EVALUATION OF THE IMPACT OF SCARCITY OF WATER IN THE BUSHBUCKRIDGE LOCAL MUNICIPALITY IN MPUMALANGA PROVINCE : A CASE STUDY OF ISLINGTON AND CLARE B VILLAGES

MASTER OF DEVELOPMENT (MDEV)

MALULEKE TIMOTHY ELLON

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BY

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LIST OF ABBREVIATIONS AND ACCRONYMS USED IN THIS STUDY

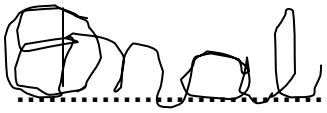
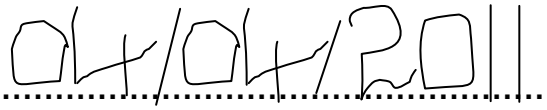
AsgiSA	Accelerated and Shared Growth Initiative for South Africa
AWARD	Association for Water and Rural Development
BDM	Bohlabela District Municipality (former)
BEE	Black Economic Empowerment
BLM	Bushbuckridge Local Municipality
CBO	Community-Based Organisations
CDF	Community Development Forum
CDW	Community Development Worker
DPLG	Department of Provincial and Local Government
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
EU	European Union
FBW	Free Basic Water (Policy)
GEAR	Growth, Employment and Redistribution
IDP	Integrated Development Plan
IMF	International Monetary Fund
MDG	Millennium Development Goals
MIG	Municipal Infrastructure Grant
NGO	Non-Governmental Organisations
NP	National Party
NWA	National Water Act of 1998
RDP	Reconstruction and Development Programme
SALGA	South African Local Government Association
SWELL	Securing Water to Enhance Local Livelihoods
UN	United Nations
WaterSA	Water South Africa
WHO	World Health Organisation
WSA	Water Service Act of 1997/ Water Services Authority
WSP	Water Services Provider

ABSTRACT

The legacy of apartheid has left the Democratic South African government with many challenges. Sixteen years of governance have not been enough for the state to close the gap between the rich and the poor. Instead, the gap is widening day by day. The Black Economic Empowerment (BEE), the Broad Based Black Economic Empowerment (BBBEE) and other government intervention strategies have not done enough to uplift the standard of living of the majority of people in the country. The poor, living in rural areas, remain the most hard-hit and recipients of the bitter fruits of the past. Little or no development has been taking place in their communities. Regardless of the many efforts by the current government, water supply and sanitation in rural areas are a nightmare. The study was conducted in two rural villages in Bushbuckridge Local Municipality (BLM), namely, Clare B and Islington. In some parts of the villages residents have never fetched water in their streets less than one kilometre for close to a year. The results show that villagers are negatively affected by the lack of water in their communities. The economic power of these communities is very low, most of them are living below the poverty line. The results suggest, as elsewhere, that the BLM should install water pipes that will transfer water from the Injaka Dam to all rural areas in the municipality, as the two villages under study are not the only ones experiencing water shortages in the area.

DECLARATION

I declare that the mini-dissertation titled 'Evaluation of the Impact of Scarcity of Water in the Bushbuckridge Local Municipality in Mpumalanga Province: A Case Study of Islington and Clare B Villages' hereby submitted to the University of Limpopo, for the Degree of Master of Development has not previously been submitted by me for a degree at this or any other university; that it is my work in design and in execution, and that all material contained herein has been duly acknowledged.

Signed :  **Date :** 

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CHAPTER ONE

1. BACKGROUND OF THE STUDY

1.1. Introduction

The study deals with the impact of scarcity of water in the Bushbuckridge Local Municipality (BLM) in Mpumalanga Province (South Africa) with specific reference to two villages, namely, Clare B and Islington. Water is one of the basic human needs. The South African government has established a number of legislations, policies and strategies meant to regulate and manage water effectively and efficiently. Among others, was the establishment of the three spheres of government with the local government being tasked to ensure that water services are available to all people; the poor people in particular at the grassroots level.

The Constitution of the Republic of South Africa as adopted on 8 May 1996 has laid the basis for water as a basic human right. It has recognised the right for every citizen to access water. Two major Acts were promulgated to enhance the management and control of water, viz., the 1997 Water Services Act (WSA) and the 1998 National Water Act (NWA). The Constitution (1996) allocated the management of water resources to the national government, which later shifted the responsibility to water boards which were set up in terms of section 34(1) of the WSA of 1997. The National Water Act (1998) created a comprehensive legal framework for the management of water resources, while the Water Services Act regulates water services (Gowlland-Gualtieri, 2007, p.4).

