hydrology is entrenched in their mystical and biotic familiarity of healthy forests. The *mwanamijie* conserve specific species that are esssential for sustaining water flows, for protecting stream banks, and for preserving the river shaded. The *mwanamijie* also teach younger age group the varieties that have important water retention potential for the forest, the species that may be exploited in traditional ceremonies or medicines, and the species that have revered or spiritual importance. Finally, the *mwanamijie* monitor water supply and water pollution. The primary sources of water pollution identified were soil erosion and animal waste. Water pollution was also known by the amount of plant debris deposited in the stream, the opacity (turbidity) of the water, and the presence of algal growth in the streambed.

Water access can also be regulated by religious traditions. Semi-structured interviews carried out by Mohamad et al. (2015, p. 134-135) in peninsular Malaysia revealed that in Hinduism, the Selangor River is regarded sacred and deified by Hindus who believe that by immersing in the river, they are rinsed of sin and freed from the karmic cycle of rebirth. Locally, religious admiration for the river is swayed by customs and traditions. Every year, devout Hindus of

Mukim Pasangan implement ritual purification using river water during the Thaipusam celebration. To show respect, some local populace believe that by asking approval from crocodiles or river spirits before go into the river, no harm will occur to them. As part of the *adab* (gesture of reverence and graciousness), they never catch river fish and giant prawns in excess and small fish or prawns are always released back into the water. This *adab* has ensured the population of the freshwater fish and prawns is sustained. Some villagers work as *pendayung* (rowers). They take the tourists in a *sampan* (a traditional wood paddling boat) to ensure that the river is not severely contaminated. The *pendayung* believe that quietly rowing a sampan in the dark night, instead of using boat engines and lights, will not disturb the fireflies.

2.7 Summary

This chapter has looked at literature on water uses in rural areas, in relation to positive peace. Water uses were found to be aligned to their sources in rural areas. The chapter has explored the nature of conflicts related to water. Literature revealed that water can be a source of conflict but can also lead to co-operation. Positive peace indicators, related to water provision were reviewed. These three indicators i.e. stockholder participation, human rights to water, development and sustenance, as well as protection of the environment, were explored in depth. The water policies of a few SADC countries were reviewed in relation to access and peace indicators. Literature on informal practices revealed that rural people often understand local rules more easily than central government laws. Overall, water policies are important for removing structural injustices that come with lack of access to water and pollution of the environment. Numerous case studies have pointed out that co-operation from the international level to the local level in efforts towards ensuring access to water for its varied uses has the potential to lead to development, which is a condition for achieving peaceful societies.

Chapter Three
Methodology and Theory

3.0 Introduction

This research aimed to understand the nature of water policies in Zimbabwe and their effects on positive peace amongst the rural population. Due to perceived weaknesses of qualitative data, the research used a Sequential Exploratory Mixed Method Model. It concentrated on a village level population and technocrats from the District Council. The research that forms the basis of this study spans twenty months over a two-year period (February 2015 – September 2016) and draws on original empirical fieldwork and analysis of secondary data.

3.1 Research methodology and methods

Hart (1998, p. 28) defined methodology as a, "system of methods and rules that facilitate the collection and analysis of data. It involves making choices from various approaches in order to determine which to use in analysing a given topic". Brewer (2000, p. 2) noted that methods are technical rules which lay down the procedures for how reliable and objective knowledge can be obtained. As procedural rules, they tell people what to do and what not to do if they want the knowledge to be reliable and objective. Mouton (1996, p. 107) defined research design as guiding principles and directives that has to be observed in focusing on the research phenomenon.

This study employed qualitative research to answer research questions on implementation of formal policies to water access, informal practices used by community members and the relative influence of formal and informal access to water on development and on peace indicators. Babbie and Mouton, (2006, p. 70) argued that, "qualitative research seeks to understand a given research problem or topic from the perspectives of the local population on which it focuses". The researcher chose to focus on a specific local population, that is, Village One residents, the Rural District Council and councillor officials to get answers to the research questions. A qualitative research produces 'non-numerical' data; it concentrates on collecting largely oral data rather than quantities. The collected data is dissected in an informative, idiosyncratic, generalised or analytical fashion.

Denscombe (2003, p. 105) contended that, "qualitative research is important in that it emphasises respect for human beings as people and not merely as objects of study". Creswell (2009, pp. 175-176) summarised some key characteristics of qualitative research. Qualitative research is done by analysing documents, observations, and interviews. This gives rise to multiple data forms, which is used to develop themes. This research focused mainly on participant observations and verbal data, through semi-structured interviews and then analysis of the data collected in an interpretative and diagnostic manner. Throughout the process, there are emergent issues, that is some phases, questions and data forms of data may change due circumstances on the ground. Qualitative research is mostly based on the use of theory to view a phenomenon. This research is based on the use of a theoretical lens to probe water access policies and positive peace. Lastly, a complex picture of the problem under study is developed, thus multiple factors of a situation are reported, and visual models of processes central to the phenomenon are sketched.

Van Griensven, Moore and Hall (2014, p. 369) argued that qualitative research, "has the ability to provide documentary information that can describe how people are experiencing a given research issue, that is qualitative research provides information about the human side of an issue, even the misinterpreted actions of an individual". This is fundamental in this study given that the research topic deals with human behaviour and lived experience; therefore, the qualitative method is the most appropriate. To complement the qualitative research design, the mixed method research design was used.

The mixed method research design was used to answer research question on participants' understanding of positive peace in the context of access to water. A sequential exploratory design was used as shown in Figure 3.1 below.

Figure 3.1: Sequential exploratory design (Source: Creswell, 2009)

Capitalisation of QUAL means priority was given to qualitative data, analysis and interpretation in this study. 'QAUL' and 'quan' stand for qualitative and quantitative respectively. According to Creswell (2009, p. 200), a QAUL/quan notation indicates that quantitative methods are embedded within a qualitative design. The purpose was to use quantitative data and findings to assist in the interpretation of qualitative findings. Morse (1991), cited by Creswell (2009, p. 211), argued that the purpose of selecting this approach was to determine the distribution of a phenomenon within a chosen population. A three-phased approach led the researcher to first gather qualitative data and analyse it (Phase 1), and using the analysis of the responses, develop a questionnaire (Phase 2) and subsequently administer this to a small sample of population (Phase 3). High priority was given to the first phase, of qualitative data analysis, as this developed an insight into the perceptions of the respondents and particular observations related to peace and access to water. However, to further generalise the views, a quantitative phase involving a larger number of people was carried out.

Van Griensven et al. (2014, p. 368) claimed that, compared with single method approaches, mixed method research is viewed as providing a more complete and deeper understanding of the subject under investigation and as having greater scope. Creswell (2003, p. 178) viewed the sequential exploratory strategy as easy to implement and the reports generated from the model are straightforward. Teddlie and Tashakkori (2009, p. 730) stressed that, in order to realise the full potential of this approach, the strengths of the qualitative and quantitative strands of the study should overlap, while their weaknesses should offset each other. Thus, in in this research, the qualitative element provided meaning, context and depth, while the quantitative strand provided statistical power and generalisability.

3.2 Sample size and sampling technique

The research used convenience and stratified purposive sampling. Convenience sampling is used when a researcher chooses a sample group that is easily accessible. The research used convenience sampling to conduct the study in Village One, ward 11 of Mhondoro-Ngezi District, in Mashonaland West Province. Village one was chosen because it is situated alongside the highway to ZIMPLATS mine and is therefore easily accessible. Only one village was considered because of financial constraints.

Stratified purposive sampling was used to select 20 Village One residents (10 men and 10 women) to achieve a measure of gender balance and to ensure responses reflected the broader spectrum of society. Patton & Cochran, (2002), argued that, "purposive sampling is also referred to as non-probability sampling which allows for the selection of participants whose qualities or experiences permit a proper understanding of the issue at hand". This research was directed towards a certain unit, making purposive sampling applicable. Purposive sampling was used to interview key informants that is four Rural Development Council (RDC) officials who operated in Ward 11 where Village One is situated. These officials were important because they were responsible for implementing formal water policies at ward and village level and had intimate knowledge of the area. The local councillor, as a local leader was also interviewed as a key informant. A small sample was used in this study because the researcher needed to spend time in the research area observing the day-to-day water related activities. The researcher spent quality time with each research participant in multiple visits in order to develop familiarity and a good rapport. This would have only been possible within the time frame of this study, if the number of participants was low, in order to gather rich and highly relevant data from the participants.

Convenience sampling was also used to administer the questionnaire to Village One residents. In terms of selecting individual participants, Babbie (1990), cited by Creswell (2009, p. 148), noted that in convenience sampling, respondents are chosen based on their convenience and availability. With randomisation, a representative sample from a population provides the ability to generalise to a population. The total adult population of Village One is 203, according to the village chairperson's register. Of the adult population of 203, 51 answered the questionnaires representing a sample of 25.12% of the total village adult population. As shown in Table 3.1 that follows, males constituted 58.8% and females 41.2% of the total respondents. According to Table 3.2 on the level of education, 9.8% of the respondents reached grade 7 or below, 9.8% reached the Zimbabwe Junior Certificate Level (ZJC), 47.1% attained the Ordinary Level, 15.7% attained Advanced Level, 5.9% had National Certificates, 7.8% had diplomas and 3.9% had degrees.

Table 3.1: Subject biographic data (males and females)

Gender					
		Frequency	%	Valid %	Cumulative %
Valid	Male	30	58.8	58.8	58.8
	Female	21	41.2	41.2	100.0
	Total	51	100.0	100.0	

N = 51

Table 3.2: Subject biographic data (level of education)

		Frequency	%	Valid %	Cumulative %
Valid	Grade 7 and below	5	9.8	9.8	9.8
	ZJC	5	9.8	9.8	19.6
	Ordinary Level	24	47.1	47.1	66.7
	Advanced Level	8	15.7	15.7	82.4
	National Certificate	3	5.9	5.9	88.2
	Diploma	4	7.8	7.8	96.1
	Degree	2	3.9	3.9	100.0
	Total	51	100.0	100.0	

N = 51

3.3 Data collection

Primary and secondary sources of data collection were employed. Primary data was collected through participant observations, key informant interviews and semi-structured interviews. This data was complemented by administering of a questionnaire to a small sample of people. Secondary data was collected by exploring published documents on the Zimbabwe water sector.

Neiuwenhuis, in Maree (2010, p. 76), pointed out that participant observation occurs when the researcher spends time living in a community observing and doing in-depth interviews, reading and researching primary source material and observing the lives of the people he or she wishes to study. Participant observations were done with the community aware of the researcher's role. The researcher looked for patterns of behaviour in the community to understand the

assumptions, values and beliefs of the participants – but remained uninvolved and did not influence the dynamics of the setting. The researcher participated in the lives of the people under study while also maintaining a professional distance. A form of participant observation adapted to water access was to take an "environmental walk" in the community "to get a general feel for conditions" by visiting water sources, such as boreholes, streams and pools. During these walks, the researcher had the opportunity to ask informal questions about water supply. There are several advantages, adapted from Creswell (2009, p. 179), that can be drawn from participant observation in relation to this study. The researcher has first-hand experience, information is recorded as it occurs and hidden aspects are noticed during observation.

Through participant observation, the researcher was able to gather background information on the village and study and collect information on the current water supply situation and practices. A digital camera was used to take pictures of physical objects observed.

Face-to-face in-depth interviews were carried out with key informants. An open-ended interview guide, organised around themes pertinent to water policies was used (see Appendix Six). Key informants were interviewed about the most effective methods to engage and impact key stakeholder groups in policy implementation, as well as construction and maintenance of water reservoirs. The councillor and 4 RDC employees were the key informants. A key informant interview is one where an individual with prior knowledge of the community is questioned to gather key information on community needs. The crucial element of a key informant interview is that the informant is well versed in information about his/her community, or field work. According to ACAPS (2011, p. 12), a key informant is a local leader whether from civil society or government.

This study used semi-structured interviews. Neiuwenhuis (2010, p. 87) defined an interview as a reciprocal conversation, whereby the interviewer asks the participant questions to collect data and to learn about the ideas, beliefs, views, and opinions of the participant. Semi-structured interviews are based on the use of an interview guide, a written list of questions and topics that need to be covered in a particular order. According to Bernard (2002, p. 50), semi-structured interviewing is best in situations where there is only one chance to interview someone. Angrosino (2007) noted that interviewing is the process of directing a conversation to collect information. According to Creswell (2009, p. 179), interviews have an advantage as participants are able to give historical information, and the researcher has control over the line

of questioning. Their major weakness is that information is filtered through the views of interviewees, researcher presence can lead to information bias and other participants may not always be helpful in articulating issues. However, the weaknesses above were countered by using multiple data collection techniques. The researcher also strengthened the advantages by keeping the participants focused on the research issues and probing for more relevant information.

The interview guides used in this study were structured in both English and Shona, to enable those who were not familiar with the former to get a clearer understanding of the questions. If a participant was not fluent in English, the researcher used Shona to continue discussions. Interviews were recorded electronically with the permission of research participants. The researcher transcribed the recorded interviews on the day they were held. The researcher also kept a notepad of written notes. These records were kept where no one except the researcher could access them. The transcriptions, observations, and field notes served as guides for topics to be discussed on the following sessions and context information for data analysis.

Mogalakwe (2006, p. 2) defined a document as "an artefact which has as its central feature an inscribed text". Documents are produced by individuals or group of individuals to meet their everyday needs and for practical purposes. This study concentrated on secondary documents such as public and private documents to corroborate the evidence from other sources. Public documents (Government publications) which were scrutinized include Acts of Parliament, policy statements, census reports, and statistical bulletins, reports of commissions of inquiry, ministerial or departmental annual reports, and consultancy reports. Private documents used included reports from the civil society organisations such as non-governmental organisations, private sector business, trade unions, newspaper coverage, books and journals. Creswell (2009, p. 180) argued that documents are a convenient and unobtrusive way to get information. The authors of the documents put critical thoughts into compiling them. The documentary collection of data saved the researcher time and expenses in transcribing. However, certain documents are not readily available to the public, and are therefore not easy to get. For instance, the researcher had difficulty in accessing the Zimbabwe National Water Policy, which is not available online, and the Rural Wash Information Management System (RWIMS) database, which is password protected. The researcher eventually obtained a hardcopy of the National Water Policy after a visit to the headquarters of the Ministry of Environment, Water and Climate. An application was made to the Government of Zimbabwe, through the National

Action Committee (NAC) for permission to access the RWIMS database. The permission was later granted. Cameron (2009, p. 141) pointed out that some documents may not be authentic or accurate. This assertion was particularly useful in documents related to Zimbabwe, when some supposedly statistical documents did not use rigorous scientific methodologies or were written to address potential sponsors (see Chapter Four).

A questionnaire with close-ended questions was used to establish the understanding of positive peace among community members in Village One, Ward 11. The questionnaire (see Appendix Seven) was modified to suit level of education relevant to Village One, Ward 11. Copies of the questionnaire were translated to Shona because most rural community members have average academic education and therefore find the vernacular language easier to read. The quantitative nature of the study sample was moderately big; hence it was made practical by distributing a questionnaire to a large number of respondents in a short space of time with little or no supervision of respondents who completed them.

3.4 Data Analysis

Data from documentary sources was analysed through content analysis. This included texts from newspaper articles, policy statements, 2012 census report, parliamentary reports, Acts of Parliament, public speeches and civil society reports. Deductive content analysis was used to analyse these texts. Deductive content analysis is used when the structure of analysis is operationalised on theory testing (see Kyngas & Vanhanen in Elo & Kyngas, 2007, p. 109). The researcher developed a categorisation matrix and coded data according to categories. After developing a categorisation matrix, the researcher reviewed all the data for content and coded according to identified categories.

Data from interviews and observations was scrutinised employing thematic analysis (Mogalakwe, 2006). According to Neiuwenhuis (2010, p. 103) "thematic analysis allows a researcher with qualitative method and design to develop themes and a code, use a check on consistency of judgment". In this research, it was essential to decode the data given by participants and appraisals into themes and to pursue forms of connotations. Since the materials collected were in the form of written words, those words were grouped into meaningful categories or descriptive labels, then organised to compare, contrast and identify patterns. First-level coding is done to reduce the data to a manageable size (see Patton, 2002 p. 453). Before

beginning the coding process, the researcher formulated basic domains that categorised a broad range of phenomena, for example, setting, types of activities, events, relationships and social structure, general perspectives, strategies, process, meanings and repeated phrases.

A manual process of coding was employed in the field; 25 copies of informed consent forms were made, with a different letters from A to Y on each one. Once a respondent agreed to participate, s/he signed an informed consent form (see Appendices Four and Five). Included with the alphabet letter was information regarding whether the interview had been recorded or whether the researcher had taken notes. After each interview, the researcher listened to the recorded interviews or read through the notes, and subsequently transcribed the interview. During the course of the interviews, each respondent answered the same questions differently. During the process of data analysis, the researcher interpreted the (accurately transcribed) answers provided by respondents.

After the initial phase where the researcher obtained themes and specific statements from participants from interviews, these statements were used as specific items and the categories for scales to create a survey instrument (questionnaire) that is grounded in the views of the participants. This was done to respond to the research question on the participants' understanding of positive peace in the context of access to water. The purpose of quantitative data analysis in this study was to provide an overview of key sample observations. Quantitative data from this study was captured on computer and analysed with the aid of the statistical analysis system, the Statistical Package for Social Scientists (SPSS) version 19. The researcher drew inferences from the data.

3.5 Theoretical framework

This study investigates water policies and their effects on positive peace in rural areas of Zimbabwe. The study seeks to understand how the formulation, ratification and implementation of water instruments contribute to an achievement of positive peace in rural societies. In addition, it explores how the use of water as a common property resource is regulated by rural customary rules, and how these rules interact with formal instruments to bring about a 'positive peace of access of water'. In addition, it also looks at conflictual relationships, emanating from access to water, and the clash of traditional and so called modern forms of water access and how these relations are transformed by water policies to ensure collaboration in water management. In doing so, this study examines the analytical usefulness

of three theories. These are: theory of positive and negative peace, common property resource management theory and conflict transformation theory. In all instances, the researcher situated these theories in relation to the key research questions. This provided a basis to understand the findings of the research which are recorded later in this dissertation.

3.5.1 Theory of Positive and Negative Peace

Developed by Galtung in 1969, the Theory of Positive and Negative Peace states that peace is about the structural organisations of people who voluntarily choose to pursue co-operation for the benefit of mankind (see Sandy & Perkins, 2000). Thus, in the management and sharing of water resources, people may co-operate to ensure maximum benefits accrue to every user. For Groten and Jurgen (1981), positive peace is meeting people's basic needs or providing the minimum for subsistence. Thus, policies for water access should be tailored to ensure every community member in the community receives water for basic use. Positive peace involves the search of positive conditions which can resolve the underlying roots of conflict which produce violence. Lack of access to water leads to conflict in most instances (see Chapter Two, section 2.2).

Gerwin (1991, p. 77) defined positive peace as a condition of society in which relationships between individuals and social groups are conducted on the basis of honesty and consent, and there is a known disposition for all parties to continue such practices. Individuals are free to do, be or become what they desire unless this infringes upon the ability of any others to do the same (Young, 2010, p. 6). From the discussion above, it is clear that positive peace entails people having the right to access water. However in doing so, the right to access water should not discriminate against some individuals in society. The deeper right would be the human right to water enshrined and enacted within national constitutions.

There are two types of peace i.e. positive peace and negative peace. It is not enough to talk about positive peace without negative peace. In the same way, there is structural violence and direct violence. According to Galtung (1990, p. 290), direct violence insults human needs with the deliberate intention to hurt and harm; structural violence does so more indirectly. Thus, with water, direct violence involves a physical contestation for water sources or physical violence among groups competing for a water reservoir. Direct violence constitutes the tip of an iceberg, with the vast majority of the formation (structural and cultural violence) hidden

below the water's surface as shown in the Figure 3.2 below. Thus direct violence is a more visible form of conflict over water, whilst structural violence, is hidden in water instruments and is legitimised by cultural violence, which are buzzwords to justify water deprivation.

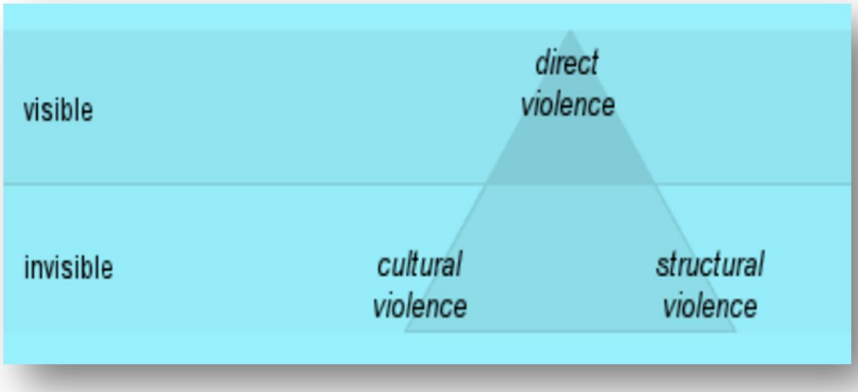

Figure 3.2: Violence (Source: HEKS, 2012)

Structural violence occurs when people are deprived of their potential by the structure of society (see Groten & Jurgen, 1981; Galtung, 1981; Anderson, 1985; Varobej, 2008; Isakovic, 2001). Naidu (1986) posited that structural violence is legalised human suffering without direct and overt use of violence. Structural violence is a hidden form of violence: "it is for this reason that research into peace needs a violence typology in a similar way that the field of medicine needs pathology as a precondition of its work" (Galtung, 1981, p. 3). Structural violence is exploitation and injustice, much of which is institutionalized and also culturally and psychologically internalised. Considering these arguments, it can be deduced that policies and legal instruments can be used to deny a certain group of people access to water for productive uses. As shown in Chapter One, the Zimbabwe Water Act of 1976 was a legal instrument used to give priority to water for irrigation to colonial settlers at the expense of the native Zimbabweans. Thus, the capacities of the blacks to produce food through agriculture was severely inhibited.

Galtung (1981, p. 3) argued that:

> *In order to be able to discuss the structural violence category, we need to have some idea about a structure of violence as well as a vocabulary in order to identify the individual aspects of the violence structure and to determine how its individual aspects relate to the need categories. As far as I am concerned, exploitation represents the main part of an archetypical violence structure. This means nothing*

more than a situation in which some people, namely the top dogs, draw substantially more profit from the interaction taking place within this structure ... than the others, the underdogs ...”

Human life can be destroyed through starvation, lack of health care, human generated environmental pollutions and ecological disasters (Exploitation A) (see Table 3.3 below). Similarly, when people suffer from preventable diseases, a kind of violence is occurring, even if no bullets are shot or no clubs are wielded (Exploitation B). The ‘underdogs’ live in a permanent involuntary state of poverty, which usually encompasses malnutrition and illness (Muller, 1993 p. 4). All this happens within complex structures and at the end of long and ramified legislation chains and cycles. The ‘top dogs’ in the above argument refers to the powerful elites represented by politicians, commercial farmers and multi-national companies, who use large quantities of water, in most scenarios overusing the water and paying very little. These ‘top dogs’ have a huge influence on water policies and legislation, due to their big budgets. The ‘underdogs’ are the rural residents, living mostly through subsistence agriculture and are ‘consulted’ only occasionally by the elites using sophisticated legal language to secure their ‘buy-in’. They are usually affected by pollution through discharges into rivers and water for commercial purposes is deliberately more expensive to them. They are therefore under structural violence as they are kept in chronic poverty.

Table 3.3: Violence typology according to Galtung (Source: Galtung, 1990)

Violence typology according to Galtung	**Need groups**			
Survival (negation: death)	Well-being (negation: poverty, illness)	Identity / purpose (negation: alienation)	Freedom (negation: oppression)	
Direct violence	Killing	Injury, siege, sanctions, poverty	De-socialisation, re-socialisation, underclass	Repression, imprisonment, expulsion, deportation
Structural violence	Exploitation A	Exploitation B	Penetration, Segmentation	Marginalisation, fragmentation

Isakovic (2001, p. 39) drew attention to the fact that people die or suffer serious harm unnecessarily as a consequence of distribution of water resources rather than overall scarcity. A society commits violence against its members when it forcibly stunts their development and undermines their well-being through lack of access to water, whether because of religion, ethnicity, gender, age, sexual preference, or some other social reason. Structural violence can include impoverishment, deprivation, humiliation, political repression, lack of human rights, and the denial of self-determination.

Galtung (1990, p. 291) argued that exploitation is strengthened by components contained within the structure of society. These components are: penetration, segmentation, marginalisation and fragmentation (see Table 3.3). Their function is to prevent awareness and mobilisation of this awareness, which are two of the conditions needed to be successful in fighting exploitation. By penetration, elements of the 'top dogs' reach the consciousness of the 'underdogs'; this penetration is linked to segmentation, which only allows the underdog a limited view of reality. Thus, rural people are deliberately given little to information about their potential rights to access water. This results in two processes, marginalisation and fragmentation. This involves forcing the 'underdogs' increasingly to the edge of society, condemning them as insignificant, dividing them and keeping them away from each other (divide and rule) (Galtung, 1981, p. 5). The argument points to a society where the opinions of water users are rarely given attention and their needs are subordinate to the whims of the elites.

According to Haessly (2011, p. 8), structural violence takes place at macro and micro-levels. At the macro-level organised, structural violence includes the establishment of state-sponsored social, political and economic systems, structures, policies and practices within a country that results in an inequitable distribution of water resources. Such policies lead to increases in poverty, hunger, a lack of health and environmental pollution. This is relevant to this study, as formal policies for water formulated at the macro-level have an influence on how people access and use water resources for various purposes. Structural violence at the micro-level manifests through discriminatory practices that result in unequal life chances. Examples are group acts that limit access to necessities of life, thus threatening or shortening the lifespan of individuals. There are cultural expectations that lessen freedom of choice that oppresses or repress others – lessening the quality of life for both individuals and groups. This research is rooted in informal practices to water in a rural community, making it imperative to explore how group rules (customary law) have an effect upon individuals' access to water resources.

Structural violence can also be against nature. Activities may not be intended to destroy nature but nevertheless do so, for example, the pollution and depletion associated with modern industry, leading to dying forests, ozone holes, global warming, and so on (Galtung, 1990, p. 293). Structural violence is a serious form of social oppression, which can also be identified with respect to treatment of the natural environment.