There have been many efforts by government, civil societies and non-governmental organisations(NGO) in ensuring that all citizens should have access to water services. The Reconstruction and Development Programme (RDP), Masibambane Programme, Free Basic Water Policy (FBW), Growth, Employment and Redistribution (GEAR) and the Accelerated and Shared Growth initiative for South Africa (AsgiSA) were some of the strategies made by government and other stakeholders to enhance the supply of

water to the people. In August 2005, Cabinet approved the establishment of the National Water Resource Infrastructure Agency (NWRIA) to ensure long-term water security for South Africa. International Organisations such as the European Union (EU), World Health Organisation (WHO) and International Monetary Fund (IMF) also joined hands with the South African government and NGO to fulfil the expectations of the poor.

Targets were even set to be achieved before certain periods. Among others were the government's commitments to ensure that everyone in South Africa has access to functioning basic water-supply services as well as a functioning basic sanitation facility by 2010. Money was invested through certain programmes. The Department of Water Affairs and Forestry (2006/2007,p.600) shows that the EU has committed about R1 billion towards supporting South Africa's water and sanitation provision programmes between 2007 and 2013.

Regionally, South Africa has signed co-operation agreements with a number of countries in the Southern African region with which it shares its borders. The following were some of the co-operations and initiatives:

- Mozambique and Swaziland on the Inkomati and Maputo rivers,
- Botswana, Lesotho and Namibia on the establishment of the Orange Senqu River Commission ,
- Botswana, Zimbabwe and Mozambique on the establishment of the Limpopo Watercourse Commission, and many others (Department of Water Affairs and Forestry, 2006, p.608).

These regional and international co-operation efforts and initiatives have benefited South Africa and its partners.

South Africa hosted successfully the 2010 FIFA World Cup soccer. During the event clean and safe water had to be supplied. The Minister of Water Affairs, Ms. Buyelwa Sonjica, indicated in the Minister's National Water Week message on March 15, 2010 before the event that 'It is therefore important for us to pull out all the stops to ensure that our visitors enjoy safe and clean portable water, whose quality is rated amongst the

best in the world. It's incumbent upon us to assure our citizenry and visitors that our drinking water is of the highest quality.'

The lessons learned from the achievements of the 2010 FIFA World Cup soccer are worth considering going forward. South Africans were reminded of unity, dedication, patriotism, willingness to serve and above all, 'ubuntu'. The most important lesson is that should all South Africans unite on water issues like they did during the world cup, all of its citizens will have access to clean, drinkable water.

Charity begins at home. The 2010 FIFA World Cup soccer finally took place. Accolades have been coming from all corners of the globe after the event. Indeed, visitors from around the world had access to clean, drinkable water; yet, there are many rural areas in the country which do not have access to water provision. The focus of the study is to evaluate the impact of scarcity of water in two rural villages in BLM.

1.2. Statement of the Problem

Nationally, the Water Services Act (1997) recognises the rights of access to basic water supply and basic sanitation necessary to ensure sufficient water and an environment not harmful to health or well-being. On 6 June 2003, the then Minister of Water Affairs and Forestry, Ronnie Kasrils, indicated in his budget speech that in 1994 about fourteen million South Africans were without safe water. In 2003, the number was reduced to five million.

Provincially, the Bushbuckridge Water Annual Report (2002, p.3) called 'Climbing the Water Ladder' went on to show that no South African would be without clean water in 2008. This was a commitment from the Bushbuckridge Water Board to provide bulk water services to Municipalities, BLM included.

Locally, it remained a problem why the residents from both Islington and Clare B villages were among the poor communities in the Bushbuckridge Local Municipality and

the country at large and that they were still experiencing water shortage problems. Some parts of the areas had water taps that were non-functional and had already gone for years without water coming out of them. This study attempts to probe on water shortage issues which could lead to finding answers that would lead into solving the water shortage problems in both Islington and Clare B which are the study's focus areas.

1.3. Motivation for the study

South Africa has a huge inequality gap between the rich and the poor. A good example is that of Sandton suburb and Alexandra Township. Those that live in Sandton are the super rich of the country; meanwhile the people in Alexandra are the poor of the poorest. There is more than enough water in suburbs because the people have money to pay for services, while townships and rural areas experience water shortages. This is due to a number of reasons. Refusal to pay for municipal rates and taxes could be one of the reasons. In some villages, the chiefs tell their subject not to pay for municipal rates and taxes.

The poverty line gap and other issues such as the efforts by government to ensure that they meet the Millennium Development Goals (MDG) targets raise some concerns as to why water shortage is still a problem in South Africa. If all the policies, strategies, projects and programmes aimed at eradicating poverty were implemented, there would be no water shortage problems. The results from this study may help to address water shortage problem in the study areas in a more coordinated way.

1.4. Aim of the study

The major aim of the study is to evaluate the impact that water scarcity has on the inhabitants of Islington and Clare B villages in the Bushbuckridge Local Municipality (BLM) in Mpumalanga Province, South Africa.