Galtung (1990, p. 292) stressed that cultural violence is understood as those aspects of moral culture that are referred to in order to justify or legitimise the application of direct or structural violence. "Cultural violence makes direct and structural violence look, even feel, right - or at least not wrong" (p 292). Parts of the Indian caste system or patriarchal societies can be given as examples for this (see HEKS, 2012, p. 9). Cultural violence works by changing the moral colour of an act from wrong to right or at least to acceptable; it makes reality opaque, so that we do not see the violent act or fact, or at least not as violent (Galtung, 1990, p. 292). Bashiriyeh, (2010, p. 137) contended that "the culture preaches, teaches, admonishes, eggs on, and dulls us into seeing exploitation and/or repression as normal and natural, or into not seeing them (particularly not exploitation) at all". Thus, words such as 'development' can be a form of cultural violence used to forcibly remove people from area for dam construction and resettle them in semi-arid regions, thus depriving them of economic livelihoods. Value systems and beliefs and behavioural patterns are reproduced across generations; though because of many factors, such as social contact especially with members of dissimilar groups, these reproductions may be partially or even totally altered.

Positive peace is only achieved if direct, structural and cultural violence are eliminated (Galtung, 1969, p. 4). Positive peace includes structures and values which enhance mutual respect and the unfolding of the full potential of all people. This means respecting people's rights to water and enacting policies that do not only lead to access to clean water but to enhancing productive capacities as well. Varobej (2008) argued that peace should mean an opportunity for aesthetic, intellectual and moral development and a chance of seeking happiness. Positive peace focused on peace building, the establishment of non-exploitative social structures, and a determination to work toward that goal even when a war is not ongoing or imminent. Happiness comes through income derived from products realised from water and participation and recognition of the voice of user groups in water management.

Galtung (1969) defined 'negative peace' as the cessation of direct violence and 'positive peace' as the overcoming of structural and cultural violence as well. To achieve positive peace, therefore, injustice must be removed. Various types of 'differences' distinguish sets of human beings: gender (male domination) and class (perpetuation of socio-economic advantage and disadvantage through birth, not merit). Thus, gender and class differentiation to water access and management must be removed and water shared equitably between men and women and all classes of people in society. At an intrapersonal level, positive peace goes beyond absence of anxiety and embraces the idea of deep inner peace through integrity (wholeness) of being, physical, emotional, and spiritual. Positive peace entails:

> *...equity, as opposed to exploitation. In this process there is reciprocity, as opposed to the mental conditioning of one by the other. There is Integration in the sense of all relating to all, as opposed to fragmentation. There is Holism, the use of many faculties in all of them, as opposed to segmentation. And there is Inclusion of them all, as opposed to exclusion, marginalization.* (Galtung, 1997, p. 1).

Galtung's argument reiterates the inclusion of multiple voices in managing water. Positive peace therefore refers to developing the quality of life in society by promoting economic growth, a more just society, and ecological balance, thereby improving life in a holistic way (Cavanaugh, 2000, p. 2). Young (2010, p. 6) maintained that society cannot be truly at peace until all forms of social, political and economic inequality and exclusion (from water institutions in this case) have been removed from the structures that exercise power within it. If society is filled with equality and other values, beliefs and practices that counteract structural violence, a state of positive peace is reached (HEKS, 2012, p. 6).

In conclusion, the Theory of Positive and Negative Peace as argued by Sandy and Perkins (2000, p. 3), postulated that positive peace entails decentralisation of power and authority in water management. This reduces the feelings of anonymity and powerlessness amongst local water users. It facilitates the development of relationships which can restore and preserve community values and spiritual needs and this lead to self-actualisation (Naidu, 1986). Readorn, cited by Sandy and Perkins (2000), contended that positive peace is the sense of the full enjoyment of the entire range of human rights to water by all people. This concurs with Galtung's peace as a positively defined condition. According to Goodhand and Hulme (1999, p. 15), peace is not purely about an absence of physical violence but is intimately connected to the analysis and practice of social and economic development. In relation to water, the study

will analyse various positive peace indicators that are: recognition of rights, universal access, participation, protection of the environment development and sustenance.

3.5.2 Common Property Resource Management Theory

Important concepts about community based water resources management can be found in research on community management on common property resources. Common Property Resource Management Theory (CPRMT) focuses on getting the water institutions right. According to Ciriacy-Wantrup and Bishop (1975, p. 715), the term 'common property' refers to a distribution of water rights in resources in which a number of owners are co-equal in their rights to use the resource. This does not mean that the co-equal owners are necessarily equal with respect to the quantities (or other specification) of the resource each uses over a period of time. The concept refers to resources (for example, water) subject to the rights of common use and not to a specific use right held by several owners.

According to Nemarundwe and Kozanayi (2003, p. 1000), institutional arrangements are defined as the rules and regulations governing resource use. "Institutions are 'created' consciously or unconsciously, by resource users acting as insiders, through deliberate design, imitation, trial and error learning, improvisation and other processes" (Bruns, 2005, p. 4). Water resource users create formal institutions such catchment and sub-catchment councils, water point committees. These institutional arrangements often form the basis for guiding the activities of an organisation, although they may also be informal, and not associated with any specific organisation. They can also be norms based on culture. Informal institutions can take the form of co-operative gardening associations and a traditional set of rules of the area. Bruns (2005, p. 5) argued that the rules and regulations used by a community determine who has access to water as common property resource, how authorised participants can use it and at what times, and who will monitor and enforce the rules. Agrawal (2001, p. 2) pointed out that rules that are easy to understand and enforce, locally devised, take into account differences in types of violations, help deal with conflicts, and help hold users and officials accountable, are most likely to lead to effective governance. From the discussion above, it is clear that informal institutions are effective in water access as they have participation mechanisms which are relevant to the everyday lives of local people. This study covers both formal and informal institutional arrangements governing water use. It aims to enhance the understanding of the effects of existing institutional arrangements on access to water resources.

One of the suggestions made by CPRM theory is that the minimum condition for functioning CPRs is clearly defined boundaries for water resources and its users (see Dietz et al., 2003). The logic behind this suggestion is that the clear definition of users and non-users, facilitates better regulation of who should, and should not, access water, and so helps in defining who should contribute to the management of the water resources. Bruns (2005, p. 6) observed that CPRM theory also suggests that effective water resource management is more likely to occur where there are clearly defined rules and enforcement mechanisms.

Turner (2007, p. 3) claimed that more successful water management includes *"*well-defined social group with rights to a clearly-defined [water] resource area, [and has the] ability to exclude others from using the [water] resource, set of use rules that limit the ways in which the water is extracted by individuals, capacity to monitor use and enforce rules". Bruns (2005, p. 5) disputed Turner's claim and argued that as water resources become depleted and augmentation of supplies become more difficult, "competition between users increases, giving rise to the need for and potential benefits from coordination among users sharing a common resource". Consequently, water scarcity may bring positive peace in the sense of co-operation to overcome increasing challenges. Dietz et al. (2003, p. 10) pointed out that within the rural areas, "access to shared water infrastructure for communal use is usually tied to obligations to contribute to investment and maintenance". Bruns (2005, p. 6) further stated that, "from a CPRM perspective, arrangements that accommodate existing local practices, such as equitable sharing of shortages and measurement by time rather than volume, are preferable".

A group holds secure and exclusive collective rights to own, manage and/or use water, referred to as common pool resources, including wetlands or irrigation water (see Andersen, 2011, p. 3). A review of existing studies of common-pool resources by Agrawal (2001) suggested that many have focused on local institutions to show that common property arrangements can result in efficient use, equitable allocation and sustainable conservation. Ratner et al. (2013, p. 184) reiterated that, in addition to recognising the importance of water's contribution to the reduction of poverty and building rural people's assets, there is also an awareness that there is positive potential that cooperation around water resources challenges can reduce the risk of broader social conflict and violence.

Agrawal (2001, p. 10) argued that the authority that the social group actually holds over water resources it manages is contingent on its relations with outside stakeholders, who may wield significant control over management decisions. Claims of political neutrality or scientific expertise may increase outsider control. The 'top dogs', as argued by Galtung (1990), may use their power to influence management and allocation of water resources. Taxation, regulation or market power may allow outside groups to control a significant portion of the benefits generated by water. Thus, formal policies and informal practices to water intersect in rural areas. The extent and nature of implementation determines the level of benefits realised by the local communities.

According to Turner (2007, p. 4), local communities often are fractured politically, with multiple sub-groups holding rights to the same water resource. Existing governance structures may not incorporate all those who hold rights to water. Moreover, local authorities making decisions on water may not be accountable to the group(s) they represent. Bruns (2005, p. 6) emphasised that, as outsiders, development agencies must work through local elites but also should seek, through an infusion of outside resources, to widen access to water-derived benefits for the less powerful — especially where equitable water access is a priority goal. Local and external specialists may aid to provide information on water issues, refining the ability of societies to create and supervise arrangements.

Communal tenure, widely used in Africa is customary and age-old, its rules relying on community decisions, or it can be newly designed for a specific purpose. In common property or common pool resources theory, communal tenure can be defined as self-governing forms of collective action by a group of people, often a village. Common-property resources (CPRs) are subject to collectively held rights in a resource system, such as water resources, which provide products that villagers can use. Andersen (2011, p. 4) noted that common property resource theory addressed five kinds of rights in relation to water, namely access, withdrawal, management, exclusion and alienation. Access pertains to the right to enter a defined physical area and enjoy benefits. Withdrawal is the right to harvest resource units or products of a water system. Management is the right to regulate internal use patterns and transform the water resource by making improvements. Exclusion refers to the right to determine who has access and withdrawal rights, and how those rights may be transferred. Finally, alienation concerns the right to sell or lease management and exclusion rights. Ratner (2013, p. 195) further pointed out that the level of trust that stakeholders have in institutions to mediate water competition

relates to the degree each has internalised shared norms and values. When shared norms are not internalised, greater levels of external enforcement are required (see Baland & Platteau, 1996, in Ratner, 2013 p. 195). Bruns (2005, p. 6) noted that rights are useless when there are no means to enforce them. If thorough conflict resolution mechanisms and sanctions are absent, then problems such as unchecked upstream abstraction and mining of aquifers are inevitable.

Vincent and Elinor in Turner (2007, p. 4) argued for use of the term 'common pool' rather than 'common property' for that class of resources that are particularly problematic to human institutions because of the difficulties of bounding or dividing them, excluding or controlling the activities of potential users. Canal water is a common pool resource: it can be used jointly, because of the high cost of excluding a landowner with commendable land; and its consumption is subtractive in the sense that water applied to A's land is not simultaneously available for B's. So, when water is scarce, congestion is likely, manifested in conflict, hoarding, and yield reductions where water arrives too late. When water management institutions are unable to address resource competition, their credibility and legitimacy are reduced in the eyes of the stakeholders (see Ratner et al., 2013, p. 195). This undermines shared values among local actors and lead to resource claims by external actors that disregard local institutions. Groundwater fulfils the same common pool criteria. Water forms vital parts of the livelihoods of large sections of the population in developing countries, and the issue of how to prevent their over-exploitation as population grows is of great importance for development policy.

3.5.3 Conflict Transformation Theory

The departure point of the Conflict Transformation Theory is that conflict is endemic in society. In the course of using and managing water resources, conflicts occur. Conflict transformation then is about transforming the very systems, structures and relationships which give rise to violence and injustice. Oxfam, (2014, p. 3), posited that, "countries associated with violent conflicts and fragility typically have poor public services, weak and often corrupt or repressive forms of water governance and justice, and politically and economically marginalised communities and groups. As a result, a large part of the population may not see the state as legitimate. Groups may respond to acts of state repression or perceptions of inequality with violence, leading to further instability". The theory addresses underlying structures, cultures and institutions (not so-visible roots) – for example, inequitable distribution of water – that

encourage and condition violent political and social conflict. These specifically consist of activities addressing political and social transformation in relation to water governance.

Reich, (2002, p. 112) argued that conflict transformation is a holistic and multi-faceted approach to managing conflict in all its phases. The goal of conflict transformation is therefore to establish a positive peace (see Young, 2010, p. 279). Miall (2004, p. 3) contended that this term denotes an ongoing process of change in the relations, behaviour, attitudes and structures from negative to positive. Conflict transformation is therefore a process of engaging with and transforming the relationships, interests, discourses and, if necessary, the very constitution of society that supports the continuation of conflict. The above argues that in the water sector, conflicts over water access can be transformed by directing people towards mutual access to water and at the same time making hierarchies involved in water governance responsive to the needs of the users.

Lederach (2003) posited that conflict transformation theory views peace as centred and rooted in the quality of relationships. This includes both face-to-face interactions in drawing water and the ways in which the society structure its social, political, economic, and cultural relationships. In this sense, peace is a 'process-structure', a phenomenon that is simultaneously dynamic, adaptive, and changing. Botes (2003) observed that conflict transformation, "is defined by intentional efforts to address the natural rise of water conflict through non-violent approaches that address issues and increase understanding, equality, and respect in relationships". To increase justice people must have access to political processes and expression the choices that shake their being. This is relevant to this study, as it seeks to understand how people are involved in formulation and implementation of formal policies to water access.

Conflict transformation theory deals with social justice issues and identity, livelihoods and political power-sharing, the aim being to achieve institutional and structural transformation in the long run (see Lederach, 2003, p. 3). Peace is made from within the society in a conflict to access water rather than by external experts and interveners, even if the latter may bring much needed and welcome ideas and support. According to Lederach (2003, p. 3), Conflict Transformation Theory suggests, that "there is need to develop capacities to engage in change processes at the interpersonal, inter-group, and social-structural levels". Reich, (2002, p. 10) suggested that "one set of capacities points toward direct, face-to-face interaction between

people or groups" in competition to access water. This requires a capacity to understand and sustain dialogue among water users as a fundamental means of constructive change (Botes, 2003).

Many of the skill-based mechanisms that reduce violence are rooted in communicative capacities to exchange ideas, find common definitions, and move toward solutions. But dialogue also plays a crucial role in the maintenance or change of social structures. Through dialogue, these structures can be modified to be more responsive and just. Thus, local people need to be continuously engaged throughout the process of water management. Lederach (1995), cited by Miall (2004, p. 4), argued:

> *Conflict transformation must actively envision, include, respect, and promote the human and cultural resources from within a given setting. This involves a new set of lenses through which we do not primarily 'see' the setting and the people in it as the 'problem' and the outsider as the 'answer'. Rather, we understand the long-term goal of transformation as validating and building on people and resources within the setting.*

The process of transformation first transforms attitudes by changing and redirecting negative perceptions. People in a conflict over water have negative connotations of each other. Secondly, it transforms behaviour, and lastly, transforms the conflict itself by seeking to discover, define, and remove incompatibilities between the parties. Water access policies should therefore have components which deal with conflicting behaviour among water users at all levels. Conflict transformation, as described by Lederach (2003), does not suggest that conflict is simply eliminated or controlled; rather we need to recognise and work with its 'dialectic nature'. By this he means that social conflict is naturally created by humans who are involved in relationships, yet once it occurs, it changes (i.e., transforms) those events, people, and relationships that created the initial conflict. At the personal level, conflict transformation involves the pursuit of awareness, growth, and commitment to change which may occur through the recognition of fear, anger, grief, and bitterness. These emotions must be outwardly acknowledged and dealt with in order for effective conflict transformation to occur. HEKS (2012) argued that certain orientations can become 'cultures of violence' or manifestations of 'cultural violence', which conflict transformation aims to convert into 'cultures of peace' transforming material and structural conditions. Policies must be designed that alter the nature or distribution of water or territorial basins, or reform water governance institutions.

According to Miall (2004, p. 12), conflict transformation usually involves a variety of actors such as development and humanitarian organisations, international NGOs concerned with conflict prevention and transformation, states and inter-governmental organisations, parties to a water conflict and other relevant groups within the affected societies. International organisations prevent local water conflicts from becoming violent and changes in the water governance structures of the societies result in some impressive transformations. Development and humanitarian agencies, carry out capacity-building and support for indigenous conflict handling capacity. The role of states includes supporting and sustaining local groups and social movements, building peace constituencies, strengthening conflict management capacity, empowering key actors, organisational development and networking and training. The local actors as the users of the resources themselves have the greatest responsibility, and the greatest opportunity, for transforming their own conflicts.

3.4 Summary

The above theories provide insights into water access policies and positive peace which can be summarised in Figure 3.3 that follows.

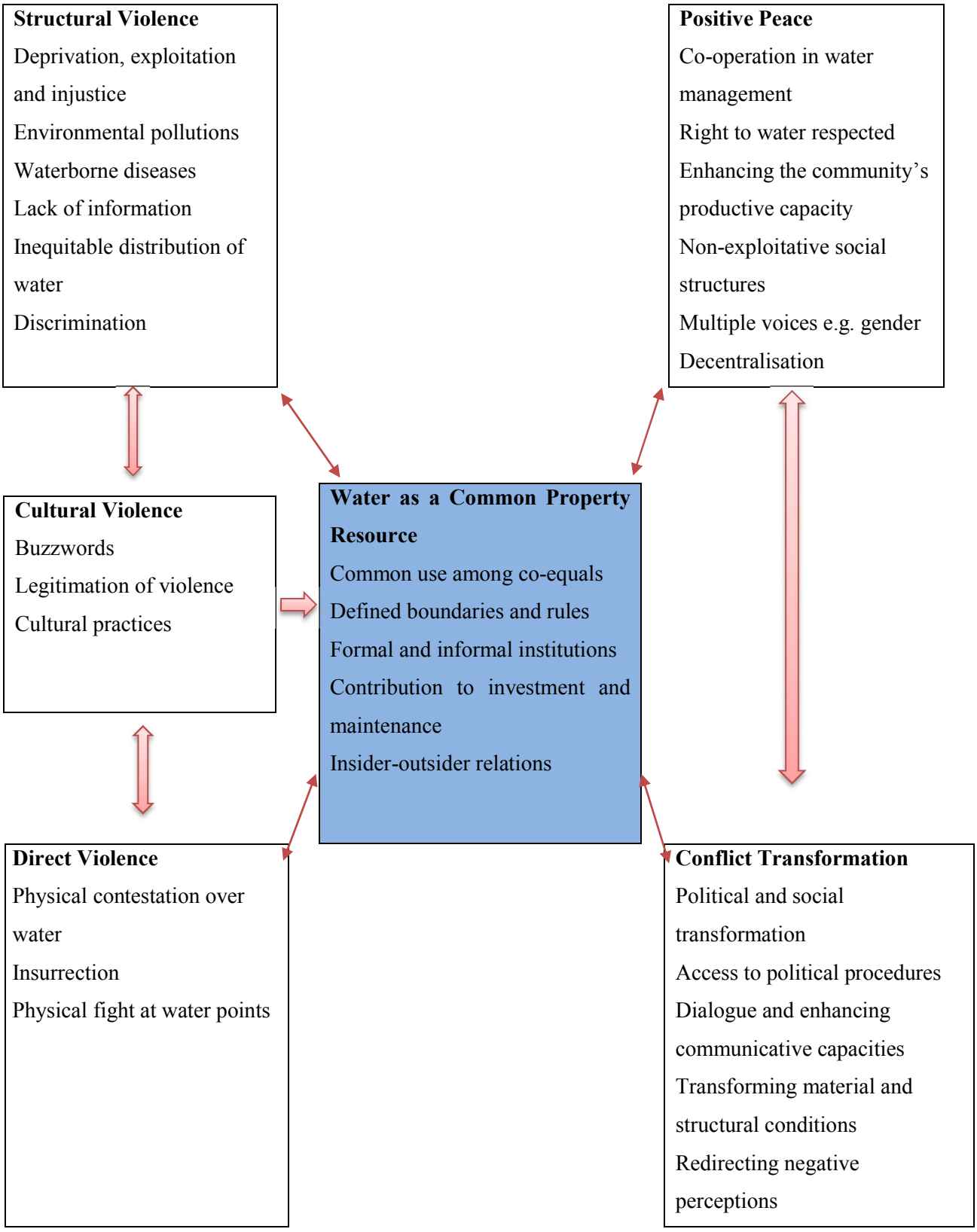

Figure 3.3: Theoretical framework for water access policies and positive peace (Source: author)

Chapter Four

Water Access Policies in Zimbabwe

4.0 Introduction

This chapter looks at water access policies in Zimbabwe. The chapter sought to answer research question 1, which sought to establish how formal water access policies are implemented in Zimbabwe. Deductive content analysis was used to analyse data from texts. The texts consisted of published articles, national policies, the constitution, various acts of parliaments, newspaper reports, civil society organisations report and the national census report of 2012. The chapter interweaved literature with the theories for water access policies and positive peace.

4.1 Historical context of Zimbabwe's water policy

The history of water policies in Zimbabwe is loaded with structural violence of exclusion of the rural communities from accessing water. Mtisi (2011, p. 6) demonstrated the point by giving an example of the 1976 Water Act, as a legal instrument used to deny the majority of Africans legal access to water for productive uses and excluding them from participating in decision making on water. She further states that water rights were tied to ownership of land and since the majority of Africans did not have title deeds, they could not apply for water rights.

Communal black farmers, living in the reserves of colonial Zimbabwe were effectively excluded from participating in water issues on River Boards because they did not have land and water rights. Boulding (1998), in Mtisi (2011, p. 6), stated that communal and resettlement farmers' use of water was viewed as 'wasteful'. Galtung claimed words such as 'wasteful' were a form of cultural violence as they legitimised deprivation of a certain group of people from access to water. This cultural violence was evident when the 1976 Water Act granted water rights in perpetuity on the basis of prior appropriation doctrine and in recognition of previous rights to water. Prior appropriation doctrine in this sense means that a user who settles first in an area, automatically enjoys more rights than those who arrives later. Van der Zaag (1998) in Mtisi (2011, p. 8) illustrated this point in a study of Nyachowa catchment, where he observed that a commercial farm, located on the upper end of Nyachowa valley, had a first call on water and thus drew the full amount stipulated in the water right. Yet by so doing, the commercial farmer left less water for communal irrigators, at the lower end of the valley with the effect that Nyachowa communal irrigators faced perpetual and severe water shortages.

Generally, commercial areas of colonial Zimbabwe were exclusively for white settlers. The gaining of independence by the country led to some settlers selling their land to the government and black farmers were resettled in these areas. This led to serious conflicts as the white commercial farmers still referred to the Water Act of 1976 to claim more rights than the resettled black farmers. This created an untenable situation, since water is a common property resource and the government had to act. As aptly summarised by the National Water Policy[29] (2013, p. 8):

> *White commercial farming areas comprised land with the best access to water. Water rights were issued in perpetuity and endorsed on the title deeds, thereby enhancing the value of farms… it helped to accelerate water resources and irrigation development in commercial farms, while very little development took place in native lands, now known as communal lands. It was therefore necessary and inevitable that … water had to be re-distributed to improve access to …* [the] *resource by most Zimbabweans.*

In an attempt to establish a more equitable sharing and just water system, the Zimbabwean government put in place the Water Act in 1998. According to Manzungu (2001, p. 101), this Act replaced that of 1976, and removed unfair clauses such as the priority date system and the granting of water rights in perpetuity. The reforms which ended in the passing of the 1998 Water Act can be used as a conflict transformation lens, which scrutinised historical conflictual behaviour patterns and sought to redress what was happening. Walker (2006) maintained that this Act gave high priority to the right to livelihood in terms of water for basic needs.

> *The reforms were undertaken primarily to redress the inequitable access to the country's water resources that had been enshrined in the 1976 Water Act and to embrace key principles of Integrated Water Resources Management (IWRM) on the basis of which the Water and ZINWA Acts of 1998 were developed. The Water Act 1998 vested all forms of water in the state … and replaced permanently held water rights with renewable water permits, thus replacing the legal concept of water rights with administrative water allocation system.* (National Water Policy 2013 p. 9)

According to the Zimbabwe Report (2010, p. 10), water is now treated water as an economic good. This resonates well with the Dublin principle 4 which stipulates that water has an

[29] Zimbabwe National Water Policy, 2013

economic value and should be recognised as an economic good.[30] Walker (2006) argued that if water is provided freely, it will not be conserved and users will not maintain water infrastructure or facilities. Economic incentives need to be considered in order to stimulate the optimum use of water resources. However, the Dublin principles of 1992, which were developed at a conference of water specialists, posited that it is vital to recognise the basic right of all human beings to have access to clean water at an affordable price.[31] These principles recognise the finite and vulnerable nature of water resources, the need for more participatory approaches to development and management, and the economic value of water.

The Water Act of 1998 introduced the polluter pays principle.[32] This means the pollution of water is an offence, which is now punishable by a fine. Crisis Coalition in Zimbabwe (2009) noted that this emerged after the realisation that water was being polluted by gold panning activities introducing mercury and cyanide, which are poisonous, into the country's rivers. This removes structural violence in respect of nature. However, Keifer et al. (2008) disputed the above assertions, and argued that enforcement of the Water Act is weak. The control of discharge of wastewater has not always been enforced. Nhapi (2009, p. 100) gave the example of Lake Chivero, where nitrogen and phosphorus levels have risen to critical levels.

Keifer et al. (2008) further posited that monitoring and evaluation of the Water Act is almost non-existent. It has remained the preserve of government project officials, with little involvement of the local communities. This reveals lack of integration of multiple voices in water governance, described by Galtung (1990) as fragmentation. Musingafi (2013, p. 170) observed that the dearth of clear data has limited the effectiveness in the water sector advocacy. He further stated that Zimbabwe has officially commissioned very few water sector studies and consequently there is a discrepancy in information. This assertion no longer holds, as the Zimbabwean government has embarked on compiling water sources for all districts in Zimbabwe, culminating in the Rural Information Management System (RWIMS) database, which provides details of all types of water sources (see Chapter Six). However, Derman et al. (2005) maintained that no catchment in Zimbabwe knows the amount of primary water used because the catchment planning exercises, which would provide accurate measurements, are yet to be completed.

[30] United Nations (1992). The Dublin Statement. Downloaded from www.cawater-info.net>library>d.
[31] ibid.
[32] Zimbabwe National Water Act Chapter 20:24. Downloaded from faolex.fao.org>docs>pdf26168.

Statistics provided by the National Water Policy, 2013, revealed that since independence, the Zimbabwean government has given high priority to rural water supply and made significant progress, moving from 5% to 43% coverage from 1980 to 2009.[33] Musemwa (2008, p. 6) argued that the aim was to bring development to previously marginalised people. This was due to political considerations, as rural voters are the backbone of the ZANU (PF) party. Therefore, although reforms were aimed at bringing positive peace of access to water, they also benefited the 'top dogs' i.e. the politicians in getting re-elected to office. However, rural water development has stagnated since 1990 (*The Zimbabwean*, 1 July 2013). Maintenance has virtually ceased as government failed to provide money for repairs, and development partner funding was not forthcoming. Many systems simply collapsed. The National Action Committee's 2004 Water Sanitation and Hygiene (WASH) inventory estimated that 75% of the 47 000 hand pumps were non-functional. An example of broken boreholes was also found in Village One of Mhondoro-Ngezi, the setting of this study, as shown in Figure 4.1. The borehole was drilled by the Ministry of Lands in 1983 (personal communication), but has since been neglected and is no longer functioning. Most of the parts, including pipes as well as the fence, have since been stolen.