1.5. Objectives of the study

The objectives of this study were**:**

- To explore how water scarcity affect the day to day lives of people of Islington and Clare B villages.
- To identify the contributing factors of water scarcity in the areas.
- To establish stakeholders' responsibilities on water provision in the areas.
- To check if the BLM had plans in the form of programmes and projects to alleviate the water crisis.
- To analyse and interpret the findings towards making recommendations on the possible strategy or strategies that could be implemented in order to minimize water shortage problems in the country.

1.6. Key research questions

The proposed study has provided answers to the following key research questions:

- How does water scarcity affect the day to day lives of people of Islington and Clare B villages?
- What are the factors that contribute to the scarcity of water in the areas?
- Who are the stakeholders and what are their roles in the provision of water in the two villages?
- Does the BLM have programmes and projects to alleviate the water crisis?

1.7. Definition of key concepts

The key concepts of the study included water services, water authority, Water Board, the Bushbuckridge Local Municipality, evaluation, scarcity and impact. Each and every concept was defined with special reference to the study, and this is called operationalisation. Rubin and Babbie (1993) define operationalisation as "developing specific research procedures that will result in empirical observations of things that represent those constructs in the real world".

1.7.1. Water Services

The Water Services Act(1997,p.6) defines *water services* as water supply services and sanitation. In this study, *water services* will refer to the activities carried out by the BLM in water provision to the residents of the two villages.

1.7.2. Water Services Authorities

The Water Services Act (1997,p.6) defines *water services authority* as any municipality, including a district or rural council responsible for ensuring access to water services. The national Department of Water Affairs (DWA), water boards and the local municipalities are all water authorities in South Africa (Abrams,1996,p.4). Therefore, this study regards *water authority* as any of the above institutions that are directly or indirectly involved in water provision to the people in the BLM.

1.7.3. Bushbuckridge Local Municipality(BLM)

Raab and Mayher (2008) describe the *Bushbuckridge Local Municipality* as one of the five local municipalities found in the north-east part of Ehlanzeni District Municipality in Mpumalanga Province (South Africa). For the purpose of this study, *Bushbuckridge Local Municipality* is the leadership of the local municipality that is responsible for service delivery in various wards including ward 33 and 34, where Clare B and Islington villages are located.

1.7.4. Water Board

The Water Services Act (1997,p.6) defines *Water Board* as an organ of state established in terms of this Act to perform as its primary activity a public function. In this study, *Water Board* refers to the Bushbuckridge Water Board. Abrams (1996,p.4) further elaborates on the role of a water board as being to supply bulk treated water on a commercial basis. The bulk supply of water is made to various municipalities which then supply to communities.

1.7.5. Impact

According to Tullock(1993,p.749) *impact* is an effect or influence. For the purpose of this study, *impact* refers to the effects of water scarcity to the people who live in Islington and Clare B villages. The study will establish whether the effects of water scarcity are positive or negative.

1.7.6. Evaluation

Evaluation is derived from the verb 'evaluate,' which means to assess progress made on something. For the purposes of this study, *evaluation* refers to 'the use of scientific methods to measure the level of water provision' to Islington and Clare B villages (Rutman, 1984, p.10).

1.7.7. Scarcity

Scarcity refers to lack of something. In this study, the word is used to refer to the outcomes as a result of the unavailability of water in the two communities. The study will establish how the communities of Clare B and Islington cope when water is scarce in their areas.

1.8. Significance of the study

The significance of this study is that it gives an evaluation of how the scarcity of water impact on the day to day lives of people living in the two villages, namely, Clare B and Islington located in the Bushbuckridge Local Municipality(BLM) in Mpumalanga Province. The findings of the study may provide answers to water shortage problems in the two villages. The findings may also reveal that other villages may also experiencing water shortage problems. The study also reviewed various forms of literature to link it with other studies that were previously conducted on the research topic. There were studies that were conducted in villages like Welverdiend, which is very close to the two villages under study. The study has laid the basis and will also serve as a guideline to future researchers on water issues. The suggestions and recommendations made will

assist policy makers on how rural villages should be assisted to minimise future water problems. The study emphasises on the importance of water as a basic human need.

CHAPTER 2

2. LITERATURE REVIEW

This chapter looks at the various forms of literature used by various scholars on the research topic including their researches findings on the area of water scarcity. This is important because it will give the present study a sense of direction to lay down its foundation. It is necessary to know what other researchers have written about the topic. This exercise also gives a form of theoretical underpinning. The findings of the current study were compared with those that were conducted before in BLM villages. As the topic itself is development-related, the study also looked at development and all its related factors such as poverty. How water provision was conducted by various forms of governments in the country was covered as well by various literatures. The current state of water provision in the Bushbuckridge Local Municipality was clarified including the roles played by community based organizations (CBO), NGO and international communities in water provision.