Figure 4.1: A dilapidated borehole in Village one, Ward 11 of Mhondoro-Ngezi District (Photo by author)

[33] Zimbabwe National Water Policy, 2013

4.2 Multi-stockholder involvement

According to Manzungu (2001, p. 100), to enhance the holistic management of water as a common property resource, the Zimbabwe Water Act of 1998 created catchment and sub-catchment councils for all river systems and aquifers. Seven catchment areas based on hydrological boundaries were established. According to the National Water Policy (2013, p. 21):

> *Water should be managed based on a catchment approach and not on political or administrative boundaries. Precipitation runoff, groundwater levels, storage, vegetation cover and water quality are interdependent and therefore influence each other in any hydrological area. While precipitation may not be directly controlled by activities in catchment, the rest of the characteristics are directly linked with human activities.*

The Water Act (1998) provided for the creation of Catchment Councils, which serve as a forum for participation and decision-making for water users represented by elected Sub-Catchment Council officials.[34] The transformative lens is evident in political procedures and power given to this participatory body. This is indicated in the key functions of Catchment Councils (CCs) which include: preparing catchment outline plans for their respective areas, determining applications and granting water permits, regulating and supervising the use of water, and supervising the performance of functions of sub-catchment councils.

Below the CC are sub-catchment councils, which are constituted by elected representatives from diverse water user groups, which include commercial, communal, small-scale and resettlement farming sectors, local authorities, traditional leaders, and mining and manufacturing sectors. The broad spectrum of water users in the sub-catchment council represents the engagement of multiple voices in social structures in water governance. The Water Act, 1998 Part III (24) provide for the functions of a sub-catchment council including regulating and supervising the exercise of permits for the use of water within their area of jurisdiction, collecting sub-catchment rates, fees and levies reporting as required to the Catchment Council on exercise of water permits in their area participating in the planning on

[34] Zimbabwe National Water Act Chapter 20:24. Retrieved from faolex.fao.org>docs>pdf26168

water[35]. Most importantly sub-catchment councils also serve as a platform for local level participation in water management.

Despite the nuanced role of the Water Act of 1998 regarding decentralisation of water management, a closer scrutiny will reveal major weaknesses. The process of drafting the 1998 Water Act was mainly top-down as it emanated from central government (see Kujinga & Jonker, 2006; Dube & Swatuk, 2002). Derman et al. (2000, p. 15) argued that the government appears to have "assumed the role of speaking for the 'disadvantaged'" in terms of water access. This paternalistic style of management ensures the government speaks for 'the people'. From a survey around Zimbabwe, Nare, Odiyo, Francis and Potgieter (2006) found that 98% of people did not know there had been water sector reforms. Kujinga and Jonker (2006) asserted that the limited knowledge by local water users limits their participation. The above arguments show that knowledge and information about water governance bequeath to all stakeholders (water users in particular) confidence and capacity to participate in water resources management. This is an essential ingredient towards transforming relations from a fundamentally conflictual towards confident positive outlooks. Interviews with participants in Village One revealed that all the respondents did not know about the Water Act or any other related water instrument. Neither did they know about Catchment Councils, sub-catchment councils nor of any individual involved in any of these councils. Only key informants reflecting the technocratic and leadership side of Mhondoro-Ngezi are aware of the existence of such instruments.

Haessly (2011) argued that structural violence can take place at the micro level, which means within a smaller unit like a village when certain poor people may be excluded from decision making. Cleaver (1998, p 100) argued that water decisions were, "only successfully enforced in those communities where the decisions were taken at a meeting of the whole community rather than by a water point committee alone". In Zimbabwe in most cases, water committees are arenas of political contestation, so when a certain party dominates then it means automatic exclusion of individuals from the other political groupings.

[35] Zimbabwe National Water Act Chapter 20:24. Retrieved from faolex.fao.org>docs>pdf26168

Manzungu (2001, p.116) argued that it is cause for concern that the Minister has, as contained in section 20 of the Water Act, absolute power in many aspects such as drawing the boundary, stipulating the number of members and assigning the Catchment Council a name. The section stipulates that:[36]

The Minister may, by statutory instrument —

(a) abolish a catchment council; or

(b)(…) alter the area of jurisdiction of a catchment council; or

(c) alter the membership or the name of a catchment council.

This means the participatory mechanisms mean nothing, if one individual is given the ultimate power. It shows inequitable distribution of power, which is heavily tilted in favour of the 'top dogs'. There are no specified circumstances in the above scenarios where the Minister carries out the decisions which raises the potential for arbitrary dismissals.

The Catchment manager, who is a government appointee, can act as a Catchment Council under sections 21(2) of the Water Act:

> *The Minister may, by written notice to a Catchment Council, confer all or any of the powers of officers upon a catchment manager or on all or any of the members of a catchment council, and may at any time amend or revoke any such notice.*[37]

The Catchment manager also has power in terms of section 29[1(v)] of the Water Act to award servitudes (permission for water related development to take place), without consulting the rural district councils and the local communities. In this case users of water are deprived of input as to how they want to draw water, for instance, or where water related development (such as dam construction) should take place, or the amount that should be levied for abstraction.

Manzungu (2001, p. 117) criticised the Act on the basis that it formed the sub-catchment councils as the lowest user organisation, some of which cover 2000 km^2 and are far too big for any practical programme. Existing institutions are not catered for in the law. By claiming expertise, the central government as an 'outsider' in 'common pool resource' use locked local institutions (insiders) in the informal sector out of water governance; an opportunity for genuine local management was lost. The Water and Zimbabwe National Water Authority

[36] ibid.

[37] Zimbabwe National Water Act Chapter 20:24. Retrieved from faolex.fao.org>docs>pdf26168

(ZINWA) Acts created new institutions rather than strengthening the existing ones. In a study of Lower Save East Sub-Catchment Council (LSESC), Mtisi (2011) discovered that the politicisation of water has alienated the majority of water users who now abstain from participating in sub-catchment council meetings. The sub-catchment chairperson increasingly politicised discussions on water management. A group of water users, highly differentiated along political lines, is rarely organised around water issues.

The Constitution of Zimbabwe Chapter 14 Part 1(264), prescribes the government devolution of power to local authorities.[38] This ensures 'participation', 'transparency', 'accountability' and 'fostering national peace and unity'. Further, it is aimed at enhancing the "capacity of communities to manage their own affairs to further their own development". However, decentralised water institutions do not necessarily mean greater representation and participation of all stakeholders as this can be limited by the political complexity and messy nature of decentralised institutions. Evidence from a study by Mtisi and Nicol (2003) of Budzi and Lower Save sub-catchment councils in Zimbabwe strongly suggested that participation of new stakeholders, mainly small-scale, communal and resettled farmers in decentralised water institutions, is still peripheral. High transactional costs limit participation to stakeholders who can afford to pay the cost of traveling to attend meetings, as well as those who can communicate and articulate effectively. Consequently, the concerns and consensus that emerge from catchment and sub-catchment councils reflect the distorted nature of participation. People with disabilities also have a clear voice regarding their concerns around water access. The National Action Committee, in its WASH Newsletter of January 2016, quoted Ishmael Zhou, Federation of Disabled People of Zimbabwe:

> *There are gaps in the inclusion of people with disabilities in [water supply]. At a village committee level, there needs to be a representative with a disability so that they can highlight those issues. We have policies in place at a national… but disability is not mentioned. My request to decision makers is to please include people with disabilities from the water point, to the village, to the district and right through to the national level. No-one is representing the aspirations of people with disabilities and [water supply] must cater for everyone.*

[38] Zimbabwean Constitution Chapter 14. Retrieved from https://www.ilo.org>dyn>Electronic

The Rural District Councils Act (Chapter 29:13), Part VII section 50 stipulates the rules of participation:

> *For each ward of a council area there [is] a committee, (...) known as a ward development committee [WADCO], consisting of: (a) the councillor [who is] the chairman of the committee; and (b) the chairman and secretary of every village development committee.*[39]

The above section is an indication of the gendered nature of participation. It gives provision for the chairman, instead of a gender neutral term, for example, chairperson. This shows structural violence of discrimination against women. In cases where there is a non-existent Village Development Committee (VIDCO), "the Minister shall appoint persons to the ward development committee from a list of names prepared by the councillor for the ward". If there is no WADCO, "the Minister may appoint such persons as he thinks fit to constitute the committee".

It is important to note that structures for water provision in any jurisdiction of RDCs follow the WADCO/VIDCO channels. However, the centralised nature of the system indicates structural violence of exclusion, where the 'top dog' is symbolised by the minister's right to appoint people who participate in the ward assembly from a list prepared by the councillor. This is prone to abuse, as the councillors may resort to favouritism. This reflects the interference into structures reserved for 'underdogs' from the top echelons of society.

While physical attendance is one aspect of participation, there is a need to move beyond the mere headcount to consider and analyse the actual discussions of water issues at the sub-catchment council. Mtisi and Nicol (2003, p. 263) contended that the extent to which the 'new water users' are representing and vocalising their interests and livelihood concerns is still controversial. This is largely because the 'new water users' do not have adequate information about the water reform, are not well organised as interest groups, lack the experience in debating and articulating water issues, and are incapacitated by the use of English in the conduct of water issues.

[39] Rural District Councils Act (Chapter 29:13)

4.3 Institutional arrangements and the provision of water

Bruns (2005, p. 6) posited, "that institutions governing common pool resources are created consciously or unconsciously, by resource users acting as insiders, through deliberate design, imitation, trial and error learning, improvisation and other processes". National Action Committee (NAC), which is a grouping of sector ministries, is one such institution formed in 2010 to ensure the co-ordination of water related activities. The purpose of describing the NAC and subsequent committees in this research is to explore participatory mechanisms put in place by formal policies from the highest levels, cascading down to the lowest tiers of water governance. Figure 4.2 below presents a hierarchy of institutions involved in the management of all water related activities from the national to the ward level. It necessary to know groups of people involved in water management and their capacity, as this gives an insight into how water policies are implemented structurally.

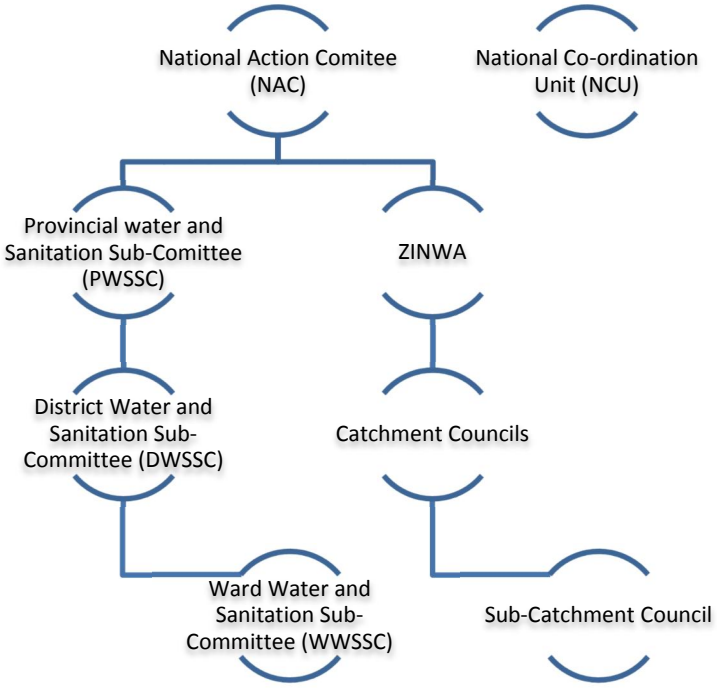

Figure 4.2: Institutional arrangements and the provision of water (Source: author)

According to the then Ministry of Water Resources Development and Management (2010, p. 12), the core business of the NAC reflects the holistic nature of managing water as a common pool resource, by involving as wide a variety of stakeholders as possible in order to ensure the incorporation of multiple views and provide national water policy direction and guidance. This has strengthened it as a monitoring, supervisory and resource mobilisation hub for the water sector in Zimbabwe.

The NAC is made up of Permanent Secretaries of the Ministries of Agriculture, Mechanisation and Irrigation Development; Energy and Power Development; Finance and Economic Development; Health and Child Welfare; Local Government, Rural and Urban Development; Transport, Communications and Infrastructural Development; Environment, Water and Climate; and Women's Affairs, Gender and Community Development. This grouping of sector ministries, at least on paper represents co-ordination mechanisms necessary to ensure holistic water management. The NAC has three sub-committees, but only two are responsible for delivering services to rural areas, one for (a) water resources management, (b) rural water supply and sanitation. It also has a secretariat called the National Coordination Unit (NCU) whose primary purpose is to provide day-to-day administration of the water and sanitation sector on behalf of the NAC.

The Provincial Water Supply and Sanitation Sub-Committees (PWSSCs) represents cascading authority from the NAC. According to the Ministry of Environment, Water and Climate (2015) these PWSSCs have an obligation to co-ordinate and assist in the management of rural water supply and sanitation activities in the provinces. Representatives from NGOs involved in rural water supply and sanitation implementation in the Province are also co-opted in addition to employees of the abovementioned Ministries. A literature search by the author by the Mashonaland West PWSSC, where Mhondoro-Ngezi is located revealed a lack of activity. The Minister of state for the province as well as the Provincial Administrator are in reality, the people in power who can approve or reject a water project. Thus, structural violence of exclusion of most people begins at high levels of society, reflecting the centralised nature of the Zimbabwean political system. Systems dominated by a few 'top dogs' are prone to abuse and nepotism.

The ultimate responsibility for the provision of water facilities rests with the Rural District Councils. To enable RDC to execute this task, the NAC works closely with other capacity building initiatives to build the technical, financial and managerial capacity of the RDCs. Within the Rural District Council, there is the District Water Supply and Sanitation Sub-Committee to co-ordinate planning and assist in the management of rural water supply and sanitation activities in the District. The National Water Policy document allocates institutional accountability for rural water supply to the Rural District Councils (RDCs), with the central government providing leadership and oversight. RDCs are accountable for WSS services at the local level, and so they will own and manage public rural water and sanitation assets, whether

developed by central government, local government, or NGOs (ZNWP, 2013, p. 7). Of all sub-committees, this is the most active and fully functional in the country. This is so because, water projects are mainly at implementation level.

The ZINWA Act of 1998, created the Zimbabwe National Water Authority (ZINWA), a state-owned entity tasked with the responsibility for providing a coordinated framework for planning, development and management of water resources.[40] Additionally, ZINWA took over the commercial functions associated with water provision which were previously performed by the Department of Water Development. ZINWA is supposed to be on the technical side of water management institutions.

The functions of ZINWA vary depending on the level at which it is operating. At national level, ZINWA advises the Minister responsible for water on formulation of national policies, water pricing, water resource development and management. At catchment level, ZINWA's role includes, inter alia, ensuring the Catchment Council discharges its functions in accordance with the Water Act, and assisting Catchment Councils in planning and coordinating water development and management within a catchment area. Also, ZINWA has exclusive responsibility for selling, supplying and management of 'agreement water'.

ZINWA, through the Catchment Manager, holds the responsibility of providing technical assistance to the Catchment Council on water issues. According to the Water Act of 1998, the role of the Catchment Manager also includes the day-to-day management and administration of the affairs of the Catchment Council (Water Act, 1998 p. 7). At sub-catchment level, ZINWA sub-offices provide technical assistance as well as advice to sub-catchment council in carrying out its duty relating to water resources supply, development and management. Specifically, ZINWA sub-offices are legally mandated to encourage and assist sub-catchment councils to discharge their functions in accordance with the Water Act, operate and maintain any water works owned by the Authority and to sell water from those.

The lowest tier of local governance is the Ward Water and Sanitation Sub-Committee. Local leadership, such as the Chiefs, Councillor, Headmen, Kraal Heads and Water Point Committees play a key role in community water provision. Rural District Councils are required to include

[40] Zimbabwe National Water Authority Act Chapter 20:25, 1998

rural Water Supply and Sanitation (WSS) in their annual budgets and commit at least 15% of their budgets toward development and management of WASH services. Naome (2012, p. 5) argued that one of the key challenges to providing rural WSS services is that many rural households simply cannot afford to invest in new facilities. Therefore, greater flexibility in service standards will allow these households to move progressively towards better facilities. There should be high integration of the various statutes, and overlapping powers which still exist between some enforcing agencies, need to be directed towards more co-ordination than conflict.

Infrastructure development and the water supply are not the preserve of one agency. Rural District Councils provide the water infrastructure but bulk water from dams is provided by the Zimbabwe National Water Authority. The Global Water Partnership (2015, p 5) involves diverse agencies in water development, agriculture, environment, catchment management and health, and administers various legislative instruments that support water development and supply. Mtisi (2011) urges integration and coordination of the present multiple actors at a level higher than the National Coordination Unit. Ensuring accord between water management structures from the Water Act which uses catchment boundaries and local government structures which use political boundaries, brings peace of mind associated with universal water access to water users.

4.4 The right to water

According to the Zimbabwean newspaper (26 June 2015), the Zimbabwean Constitution declare that socio-economic rights are second generation rights, and therefore enshrines the right to water. According to section 77, everyone has a right to:

(a) *safe, clean and potable water and the State must take reasonable legislative and other measures, within the limits of the resources available to it, to achieve the progressive realisation of this right.*[41]

Preserving the right to water in the Declaration of Rights is a timely improvement because the Water Act and other regulations dealing with water did not specify in precise words for a right to water. The insertion of the right to water clause in the Declaration of Rights signifies that the right is justiciable, that is it can be prescribed by the courts.

[41] Zimbabwean Constitution Chapter 1 Retrieved from https://www.ilo.org>dyn>Electronic

Section 46 of the Constitution establishes regulatory codes on how courts should translate legal rights, as well as the right to water. According to this subdivision, when translating the right, a court of law:

> • *must give full effect to the right. In other words, the right must be interpreted widely rather than narrowly,*
> • *must take into account international law and all treaties and conventions to which Zimbabwe is a party, and*
> • *may consider relevant foreign law, including court decisions of other countries.*[42]

The right to water has certain obligations. Constitutional justice enforce both negative commitments on the government for example in respecting the right to water, the State should not intentionally limit the right. It also has positive commitments – the government should satisfy, encourage and safeguard the right. Since the Constitution was enacted, there has been only one case dealing with the right to water (Mushoriwa v City of Harare, decided in 2013). The opponent dealt with only one negative obligation of the right as he argued that it was a violation of the right for the City of Harare to disconnect water without a court order. However, the rural areas have little knowledge on the existence of this water court, as this remains the preserve of the more knowledgeable city dwellers. Interviews in Village One, Ward 11 of Mhondoro-Ngezi District revealed that the participants had no knowledge of the water court.

Besides the Constitution, other Zimbabwean statute laws recognise the importance of the right to water and the duty of the State and local authorities to provide their people with adequate water. Section 64(1) of the Public Health Act:

> *"(1) Every local authority, when required …, shall provide and maintain, or cause to be provided and maintained as far as may be reasonably possible, a sufficient supply of wholesome water for drinking and domestic purposes, … and may construct, equip and maintain any works necessary for collecting, pumping or storing water.*[43]

Section 66 of the same Act:

[42] ibid.
[43] Public Health Act, Section 64

All water works vested in any local authority shall be maintained by the local authority in a condition for the effective distribution of a supply of pure water for drinking and domestic purposes.[44]

The thrust of the above sections on water, is the right to health to be enjoyed by the populace. The supply of 'pure water for drinking' means preventing waterborne diseases, itself a positive right and bringing inner peace. A society without diseases such as cholera, typhoid and dysentery enjoys peace and tranquility as citizens are able to transact their business in good physical shape.

ZINWA, the National Water Authority, is also mandated with distributing water to the people. Section 5 of the Zimbabwe National Water Authority Act (Functions of ZINWA), charges the authority to:

(i) secure equitable accessibility and efficient allocation, distribution, use and development; and

(ii) provide, in both the short and the long term, adequate water on a cost effective basis; and

(iii) promote an equitable, efficient and sustainable allocation and distribution of water resources.[45]

The right enshrined in this clause is equitability, that is in distributing water ZINWA should ensure that the common property resource is equitably shared among all users, so as to enhance their development. It also must provide water on 'cost effective basis', collecting levies for it to continue operating but at the same time considering the differentiated nature of incomes of diverse water users.

4.5 Gender equity

Walker (2006) noted that the Water Act of 1998 emphasises women's participation in water management initiatives. However, she urged the government to take into account the initiatives of women as water managers as well as their knowledge and experiences. Gozo (2011, p. 162) posited that women are the majority of rural inhabitants in Zimbabwe and they are the principal managers of domestic water. In terms of gender equity, the National Gender Policy (2004, p. 7), proposed the inclusion of women as water users in the planning and management of the

[44] Public Health Act, Section 66
[45] Zimbabwe National Water Authority Act (Chapter 20:25), 1998

resource in such capacities as members of the Zimbabwe National Water Authority and Catchment Councils. It also advocates for the availability of water for domestic use to reduce women's work load.[46]

The National Water Policy 2013 also recognises and promote gender equity in allocation, access and utilisation of water as well as implementation of Water Sanitation and Health (WASH) activities.[47] It acknowledges the uneven load set on women and girls when drawing water and looking after the sick.

> *Targeted programming and implementation of WASH activities shall be gender-sensitive. Gender based budgeting will be promoted and implemented. At least 30% of the Catchment and Sub-Catchment Council positions will be reserved for women and the youth. At least three board members in the ZINWA board will be women, youth or worker representatives.* (National Water Policy, 2013, p. 26)

However, Mulenga et al. (2013, p. 4) argued that in cases where departments of gender are co-opted in water and sanitation committees, their roles and powers are not clearly stated. In Zimbabwe gender in the rural water and sanitation sector is not addressed at the national, provincial and district levels, even though the ministry responsible for gender is included in water and sanitation committees at all levels. The National Coordination Unit, the secretariat responsible for coordinating the day-to-day activities of various players in the rural sector, does not itself have a gender policy. Gozo (2011, p. 162) maintained that the provincial and district structures do not have gender policies. Gender equity is adopted mainly by NGOs and donors at the project implementation levels resulting in gender focusing on meeting practical and not strategic needs.

Within a household or a community, gender disparities in action resources are pronounced. According to Ratner et al. (2013, p. 193), action resources are tangible and intangible assets that give actors the capability for agency. Agency includes the ability to exercise livelihood choices, to participate in collective action at various levels and get involved in political processes. At village level, for instance, cultural violence, which legitimises the exclusion of women from participating in water management is strong. Pandolfelli et al. (2007) in Ratner et

[46] Zimbabwe National Gender Policy, 2004
[47] Zimbabwe National Water Policy, 2013

al. (2013, p. 193) argued that men and women have different roles and interests, different action resources available to them, different socially sanctioned norms of behaviour and different approaches to conflict or its resolution. Women may want water for irrigating vegetables during the dry season, access to health and clean water, short distances to a borehole, while men are concerned with livestock and larger scale irrigation. However, patriarchal norms and values are still strong in Zimbabwe and are legitimised by views that men's projects are more development oriented, whilst women's are viewed as petty. This is reflected in the lack of practical gender programmes in water institutions. Consequently, men's views are given high priority to the detriment of women's well-being.

4.6 Water resources development

Development of water resources and peace have been inextricably interlinked always. Enhancing the productive capacities of the local communities redirects people's energies towards creating better working relations. There are differing statistics as to the number of dams in the country. The National Water policy estimates there are 8000 dams in Zimbabwe and 244 are classified as large. Considering communal dams alone, the RWIMS database shows that there are 1134 dams nationally, 216 dams in Mashonaland West, 27 in Mhondoro-Ngezi, 2 in Ward 11 and none in Village One. The statistics show the neglect of people in communal areas, as dams are used mostly for collective gardens and hence are a source of livelihoods for many. The 2012 Census statistics reveal that 67% of the Zimbabwean population live in rural areas, with a population size of 8 777 094.[48] It is clear from the data that a slightly above a thousand communal dams cannot serve the needs of such a huge population. Isakovic (2001) argued that a society commits violence against its members when it forcibly stunts their development and undermines their well-being through lack of access to water. Although a few have their own household water sources, they are simply not enough relative to the population. In Village One, the study setting, there is no dam and people rely on pools (which always dry up) to irrigate their gardens and for their livestock. During dry seasons, some people's livestock die due to lack of water. Ownership of livestock, in particular cattle, is prestigious in communal areas of Zimbabwe and particularly in Village One. If one loses cattle, he/she may considered poor, a painful phenomenon.

[48] Zimbabwe National Census, 2012

Dam projects, as water resources development, have provided many development opportunities in the places they have been implemented. Gozo (2011) carried out a survey of dam constructions undertaken by the Zimbabwean government which found that the construction of dams (for example, Osborne in Manicaland) led to irrigation projects to assist the rural poor to increase their incomes through increased productivity. Irrigation projects give people the chance to interact, co-operate and have dialogue, which enhances peacebuilding.

The dam and irrigation projects need maintenance to continue being productive to communities. As Gozo's 2011 survey discovered, most of the completed dams have significantly lost their capacities due to siltation from inappropriate catchment management (for example, Suri dam). Some dams dry up during the summer seasons, such as Matorahuku dam in Chiwundura communal lands when irrigation demands are at a peak thereby crippling crop production. Over-abstraction and water pollution are other challenges associated with government initiated water development projects. Due to land reform many commercial farmers were replaced by A1 and A2 farmers. These farmers are used to the subsistence mode of farming and communal tenure, where dams were communally owned, hence no personal investments were made. There is a need to enhance capacity of the farmers to have initiatives to collectively maintain dams in their own area. This comes through including them in sub-catchment councils and giving them lessons on proper abstraction of water for irrigation.

Development of water resources if haphazardly planned can lead to loss of livelihoods, due to unintended disasters, such as the Tokwe Mukosi floods in 2014. As reported by the *Herald* on 9 December 2014, heavy rains pounded southern parts of Masvingo and precipitated flooding in the Tokwe Mukosi Dam that saw rising water threatening to sweep away the dam wall. Around 4 500 villagers living along the flood basin of the dam were evacuated after water, escaping from cracks in the dam wall, flooded Tugwi River that flows directly towards the villages. The floods submerged homes and destroyed property, leaving thousands of families' homeless and destitute.

The flood victims were evacuated and began to live in classrooms together with their belongings forcing several schools around the Tokwe-Mukosi Dam to stop conducting lessons, in the process affecting children. Over 2 000 school children were forced to abandon classes after more than ten primary and secondary schools in the basin were flooded. The floods destroyed roads, clinics and bridges leaving a huge developmental wound in the affected areas.

The people were moved to relocation sites of Nuanetsi Ranch in Mwenezi District. The place became overcrowded and unhygienic due to a lack of clean drinking water. A conflict between the government and the displaced people ensued as the authorities started using force to relocate the flood victims, after the victims had refused to be relocated without full compensation saying that it was an infringement of their human rights. The above example shows the importance of engaging the people likely to be affected by any water development related project well before its commencement.

Water resource development can also mean tapping of underground water to meet the basic needs of the rural populations. Tapping groundwater has been mainly done through borehole drilling. The Rural Wash Information Management system (RWIMS) database shows that nationally, there are 24 117 communal boreholes available for 1 419 583 households. There are 3 084 communal boreholes in Mashonaland West serving 221 633 households. In Mhondoro-Ngezi District there are 283 communal boreholes serving 21 980 households. In ward 11 there are 22 communal boreholes used by 1 758 households and in Village One, the study area, there is only one borehole serving 65 households. The most common hand pump is the bush pump with a pumping capacity of approximately 20 litres per minute, each designed to serve a rural population of 250 people. The Central Statistics Office estimate the average Zimababwean household size at six individuals. The estimated population of the village is 390 people, meaning the borehole is being overused. This lead to frequent breakdowns, and shortages of clean drinking water. The then Ministry of Water Resources Development and Management (2010, p. 3) argued that a major challenge is the weak operation and maintenance system for rural water points, resulting in approximately 60% of the hand pumps remaining in a state of non-repair for long periods at any one point in time.

A survey by the Zimbabwe Vulnerability Assessment Committee (2016, p. 54), which comprises of the government agencies, donor agencies, NGOs and private businesses found that about 19% of the rural wards had an irrigation scheme.[49] Of these wards, 53% had functional irrigation schemes, 35% had partially functional and 37% had non-functional irrigation schemes. Equipment breakdown and inadequate water continue to be the main causes of non-functionality and partial functionality of irrigation schemes in the country. The above statistics shows that water for people's productive needs is insufficient, with many people over

[49] ZIMVAC carries out a survey annually around the country to determine areas in need of aid.

reliant on rainwater. The National Water Policy (2013, p. 17) claims that 20% of the land in Zimbabwe in currently under irrigation.[50] This is mainly due to the loss of experienced human resources, itself an indication of how people are critical for input in successful water policies. This has resulted in a decreased revenue base accruing to ZINWA and consequently no new investment in water.

4.7 Implementation of water policies

Policy implementation involves activities that result from the official adoption of a water policy. Sometimes laws are passed, but nothing really changes on the ground. The former Prime Minister of Zimbabwe, Morgan Tsvangirai, speaking at the launch of the National Water Policy in March 2013, urged its implementation:

> *With the National Water Policy having been crafted, what remains is its implementation, paving the way for user oriented service provision. The success of this policy should be determined ... universal access to water. In that regard, ... a policy have been launched before, and ... many have never been implemented, in what demonstrates an unfortunate cancer afflicting public governance in Zimbabwe, failure to implement ... policy pronouncements! ... the real deal lies in implementing policy proposals for the good of the country, and more often than not we are found wanting in this regard.*

If policies are present but not enacted, this is a form of structural violence in the sense of lack of legislative power to improve lives. The National Water Policy which was launched in 2013 seems to be suffering the same fate, as its provisions are yet to be to be incorporated in any primary Acts dealing directly with water provision.

Naome et al. (2012, p. 6) cited the lack of political will by the local leadership (chiefs, councillors, members of parliament, and government ministers and senior government officials) as compounding to the above problems, especially in areas such as the enforcement of conservation works and pollution control. Some political representatives were reluctant to enforce unpopular regulations for fear of destroying their political base, for example, gold panning is an environmentally damaging activity and yet it was allowed to continue to operate.

[50] Zimbabwe National Water Policy, 2013

Rural District Councils are empowered to control conservation of water resources using their by-laws, but these regulations are now more than twenty years old and do not reflect the scope of environmental problems in rural centres.

The Environmental Management Act (Chapter 20:27) states that local authorities should have environmental committees to monitor the state of the water pollution issues in their areas of jurisdiction, but they are barely functional. This is due to the lack of human capacity in terms of skills to qualify and quantify the levels of pollution and appropriately interpret them with the provisions of the EMA. The implementing institutions are thin on the ground and lack resources in terms of transport to inspect and enforce 'the polluter pays' principle as law.

AMCOW (2015, p. 21) posited that the situation is the same for borehole drilling. There is need for clarification on rural drilling policy. The District Development Fund does not have the capacity to drill the required boreholes, nor can government afford to subsidise all boreholes. Drilling tenders should be competitively bid at market prices to encourage development of a domestic drilling industry.

Muzuva (2015, p. 13) urged the government to capacitate local communities in order to effectively implement water policies. Mobilisation of communities whose leaders have been trained in transformation is far easier when a community has been trained. A trained community is pro-active and in most cases, knows the ways to achieve the vision with regard to the challenges faced. The management and development of water resources and the provision of water services needs to be undertaken from a sound scientific and technical basis. It is therefore important that relevant institutions involved in water affairs have the technical capacity and instruments necessary to undertaken systematic collection, storage, processing and analysis of data and information. Tom and Munemo (2015, p. 69) argued that policies that are 'good' on paper, yet whose soundness is not realised in practice, indicate implementation gaps thereby signaling policy failure. Consequently, nothing can be gained from policies that are not implemented or those policies whose implementation gaps are not known and addressed. Despite the problems presented by public participation, the citizens of any country lose confidence in a government that cannot translate policy statements to action.

4.8 Water availability, accessibility and quality

MIMS (2009, p. 17) pointed out that access to drinking water is important for women and children, especially in rural areas, as these bear the primary responsibility for carrying water, often for long distances. Improved water sources in rural areas are those sources which provide quality water such as piped water (into a dwelling, yard, and public tap), borehole or protected well. Unrestored resources include uncovered wellsprings, surface water (river/stream, dam, lake, pond, canal, irrigation channel). Positive peace means access to clean water, which ensures healthy lives and peace of mind. Structural violence is experienced when there is suffering from highly preventable waterborne diseases. Access to safe drinking water is essential to the improvement of living standards as it reduces morbidity from diseases such as diarrhoea, dysentery, cholera and typhoid.

According to the Zimbabwe 2012 National Census report:

> *A proxy of the proportion of households using what could be termed safe water can be obtained. Without applying any rigorous health or hygienic standards one could say that households using piped water, communal taps, protected boreholes and wells have access to safe water.*

Thus, the Zimbabwe National Water Safety Standards piped water, protected boreholes and wells are a measurement of safe water. According to the 2016 ZIMVAC Survey, nationally, 71% of households access water from improved sources. However, the ZIMVAC survey differs from the Census Statistics claiming that "nationally, 54% of households travelled more than 500m to the nearest water source. Of these, 25% travelled more than 1km." (p. 107).
In Village One, under study the community borehole is more than 1 kilometre away from the nearest household. This presents a significant burden to rural dwellers.

A survey by the National Association of NGOs (NANGO) in January 2016 revealed that the average availability of water ranged between a high of 100 litres per capita per day in Hwange and a low of 9.5 litres in Marondera. The average water availability for the other districts was Mangwe, 57.5 litres per capita per day; Chimanimani, 14.6 litres; Gweru Rural, 28.2 litres; and Chivi, 27.5 litres. Water supply disruptions, such as breaking down of boreholes resulted in residents collecting additional water from alternative, sources that are usually unsafe, such as protected and unprotected deep wells.

According to Galtung (1990, p. 725), if people die of preventable disease, this is a kind of violence. According to the Zimbabwe Water Forum (2013, p. 2), the economic recession of the 2000s led to a collapse in revenues for maintenance, rehabilitation, and even the purchase of water treatment chemicals. The results indicated inadequate and erratic water supply, poor quality of water provided to residents, and badly decaying infrastructure. This eventually created a deadly cholera epidemic in 2008–2009 that claimed 4 000 lives. Given that cholera is a preventable disease, structural violence occurred when the state failed its obligations to provide clean potable water to rural communities.

The Zimbabwe Multiple Indicator Cluster Survey (MICS) 2014 revealed that 24% of rural households have no access to safe drinking water sources. The report records 12 724 diarrhoea cases and 20 deaths during week seven of 2014. Of these, 6 205 cases and 11 deaths were children under five. One cholera case was confirmed in Chiredzi district with 204 confirmed typhoid cases reported in other parts of the country. The 2009 Multiple Indicator Monitoring Survey (MIMS), compiled by the government and UN Children's Fund (UNICEF), listed diarrhoea as one of the major causes of infant mortality resulting in around 4 000 deaths in Zimbabwe annually. The MIMS survey showed a 20% increase in under-five mortality since 1990. During the rainy season, people living in rural settlements are vulnerable to waterborne diseases. The survey claimed: "The inability of vulnerable populations to access safe water … has resulted in frequent diarrhoeal and cholera outbreaks". The Consolidated Appeals Process (CAP) for Zimbabwe, launched in early December 2011, said "a third of rural Zimbabweans still drink from unprotected water sources and are thus exposed to waterborne diseases," and noted reports of cholera cases in rural Chipinge, in the eastern province of Manicaland, and Chiredzi in the south-east of the country.

4.9 Environmental protection

The National Water Policy (2013) recognises the importance of protecting the environment as a water user:

> *The Environment is a legitimate and important user of water. Therefore sufficient quantity of water of adequate quality will be allocated to meet the requirements riverine an aquatic ecosystems, wildlife, wetlands, bird life and others, based on sound professional assessment.* (p. 22)

Sandy and Perkins (2000) theorised that environmental pollution is a type of structural violence, as people drink contaminated water which is detrimental to their health. Ill-health constrains victims' economically productive tasks and reduces their self-esteem – a necessary ingredient of positive peace.The Environmental Management Agency (EMA) Act (2002) recognises the importance of the environment to the well-being of the people and Section 57 prohibits water pollution and provides that any person guilty of the latter should pay for the removal of poisonous substances or "pay third parties such reparation, cost of restoration, restitution or compensation as may be determined by court on application by such third parties". Thus the Act moves from punitive justice towards restorative justice which seeks compensation for the offended. This is in sync with traditional conflict management systems which seeks to restore relationships between the conflicting parties.

Madebwe (2015, p. 109) posited that the Agency and police officers have been equipped and empowered to ensure that organisations or persons failing, or potentially failing, to comply with environmental laws or regulations are brought or returned to compliance or punished for their non-compliance through administrative or criminal action. Naome et al. (2012, p. 4) argued that the RDCs do not have the capacity to manage hazardous waste and pollution prevention. Ajusa (2003, p. 10) added that law enforcement agencies are thin on the ground, with limited resources to carry out any enforcement or policing of the various statutes.

Artisanal small scale mining along river channels in Zimbabwe has become a major environmental concern since the year 2000. The decline in agricultural production, frequent natural disasters and rapid economic decline have resulted in individuals turning to mining to alleviate poverty. In addition, mechanised alluvial mining has caused considerable pollution of river systems. There is widespread use of mercury and in some cases cyanide (through dump cyanidation) in the mineral processing, posing a serious threat to the health of communities that live downstream of these activities. This poses a health threat to people and livestock health. Statistics gleaned from RWIMS database shows that nationally, 242 461 households rely on shallow wells dug on the river sand. In Mashonaland West, 23 519 households use these shallow wells, 1 094 in Mhondoro-Ngezi and 222 in Ward 11. There are health risks to these households consuming water from shallow wells. In addition, there have been numerous cases of cattle dying after consuming water from dumb cyanidation process along Muzvezve River in Mhondoro-Ngezi.

The Environmental Management Act (Chapter 20) prohibits mining activities within 30 metres of a water course, thus mining activities in the river are prohibited. However, due to corruption, mining companies are still being granted licenses to mine in the rivers. The Centre for Research and Development (CRD) (2014, p. 29) documented the case study of DTZ-OZGEO, a mining company which was issued with a special grant by the Ministry of Mines to mine in both the river and an extensive farming area, violating the government's own environmental laws. The company which has been mining for over a decade was finally ordered to stop operations in Penhalonga by the EMA. However, the CRD interviewed company authorities soon after the granting of the order and realised that the measure was only temporary and mining activities would resume as soon as rehabilitation of mined areas has been completed.

A study by Centre Research and Development (2014, p. 29) showed that alluvial mining in the river disturbs the water source through sediment release and construction of impoundments that affect the natural flow of the river. The CRD investigated the Chinese mining companies (namely, Linefall investments and Kingfrost gold mining companies) who mined alluvial gold in Odzi River for over six months in 2013 without both water permits and approved Environmental Impact Assessment plans. People and livestock in Odzi and Arda Transau have suffered the downstream effects of these mining activities because hazardous substances and sludge were dumped into Odzi River. This river is the source of water for surrounding communities including about 4 500 relocated people at Arda Transau. Unlawful mining activities have increased siltation and livestock have died after drinking contaminated water from these river sources. Mining operations at Odzi reflect weaknesses in the Mines and Minerals Act that allows individuals and companies to carry out mining activities without clearance from other important stakeholders like communities, rural district councils, EMA and ZINWA with disastrous impacts to communities and the environment. Ajusa (2003) argued that mining developments and activities in Zimbabwe are characterised by profit motives at the expense of environmental protection. They therefore operate at the expense of the health of the local communities.

The National Water Policy conclusively adds:

> *Pollution of water is harmful to the environment and water users and it reduces the quantity of water available for use. All water users have a responsibility for protecting water sources and for the quality of water they return to the system …*

> *Society, through the state, has a right to hold repeat offenders … to account for their actions or negligence through prosecution*. (p. 22)

Crisis Coalition in Zimbabwe (2009) reiterated that the polluter pays principle needs to be strengthened to include real deterrence and real incentives not to pollute. Without real deterrence, companies and individuals will continue to pollute.

4. 10 Summary

This chapter has described the water policies and regulation as they are administered in rural Zimbabwe. It traced the history of the structural violence of exclusion to water access from the colonial period to the present. Although the government instituted water sector reforms to bring about more equitable distribution of water, the institutions that were created by the new legislation perpetuated structural violence. The Catchment and Sub-Catchment councils are dominated by elite commercial farmers and industrialists. Therefore, the right to water in Zimbabwe is only for primary use; the rest is for sale, and often the productive capacities of the poor rural populations are neglected. To remedy this and bring positive peace, some dam projects have been undertaken and irrigation has been developed around these dams. However, dam sites have become a new source of conflict between the communities who are displaced and often settled far away from these sites and the government. Gender inequity is also problematic in sub-catchment councils, as few women are involved in these decision-making bodies. The policies are facing implementation gaps as more companies are polluting water, giving rise to waterborne diseases. The companies face limited sanctions from the government, because they possess economic power and in most cases, they are linked to powerful political elites.

Chapter Five

Informal Practices and Access to Water

5.0 Introduction

This chapter presents qualitative findings of the study obtained from primary data. It sought to address the research questions based on understanding the concept of positive peace in the context of access to water amongst the community members and secondly, informal water access practices used by community members. In the presentation of themes, the voices of participants are interwoven in response to the study's research questions. Qualitative data findings will be corroborated with statistical data to provide a deeper understanding of the concepts. Sub-themes in this study were formulated following Creswell's (2009) thematic content approach to generation of themes in qualitative research data analysis. In this study, the thematic content approach assisted the researcher in searching for patterns that provided an illuminating description. The patterns led to the formation of themes and sub-themes. For the evidence, the chapter presents the verbatim data from participants' responses using pseudonyms to protect the identity and confidentiality of the participants.

5.1 Positive peace and access to water

The participants in this study (Village One residents) identified the following as peace in relation to access to water: harmony, community without corruption and peaceful resolution of conflicts which are considered below as the sub-themes. They became sub-themes when it was noted that they were reported so many times and all related to the main theme on the understanding of positive peace in the context of access to water amongst the community members.

5.1.1 Harmony

Harmony was identified as one of the major components of peace in Village One, Ward 11, and Mhondoro-Ngezi District. The sub-theme was extracted from the narratives of the study participants. Harmony is equated with mutual trust and understanding, a sense of belonging/cultural worth, co-operation/collaboration, effective communication, concern for common good, a sense of reconciliation and desire for consensus (UNESCO, 1995 p. 7). Harmony occurs when all people get along together, when using shared water resources.

Harmony is agreement in action, opinion and feelings. When harmony is present in society, there is co-existence and community members help each other obtain water.

(i) Co-existence

Oxfam Great Britain (2002), cited by Berns and Fitzduff (2007, pp. 1-2), defined co-existence as recognising each other's status and rights as human beings, developing a just and inclusive vision for each community's future, and implementing economic, social, cultural or political development across the community. Co-existence describes societies in which diversity is embraced for its positive potential, equality in accessing water is actively pursued, and interdependence between different groups is recognised. Co-existence is evidenced in relationships across differences that are built on mutual trust, respect, and recognition, and is widely understood as related to social inclusion and integration.

All 20 participants indicated that they understood peace as (harmonious) co-existence between people. For co-existence, participants shared as follows. Zunde (30 years, male) said:

> *Peace is harmony among people and people come to discuss water issues at a round table together. Without harmony, people may fight over water sources.*

Another participant said:

> *Living with each other in harmony, being in friendship with each other is peace. Harmony is living with other people in a friendly manner, helping each other (egalitarianism) access water for day-to-day use. One day I can say my friend can you lend me your water pump, so I can water my garden and the person gives me. If there is a funeral, I suspend going to my garden, grieve with my neighbour, and help him to fetch water used at the funeral so that in the future when there is a funeral at my place he/she will do the same ... that is peaceful co-existence.* (Kondo, male, 48 years).

This is corroborated by another participant:

> *Peace is whereby we use water together without squabbles, agreeing on everything that we do. We tolerate each other's views and we respect each other's rights to water.* (Ngonie, female, 35 years)

However for John (male, 40 years), peace is qualified as:

Peaceful co-existence, is living without fear that my neighbour will prevent me from getting water for my everyday needs. In this area there is peace, because I can and do fetch water any time I want as long as I abide by the law.

Tonde (male, 22 years) supported the notion:

If you look at my generation, if you stay, showing a difference, because an animal and a human being are different. Whilst animals live in competition to access water, where the rule of the jungle is survival of the fittest, human beings seek to live in peaceful co-existence with each other with maximum co-operation and unity in managing our water areas such as pools, the borehole or even the dip tank. Individuals should seek to live without being accused of using our borehole in an unhygienic manner. I should be a role model of sharing water resources and human compassion that in as much as I need water, my fellow community members also have the same need. When people look at a person, they should be inspired.

Peaceful co-existence is also respecting each other's rights. Gladys, a 24 year old housewife, said:

Everything will be moving smoothly. People will be living freely. If I have rights to access water whenever my family want it, I feel peaceful. My rights to access water for cooking meals for me and my child will not be abused. I have rights when I have access to happiness by accessing water, without being afraid that I will be deprived of those rights by my neighbour.

A survey of 51 participants in the village showed that 83.39% of the respondents strongly agreed that peaceful co-existence comes through equitable sharing of water, 13.73%, were neutral, 1.96% disagreed and 1.96% strongly disagreed. This shows that respondents understood that if people share common pool resources equitably, positive peace is realised. Positive peace comes through co-operation and engagement in water resources management. Co-operation ensures equitable allocation of water as a common pool resource among the users in the community. This improves relations among the members of the community. Improvement of relations fosters unity and peaceful co-existence within the community.

(ii) Helping each other

Collaborative work is important, as this helps the community to improve expansive capacities to give-and-take, discover collective explanations, and step toward resolutions. Fifteen participants stressed the importance of helping each other to access water:

> *If my neighbour has a heavy work burden which consumes large quantities of water for example construction of a house and he finds the task difficult to complete, then I go to his home and help him, to fetch water. In the same vein, in future if I want to water my garden, he can come to give a helping hand meaning that we are living together and helping each other.* (Kondo, male, 48 years)

Mwale (male, 40 years) said:

> *I help my neighbour to tackle his own problems and in turn he tackles mine. If I want to plough and I don't have the cattle, I can approach the neighbour to borrow his cattle for use and he gives me to plough. In turn I can take his cattle to the river and they drink water. That way the cattle stay healthy and I know I will get help again for many farming seasons.*

Ndaba, a 19 year old man emphasised the spirit of sharing:

> *If I go to the community garden, I and my friends share the task of watering the garden. If I have scotch cart, they do not have and they want bulk water they come to me and if I want something, I also approach them, being in friendship. If we are in conflict we are no longer in harmony.*

For Sophia, a 25 year old woman, helping each other goes beyond food or goods:

> *I can help my neighbours with something they do not have. Even ideas… I can help somebody with ideas to say, 'Look, you have found employment at ZIMPLATS, and you now have the money, why not try digging a well and access water at your homestead'. I have given him/her ideas and I would have helped him/her.*

Her views were shared by Tonde, who said:

> *The way we live in this village is that is clustered. Our homesteads are very much near each other. If we share ideas, not only water but ideas, and counsel each other, we experience peace. Let us say a person has reached the near end of his wits, I can advise him to live in a way that is better for his life. If I see a person in*

need and I have something I can help the person. We can talk about anything that I see is troubling the person during that particular period.

However, for Gladys (female, 24 years), "people need to be given lessons on sharing water resources, so that they can have unity, peace should be taught". She further stated that:

Peace for me is self-explanatory, there is no conflict. For example, if I have my friend we advise each other when, one of us goes wayward, for example if a person washes her baby's nappies at the borehole, I will tell that friend in a polite manner to be hygienic. We continue to live together and have friendship.

Sharing should not only be for neighbours and within the family, but also should be broader, involving communities as revealed by Kondo:

We live in harmony with other villages. Personally I live in harmony with my village neighbours across the Chingondo stream banks. You see these vegetable beds (looking towards the garden), my nephew from Village Two came here and prepared them. When he came here I was not there and he prepared the beds and he said, 'Uncle, I came and prepared my bed of vegetables in your garden' and I said, 'No problem'. I stay here and chase away monkeys, from eating his vegetables. I also water them, to keep them healthy, if he spends a week (long time), without coming here. He comes and thank me. He sometimes brings me sugar as a way of thanking me.

Hondo (female, 55 years) said that:

We meet at the dip tank and help each other complete tasks for example, filling the dip tank with water. If their borehole breaks down they are free to come here and fetch water.

Mr Manyere (male, 32 years) said:

We collaborate at the dip tank. Those with scotch carts and own cattle bring them and work together with those who do not have livestock to fetch water and fill the dip tank.

Responses from the questionnaire indicated that 64.71% of the respondents strongly agreed that peace comes through helping each other to access water, 25.49% agreed, 3.92% were neutral, 1.96% disagreed and 3.92% could not answer. Help involves empathy for other

people's situations and this is also reciprocated. Reciprocity of good deeds, like helping each other, increases harmony. Harmonious relationships are a measure of positive peace in the community. As the statistics show, 90.2% of the participants acknowledge that relations are particularly improved through exchange of goods, services and even ideas.

5.2.2 Community without corruption

A corruption free environment is also an indicator of peace. A corruption free environment was considered as a sub-theme in this study after being constantly identified by 80% of the study participants. According to the Pillars of Peace Framework (2012), corruption refers to the abuse of entrusted power for private gain, encompassing acts such as bribery, fraud, extortion, embezzlement and kickbacks. Systematic corruption occurs when the nature of governance and governing institutions makes paying a bribe a prerequisite to interact with these institutions and to engage in economic activity with them. According to Transparency International (2014), keeping corruption under control is essential for building and maintaining peaceful societies.

One participant indicated that he considers peace where corruption is non-existent. Melania (female, 20 years) said:

> *For people to live in harmony having access to affordable water and having tools to carry out the tasks … We also see people living in peace, without fighting each other, or still, without corruption … Especially corruption, even a leader, taking away what is supposed to benefit the majority. In our area we do not condone corruption because it retards development.*

Ms Mhungu (female, 65 years), equates a corrupt free environment with the capacity of local leaders to listen to views of the people:

> *Peace can come if leaders listen to people's problems and grievances. If people say they have a plan to harness our water resources in the area, we sit together, right from the village setting to the councillor to consider the proposition … this one giving information to the other. This gives us a chance to develop.*

Five of the 16 respondents lamented the presence of corruption in their area, which compromises peace.

We have corruption, especially from our leaders, for example councillors. Corruption which is common in our area is lack of transparency. We do not know how boreholes come to be drilled in a certain area. For example, we can witness a borehole being drilled without our input and you find out that the borehole is being drilled near the councillor's garden. Kondo (male, 48 years).

Another respondent concurred:

If a leader has an advantage, or is above others he/she initiates corruption. For example, if I have money or I am the leader, I will take advantage others do not have money that is the root of corruption. (Mr Madiro, male, 32 years)

Tawengwa (male, 27 years) observed:

Corruption in water projects can occur when committee members collect money for repairs from households, but would contract a bogus pump minder, who is cheap. The remainder of the money would be converted to personal use. In the end the borehole will continuously break down and people's rights to water are violated in the process. Community member will not have peace of mind because they will travel long distances to fetch water, most of it contaminated.

In the questionnaire, 76.47% of the respondents indicated that they strongly agreed with the notion that peace is present when there is no corruption in water provision, 13.73% agreed, 1.96% were neutral, 5.88% disagreed and 1.96% strongly disagreed. According to the Pillars of Peace Framework (2012), there is an experiential connection between corruption and peace. The Framework further stated that a decrease in corruption leads to an increase in peace and societies with the most solid representative organisations having a tendency to be both the most peaceful and the least corrupt. Transparency and inclusion of community members into water point committees for instance increase their inner peace as they perceive the leadership to be less corrupt.

5.2.3 Peaceful resolution of conflicts

Botes (2003, p. 1) hypothsised that violence is the social interference in the genetically programmed feelings, thoughts, sensing and/or behaviour of another individual. Ten participants identified that peaceful resolution of conflicts is a benign concept in so far as access

to water resources is concerned. This comes through strengthening the informal social and cultural norms which relate to the behaviours of members in relation to their tolerance and acceptance of people within the community. Lederach (2003) postulated that conflict within the community is endemic, but it was important to be able to transform relations from a negative state and channel them towards positive perceptions of every member of the community towards each other. Narratives from participants supports this perspective.

Ms Mhungu (female, 65 years) argued that:

> *Hatred between people in using water is always present in this community. This may lead to formation of two opposing groups in the community. Most of these divisions take political forms, as people from different political groupings take opposing sides by supporting fellow comrades. This happens even if some are clearly on the wrong side.*

To expand justness, citizens should retain access to social processes and right of to decide in matters that involve their existence, as argued by Mr Manyere (male, 32 years):

> *Peace is also in the country if people are not being abused politically. If leaders in the area are not suppressing people and denying them their rights to participate in water committees. Leaders should respect the voices and inputs of the people.*

Another respondent alluded to respect for his rights:

> *I do not want to be abused, as you can see for yourself, our country is independent. I have a child with the same age as this one (pointing towards a four year old child), she has to go to crèche, and I do not have money in the bank, nor a funeral policy. I get water from this stream and people say I should not grow, I will not be free.* Kondo (male ,48 years)

Other study participants argued that without respect for each other, there is bound to be violence:

> *If a person come here at my homestead and begins to say, 'what are you are doing here is not allowed. You are not supposed to stay here near the river, if you stay here and I come back, I will destroy your thatched house'. I am staying in this thatched house and near the river because I do not have anywhere to stay, but if a person comes here to remove me, where do you want me to stay. It is very bad, and that is violent.* Kondo (male, 48 years)

He added:

I must be free to live in the country with respect. Free in the sense that, where I am cultivating my crops, people should not say I am not allowed or if I cultivate my crops I will be forced to pay for water even if water is a gift from God and comes from heaven … do not grow on the river banks even if I use a fountain to make a living and send my children (pointing towards them) to school, one should not come to stop me from getting my 20 cents, from the source and buy my children books so that they can learn whilst I am not educated. My aim is that if I grow vegetables, I educate my children, so that they can help our country to grow, but someone comes here and say stop cultivating, it is not proper.

Mrs Vhumiso (female, 30 years) said:

When using water I know people can be at loggerheads. People can quarrel at a borehole, for example when wants to fetch water first yet he/she was the last to arrive. There can be a misunderstanding and people resort to physical violence. It can start as trivial issue and grow to a big issue. People take violence as physical fight, however vulgar or harsh words towards each at a borehole can be violence.

Answers from the questionnaire indicated that 74.51% of the respondents indicated that they strongly agreed with the notion that conflicts occur in the context of people trying to access water, 21.57% agreed and 3.92% could not answer. If conflicts are present in day to day interaction of community members in accessing water, then their capacity to resolve conflicts should be enhanced. Botes (2003) argued that, "conflict transformation is defined by intentional efforts to address the natural rise of water conflict through non-violent approaches that address issues and increase understanding, equality, and respect in relationships". Study participants equated the capacity to resolve conflicts to peacefulness:

Peace is staying in a community without gossiping and violence. If someone offends somebody for example by overusing another person's water pump to the extent that it breaks down, the two need to sit down and talk to each other without violence. If peace comes, it saves lives and we live together. Syto (male, 29 years)

The community, as the user of water also has the capacity to resolve their own conflicts. Syto (male, 29 years) said:

In cases of clashes at water points, we sit down together with others. We go to the village Chairman, we give the Chairman the story. We deliberate together as an

assembly about the problem at hand. We then together determine, who is on the wrong side. She/he will be told that the way she/he did is not in tandem with living with others in harmony and should change. We then shake hands and declare the problem over.

A survey showed that 68.63% of the respondents strongly agreed that they resolve their water conflicts peacefully, 27.45% agreed, 1.9% were neutral and 1.96% could not answer. According to Mohamad et al. (2016, p 139), shared values can be used to solidify a community's sense of vision, trust and engagement with each other, and drive them to cooperate towards a common goal, hence providing a stronger basis for social/collaborative learning and adaptive co-management of water resources.

5.2 Informal water access practices

This section present findings related to informal water access practices used by the community. Informal practices are norms and values embedded in the community that regulate access to water. Informal practices used by the community vary depending on each source.

5.2.1 Boreholes

Study participants explained the informal practices used to regulate abstract water from the community boreholes. From observations, there is one borehole for the village, and a further two inside the primary and secondary schools. The schools are situated between Village One and Village Two, although they serve a larger community. School boreholes are for pupils and teachers, but they can also be used community members if there is a breakdown in either of the two village boreholes. The type of borehole used by community members in Village One is shown in the photograph that follows (see Figure 5.1).

Figure 5.1: Community borehole (Photo by author)

Water resources, as a common pool resource, are characterised by common use and equitable sharing. Ngonie (female, 35 years) said:

> *Everybody is free to use the community borehole. We also have boreholes inside the primary and secondary school yards. The borehole is for these institutions and people are not supposed to draw water from them. If I use a borehole, I should use it in a manner, which I would if it was my own, preserving it. People should not vandalise, mess up or say the borehole is not mine so I should destroy it".*

Syto (male, 29 years) believed that:

> *You must fetch reasonable water from the borehole. If for example you fetch too much water, even if people do not notice, you should ask yourself and feel guilty. If you over abstract water from these boreholes, they can break down and others will suffer.*

Sophia (female, 25 years) added that:

> *At our boreholes shouldn't bring too much containers… at least bring 60 to 100 litres. We have an agreement that people should use the borehole responsibly, for example not to overuse it. People are not allowed to take any nut, bolt or any part from the borehole.*

Informal institutions can take the form co-operative behaviour and traditional set of rules of the area. There is a positive potential that cooperation around water resources challenges can reduce the risk of broader social conflict and violence. The responses above show common rules used by the Village One community members to conserve their water. The rules are anchored in morals known as the *unhu/ubuntu* philosophy.

Local practices prescribe rules for contributions towards investment maintenance of water sources. Rhoda (female, 25 years) argued that:

> *We discourage lack of hygiene, because people drink water from the borehole and can suffer from diarrhoea. Everybody is involved in maintaining the rules of the society. If a borehole breaks down, we are informed as a village and we repair or we can contribute 5 Rand each to hire an individual who is capable of repairing the borehole. Everyone has the right to drink water from the borehole, because we would have contributed to the repairing of the borehole by paying 5 Rand each.*

This was supported by Mrs Vhumiso (female, 30 years) who said:

> *If the borehole breaks down, Mr Sava is the only one who is capable of repairing. We sit down and discuss if there is a part that should be fixed or replaced on the borehole, then we discuss the cost of the part. If it costs $10, we can pay for example 50 cents or 20 cents whatever the case may be. The part is then bought, the borehole repaired and people get water.*

Thus, in times of crisis unity is fostered due to the need to achieve a common goal of access to water. The respondents have knowledge of the health consequences of accessing contaminated water, like diarrhoea. However, as observed, the community members may be divided on maintenance issues, for example the available borehole, though new, broke down after only three months of being installed. Almost a year after the borehole broke down, it is yet to be repaired, signifying lack of co-operation among community members.

5.2.2 Water point committee

Bruns (2005, p. 4) suggested that "institutions are 'created' consciously or unconsciously by resource users acting as insiders, through deliberate design, imitation, trial and error learning, improvisation and other processes". Thus, water committees are part of institutions created by

the community, to act as intermediaries in water related issues. Although these water point committee are included in formal water hierarchies, they are rooted in the community's informal practices.

Responses from the participants revealed the presence of a committee to regulate access to water. Kondo (male, 48 years) said:

> *... borehole committee, which is responsible for issues to do with access to water for people. We drink water from the borehole so the area around it has to be cleaned for hygienic purposes. If our borehole breaks down, we make donations to mend the borehole. An individual should not use water carelessly, spilling it all over, because we use the borehole water for survival. A person should not wash his/her clothes at the borehole, but somewhere away from the site because this is where our children and our health is.*

Ngoni (female, 35 years):

> *If the borehole breaks down, the committee moves around exhorting people to making contributions for example 5 Rand each, so that they can go and search for an engineer to repair our borehole. We then make contributions and our borehole gets repaired, then we drink clean water. The committee has one member who checks if the borehole is being used properly.*

However, Zunde (male, 30 years) emphasized the dominance of one powerful individual above the collective committees:

> *We have the village chairman, who has the right to reprimand an individual, but we cannot point an individual with the authority over a borehole. As a community, people know the expectations, but in case of problems the chairman and the councillor will reprimand people. If I find an individual washing baby nappies at a borehole, I will say nothing but will tell the village chairman as the leader of the area and who now takes the responsibility.*

Within the community, social structures may be dominated by one powerful 'top dog', who influences decisions on all water related issues. In Village One the committees showed ineffectiveness as they could not solve any water related disputes. People prefer the Chairman to the Committee in all water related matters.

The committees are also not all encompassing, as some respondents are not involved in decision making. Respondents revealed the presence of structural violence of exclusion. Melania (female, 20 years) argued:

> *We have not yet settled down to be among committees, but I wish to be involved in committees. Leaders do not involve us in the committees. They are quiet about committees, they do not talk about them.*

Rhoda (female, 25 years) also disputed the presence of committees, "Local laws were previously there. We had a water committee which oversaw the collection of money for repairs. Nowadays we do not have them". This is self-evident when rules are ineffective, as pointed out by Mrs Meke (female, 38 years):

> *We cannot say we have rules because an individual can do whatever he wants with water. The boreholes were supposed to be fenced, but there is no fence, even young cattle herders can go and do whatever they want with the boreholes, even if they do not have any particular use of the water. They just do it for fun.*

Observations also revealed that local rules through the water point committee as a conduit are not easy to enforce. There are several reasons for this weakness. The committees are voluntary and the members are appointed by the Chairman. The local communities do not feel compelled to follow the rules as enforced by the committees because they did not participate in choosing members therein. Attempts to include the Water Point Committees in formal structures were challenging as the water point committees have no statutory power i.e. no formal water legislation has enacted provisions regarding them. The Chairman of this village, similar to nearby villages and early 1980s resettlement schemes, has peculiar challenges. The people settled in these areas are of diverse origins, hence the village Chairman's authority emanates from the ZANU (PF) political party and not from traditional ruling lineages. In other villages, where resettlement occurred long ago, families belonging to the same lineages were settled in 'reserves' by the colonialists. Thus, in these villages there are a kraal heads, operating through kinship ties and using customary rules that have existed and been modified for almost a century. These communities are better organised, and local rules are enforceable and respected.

5.2.3 Mythical rivers

Lamberts in Kummu et al. (2008, p. 3) argued that myths are stories which explain why the world is as it is today. Kummu et al. (2008, p iv) reiterated that "myths are stories that a particular culture believes to be true and that use the supernatural to interpret natural events and to explain the nature of the universe and humanity and all cultures have them." Myths have functioned as rationalisations for the fundamental mysteries of life. Myths can also be used to justify certain kinds of decisions and strategies. Policies and agendas related to water and development are exposed to various myths, like most human activities. Myths regulate customary tenure in communal areas of Zimbabwe.

There are two rivers and one stream, which serve Village One. These are Muzvezve and Chingondo Rivers as well as Mutorahuku Stream. These rivers only flow during the summer but they dry up during the winter and autumn. However, there are pools dotted along the Chingondo and Muzvezve rivers. These pools are subject to local practices such as prohibition of use of soap, petrol generators and fishing. The photograph that follows shows one pool in Muzvezve River (see Figure 5.2).

Figure 5.2: A pool in Muzvezve River (Photo by author)

Myths have informed the nature of informal practices used by the community for a long time. They regulate conduct and access to water. Kondo (male, 48 years) said:

If you go through the pathway to the south you find a fountain, which is perennial, from January to December. I am one of the enforcers of our traditions. We have some reeds on the fountain, and no one is allowed to pluck them off. No one is allowed to go and fetch water using a metal tin that is why you see me using a plastic bucket. Metal tins cause our fountains to dry. Our place is sacred, that is why it is called Chingondo – falls. Our chiefs (Ngezi-Murambwi) are buried in caves in mountains overlooking these rivers (Chingondo and Muzvezve). If you come across a python – and there are many of them – you are not allowed to kill it, you just clap your hands [gesturing] saying out the chief's totem and it goes.

These traditions involve all the people in the community. Syto (male, 29 years) said:

We sit down and carry out traditional ceremonies, we go to the caves, where our spirit mediums tell us what our ancestors want. Water pumps are not allowed to be immersed into the rivers for drawing of water. Those who are doing it are our leaders who are mischievous. They know our tradition doesn't allow it but they misuse their powers to break the laws.

Ngonie (female, 35 years), concurred:

We have Chingondo… there is a place where water pumps are not allowed. You know what we do nowadays electric or fuel powered water pumps. It is not allowed. Even washing on the spot is not allowed. People can be doing it but it is not allowed.

John (male, 40 years), also supported the above assertions:

We do not fetch water using black tins on sacred areas of the river. Muzvezve River is sacred, people should not wash in the river. We preserve our water following local myths.

Local practices are therefore holistic and involve the whole community. Myths are used as an indirect way to conserve water, for example fuel powered water pumps draw a lot of water in a short space of time. Their prohibition is therefore an indirect way of conserving water for equity purposes. Tradition would prefer people to manually draw water from the pool so that everybody accesses water as opposed to a single owner of a water pump.

5.2.4 Informal practices and ecological peace

Local rules advocate for environmental peace. They are also embedded in preservation of water through hygienic practices and conservation of trees. Narratives from participants revealed these linkages. Kondo (male, 48 years) said:

> *We know that washing is a problem in the rivers. We do not wash our clothes everywhere. I know you found me washing, I am fetching water from that stream (30 metres away). Our water should not get contaminated by soap. Even if I want to wash my body I fetch water using a bucket and wash as far away as possible from the river.*

Ngonie (female, 35 years) said:

> *I am one of the people responsible for preserving our rivers. If I see an individual washing I will take him/her to the village leaders who has the right to give a deserving punishment so that we preserve a rivers and pools clean water to help in survival.*

Rhoda (25 years, female) concurred: "We do not allow people to wash on the river banks, because soap contaminates water". "People should not bath in the river because soap contaminates water and lead to the death of the living organisms in the water" (Zunde, male, 30 years).

Kondo (male, 48 years) argued that local rules dictate that trees should also be conserved:

> *Look at these trees hanging on river banks (pointing towards), it is prohibited to cut them down. If you are seen cutting a tree, which is not firewood, you are arrested. The reason is that, our pools won't dry, if we have trees lining the river banks, and we survive using the water".*

According to Syto (male, 29 years), "*Trees on the river bank should not be cut down so as to limit evaporation".*

5.2.5 Community gardens

Local practices also prescribe the setting up of gardens in the community, especially close to the river. According to Kondo (male, 48 years) who resided on the Chingondo stream banks:

We are allowed 30 metres from the river. Look at my garden, its boundary starts on that lemon tree, near the electric pole (pointing approximately 20 metres from where we are sitting) going towards the north. Where we are sitting here we are instructed to grow some trees and I have already done so, look at them. This is done so that our pools will not dry up. This pool over there will never dry up. No one uses a net, wash clothes or hands in the pool.

However, "people are free to have gardens along Muzvezve River" (Tawengwa, male, 27 years).

Mrs Meke (female, 38 years) disputed this:

We used to forbid people to settle along the river bank, but now people have settles there and there is a lot of erosion. Even cattle were not allowed to drink water everywhere. Now people are overfishing, using Mosquito nets, containing dangerous chemicals. Previously when one was discovered using a net he/she was arrested, but nobody cares now.

Mrs Vhumiso (female, 30 years) concurred: "You can see an individual having a garden five metres away from the river and nothing is done to him/her".

Rhoda (female, 25 years) said:

We once met and discussed about people who are growing their gardens on the river banks… It can affect our dams and rivers, they are silting.

Gardens are dotted along the Muzvezve and Chingondo Rivers. Some are beyond the 30 metres stipulated by the local practices, but most are within the rivers. The importance of water as a source of livelihoods has seen many leaving the village and establishing homesteads within the banks of the river. Although it is unlawful under both the customary and EMA Act, the prevailing harsh economic conditions means the locals are surviving through market gardening. It is therefore difficult for the local leadership to try and remove these people as a physical confrontation is a possibility. Therefore, when shared norms are not internalised, greater levels of external enforcement is required

Common property arrangements can result in efficient use, equitable allocation and sustainable conservation. Conservation can also be seen in preservation of the aesthetic value of shared

water sources. Fishing, for example, is also regulated by customary practices. Mr Manyere (male, 32 years) said:

> *If an individual comes to fish using a fishing rod, there is no problem. What is prohibited is coming to fish using a net. If you use a net you harvest even smaller fish, but if you use a fishing rod, then you can get fish enough for family consumption. If you are seen using a net, you go to the village court.*

Rhoda (female, 25 years) supported the above assertion:

> *We have a rule that people should not use soap on stagnant water, people should not use nets, when fishing in Muzvezve River. The village chairman, during dry seasons announce that we should not use nets while fishing in the river.*

Informal practices are therefore not only concerned with the allocation of resources to every individual in the community but also aesthetic peace. Aesthetic peace in this sense means the preservation of the beauty of water sources, through non-contamination and practices that disturb the general appearance of their pools. Therefore, mythical connotations are invoked in a deliberate effort towards sustainable use of the water resources.

5.3 Summary

The findings of this study revealed that community members understand the concepts of positive peace as they relate to water access. In using water as a common pool resource, the community should co-exist through equitable sharing of water. They understand peace as living in harmony with each other. This includes peaceful co-existence by uniting and celebrating diversity. Participants also understood peace as an environment free from corruption i.e. if their leaders are not diverting contributions for maintenance of water reservoir to their own personal use. The participants confirmed that conflict is endemic in their community; however they are able to gather and restore their relations to produce a desirable peace outcome. They also indicated that peace comes after respecting each other's views and rights. Peace also comes if people are able to resolve their conflicts peacefully. There are various local practices used to access water and these are important to foster collective access and equity for each community member. The type of practices depends on water sources. When using boreholes, participants emphasised hygiene and sharing. There are committees which regulate abstraction of water from these boreholes. They also help people to maintain and contribute towards repairs in the

communities. However, some participants said these committees do not involve all the people, to such an extent that local regulations become ineffective. Rivers and pools are also subject to local practices. People are prohibited from washing their bodies and clothes in rivers. Trees should not be cut, and gardens are also established 30 metres or more away from the rivers. Fishing is allowed when using a fishing rod only to allow for breeding. The local myths control the use of rivers and pools. People are supposed to respect local traditions, otherwise there will be limited rainfall.

Chapter 6

Water, Development and Sustenance

6.0 Introduction

This chapter presents empirical and qualitative findings on water access policies and positive peace in a Zimbabwean rural setting. Findings are presented following two major themes: the relative influence of formal and informal access to water on development and sustenance; and impact of formal and informal water access on peace indicators. Relative influence means historical, geographical, and familial factors that affect access to water. According to Sheldrake (2013, p. 20), there is influence in everything people do, and sometimes in what they do not do. Impact refers to the influence something has upon wider society, intended as well as unintended, immediate as well as protracted (Federation for Humanities and Social Sciences, 2014, p. 7). According to Stern (2015, p. 4) impact is "positive and negative, primary and secondary long-term effects produced by a set of policies or activities, directly or indirectly, intended or unintended". The World Bank in Stern (2015, p. 5) defined evaluating impact in terms of attribution: "assessing changes in the well-being of individuals, households, communities or firms that can be attributed to a particular … policy."

Therefore, by evaluating impact, there was search for any water policies and/or informal practices effects, not only those that are intended. The researcher recognised that these effects may be positive and negative, and that effects of interest are 'produced' (somehow caused) by the water policies and/or practices. There is a possibility of different kinds of links between all kinds of development intervention (project, programme or policy) and effects. Lastly the study focused on the longer-term effects of water access policies and/or informal practices.

6.1 Findings

6.1.1 Whither development?

Participants defined development and how this is affected by water availability and access. According to Ait-Kadi (2016, p. 108), there are evolving links between water and development. Water is essential for sustainable social and economic development and, in turn, that development provides the necessary resources to invest in improving water security, water infrastructure and water institutions. Thus, water is at the heart of the development process.

Goodhand and Hulme (1999) argued that positive peace means an opportunity to achieve social and economic development derived from doing water projects.

All participants interviewed (25) had a view on development and its relation to water. Tawengwa (male, 27 years) defined development as:

> *Development means people unite and do things together. Development means establishing such things as hospitals, shops, water, roads, so that the community is self-sustaining. The starting point is water, because it is used in building all the other things that I have mentioned.*

This shows an understanding of water's pivotal role in the development of local infrastructure. The construction of social amenities as direct derivates of water, brings to the fore that there are various benefits which come with utilisation of water resources.

Rhoda (female, 25 years) viewed development in terms of progress:

> *What we have, we build more so that our lives become better. We move from one stage to another, that is development. If we do not have electricity and we are using firewood and then we get electricity, then we know that we have development. We will get entertainment and our cooking becomes easier. We use the electricity to carry out chicken projects, drilling boreholes inside the homesteads – development is continuing.*

Water does not only influence development of other projects, but there is an inverse relationship. Electricity, for instance, gives the potential to bring electric powered boreholes, which makes homestead irrigation easier. In Village One, people innovate and use petrol powered water pumps, but the gardens are located on the river banks where water is easily obtainable from pools.

Development can also enhance change for better living:

> *Development is anything that brings change to an area. Anything that was not previously in an area and is brought can be termed development. If I do water projects and grow in business and at the same time develop my area that is development.* (Kondo, male, 48 years).

He added, "Water is life…No living thing can live without water. We can have food but water is the most important", stressing the importance of water to development and sustenance. If

water is a basic need, then its timely provision is important in enhancing people's development capacities.

Ms Mhungu (female, 65 years) argued that:

> *Water brings health because it is used at home to wash clothes and plates. Water is important to us if it is near, clean and safe, because women will not have to travel far to fetch water. We can have various projects that can be done using water, for example chicken or piggery is done much easily if water is abundant – we therefore get money. If water is near we construct gardens. At the moment, our gardens are very far [pointing towards Muzvezve river a kilometre away] and are prone to wild and domestic animals and not suitable for human habitation.*

Water enhances community development, through agricultural activities. Rural people use their own resources and initiatives for some small income generating activities. It was observed that in the village there were several water related informal practices such as broiler and rabbit breeding, and market gardening. To the community, this brought peace and happiness through income generation.

The available water source (Muzvezve River) is also an important common-pool resource for sustenance: "River water is important because our livestock drink water, we fish, have gardens and bath in the river. Rain water is important because we can cultivate large areas, provided it has good patterns" (John, male, 40 years).

Mr Madiro (male, 32 years) added, "We use water from Muzvezve to water our gardens, to grow maize crops for subsistence. Even at the boreholes some have gardens to grow vegetables, at least they will have a $1 in their pockets".

Mrs Vhumiso (female, 30 years) indicated that local practices are important to development:

> *Those who have gardens grow vegetables and tomatoes and sell them. At least they get something for subsistence. Those who utilise water at least gain something they do not have. Even if life is tough if one gets a dollar, it is better.*

The respondents understood the use of water as a tool for livelihood sustenance. This shows that survival instincts inherent in the human beings, can be harnessed as a source of and

imperative for development. Muzvezve River which passes through the area is widely utilised by the community members for development and sustenance. This shows that rural people have the initiative and capabilities to spur their own development using available resources.

Water is an important tool in community development:

> *At the secondary school, we fetch water for builders to construct the school buildings. People have gardens to grow various types of vegetables like tsunga, covo, rape, tomatoes, butternuts and green mealies. They find food in the gardens. Those who cannot farm buy from those who have the gardens. There are also those who rear commercial chicken, their broilers can also drink.* (Sharon, female, 30 years)

Tonde (male, 22 years) concurred:

> *Development depends on what you used to do. Like in this area we came for farming. If we talk about development we talk about electric boreholes, since we now have the road. Rain water is no longer reliable because it is erratic, you can buy inputs but you can have a business loss. If you talk about development I think about projects which people can undertake to help themselves. An example are gardens, piggery and poultry. Along the Muzvezve River, if people unite and we have gardens, we can make something worthwhile. In our area, we look forward that if we do these things then we can be developed. Water is an umbrella issue as it is important for everything we need. We want to drink safe water, others irrigate and some use it for their livestock. We need water for our manual gardens. We have small gardens, where we grow rape. If we get water we grow slowly. We fetch water using buckets. We also sell these garden produce. Petrol is expensive, for one cannot fill the water pump every day for the purpose of irrigation. If I have electricity, I can buy monthly. Petrol is more expensive than electricity. Besides electricity, there is solar system that can water up to four hectares. Besides crop farming there is animal husbandry.*

The above narrative showed that communal farmers are left to their own devices by the government, yet according to SIWI (2015) mechanisms to increase irrigated area in the rural areas would increase farming efficiency five-fold. The monetary value of these benefits is twice the cost of the irrigation development.

Gladys (female, 24 years) also supported the argument: “Water is important for food and irrigation. Almost everyone has a garden in this area. Those who have poultry projects, is because of water. Water is also important for disease prevention, because one can wash and drink safe water.”

However, Mr Madiro (male, 32 years) argued that water utilisation depended on the individual:

> *People are not utilising the available water. However there are some who are using it to develop themselves. My neighbours have a large garden. Some are migrating from the village to settle along the river banks so they can cultivate their gardens easily. They realise that water is life. If you grow, close to three or four beds of vegetables you will sell to those who do not have them and you survive.*

Ms Mhungu (female, 65 years) said:

> *I have a garden and have a private borehole and I am watering my butternuts, tomatoes and vegetables. My borehole has a pump powered by diesel generator to draw underground water, with a submersible pump. I drilled the borehole recently. We want to work but it is tiresome to water gardens using Muzvezve River because of steep slopes. If one gets money, then he/she can buy an engine.*

The above arguments shows the diverse nature of people within the same community: some have gardens, others have poultry projects. Within the group of the respondents with gardens, some use buckets to fetch water and others use fuel powered water pumps to draw water from the river. Another respondent had a private borehole, which also uses a generator. Consequently, any water policy, legislation or statutory instrument has to be holistic, it has to take into account the different needs within rural communities. Rural communities are not a homogenous grouping of individuals, so this can be reflected by the depth of water instruments in order to answer as many questions as possible related to community water development. As the above responses reflect, informal practices are embedded within the society. They are therefore a useful starting point in water policies and any water related projects. Significant input from the community must be sought, as they have intimate knowledge of water.

Some village residents did not see any development brought by water in their area:

We cannot talk of development because if I have a small garden I just get vegetables for consumption. I cannot have an acre of a garden, while watering using only a 20 litre bucket. Ndaba (male, 19 years)

Mwale (male, 40 years) agreed with Ndaba,

We cannot say water is being used with huge impact on development. Even people with water pumps in their gardens are earning only enough for subsistence for example selling five bundles of vegetables a day. I do not see any improvement on the gardens or the lives of people … We want piped water in the area as opposed to fetching water in Muzvezve River. If piped water is near, we can fetch water and construct gardens for better livelihoods.

However, Kudzie (a council employee) said:

Generally in Ward 11, there are areas such as Wanganui where ground water is difficult to get. We are carrying treated water to them. In Village One, we haven't heard of any challenges.

Manjoro, a rural district council employee, said:

There is no irrigation yet, but it is highly capital intensive and needs the participation of other partners. We built Island Dam, we open the gates periodically, we are working on the possibility of damming our major rivers but you find out that right now government through its irrigation department, some communities are getting mechanised equipment.

The hands-off approach by the government in terms of water supply for the community's productive needs is apparent from the above responses. People access water through informal practice and it is only enough for subsistence purposes. The Department of Agriculture and Mechanization pre-occupies itself with distribution of seeds and fertilisers during rainy seasons, even with evidence of erratic rainfall patterns. A mechanisation policy is present, but the little equipment provided in the provinces is quickly whisked away by the political elites. There is simply no evidence to suggest that communal farmers are getting irrigation equipment 'Opening up of gates' of a single dam built for the purpose of ZIMPLATS mining company is simply not enough, as this water is utilised by wealthy commercial farmers downstream of

Ngezi River. Communal dam construction might provide the solution, if constructed with the purpose of providing piped water for irrigation for the rural communities.

Manjoro, a rural district council employee knew the importance of irrigation to development of the communal areas, but argued that it is situational:

> *Where the water capacity is high, you can use it for other purposes. For those who are high yielding you can encourage them to have nutritional gardens. With the coming in for solar technology it is helpful, because the strains on the uplifting device is less, unlike physical abstraction because it may not be done properly. We put in a submersible pump to a tank, and you can now ration it with all facts knowing that you have so much litres.*

However, he also lamented:

> *We don't have much groundwater in the ward. When the former settlers were in the area, they reserved the area for cattle ranching, because they knew they was no much water. They would do their maximum geo-surveys to find where there is water and at what depth. They are not suited for crop farming. We need to improve technology for scouting for water.*

Another council employee, Kudzie said:

> *We supply treated water in taps to surrounding villages (near Turf Rural Growth Centre) although we have not reached Village One yet. The water is commercial in the sense that they pay for the delivery. We have plans to expand treated water to Tyrone area but it is commercial.*

According to Sithole, the council chief engineer, water provision has its challenges in the District:

> *We cannot predict that in this area there is water. It something that is difficult. It is a natural phenomenon, which we cannot overcome. Where we intend to supply water, we end up not supplying the water because there is no water. We only drill a borehole where there is water. Sometimes the communities which are crying lack of water, there is no water in the sense that the area has no ground water, not that the council is failing to provide water. The aquifer there does not have water, for example in Cycle G, that is a big problem. The other challenge is priorities. We*

have got other pressing priorities. Other communities say they need a road, maybe water is not a challenge there. How do we synergise given that we have about 60 lots and the resources must be pooled together. We have so many resettlement areas, where we do not have many social amenities. For example, there is no water, no roads, clinics or even schools. What do we prioritise? Yes, we need water, after water what do we do? How do we balance an area in Ward 11, 12 to Ward 16 against Wards 1 to 8 which are communal where drilled boreholes long back soon after independence and where you also find that the water table is high? In these areas where people were resettled there is no water because the area was meant for ranching.

The views above indicate that the local authority is out of depth in terms of water provision. The continued reliance on arguments that there is no groundwater shows lack of knowledge on rainwater harvesting methods. Thus, there is a real possibility for cultural violence in the sense of words legitimising inaction on the part of the government bureaucracy. Words such as 'other priorities' or 'other communities' can be used to justify neglect of the rights of communities to water. It is important to note that the water provided in Turf Growth Point, was provided by ZIMPLATS mine under a Build Operate Transfer (B.O.T) agreement and despite the council now collecting revenues from residents, they do not have the capabilities to expand these services beyond a few villages near the growth centre.

Clean water is also important for personal health. Structural violence is present if people suffer from preventable diseases such as waterborne diseases. Syto (male, 27 years) said:

For an individual to live, water is important to drink and bath. It provides health to people and livestock. Recently, the heat waves that we experienced, showed the importance of water. Our breathing became difficult. When rain fell, I could feel that I was fit because there if fresh air. Even other living organisms survive because of water.

Cletus (council employee) said:

Ministry of Health have an Environmental Health Department have their EHTs (Environmental Health Technicians). Whenever we drill a borehole, it is not allowed to be used by the people before the EHTs test if it safe. We find some water with too much iron and it is condemned and people will sometimes complain of

being short-changed because they do not technically understand exactly health issues.

Manjoro, rural district council employee, also concurred:

At the moment, we in conjunction with ZIMPLATS is implementing the Tangwena scheme, at Tangwena Primary School. The borehole in the area was producing water mixed with termite eggs. We discovered that it was drilled on an ant-hill. The EHTs deemed the water unsafe for consumption. ZIMPLATS is helping reticulating water from Tailing Dam to the school and eventually to the homesteads in the village surrounding the school. … The community has not yet complained about any pollution from ZIMPLATS.

(i) Conflictual development

Some respondents alluded to the fact that in using water there conflicts abound:

We are diverse people. If one brings, what he/she thinks is development, there can be disturbance of peace, because some may not be receptive to the idea. For example the introduction of electricity may lead some to think that 'dangerous' information is brought to people through improved access to radios and television sets or bring prostitution at the local business centres, instead of seeing opportunities of electricity having the potential to bring electric powered water pumps. So development can bring conflict. (Sharon, female, 30 years)

Conflicts in using common-pool resources, such as water, is common:

If one wants to develop his family in this area there can be conflicts. We can have a resource that is not being used in the area. If an individual utilises that resource, people begin to question… for example we have idle boreholes, if one connects a pump to use for a garden, people begin to get jealousy. (John, male, 40 years)

Sithole, the council's chief engineer, said:

When it comes to the protocol that we use, the VIDCOs and even WADCO, there are a lot of conflicts. Sometimes they retard water supply and development.

However, Mr Zijena, the local councillor claimed:

Economically we have challenges. There might be a need for some sort of things. Sometimes we fail to meet people's expectations due to financial challenges. There

may be conflicts in terms of diverse ideas, but we still come up with a solution People may argue in terms of siting of water points for drilling of boreholes. I think people need to be sensitised as to why we chose a particular area for drilling. We have experts who can detect water, but some can argue without knowing what actually led to the siting of an area. However, these are passing phases.

Lederach (2003) proposed that conflict is endemic in society; in accessing water for development, people constantly come into conflict. As responses suggest, this is an impediment to water related development, as projects may be unnecessarily delayed to the detriment of the communities.

(ii) Access to markets

Using informal practices people are able to sell products from smallholder agriculture:

Water helps people to irrigate their crops and make them healthy. The economy has slumped and the people are surviving through selling up of farm produce to areas like Chegutu and Turf. (Gladys, female, 24 years)

According to Ndaba (male, 19 years):

Almost every two days an individual goes to the main road to sell his/her farm produce, be it chicken or vegetables. So, water is bringing development because of the way we are using it is bringing money … However it is difficult to sell to companies like OK or SEVCOR because they need papers. Last month I had rape vegetables and I approached SEVCOR, seeking to see them, but they demanded papers, but I do not have money to find these medical clearance papers. They say if you grow crops you should have your own transport, not public transport… that is a major setback for me. We do however find buyers from the community. We sell butternuts, tomatoes and green maize to our fellow residents, but we cannot sell to big companies who have more money.

Sharon (female, 30 years) disputed this:

People were previously selling vegetables at OK Supermarket in Turf. Some companies for example SEVCOR, buy vegetables, but maybe people in this area are not aware or they are indifferent. They have a big market and they need supplies.

Tonde (male, 22 years) also added:

Medical examination papers are not difficult to obtain. If an individual knows that he/she is in farming full time, it is necessary to get these papers, because it takes a few days. SEVCOR need medical papers to ascertain the health status of food handlers in order to buy from him/her.

It is not enough for people to simply access water for irrigation; they need to access markets, to sell their products from these gardens. This is important for people's personal development and livelihood sustenance. Enquiries at the local ward clinic showed that a medical certificate costs US $40. It expires after six months and is only obtainable from a medical practitioner at a government or mission hospital. The nearest and easily accessible hospital is in Chegutu town some 108 kilometres away. This shows structural violence due to lack of access. Firstly, the certificate is expensive to many and the distance to collect the certificate is problematic. Processes of testing for medical certificates are cumbersome to such an extent that local clinics find them impossible. Water policies only look at the supply side of water, without marketing mechanisms for outputs of some water related products especially from smallholder farmers.

6.1.2 Service provision

Lokwood and Smits (2011, p. 71) posited that service provision is having clearly defined levels of water service within sector policy and norms; the type of service a consumer has (or should have) access to in terms of characteristics of quantity, quality, access, reliability and continuity. The World Health Organisation (2010) defined access to water supply, as access to an improved source of water of at least within one kilometre of one's dwelling. Provision of water should meet the positive aspirations and basic needs of the communities.

According to Sithole (RDC chief engineer):

We provide water as a local authority, we work together with the District Development Fund (DDF) as service provider. If we get money we give DDF and they drill boreholes.

The District Development Fund (DDF) is an important national institution at the operational level. This state-owned entity is not a part of local government, but it is an institution created by central government to assist in the provision of water infrastructure and is one of the main sources of public finance for the development of rural areas, especially the communal lands. Though the agency scored some resounding successes in the early 1980s, it has since suffered

from goal displacement and has become a vehicle for massive mismanagement of resources and corruption by both the local and national political elite.

The Herald (24 August 2004) reported that the Association of Rural District Councils (ARDC) called for the DDF to be put under the direct supervision of local authorities and for a commission of inquiry to be set up to investigate its criminal activities. The DDF has come under serious criticism for not consulting local authorities, who are the planning authorities, on its activities, resulting in the duplication of roles.

Bruns (2005) posited that local and outside experts can help provide knowledge on water issues. Sithole, the council's Chief engineer said:

> *Th mandate of the local authority is to facilitate water provision. There are some development partners, there is DDF and the Donor community. Even the community itself should mobilise resources so that they provide their own water. As a council we budget for water supply, sanitation and hygiene but our budget given financial constraints is not adequate. We need some players who assist the local authority. We only come up with a Strategic Plan for Water Supply, Sanitation and Hygiene. That is our core mandate and as a council we must have a strategic plan of how to supply water. In this case the advantage that we got is the community trust, where we say ZIMPLATS through mining activities which it is doing in this district, have managed to allocate resources to water supply and that is a plus to the district which is not happening elsewhere.*

Cletus (a council employee) supported the above argument:

> *We also provide water in conjunction with NGOs for example AFRICARE doing WASH in public institutions in Ward 11. We do the planning, identification and co-ordination. We have the councillors, and DDF is our sector department. Coordination mechanisms such as the programmes which come into the district such as WASH, undertaken by the UNICEF which is nearing the end. We have managed to drill 25 boreholes in Mhondoro-Ngezi District. The money comes from UNICEF, which they channel trough AFRICARE. The council does the co-ordination. We give NGOs Memoranda of Understanding (MoU), but they first have to pass through the Province. We agree on the nature of their projects in the area. Various NGOs work should not clash. As a planning authority, we give a*

brief guideline that is if and where a similar project is being undertaken. We instruct another NGO to move to an area where there is a gap in order to fill a void. This is called development sharing. We avoid duplication of roles. We see that there is no over-prescription of other areas. CSOT is mainly sponsored by ZIMPLATS, which also undertakes borehole drilling. At Turf Township, we have a treatment plant that we did with ZIMPLATS on a Build Operate and Transfer (B.O.T), so we are running it as a local government. They built a dam (Island Dam), to draw water into Turf rural growth centre, but this is for sale. Turf was built on a previous resettlement area. Its construction affected the nearby villages. As a local authority, we connected piped water to these villages, to compensate for the disturbance they underwent due to developments taking place in their area.

Kudzi, another council employee, added:

In water we have Africare, drilling boreholes at public institutions. We also have Zimbabwe Community Development Trust (ZCDT) being sponsored by Agro-Germany (Welthungerhilfe) drilling water at rural growth centres. So far we have done it at Doneni, where we managed to refurbish the water reservoir, adding new tanks, re-reticulating where we replaced corroding asbestos pipes by plastic. At Mamina we did the borehole flashing and building of flush toilets. We as a council put piped water at Gweshe and Kadhani business centre.

The responses indicate that, there is a high degree of co-ordination between different actors within the water sector. Both the local government, non-governmental organisations and private entities are very involved in water service provision. These synergies improve water availability and infrastructure in rural areas. Agrawal (2001) argued that these outside stakeholders wield significant control over water management decisions. This is by virtue of them bringing the financial and human expertise to the communities.

Institutional arrangements for water service provision in the communities are also centred on government agencies, as Kudzi said:

We work with EMA. If our security arrest people cut down trees, the EMA issues tickets to the offenders. The offenders pay both to the council and to EMA. In terms of water, money is paid to EMA and Council in terms of land royalty. We do not

use the RDC Act only, but use other Acts, so that we have power. EMA looks at issues to do with water pollution.

However, there seems to be an overreliance on outside funding for the council's water activities, as pointed out by Manjoro:

If they want to service their boreholes, then we help them and we communicate with DDF to help them. UNICEF has an account related to water, they deposit a floating sum into the RDC account, and then we run around organising workshops.... ZIMPLATS have their community relations officer in the CSOT. Their job is to put money into the Trust, then the committee will determine where and when to undertake water projects.

Sithole (Chief Engineer) added:

Given how we are operating, things are difficult but our core donor is UNICEF which is the main agent channeling to the implementing partners like Africare. Previously Africare was working here. They get some resources from UNICEF. On their own they cannot mobilise the resources.

The responses show a dependency syndrome over financing of water projects from non-governmental bodies. This may lead to corruption within the local authorities as levies collected may be used for other purposes with the knowledge of continued help from donor agencies. Although water policies and instruments provide a holistic management of water, since the outbreak of a cholera epidemic in 2008, UNICEF has been providing water treatment chemicals to local authorities and sponsoring the drilling of new boreholes. Instead of harnessing other avenues of income to complement the water projects, RDC authorities began to award themselves hefty salaries and allowances.

The Mhondoro-Ngezi RDC has, however, been proactive in seeking to raise capital for water projects for the communal areas. On council progress in developing the community and meeting the people's basic needs, Cletus (a council employee) said:

In our case, we are unique in the sense that we managed to procure our own rig. We are using that rig to drill boreholes in our district as well as other neighbouring districts. The profit that we get is used to drill boreholes at our public institutions (schools, business centres and clinics). To lessen the burden of drilling costs for

our rural folks, we remove the component of mileage. We look forward that nobody should walk more than 3km to fetch water. About 50 people should use a borehole. If there are more than 50 people at an area, there should be an extra borehole drilled for them. To achieve this, we managed to buy a rig so that they can be able to drill boreholes on their homesteads. If local people prove that they have the capacity of owning some tangible assets, for example cattle, he/she pays half the total amount. If one wants to drill about 60 metres we want a total amount of US$ 2 800, therefore an individual pays US$ 1 400, and we drill the borehole. We give the customer a two months grace period and he or she pays the remaining balance in instalments. At the least a person should pay the full amount in three months. We still use his cattle as surety.

Manjoro, another council employee, concurred:

We have got several running programmes and we are not yet with the communities and the ideal is that is being the custodian of the water infrastructure of the council, we should build that into our programmes. It is also used as an income generating project. We bought a new rig to drill boreholes. We avail it to everyone who wants to own an individual borehole, we drill for him/her and they make a payment plan. The rig is a new initiative and was bought in February 2016 and was commissioned in April. The ratio should be 250 people per borehole. Our aim is to reach 400m that an individual should not walk more than 400m to reach a borehole. That is where the inventory comes in now. It is important to have such knowledge to plan as a nation. The ideal situation is 500m. Normal consumption, people should not carry water on heads.

The responses show that that this new initiative of the water rig is discriminatory in pricing. The amount of US$2 800, for drilling even divided into installments is still prohibitive for many, as US$1 400 cash is still needed upfront. Thus, on paper the project appears a good vehicle for providing water to the community, but in fact only the financially stable are able to pay for the service. In Village One, no-one has benefited from the project or knows that there is such a facility.

Sithole (Chief Engineer) knows the council's obligations to provide water to the local communities:

Off-hand we may end up lying, but we are talking of Tyrone, Village One in terms of population, I do not have an actual figure of households in that area. I am saying it is a plus, where ZIMPLATS are assisting that area. Even at the schools they drilled boreholes in that area and they are still to do some boreholes. Under normal circumstances, I think every 250 must be served by one borehole and in Ward 11 we are almost there.

He, however, added that:

We do not help the community with the rig, we generate income. The income which is generated, is supposed to help the community. That rig has high capital costs. Once we do some projects within the districts, which are not budgeted for there will be crisis. We hire out the rig, we mobilise the resources. Once we do that whatever amount we raise that is what we are going to use to drill a borehole in the community. Rather than saying the rig is meant for the community, it is meant for them provided they are paying for it.

The water rig is hired out to raise 'capital' for other 'projects' within the district. It is not as clear now how the capital raised from these 'income generating' projects has been used. Instead of drilling or resuscitating boreholes using the machine meant to do so, the council uses money form drilling water elsewhere to hire DDF to drill boreholes, as it is easier for them to do so. In the end the water rig is prone to misuse as it is sometimes 'hired' by politicians to drill boreholes during campaign periods. The council rarely get paid for the service. The local communities miss the benefits of the common property in their area, as it is monopolised by the powerful outsiders.

(i) Empty promises

Agrawal and Ribot (1992, p. 2) argued that in management of common property resources there is need for downward accountability whereby government officials answer to their constituencies, and actors and institutions at lower levels in a political and administrative hierarchy, make decisions affecting their lives. The promise of free water for the poor is premised on the assertion that the government's duty is to provide safe water for the poor, free of charge, but in reality, the poor actually pay for water.

Zunde (male, 30 years) bemoaned the government's absence in the area: "The government is not living up to its promises as we thought it could do". Kondo (male, 48 years) thought this was caused by new leadership which limits necessities of life: "Government used to drill boreholes, so that people could get clean water. Nowadays, water projects are scarce… Maybe leadership changes has caused a change of course." He added that, "Our local Member of Parliament does not come here. We just heard that we have an MP, but I do not know him. He doesn't even come to address a mini-meeting related to water provision or any other matter."

Ngonie (female, 35 years) said:

> *We have a problem of livestock diseases. The veterinary is not always available. In August 2015, we were promised a dip tank, but the cattle only got to dip in December 2015. Now there are a lot of cattle diseases.*

Mwale (male, 40 years), a pump minder, said he was not consulted:

> *I am a pump minder, but there is no work…You can report problems pertaining to specific boreholes, for example rods, pipes…but most of the time there is no response.*

For John (male, 40 years) the problem is historical:

> *When we settled in this area, the then Ministry of Lands drilled one borehole in each village, but then the population ballooned and the boreholes were overwhelmed. The Community Share Ownership Trust has promised to sink one more borehole in each village and repair broken ones.*

The Community Share Ownership Trust (CSOT) is a vehicle for development of local communities where foreign companies operating in an area are obliged by the Indigenisation Act to release funds for the development of the area they are operating in. To date, the Mhondoro-Chegutu-Zvimba CSOT, spearheaded by ZIMPLATS, has released US$10 million. Part of the money has been used to drill boreholes in these three districts. However, many have viewed the CSOT as cosmetic and covering too large an area. For instance, ZIMPLATS mine is located in Mhondoro-Ngezi, but the CSOT includes Zvimba District, which is almost 200km away from the mine's area of operation. An amount of $10 million is too paltry an amount to make any meaningful contributions to water projects. The leadership is therefore viewed as inactive in advocating the right of the people in the area to access water for meaningful projects.

Some respondents view the leadership as doing their best to transform the lives of the people. Tonde (male, 22 years) said, "There was a borehole that was drilled in this village. There borehole is no longer working, but people are just cry-babies because there are other boreholes at the primary and secondary schools which we can still use."

Gladys (female, 24 years) concurred that the leadership is working to ensure water provision;

> *We have a councillor who sources boreholes for us from the council. So far we have been given one borehole only, which has since ceased to function. The council drilled boreholes. We have the councillor who came and addressed us that he has drilled boreholes for us.*

The views from the respondents reveal a patronising attitude of the local leadership. The author terms this the 'son of the soil' phenomenon, where politicians 'bring' development to the people. In the context of above responses, the councillor 'sources' boreholes for the people. In this instance, the local community are passive recipients of water projects as everything is done for them by the leadership.

The ZIMPLATS mine, operating in Ward 11 of Mhondoro-Ngezi is also involved in water issues of the area. It does not only provide water, but is also a consumer of water from the area. Responses from research participants reveal a sense of injustice, by the mine towards the people. Whereas the company exploit the area's abundant platinum group of metals, it has not done enough to develop the area's water needs.

One respondent, Ndaba (male, 19 years) said: *"*The council promised to bring piped water to homesteads. The local mine (ZIMPLATS) also promised to bring piped water to the area".

Sophia (female, 25 years) talked about unfulfilled promises:

> *When ZIMPLATS established their mine about 15 years ago, it promised us dams for the sake of our livestock. They only constructed one dam in Village Four. The dam has since silted to the extent that livestock can get stuck and can sink. They have not constructed another borehole since and people are angry. They sunk one or two boreholes, but they have so far delivered about 20% of their promises.*

Sharon (female, 30 years) said they sometimes convene meetings with the mine, where they air their grievances;

There was a meeting that was held three weeks ago, people requested water for irrigation. Then the mine told the people they will drill boreholes for irrigation, because relying on rain water delays development. They have promised that if this succeeds, then we will form groups, according to where the borehole has been sunk.

However, the mine frequently comes into conflict with the local population:

The mine is evicting people who are living along the Muzvezve River Banks, because it claims it owns the area. So the people approached the District Administrator, to talk to the mine to find alternative ways to let the people make a living. So the mine would find alternative land in an open area, then they drill the boreholes for irrigation. (Melania, female, 20 years)

Consequently, the respondents viewed the mine negatively:

In terms of water, there is no response. We looked forward that the mine would have initiative as their social responsibility. They constructed a road on the middle of the village to collect sand from Muzvezve River without our consent. What they are doing is piecemeal development. (Ms Mhungu, female, 65 years)

It is only a name that we are staying near ZIMPLATS mine, we have not seen much from them in terms of help. This road was only made because the mine only needed sand from Muzvezve River. The mine lie, so that outsiders think that those around the mine are benefiting. They can take pictures of certain infrastructure they did not build. They are just taking away our resources. ZIMPLATS has not helped us in any way. It destroyed our lands and rivers. We can do nothing because the mine is regulated by the government. (Mr Madiro, male, 32 years)

The above responses show the importance of government policies in terms of regulating and compelling multi-national companies to make substantial investments into water infrastructure of their area of operations. The Responses shows that people feel helpless about pressing the mine to own up to its responsibility, as they feel it is being protected by the local authorities. Syto (male, 27 years) argued that:

ZIMPLATS just gives promises but we have never seen them fulfilling their water related projects. Maybe they just focus on Turf growth centre, but here we have never seen them in water provision projects. They constructed a dam (Island Dam),

which benefit their mining operations. They have not constructed any water reservoir in this community.

Mwale (male, 40 years) concurred:

> *We were once sent to make a request to ZIMPLATS, but we were only told that they were not able to build a dam for us, but may be they could drill a borehole only. They were saying the process is going to be done*.

Mrs Meke (female, 38 years) said:

> *ZIMPLATS has provided money to Community Share Ownership Trust for the drilling of boreholes, but besides that there is no other development.*

The Mine has mainly preoccupied itself with refurbishing existing community projects such dip tanks. Through the community share ownership trust, ZIMPLATS have refurbished the community dip-tank which serves Tyrone Village One to Village Four as well as surrounding resettlement areas (see Figure 6.3). It has also focused on institutional provision of water, by drilling boreholes at Chingondo Secondary School and Clinic.

Figure 6.2: Community dip-tank sponsored by ZIMPLATS (Photo by author)

Other government agencies, who are supposed to be partners of the local authorities and local communities have a weak presence in Ward 11. ZINWA and EMA are pillars in the National Water Policy provisions of 2013, in terms of contributions towards construction of dams and prevention of water pollution respectively. Tawengwa (27 years, male) argued that: "ZINWA does not contribute anything to water development in our area, even if it collects levies. Our water sources are usually drilled by donors, and other companies for example the trust (Community Share Ownership Trust)." Mwale (male, 40 years) supported Tawengwa's assertions: "We are not helped to irrigate our crops by any government agency".

Mr Manyere (male, 32 years) also lamented the lack of reciprocity of the government agencies:

> *The EMA, guys do not respond, even if we report about the pollution of our pools by fish mongers. We only see them confiscating firewood from people who are selling on road sides. I think people who are working for EMA are not properly supervised. There is no awareness about the effects of pollution amongst the people.*

People end up ignoring these agencies, as punitive measures are not enforced at the local level: "EMA came last year to remove people who practised stream bank cultivation. But it did not do its work properly because some are still farming along the river banks" (Rhoda, female, 25 years). However other respondents said EMA is doing its job: "EMA taught us not to burn grass, even in our gardens. If you burn you destroy certain species, which are beneficial to the environment. Be it special grass or any other living organism" (Vhumiso, female, 30 years). Ngonie (female, 35 years) concurred:

> *We know EMA is there, it told people not to cut down trees or else you face a hefty fine. EMA punishes people by imposing a fine if we cut down trees. Trees lining the river, are important for prevention of siltation. Their roots binds the soil together. They also prevent evaporation. EMA gives information to people to preserve tree. In this sense it is also important in the preservation of our water.*

Even within the villages there are EMA committees: "There are people who were appointed to see to it that trees are not wantonly cut down," said Rhoda (female, 25 years). EMA is also helping the local community through awareness: "EMA guides our lives, by preserving trees and therefore water and oxygen. If there was no EMA there would be no trees and hence no

water. Cutting down live trees is an abominable act. So EMA is helping us realize why trees are important in our lives." (Kondo, male, 48 years)

Sithole (Chief Engineer) said:

> *We do meet at DWSSC. We meet regularly. The DDF is a key player in water supply. ZINWA is also a key player, so is EMA though sometimes they come at the wrong time where we do not need them. I think we are doing well. We have a strategic plan, which guides how we implement various activities given the resources that we have. But each time when we budget, the resources we mobilize are not the intended or planned resources. Here comes the problem, where we say there is a deficit but we need to achieve. Sometimes we carry over some projects into the next financial year. With the five-year term plan that we have, we assume that when we happen to mobilise resources, there are some key players like the NGOs, who can come to our rescue. I think that will be good in achieving all these."*

Mr Zijena (councillor) also said:

> *We have sector ministries at Ward level. When we convene our ward meetings, there will be present ant they educate people, why it is important to cultivate more than 30 metres from the river bank. At village level, we have the EMA committee, who instruct people to conserve their trees.*

Responses from the above key informants reveal that at the District and Ward level, representatives of these government agencies are active. A search for a ZINWA employee in the village area yielded nothing, as this state-owned entity is preoccupied with levying abstraction of water from dams. There is no dam in Village One. An EMA committee at village level was also not found. However, it was observed that regulations on cutting down of trees is mainly rooted in customary law, therefore people are already aware of the positive effects of preserving trees.

6.1.3 Societal engagement

A study by Mohamad et al. (2015, p. 320) pointed to the need for decentralisation in decision-making and active involvement of stakeholders in water management – the assumption being

that decisions taken by and with stakeholders would be better informed and therefore can improve negotiation among stakeholder groups to achieve more rational and equitable solutions. They argue that such processes might also lower resistance to sometimes difficult decisions. According to Hall et al. (2015, p. 725), underlying public participation requirement is the assumption that engaging citizens will result in improved management of water resources. Including of diverse people in social structures gives multiple voices to water and quality decisions are likely to be made.

Manjoro, a council employee, explained structures involved in water provision:

> *National Action Committee, which is a grouping of sector ministries which has got a mandate of water, From the NCU we got the PWSSC-Provincial Water and Sanitation Sub-committee and then we go to DWSSC (District Water and Sanitation Sub-Committee). Ideally we should have VWSSCs (Village Water and Sanitation Sub-Committees), so that they actually take up the programmes to WWSSC (Ward Sanitation Sub-Committee) which are operational and co-ordinate the pump-minders job. As DWWSSC we have tool kits which are used by the pump minders, and strategically placed at a certain place, for example, ward level, institution for example clinic and schools. Every village who want to access those tools will come and talk at the institution and sign issue vouchers and return and the WPC co-ordination that. We had to shift from giving the pump minder because if he dies then these things were shared amongst his relatives as inheritance, yet these are government properties. DWWSSC report to council. They have resolution power. The social services committee chair sits in the council. For co-ordination purpose he/she becomes the secretariat. Whatever they recommend reaches the council.*

Cletus, another council employee, said:

> *In all Council operations, we work together with sector ministries, whenever we hold our committee meetings which relate to government departments. For example, we have Land Conservation Committee, where ZINWA, EMA, Agritex and Farm Mechanisation all attend. They assist and advise council on policy issues at committee level. If we have a dam project they will be there including the National Parks, because they will manage for example fish. ZINWA will give us the water permit irrespective that we are constructing the dam.*

Manjoro added:

> *In the social services committee, we have the Ministries of Youth, Health and Women. We want to synthesise everything and make sure all issues are dealt with and included into our programmes. We plan together with them. The District Water and Sanitation Sub-Committee [DWSSC] falls under social services arm of the council. It comprises government departments, then partners working in the district at the time for example DDF, ZINWA, Health, and Women Affairs.*

Figure 6.3 that follows illustrates how the DWSSC is comprised of various officers, councillors and chiefs.

Figure 6.3: Officials in the DWWSC (Source: Author)

> *If DWSSC roll out programmes, we have Water Point Committees. Water Point Committees are comprised of the communities who are benefiting from the water source. The head who calls for the meetings is the village head, so that implementation of whatever constitution that was drafted by the community is adhered to. Penalties, for them to be enforceable is prescribed by the chief, then VIDCOS, we do not want dual governance. Water Point Committees fall under the Village Head as he is the ultimate authority. They also sit in village assemblies and*

then they give reports. Enforceability of monthly subs, need to be paid and the village head has the authority to demand payment. He is incorporated as the ex-officio member. He is the one who calls for general meetings, where everybody is invited. (Manjoro, council employee)

At ward level Manjoro, revealed the top-down nature of participation:

The Ward Development Committee (WADCO) is chaired by the councillor. Whatever he does is reported to the council. Whenever we want to undertake a project that affect people's livelihoods especially water, the first step is that the councillor is informed and he calls the Ward Development Committee and informs them about the number of boreholes allocated to them. The WADCO from a list of priorities will determine which areas are worst affected. If they are given two or three, they may decide to allocate to a certain village or village head. The WADCO will go to the villages and they will hold another meeting and undertake pre-siting, where they identify about three areas they think can have water and convenient to them. After they do that, we then send a surveyor, to site for water using technology on those three sites. If he finds water on any of the three sites, then that site is given first preference and the borehole is drilled.

However, Kudzie (council employee) contradicted the above assertion and said participation is bottom-up:

There is a ward assembly where proposals from every village are tabled to go to the council. We look at Ward Extension Officers to become the ward Assembly. Ward Youth officers channel their proposals to the District Youth officer, the women the same. All these issues pertaining to water comes through the extension officers who sits in the Ward Assembly.

Mr Zijena, the local councillor supported Kudzi's arguments:

At Ward Assembly we will be having people from village level, the VIDCO chairpersons and all the committees at VIDCO level and some other sector ministries within the ward, which is how we deliberate issues within the ward, at Ward Assembly. Therefore the village chairperson and his secretary bring out issues at the Ward Assembly, where I will be chairing as the councillor. My secretary at ward level will be taking minutes of everything deliberated. In Ward

11, I have got eight points whereby I chair as the WADCO chairperson including the top executive at Ward Assembly. Normally they give issues from villages for example water issues from water points. They give out issues on how they get water in terms of sanitation. They will describe their boreholes in terms of hygiene, is it smart, 'lookable' or whatever, and are there some problems and so on. They tell the councillor, then I give feedback to the CEO, to give some advice in terms of some equipment if the borehole is having some problems. Then they send an engineer to sort out the problem, through the committees at village level. The first and foremost issue is that people should consume clean water and the surrounding area where the borehole is sunk in hygienic".

The Councillor also added:

At village level, normally there is a committee of seven, whereby in terms of convening a meeting they call one another for a purpose. When they see any problems within their communities they seek a way forward. If they have a water problem they channel it up, if they fail to sort it out. They channel it to the WADCO to seek a resolution. Every village can have a dual role but specifically there is a committee for water, AGRITEX, EMA and so on. We have committees at District level, they cascade down to the village. Village One has got the set up.

According to the Traditional Leaders Act Chapter 29:17[51], the functions of the VIDCOS are to identify and articulate village needs; co-ordinate and forward village needs to the WADCO; co-ordinate and co-operate with government extension workers in the operations of development planning; co-ordinate and supervise all activities relating to production and general development of the village area; and organise the people to undertake projects that require a considerable workforce. However, in practice, the role of VIDCOS are simply conduits of directives from above (that is, from central government and from Zanu-PF party officials), rather than that of acting as a channel for bottom-up initiatives. These grassroots structures (WADCOs and VIDCOs) are meant to facilitate decentralised planning through grassroots participation, but they were created with little or no consultation. In fact, these structures are successor structures to those established by ZANLA[52] forces during the liberation

[51] Traditional Leaders Act Chapter 29:17

[52] ZANLA, the Zimbabwe African National Liberation Army, was the armed wing of ZANU (PF) during the liberation war in Zimbabwe 1966-1980.

war in the rural areas they controlled. The VIDCOS and WADCOS have now become mere empty shells.

According to Sithole (Chief Engineer):

> *Ward 11, basically is Tyrone. The ward is very big. We are saying someone at Cycle G need water and at the same time those in Mambo also need water, so how do we prioritise – that is the challenge. As it stands those in Ward 4 benefited from the Community Trust and other partners like the Germany Trust and UNICEF… But how do they co-ordinate their meetings? I think it is something that needs to be tackled. They are not all trained, on how they can tackle development issues vis-à-vis political issues. They may end up playing double duties which is totally different from what they must do to serve the community. VIDCO is a developmental tool to assist the council at the bottom. We encourage public participation, but how do they participate? They participate through the VIDCOs. As a local authority, we cannot visit every VIDCO in the District. We are saying information which they compile is of much importance and will also be tabled at the WADCO and the Councillor will be responsible for issues affecting the community under his jurisdiction.*

Cletus, another council employee, concurred:

> *Before we drill we establish a water point committee, so that they will be able to manage maintenance costs. As a council, we also have a budget for borehole maintenance. We do this for buying some components which they cannot buy as villagers, such as pipes and so on. However, they can buy bolts and nuts for themselves. The people levy each other depending on their water point. Whenever there is a breakdown they rally up to maintain their boreholes. As a council, we have professionally (although not yet operational) set up a revolving fund, where the theme is to buy materials which have a longer shelf life which cannot be sold off very quickly, like cylinder, pipe. We do not expect local shops to have them, and strategically place them and sell them to the community, if we buy it at US$300, we sell it at the same price.*

Daniels and Walker (2001, p. 100) stressed that with prior decisional communication between the agency responsible for the decision making and the public affected by the decision,

participation should result in power sharing (Arnstein, 1969). As citizen groups meet regularly over an extended period, the members will become familiar with technical matters (Lemos et al., 2010, p. 820), learn from one another (Pahl-Wostl & Hare, 2004) and improve decision making. Advisory councils can represent a diversity of water users, have the ability to add important insights about localised physical and biological dynamics, and community values and norms.

Participation can also start at the individual level and can take many forms:
According to Zunde (male, 30 years), "I am involved in assisting with manpower in installation of boreholes. When the engineer comes we are called to offer assistance in the assembling of boreholes". Ngonie (female, 35 years) concurred: "I got some lessons from the RDC, when we were installing the borehole. They taught us how to use water drawn from the borehole and how to handle the borehole properly. If it makes a funny sound, it might be the valve malfunctioning." Another respondent said: "We have Mr Maturure, who came and repair boreholes … I help with manpower. We help him in handling the steel pipes" (Tawengwa, male, 27 years).

Kondo (male, 48 years) said:

> *I participate in leadership positions in the village. I am the first person, who communicated with ZIMPLATS mine, registering my concerns. I booked a meeting with* The Herald *chief editor, and they were able to publish my letter registering my concerns with the mine, especially with regards to boreholes in every village.*

Engaging the local communities has its own challenges though, as Cletus, a council employee explained:

> *When we undertook the Tangwena piped water scheme in Ward 11, parents were providing manpower in the form of building of trenches. We had a challenge though, when one of the villagers cut the pipe before the trenches were filled. He cut about 100 metres of the pipe and stole it and he was arrested. The communities sometimes do not understand that projects are done for them because they are offered for free, although they were consulted. Some can be selfish to the extent of wanting to grab project material or the project itself for his/her own benefit at the exclusion of others.*

Other respondents seemed unaware of the existence of water committees: "We do not have committees that specifically deal with water issues. Maybe they are there but I do not know about them." (Mwale, male, 40 years). Rhoda (female, 25 years) agreed: "We haven't yet settled down to be among committees, but I wish to be involved in these committees. Leaders do not involve us in these committees. They are quiet about committees, they do not talk about them."

Observations showed the existence of water committees but they are ineffective and exclusionary. This is due to polarisation brought about by the present Zimbabwean politics. If a water point committee is dominated by individuals belonging to a particular political party, then two scenarios occur. The first is that those from a rival political party are automatically excluded from water projects, meetings and/or any water related information. The second scenario is that the rival party members sabotage the work of the committee, by refusing to pay for maintenance or even attend meetings. This automatically renders water point committees relatively dysfunctional.

This becomes problematic as Sithole (Chief Engineer) lamented:

> *Normally the problem that we have with our communities, yes they want to contribute, but how do they contribute? Sometimes they end up demanding that this must be done by the local council, which is bad in our sense. An individual can just mobilise resources to drill water and even a dip well, there are some who can afford.*

(i) Group cohesion

Everyone is a water user and thus a potential public participant. Water managers must decide from whom and by what means they should solicit input. The capacity of local communities to participate is inherent in their capacity to unite among themselves (i.e. group cohesion). Conflict transformation theory urges dialogue between the water users as this redirects negative perceptions towards each other. However, respondents revealed that access to water is also hampered by this lack of unity among the users. Hondo (female, 55 years,) lamented this lack of unity:

> *Mr Chapa was given training by the Rural District Council, for repairing boreholes. Due to lack of unity, people are no longer consulting him. He should have been the link, by reporting to the council about the need to have materials to*

repair the boreholes. The Rural District Council personnel came and were surprised that the people could not work with the pump minder.

Sharing of water from private residences is also problematic as John (male, 40 years), who drilled a borehole at his homestead, pointed out:

At the moment I am not allowing anybody to abstract water, unless if there is a funeral. I drilled a 40 metre borehole, but today I cannot fill my tank because the water table is too low. I need to help people but the water is simply too little.

Even group tasks are problematic:

People sit down as a community and decide which village has the duty to fill water into the dip tank. Initially, it was suggested that a contractor be chosen to fetch water and get paid (people were to pay 50 cents each). It was later rejected. We have never seen anyone coming from anywhere, with bowsers to fill water for us. (Syto, male, 27 years)

(ii) Incorporation of traditional voices

Mohamad et al. (2015, p. 321) stressed that community-based shared values such as local traditions, folk stories, unique sense of local community, citizen volunteerism, historical memories of human-nature relationships and landscape appreciation have contributed to proactive, long-term citizen participation and stakeholder support in the water management.

In terms of incorporating traditional inputs into day-to-day management, Cletus, a council employee said:

Chiefs, as the embodiment of traditional authority have been formalised through the Traditional Leaders Act and Communal Lands Act, which are used by the council. If the Chief does not give permission for drilling of water at a certain place, we have to stop because there are certain areas which are regarded mythical and have taboos. There is no way we can drill water without the knowledge of the chiefs. They are part of us. They are ex-officio members of the council. They sit in full-council meetings. That does not mean everything that is said by the chief is swallowed; a majority of people have agree to his views for example the village heads and headmen and so on. The chiefs sometimes dominate the people by threatening them that he is the ultimate authority.

Manjoro (council employee) alluded to the involvement of traditional authority in water provision:

We work with chiefs in water provision. The constitutions of the water point committees are forwarded to the chiefs, so that if people agree that a person should be handed with punishment if he/she tampers around with anything it is enforced at the Chief's court. Whenever we train WPC, we invite chiefs. Chiefs also sit in council, so that whatever policies are set out and programmes running they are informed. We insist to donors, that their first port call are the chiefs, so that they will not say whatever programmes running they were not informed.

However, there are in some cases conflicts between competing customary tenure in water management related to rules governing access namely withdrawal, management, exclusion and alienation. As Cletus (council employee) added:

When we built the Island Dam, we had a problem when the dam was about to be complete, a rival claimant to the throne suddenly cropped up and claimed ownership of the area, tracing historical ancestral ownership – the Mandizadza family with the Lion totem. They argued that due to this historical ties they had every right to be responsible for whatever happened on the land. They requested the company to be allowed to carry out their traditional rites and they were allowed to do so. Their claims were verified by the discovery of artefacts in the caves embedded in the mountains. Before the dam was constructed, the traditional chiefs were consulted and there was a dispute each chief claiming ownership of the area. Various chiefs such Nyika, Mupawose were claiming ownership of the area. The reincarnation rituals were carried out before the dam was constructed.

Thus, the local authority as a water regulatory institution could resolve disputes relating to water, and therefore gained legitimacy among these competing claimants to water.

Conflict can also be between technocrats and the traditional authority. According to the Zimbabwe Institute (2005, p. 13), traditional leadership and local government officials occasionally trade accusations of abuse of power, non-compliance with laws, customs and traditions, especially regarding allocation and management of scarce resources such as water.

The Traditional Leaders Act (1998) formalised previously informal institutions and empowered traditional leaders to deal with problems of water management in their areas,

punish crimes like misuse of water resources.[53] The Act also recognised in legislation, power of the village head and headmen. The village head is the sole leader in all the traditional, cultural, judicial and developmental programmes at village level. The village head is the chairman of the Village Assembly that effectively superintends the VIDCO structures. The powers of chiefs were extended to include administrative, judiciary, planning and development co-ordination, traditional, cultural and policing powers.

The Headman assumes functions similar to those of the Chief on a delegated basis but he also chairs Ward Assembly meetings. Since the Village Head chairs both the VIDCO and Village Assembly, the VIDCOs are dependent on the Village Head. In many cases, the VIDCOs are no longer operating with all VIDCO functions being performed by the Village Head. Most rural people were not comfortable with the enhancement of the powers and authority of traditional leaders, as they often abused time. Musemwa (2013) argued that there is a disconnection between the modern and traditional structures of authority and attempts to harmonise the two have not been successful.

Sithole (Chief Engineer) said:

> *Traditions are there and we do respect them, but given the scenario that we have, there is a crisis, can we follow the channels when there is a crisis? We are saying there is a development partner who is coming, can that person follow traditional customs in water supply? Sometimes it is our duty as a local authority to do that before we invite someone who can assist us. So, we assume that all the ground work was done, we are only coming to supply water. So, the community is responsible, we are not responsible. The community through the councillor are responsible, if rituals are to be done, they will do all of them.*

This concurs with observations by Hall et al. (2015, p. 726) that it is time consuming for participants and organisers. Developing the logistics of meeting is difficult requiring high levels of organisation. Budget constraints and time limits increase these challenges. While the traditional approach has in some cases achieved physical coverage targets, this has led to a heavy reliance on central technical agencies, who themselves have limited capabilities. Garn, in Fishbein (2001, p. 9), argued that, even after receiving initial training, community

[53] Traditional Leaders Act, Chapter 29, p.17

organisations are for the most part weak and systems are plagued by breakdowns and not maintained on a sustainable basis.

In terms of common property resources, such as water, it is not only the traditional authority but the whole community that takes the initiative:

> *What we want to do is to operate on a levelled ground, rather than taking more time on the ground doing rituals we do not even understand. The community itself has an understanding of their customs and culture for the specified area.* (Sithole, Chief Engineer)

Mr Zijena (the councillor) added:

> *If people are at village level, they know places to preserve. Culturally we respect that. After all if we drill boreholes, we will no longer need tradition. We have wells, dams and pools, where there are mythical places, we respect that, and we respect culture.*

(iii) Access to information

Hall et al. (2015, p. 729) reiterated that access to information means citizens can readily access the relevant information; that people can access the public meetings including holding meetings at a location, date, and time that enable citizens to attend; and that at the public meeting, attendees are granted the opportunity to speak. The citizens should influence decision making. There should be a clear indication that citizen comments have been considered in the decision making. This is not necessarily power sharing but evidence that the public's contributions were included in deliberation. Structural violence is the deliberate distortion of important information from water users. This leads to lack of knowledge, and exploitation. Exploitation can take place if individuals are not aware of policies that protect their rights to water and are therefore constrained to act and seek accountability from their leaders.

One respondent said he had information about the water laws:

> *The Rural District Council came to the village to survey for the borehole that they eventually drilled. They cited the area around Muzvezve River as suitable for the sinking of the borehole. Water laws that I know from the government are that people should have access to water and at a convenient place/area. If you want to sink a borehole or construct a Dam, ZINWA will have the authority to levy a certain amount from you.* (Mr Manyere, male, 32 years)

However, most respondents said there was exclusion of the majority in water management:

> *Our committees are politicised. Their dealings and work are hidden. Even if they are supposed to help everybody, some hijack them. The recent borehole that was sunk is an example of the opaque nature of their work. We as the village, were initially tasked with surveying, but at the end of the task we found out that the borehole was sunk away from the village, without the community involvement.* (Sophia, female, 25 years)

Mr Manyere (male, 32 years,) concurred, "We were not consulted on issues to do with citing of the borehole. We were just informed that they have put a borehole on a certain place. They came with machines to search for places with water." "What happens is that our leaders just do what they can, we are not involved, and we are just told." (Tawengwa, male, 27 years)

> *We heard that the borehole that was drilled was supplied by the council but the information was supplied by the council, but the information was a bit hazy. We only saw being installed. They were supposed to drill the borehole near the Business Centre, but we have heard that the council said their site had no water. But no one believed what the council said, because we believe the site has water. That is why you see that the new borehole is situated further down the river banks. Maybe they discovered that there is water or there is an advantage of drilling it there. Nobody knows the truth now because they did not consult us.* (Kondo, male, 48 years)

This means there is no acknowledgment from the local government of the legitimacy of citizens' comments and that citizens have been heard. Consequently, water projects are not sustainable:

> *The recently sunk borehole only operated for one month, and is not functioning for close to eight months now and no action is being taken. If the committee was present and working it would take less than a week to mend, and because there is no committee to talk about people are not acting on the problem. It can take up to five years to be repaired.* (Syto, male, 29 years)

Hiding information of potential water projects from, the targeted population, also means that vital information and knowledge available in the community is not tapped. This mostly results in project failures, as a respondent below argued:

> *The leaders do not consult, when surveying boreholes, I just see things are being done without my involvement as a pump minder and most of the times these drilling project fail miserably. The borehole that we have presently is overloaded. We are using water from the local primary school borehole. The new borehole that was drilled at installed only worked for three days.* (Mrs Vhumiso, female, 30 years)

Lack of knowledge manifests itself in practices that is detrimental to the collective well-being of the community. As aptly put by Mwale (male, 40 years):

> *If any individual buys a pump today he/she goes straight to the river to abstract water. They have not yet been taught nor are they aware of any rules regarding setting up of an engine for pumping water from the river. This may sometimes lead to over abstraction and wastage of water.*

According to Hall et al. (2015, p. 727), agencies should listen to the input of community members, incorporate their thoughts into planning or people will stop giving input.

> *We heard information about RDC coming to drill private boreholes. However, we did not sit down as an assembly to discuss about that, it was just grapevine. Just like the new boreholes drilled, it was just hearsay, until we saw the borehole drilled.* (Rhoda, female, 25 years)

> *We just heard that the borehole has been drilled but we do not know by who. Previously we heard that the council will drill and we also heard that ZIMPLATS will do the job. Now, we do not know who actually and eventually drilled the borehole. We were just told by the councillor that, 'we have drilled the borehole for you'. The truth has not been told.* (Mwale, male, 40 years)

However, another participant said he was involved in water provision: "We had two boreholes that were drilled by the council. We have the village committee who gathered and discussed where to put the borehole. People were informed that the borehole will be drilled." (Syto, male, 27 years). Ngonie (female, 35 years) added: "I attended a workshop for two weeks, where I

learnt about maintaining the borehole with the aim of conserving water. Water should be used productively."

The Council insisted that their water provision programmes are holistic, integrative and inclusive. Cletus said: "If we drill the boreholes, we need to go to the communities, they do the pre-selection. The district team will come for verification. We advise that we are going to drill boreholes in your area, give us villages' area in need of water." Manjoro concurred: "They (village) bring requests and we search for elder men with knowledge of boreholes, then we pay him for the service rendered. We do not have our own staff, so we subcontract". Kudzie, another council employee, added: "We give people lessons on water use. RDC officials move around, we buy drinks, bread during workshops, and teaching people on how to use and preserve the new boreholes."

Access to information should not only be confined to the community but should be available to planners and technocrats as outside experts who can use the knowledge to design water related projects.

For planning purposes, Manjoro said:

> *There was a baseline survey at independence and periodically done. That is put under the cluster for water and sanitation at national level. Then locally it is done and MoUs are drafted. It is well recognised that it is every individual's right to have access to water, it does not have implementations impediments even on the political front. We are at loggerheads with the international community, but you find that water programmes won't stop, despite donor fatigue, because money has to come from someone.*

Cletus added:

> *We have got a database which shows the whole district, which shows that this village has so much boreholes or water sources known as the Rural WASH Information Management Systems (RWIMS). It is a village based consultative inventory where we look at WASH facilities at a village level where there is communal water you can tell that, how many and where .You can even see them on the map if it is a communal source such as pool, borehole. It has GPS co-ordinates showing where the water point is. We can use that information to determine areas in need. You can filter too see if they have wells, protected or unprotected, if they*

are boreholes how are they powered, are they bush pumps or electric motors, at communal level and institutional level.

According to Muzunga and Nyawasha (2015, p. 16), the system has currently demonstrated success through providing reliable information to local authorities for development initiatives in the respective districts. RWIMS was noted as having played a pivotal role in ensuring the CERF project addressed specific water supply needs to the deserving communities.

> *RWIMS is used for planning for the district and recently it was used for the Assessment of Piped Water Schemes using site locations from the system. In Mhondoro-Ngezi district, the system has been used on needs assessment and targeting for borehole drilling and rehabilitation. As water and sanitation are at the epicentre of any development endeavour the world over, RWIMS is providing a technological solution to the Zimbabwe WASH Sector information needs and is improving WASH service delivery. The System has strengthened the multi-sectoral approach of local authorities and continues to support monitoring and planning for the districts, particularly resource allocation. As noted above, reports that are generated from the system show coverage statistics and functionality status of WASH Facilities.* (Mazunga & Nyawasha, 2015, p. 17)

This idea was conceived within the backdrop of understanding that, it is critical for the sector to know and establish the distribution and status of WASH facilities at any given moment if ever sector interventions are to directly feed into improved service delivery and most importantly, raise the standard of living for the most vulnerable members of our community. RWIMS is important for those who need evidence in strategic decision making processes particularly the Rural District Councils (RDCS) as they develop and prioritise their budgets, as well as implementers as they develop proposals to justify targeted funding by donors, and also beneficiary communities to inform issues of operation and maintenance and service delivery.

Table 6.1: Distribution of facilities by water source type in the district of Mhondoro-Ngezi (Source: RWIMS)

	TOTALS	Borehole	Dam	Deep Well	Other	River	Sand	Shallow well
Total Water Points:	*385*	283	27	23	3	27	4	18
Total HHs using as Primary Source:	*29 847*	21 980	3 864	888	343	1 473	205	1 094
Ward No. 1	18	15	0	2	0	0	0	1
	801	747	0	36	0	0	0	18
Ward No. 2	15	12	0	3	0	0	0	0
	839	674	0	165	0	0	0	0
Ward No. 3	23	18	0	5	0	0	0	0
	2 010	1 793	0	217	0	0	0	0
Ward No. 4	34	27	0	1	0	0	0	6
	1 646	1 241	0	40	0	0	0	365
Ward No. 5	23	19	0	1	0	0	0	3
	996	850	0	31	0	0	0	115
Ward No. 6	24	20	0	3	0	0	0	1
	1 814	1 699	0	105	0	0	0	10
Ward No. 7	14	12	0	2	0	0	0	0
	420	412	0	8	0	0	0	0
Ward No. 8	24	18	0	4	0	0	0	2
	1 647	1 368	0	187	0	0	0	92
Ward No. 9	26	26	0	0	0	0	0	0
	1 085	1 085	0	0	0	0	0	0
Ward No. 10	18	17	0	0	0	1	0	0
	533	511	0	0	0	22	0	0
Ward No. 11	31	22	2	0	1	3	1	2
	2 480	1 758	216	0	45	172	67	222
Ward No. 12	38	10	15	0	0	13	0	0
	3 289	547	1 924	0	0	818	0	0

Table 6.1 from the RWIMS shows distribution of communal water facilities in Mhondoro-Ngezi District. Statistics from all the wards are included to show the general trend in water facilities in the district. In Ward 11 which is under study (highlighted in purple), there are a total of 31 water sources shared by 2 840 households. Of these 31 water sources, 22 are boreholes used by 1 750 households, 2 dams used by 216 households, 3 river sources (172 households), 1 sand source (67 households), 2 shallow wells (222 households) and 1 unspecified other source used by 45 households. The two dams in Ward 11 are generally in

secluded areas, for example Island Dam is in Ngezi Recreational Park, and is not accessible to other village residents. It was built for commercial purposes and is well guarded by the National Parks. The statistics shows lack of access to adequate water amenities by the rural population. The proportion of 22 boreholes to the household population of 1 750, means that they are strained and therefore are not supplying the rural population with adequate water. However, from the example given in Table 6.1 above, there are advantages in accessing information from this database. Planners can get refined analytical real-time reports on the distribution and functionality of water facilities. RWIMS has the capacity to produce water maps and reports not only for the whole nation but also for specific villages, wards, districts and provinces with the click of the mouse on a computer. RWIMS is however password protected, so not everybody can access information from the database.

6.4 Summary

This chapter has presented empirical findings from key informant interviews, interviews with village members and observations. Informal practices rooted in local traditions and regulations ensure optimum access to water for irrigation and development for the rural people with minimum support from the government. There is structural violence of exclusion in water management as local leaders do not encompass people's views in water management, thus most people are not aware of water point committee activities. The council is raising income through the procurement and hiring out of the rig; however, there is no evidence on the ground so far that the income is filtering to the community members. Participation mechanisms on one hand in the DWSSC and WSSC, presents opportunities for the local representatives to learn to manage water as a common pool resource, from technocrats employed by the RDC. On the other hand, Village Committees are political and therefore mostly represent one side of the society. The Village Committees, as vehicles for collective management of water resources are ineffective, as they are shunned by most village dwellers. Traditional authority is respected and involved in decision making in relation to water. However, this management involving the traditional authority is heavily contested and accused of partiality as they exclude opposing political parties' supporters in village committees. Access to information is vital to peace for the rural people, as they are then able to make informed decisions in relation to water. However, control of information is a political weapon, and is used to leverage power over opponents for voting purposes.

Chapter 7
Summary and Conclusions

7.1 Summary

This study has probed water access policies and positive peace in a Zimbabwean rural setting. The study's major focus was the effect of water access policies provisions in Zimbabwe on positive peace. The first chapter provided an overall background to the study, what it set out to investigate, and how it intended to achieve the set goals. A statement of the problem argued that studies on water access for peace that consider only formal policy instruments are limited in that findings are incomplete because the water sector in rural areas is highly informal, and formal policies have a limited reach. The chapter hypothesised that the convergence of the well-crafted formal policies with informal practices has the potential to bring positive peace. Research questions and objectives provided the framework, for which the study sought answers in later chapters. The ethical considerations underpinning this study were provided. A brief description of Mhondoro-Ngezi, and Village One, the study area, was provided

Chapter Two of the study explored literature on water sources, conflicts and peace indicators. It provided definitions of the rural areas and various water sources used by African rural people. It provided the context of water vis-a-vis conflict, and explored how policies can increase or mitigate local level conflicts among water users. Various reasons behind water based conflicts were explored and global examples were given. The study also discussed peace indicators as used in this study. Stockholder participation, protection of human rights, development and environmental protection were cited as positive peace indicators. Policies which provide opportunities for participation were revealed as promoting increased equity, efficiency and development in water management. The section discussed how human rights to water are important in ensuring inner peace, through access to hygienic water. The chapter showed how water resources development can enhance rural people's productive capacities and economic growth. The environment was discussed in relation to pollution of water sources and how this has adverse effects on the well-being of rural people in terms of preventable diseases. The chapter discussed SADC countries' water policies in order to provide the context for further exploration of the Zimbabwean setting. South Africa, Tanzania, Malawi and Namibia were given as examples. The study further explored in depth the informal practices of rural people related to water and how they help them access water.

Chapter Three provided the methodology of the study, the sample size and sampling technique, and data collection was also discussed. A sequential mixed model was chosen to collect data. Data gathering techniques such as participant observations, interviews, and observations, analysis of documents and administering of the questionnaires were discussed. The chapter incorporated the theoretical framework of the study in order to build its arguments and make rational conclusions. The Theory of Positive and Negative Peace, the Common Property Resource and the Conflict Transformation Theories were employed. The theory of Positive and Negative Peace revealed that positive peace is social justice and equity – the removal of structural violence. The Common Property Resource Theory is more concerned about how rural people used to manage water as a common pool resource, the conflicts involved and how they share the resource equally. The Conflict Transformation Theory showed how water conflicts may arise. It is concerned with transforming inherently conflictual settings to produce benign outcomes.

Chapter Four used content analysis to explore documents on water access policies in Zimbabwe. The first section provided a historical analysis of water, from colonial times to the water sector reforms which culminated in the Water Act of 1998. The chapter explored the involvement of the rural people in the formulation of water policies in their domain. Institutions that are tasked to provide water resources were also identified. The National Action Committee and ZINWA were discussed extensively in terms of their capacity to manage water effectively. The Constitution of Zimbabwe was given as an example of how the right to water is respected in the country. Various Zimbabwean Statute Laws on the provision of water such as the Water Act, Public Health Act, Mines and Minerals Act, the ZINWA Act and the Rural District Councils Act were discussed. Policies on gender equity in relation to water were also discussed in depth. The chapter explored development of water resources, implementation mechanisms and its attendant problems such displacement. Issues of water availability and quality especially in relation to environmental pollution through mining activities were also dealt with.

Chapter Five turned to qualitative findings on how the residents of Village one, Ward 11, Mhondoro-Ngezi understand the concept of positive peace. Semi-structured interviews were conducted to determine the views of the respondents on positive peace. Various explanations as to the meaning of peace were highlighted. After the views were collected, the questionnaires were administered, and the results were shown in this chapter through statistical tables and

charts. The chapter also presented findings on the informal practices to water used by the residents of Village One.

Linked to the later part of the previous chapter, Chapter Six examined the relative influence of formal and informal water access to development and sustenance. Varied definitions of development related to water were given. The second part of the chapter was related to the impact of formal and informal access to water on peace indicators. The respondents from key informant interviews narrated how local government involves traditional authorities and the people in water service provision. On the other hand, the respondents from Village One talked about their relations with agencies who are responsible for provision and protection of water in their area.

7.2 Conclusion

From the results of this study, some critical points can be deduced:

Policy formulation is inherently political, that is the process of crafting water policies and legislations is a result of political processes. The National Water Policy of 2013 was formulated during the year of an inclusive government in Zimbabwe. The then Ministry of Water Resources Development and Management was under the Movement of Democratic Change (MDC) party in the government. However, later that year, the country reverted back to a single political party dominated government. This led to the 'discarding' of the policy as everything advocated for by the MDC was ignored in favour of a new economic blueprint, the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET). The policy document remains simply a document – and is rarely referred to in government language.

Water reform is an arena which shows the biased nature of water policies. Since independence, the central government has tended to favour rural areas in terms of water provision, especially water for primary use. The politics behind this rural bias lies in population distribution. Most the Zimbabwean population (67%) reside in rural areas. Rural inhabitants of Zimbabwe have traditionally voted for ZANU (PF) political party, since 1980. Thus, to maintain allegiance, the party initiates water projects which are used as bait to gain advantages at the expense of its competitors. Thus, water reforms are therefore not a scientific tool to bring positive peace to

the rural people but are a calculation by the political elite on the benefits derived from these water reforms.

Political philosophy has an influence on formulation and content of water policies. Zimbabwean policy making has been dominated by two phases of this political thinking. The first was ZANU (PF) dominated ideology of a centralised planning. Thus, the central government set the agenda for the formulation of the Water Act. At the same time, they prevented some views from becoming policy issues. The provisions contained therein reflect these principles, for example, the powers given to the minister to appoint members or dissolve the catchment and sub-catchment councils. The catchment council manager was also given the power to act as a catchment council if required to do so by the Minister. The Minister has power to appoint individuals into the Ward Assembly, under the RDC Act. The second political doctrine of liberalism – governing with the consent of the governed – is reflected by the two MDC formations who were part of the inclusive government (2009-2013). The National Water Policy document of 2013 was produced after consultation of different stakeholders from the local to the national level. The policy provision it contained such as decentralisation, gender equity and clear mandate of water institutions, reflects this doctrine. Sometimes these political philosophies clashed, for example, during the constitution making exercise. While the Constitution of 2013 respects everybody's right to water, the mechanisms to achieve this were highly contested. The MDCs advocated the devolution of power so that local authorities become semi-autonomous and therefore control economic benefits derived from resources from their jurisdictions. They argued that this would enable every region to develop social amenities such as water in the areas they controlled. The ZANU (PF) side of government stuck to the centralised approach, arguing that the MDCs wanted to promote anarchy. The result was watered down provisions which qualify devolution as 'whenever appropriate', as opposed to a permanent state. Despite the 2013 Constitution providing for this mosaic decentralised approach to development issues, the water related water statutes remain centralised and tightly controlled from above.

Special interest groups (commercial farmers, industrialists, miners and manufacturing companies) drive the formulation of water policies. The special interest groups or lobbyists in the Zimbabwean water reforms were farmers' unions, miners and manufacturing companies. Although the passing of the Water Act and ZINWA Act in 1998 was a result of pressures emanating from historical exclusion of the majority, powerful lobbyists sought and succeeded

in making their inputs dominant in the provisions of the legislations. This culminated in the passing of provisions which granted their dominance in catchment and sub-catchment councils. The catchment councils have the power to issue or revoke water permits. Commercial farmers – most of them are now blacks and politicians – are one of the biggest consumers of water. Most irrigate crops and they protect their interests of accessing water in these catchment council meetings. Mines also consume huge quantities of water and they are the biggest polluters of rivers. However, their representation in catchment councils is combined with their deep pockets which prevent them from paying for contaminating rivers. The same also applies to manufacturing companies, for example, contamination of Mukuvisi River from effluent discharges from Southerton industrial area in Harare. Those living downstream in communal areas are at a great disadvantage as they consume contaminated water.

The participation of citizens of Zimbabwe in policy formulation is limited to 'proxies'. These are organisations that purport to represent the poor local people, for example the Zimbabwe Farmers Union. Documentary analysis shows that drafting of laws and policies is mainly top-down emanating from the central government. As a result, many people do not have knowledge of water related policies and laws. Responses from interviews also showed that people have no knowledge of the water regulations and rights contained therein. Only the privileged few know about the Water Court. The only case reported when a resident dragged a local authority to the court is in the City of Harare, far from a rural Zimbabwean setting.

The National Water Policy of 2013 is a comprehensive document which involves various departments and statutes in its provisions. Issues to do with prevention of pollution, gender equity, construction of dams, rural WASH, participation mechanisms, right to water and so on are contained in the policy. The Constitution of Zimbabwe weighed in with the bill of rights, especially the right to water. However, the relevant statute laws have not been aligned to fit into the policy as well as the Constitution. This presents a dilemma in the implementation of the water policy if its provisions are not backed by relevant legislation. This has weakened the implementation of the water policy principles in the country.

The National Water Policy has no specific time frames for achieving specific benchmarks in implementing the policy. It envisaged phased recovery, from the recovery phase to the normalised phase, with some details, but without specific timelines for these phases. This can

be misconstrued as avoidance of scrutiny by political framers in case of failure to meet set targets.

As research findings reveal, rural Zimbabweans have an understanding of the concept of peace in relation to water access. The participants of this study identified such positive peace connotations as harmony, co-existence and co-operation in accessing water. They also identified lack of corruption which is a positive peace. They mentioned negative peace connotations such as refraining from fighting each other at the borehole and resolving disputes amicably. Therefore, when peace is mentioned they mostly envisaged absence of direct violence with a small mixture of positive peace.

Informal systems to water access are used to regulate access to and protection of water sources. This was revealed by the study participants' responses. Informal regulations govern use and maintenance of the boreholes, even if they were drilled by the government. Regulations manifest themselves in financial contributions towards the general maintenance of boreholes. This is coordinated by the water committees. Water committees, although recognised by the local government, is not enshrined in any legislation and remains informal. Local myths are also used to govern access to the river in terms of tree conservation, fishing and contamination. These traditions which are moral in nature, govern access to water and are respected by the local people. However, due to their informality, there are some who challenge these local regulations for example by pumping water from using petrol water pumps resulting in the drying up of the river. Economic hardships have also forced people to disregard local regulations and settle along the river, silting it up perilously.

Water access helps people to develop and sustain their lives. Informal access to water is mainly used by the local people to irrigate their crops in the gardens. There is little help provided by the government to carry out small scale irrigation of crops. The National Water Policy document of 2013 states that water for "direct personal consumption, personal household hygiene, food preparation, gardening and household stock watering" is a right for all Zimbabweans. However, for commercial purposes is not a right. This means that structural violence occurs when the local people are locked into the subsistence mode of production. They have to apply for a water permit if they want to produce commercially. It is easier to apply than to get the permit itself from a sub-catchment council dominated by political elites. To further worsen their plight, the markets for selling fresh farm produce require cumbersome paperwork

in the form of medical examinations, which few can afford. The restrictions mean the communal farmers cannot compete with commercial farmers most of whom are government bureaucrats and responsible for policy formulation. They end up selling on roadsides to motorists, or being duped by urban informal traders who have gained a permanent foothold in the Zimbabwean economic landscape.

The government water policies allow for a co-ordination between local authorities, donor agencies, NGOs and private companies to provide water to communal areas. However, there is a growing tendency towards donor syndrome among the local authorities. Key informant interviews revealed that local authorities sometimes push water related projects into the next financial year, because they draw up their budgets taking donor finance into consideration. If donors are not forthcoming, they run into deficits. There has been a growing outcry around council personnel awarding themselves perks and benefits, while relying on donations. The other reason is the growing list of priorities and the shrinking of the revenue base due to the declining economy. To a large extent, donor funds from UNICEF have helped the water sector to remain afloat since the outbreak of the cholera epidemic in 2008. Without donor funding, access to clean water for the local people would have not been possible.

Local political leadership does not involve people in water service provision. More than 60% of participants interviewed insisted that they were not involved in any water related projects. The leadership does not involve the majority due to various reasons. Firstly, the 'son of the soil' phenomenon, where leaders seeking for votes act as if they brought development in the area. They fear that if people participate and get clear explanations as to the source of funding to drill, for example, a borehole, the leader's usefulness may be eroded in the eyes of the constituency. Secondly, since early 2000, rural Zimbabwe has been a hotbed of competing political activities, to such an extent that anyone who is a leader at the particular time would automatically exclude their nemesis for political gain. In the same vein, those in the opposition at a particular time will refuse to cooperate to spite the leader and ensure that a particular project fails. Thus, in any policy implementation, conflict is a continuous. This happens from the local level, thus leadership may be evasive about any water related projects from the top.

The national water policy also allocates responsibility towards provision of water to private entities operating in communal areas as part of their social responsibilities. The local mine (ZIMPLATS) is doing nothing to help the cause of the communal farmers in their quest to

establish small scale irrigation. The focus on water and sanitation is apparent in its focus on drilling of boreholes on schools and clinics. The mine has concentrated on small urban development around Turf area where its workers reside. The government initiated the Community Share Ownership Trust; ZIMPLATS deposits money into this revolving fund. Over the past four years the company has deposited USD$10 million into the CSOT. The CSOT involves three districts of Chegutu, Mhondoro and Zvimba, and the resources are so stretched that they become ineffective.

Structural violence (societal injustice built within water institutions) occurs due to a lack of information dissemination to the local people. Interviews with participants revealed a lack of knowledge on water policy provisions as well as regulations governing access to water. Copies of even simplified versions – for example, using local languages – of water instruments have not been given to the general populace. The National Water Policy of 2013 is not available on the Internet and most departments involved in implementation of the policy do not have copies. As a result, the policies that apply remain the domain of academics in terms of knowledge production.

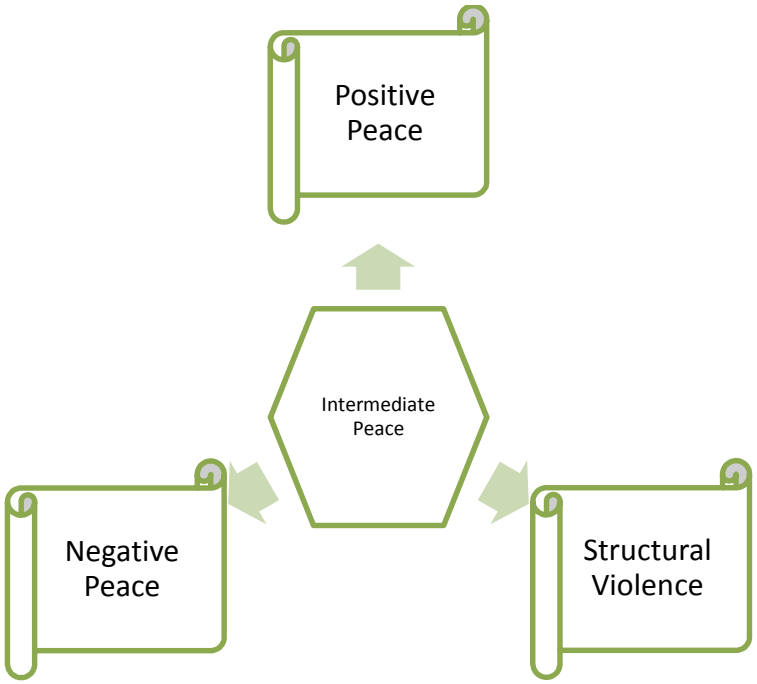

Figure 7.1: Conceptualisation of Intermediate peace (Source: Author)

Overall, findings from the study revealed a middle scale of peace, which lies between positive and negative peace. The researcher refers to this as 'intermediate peace' (see Figure 7.1). Thus, in a society some aspects of negative and positive peace exist in society congruently. A society can experience direct and structural violence on a fluctuating basis.

'Intermediate peace' can be conceptualised as the condition that exists when aspects of positive peace, such as access to clean water and participation in lower structures, are present. At the same time, negative peace is present in the sense that there is no physical fight over water points and access. For instance, if individuals are not engaging in fights over who should be the first to fetch water at a borehole. At the same time, there is evidence of the structural violence of exclusion from government water institutions, lack of access to water for productive uses, lack of information and so on. These elements crystallise to form intermediate peace. Thus, most of the local community members in rural Zimbabwe have access to clean water but have less access to water for irrigation purposes. In the same vein, lower echelons of society provide avenues for participation through customary tenure, but there is a 'bottleneck' tendency as the ladder is climbed.

In each society, at particular times there might be direct violence in terms of wars over water or other natural resources. Negative peace may follow immediately in the aftermath of physical confrontation. However, there might be no structural violence or positive peace intrinsically in a given community. There might be social injustice in a certain sphere and social justice in another, both within the water sector.

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APPENDIX ONE

Permission Letter to the C.E.O, Mhondoro-Ngezi Rural District Council
UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF SOCIAL SCIENCES

Dear Sir
Fieldworker: Evans Shoko (0773220010)
Supervisor: Dr. Maheshvari Naidu (+2731-2607657/naiduu@ukzn.ac.za)
Research Office: Ms P Ximba (+2731-2603587)

I am a Doctoral student at the University of KwaZulu-Natal (South Africa) and am hereby seeking your permission to interview three of your subordinates who work in Tyron Ward.
My research title is: **Water access policies: Probing water access policies and positive peace in a Zimbabwean rural setting.** The aim of this study is to explore how formal water policies and informal water practices impact on positive peace indicators in rural areas of Zimbabwe. It will focus on positive peace indicators such as access to water, participation, and recognition of rights, development and reduction of poverty.

The study involves individual interviews which will take no more than 45 minutes. Participation of individuals in the study will be on a voluntary basis. There are no risks to your subordinates as a result of taking part in the study. Participants will be given the option not to take part in the study if they wish not to and to withdraw from the study at any point during. You are also free to withdraw consent for any (or all) your subordinates in this study and without penalty or obligation.

Information collected in this study will be used solely for the purpose of this study. It will not be made available to any persons or organizations not involved in this study. All data will be kept secure, in safe box, where no one else except me will access. A summary of the study's findings will be made available to you at the conclusion of the study. The findings will not present results targeting individuals but will combine all the participating respondents.
If you agree to have your subordinates take part in the study, please kindly sign the conclusion form below. Should you require further clarification pertaining to any aspect of this study, feel free to contact me or my supervisors at the numbers listed above.

Thank you.
Yours Sincerely,
Evans Shoko

APPENDIX TWO

Permission Letter to the Councillor
UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF SOCIAL SCIENCES

Dear Sir
Fieldworker: Evans Shoko (0773220010)
Supervisor: Dr. Maheshvari Naidu (+2731-2607657/naiduu@ukzn.ac.za)
Research Office: Ms P Ximba (+2731-2603587)
I am a Doctoral student at the University of KwaZulu-Natal (South Africa) and am hereby seeking your permission to interview official who work in Tyron Ward.

My research title is: **Water access policies: Probing water access policies and positive peace in a Zimbabwean rural setting.** The aim of this study is to explore how formal water policies and informal water practices impact on positive peace indicators in rural areas of Zimbabwe. It will focus on positive peace indicators such as access to water, participation, and recognition of rights, development and reduction of poverty.

The study involves individual interviews which will take no more than 45 minutes. Participation of individuals in the study will be on a voluntary basis. There are no risks to your subordinate as a result of taking part in the study. Participants will be given the option not to take part in the study if they wish not to and to withdraw from the study at any point during. You are also free to withdraw consent for your subordinate in this study and without penalty or obligation.

Information collected in this study will be used solely for the purpose of this study. It will not be made available to any persons or organizations not involved in this study. All data will be kept secure, in safe box, where no one else except me will access. A summary of the study's findings will be made available to you at the conclusion of the study. The findings will not present results targeting individuals but will combine all the participating respondents.

If you agree to have your subordinate take part in the study, please kindly sign the conclusion form below. Should you require further clarification pertaining to any aspect of this study, feel free to contact me or my supervisors at the numbers listed above.

Thank you.
Yours Sincerely,
Evans Shoko

APPENDIX THREE

Information Form/Study Description
UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF SOCIAL SCIENCES

Dear Respondent,
Fieldworker: Evans Shoko (0773220010)
Supervisor: Dr. Maheshvari Naidu (+2731-2607657/naiduu@ukzn.ac.za)
Research Office: Ms P Ximba (+2731-2603587)

I, Evans Shoko, a Doctoral student at the University of KwaZulu-Natal wishes to invite you to participate in a research project titled: **Water access policies: Probing water access policies and positive peace in a Zimbabwean rural setting.** You have been chosen because you work in village one and have knowledge of the place.

The study will explore how formal water policies and informal practices affect access to water. It will try to understand how you participate in water institutions and if this leads to development in the community.

Your participating in this project is voluntary. You may choose to withdraw from participating from the study at any point or choose not to answer any question that you do not feel comfortable answering and no penalty will be attached to any of such actions. The information that will be gathered from this study will be used in my thesis writing and may be published in academic journals and presented orally. However, your identity will be protected at all times and will only be made known if you so wish. Unfortunately, I will not be able to afford you any payment for your participating in this study; as such there will be no financial benefits. This interview will be informal and semi-structured and will last for 30 minutes but can be more or less, depending on your availability and willingness. These will be held at your home or anywhere you are comfortable. I hope you will take the time to participate.

If you have any questions or concerns about participating in this study, you may contact me, my supervisor, or the University's research office through the numbers listed above.

Yours Sincerely,
Evans Shoko

APPENDIX FOUR

Informed Consent Form
UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF SOCIAL SCIENCES

Fieldworker: Evans Shoko (0773220010)
Supervisor: Dr. Maheshvari Naidu (+2731-2607657/naiduu@ukzn.ac.za)
Research Office: Ms P Ximba (+2731-2603587)

I _____ (**optional** and may be replaced by initials) hereby declare that I am fully informed about the nature of the research titled: **Water access policies: Probing water access policies and positive peace in a Zimbabwean rural setting** by the researcher.

Yes…… **No……**

I have also been well informed about the role that I stand to play if I am to participate in this project, which is participating in a one to one interview. I am also aware that participation is voluntary and I can choose to withdraw from the process at any stage without any consequences to my withdrawal.

Yes…….. **No…….**

I am aware that all information obtained from me in the course of this project will remain confidential and that my identity will be well guided in the case of any publication of the obtained information.

Yes…… **No……..**

I agree that the interview process will be electronically recorded and all collected information will be kept with confidentiality and high security. **Yes……** **No……..**

| --- | --- | --- | --- |
| Initials | Signature | Date | Place |

I Evans Shoko state that I have fully informed the above participant of the nature and purpose of my research and the demands involved in his/her participation. I also state that I will do all in my power to maintain confidentiality and anonymity of the participant as I fully keep to the ethical conduct requested of me as a fieldworker.

| --- | --- | --- |
| Signature | Date | Place |

APPENDIX FIVE

Interview Schedule: Village One residents

1. Where do you fetch your water?
2. What is your view on the quality of water in your area?
3. What do you think about the water access policies in Zimbabwe?
4. Are there any traditional norms that govern access to water in your area?
5. If any, how do these traditional customs affect your access to water in your area?
6. Do you have any training in water resources management?
7. How do you use water resources in your area?
8. Do you feel water has driven development in your area?
9. In what ways are you involved in the management of water resources in your area?

APPENDIX SIX

Interview schedule for key informants

1. How are you as a local authority involved in provision of water in Ward 11?
2. How are you working with WADCOs and VIDCOs to ensure water provision in Ward 11?
3. What is the ratio of borehole to users and how are you working to achieve this?
4. What type of synergies do you have with NGOs in provision of water?
5. What co-ordination mechanisms have you put in place to work with other government agencies?
6. What future plans do you have for increased provision of water?

APPENDIX SEVEN
UNIVERSITY OF KWAZULU-NATAL

SCHOOL OF SOCIAL SCIENCES

QUESTIONNAIRE FOR VILLAGE ONE RESIDENTS

I am Evans Shoko, a Doctor of Philosophy in Conflict Transformation and Peace Studies Student at University of KwaZulu-Natal. I am carrying out a research titled: **Water access policies: Probing water access policies and positive peace in a Zimbabwean rural setting.** The aim of this study is to explore how formal water policies and informal water practices impact on positive peace indicators in rural areas of Zimbabwe. Information obtained from this research will help among other things to maintain peace in communities. It will not be made available to anybody or any organisation not involved in this study. May you please assist by completing this questionnaire. If you feel like not willing to continue taking part in this study at any point during completion of the questionnaire you are free to do so without any penalty.

Thank you for taking part in this study. Please complete all the questions as much as possible

Please tick the correct answer in the appropriate box [√]

SECTION A: PERSONAL DETAILS

Gender: Male ☐ Female ☐

Level of education: Grade 7 and below ☐ ZJC ☐ 'O' Level ☐ 'A' Level ☐ Certificate ☐ Diploma ☐ Degree ☐

SECTION B:

Key:

SA – Strongly Agree
A – Agree
N – Neutral
D – Disagree
SD – Strongly Disagree
CA – Cannot Answer

Qn No	Question	Responses					
		SA	A	N	D	SD	CA
1	Peace is co-existence by sharing water equally with each other						
2	Peace comes by helping each other to access water in the community						
3	Peace is present when there is no corruption in water projects						
4	There is peace when we respect each other's right to use water						
5	We resolve our water disputes peacefully						