2.1. The conceptions of poverty

Poverty dates back to many centuries ago. There are many ways in which people perceive it. However, for the purposes of this study, poverty is pronounced deprivation in well-being, and comprises many dimensions. It includes low incomes and the inability to acquire basic goods and services necessary for survival with dignity. It also encompasses low levels of health and education, poor access to clean water and sanitation, inadequate physical security, lack of voice and insufficient capacity and opportunity to better one's life (Worldbank.org).

Oosthuizen (n.d.,p.2) proposes three ways in which poverty can be measured, perceived or categorised, viz., absolute poverty, relative poverty and subjective approach. He goes on to define absolute poverty as the measure that draws a line that values in monetary terms the goods and services required to meet a set of absolute minimum living standards or basic needs. He differentiates relative poverty from absolute poverty by indicating that it is not anchored in minimum living standards or

basic needs, but on the society's characteristics and attempts to identify those individuals whose standards of living are unacceptably low relative to the rest of society. In simple terms, this refers to the working poor who regardless of earning a salary, live below the poverty line when compared with other members of their society, more especially in an unequal society like South Africa. On the one hand South Africa has individuals who have extreme wealth, while the poor on the other hand languish in absolute poverty. The last contemporary form of poverty is its subjective approach that Oosthuizen (n.d.,p.2) defines as a measurement that relies on individuals' opinions as to what constitutes the minimum income or expenditure required by a household.

Five causes of poverty have been identified as education, health, economics, government and unemployment. Lack of education keeps children from obtaining jobs that would lift them and their families out of poverty. Poor health decreases the amount of work impoverished individuals can do, lowering their income and driving them deeper into poverty. Economically, the poor are often prevented from receiving loans and other financial benefits. It is even worse to the unemployed; they are the ones living in absolute poverty with others turning to criminal activities as a means of survival. The core cause of poverty in many countries around the world is the government. Wars, corruption, lack of government infrastructure and poor service delivery are some of the hindering aspects experienced by many governments.

There are three types of countries defined according to economic development: developed countries, developing countries and underdeveloped countries. Developed countries are regarded as highly industrialised countries such as Australia, Austria, Canada, France, Germany, Italy, Japan, Russia, UK and USA. Developing countries are those countries that are making progress towards becoming industrialised such as South Africa, India and Brazil. Underdeveloped countries are those countries that are war-torn and as a result do not have time to engage in developmental issues. Therefore, development is the key to eradicating poverty.

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2.2. Development and its essence to this study

There are many definitions with regard to development. For the purposes of this study, the definition from the electronic Geography Dictionary by Mayhew (2004) was adopted. She defines development as 'the use of resources to relieve poverty and improve the standard of living of a nation; the means by which a traditional, low-technology society is changed into a modern, high-technology society, with a corresponding increase in incomes.

The World Bank, other organisations and institutions use the development indicators to measure the level of development in countries. However, to the poor, the success of development efforts by governments is measured by the results that are visible in the society, for example, a good state of health care, building of schools, provision of water and sanitation and construction of roads and bridges.

When most of the expectations listed above from the poor people are not met, most communities often resort to riots, causing serious challenges to the country. This stems from the past racial policies like the Native Land Act of 1913, the Group Areas Act and others which were pursued by the previous government aimed at impoverishing millions of Africans. The current government has been in power for long now. Strategies like the Black Economic Empowerment (BEE) have not yielded tangible fruit to many. There has also been a new trend of some whites becoming poor as a result of the BEE, Broad Based Black Economic Empowerment (BBBEE) and other forms of the Affirmative Action policies. This shows that poverty has a long way to go unless something is done.

Development in the Bushbuckridge Local Municipality is under serious threat. This is due to the fact that Bushbuckridge is exceptionally poor as 85% of households live below the poverty line and only 14% of the population are employed (Dept. of Provincial and Local Government,n.d.,p. 7). A lot has to be done to remedy the situation. Water provision could also help when poor people start using it productively for uses such as irrigation and cooking for business in order to eradicate poverty.

2.3. The history of water provision, governance and policies in South Africa

Water provision, governance and policies in South Africa have a long history even before the arrival of the Dutch Settlers in 1652 in Cape Town. Prior to the pre-colonial era, water rights were governed by the African Customary Law (WaterSA, Vol.35). This means that by then water rights were just common knowledge and governed as such. Problems often arose in situations where a certain tribe would infringe on the water rights of certain users from different areas.

The Dutch rule also brought its own form of water control measures. The Roman law was employed to regulate water (WaterSA,Vol.35). Under the law, water use was classified as private, common or public. Private water was regarded as the water owned by individuals with individual rights. The common water was water for all people, while the public water was the water controlled by the state. All running waters in the streams was not owned by anyone, but once taken from the stream, became private (Wiel,1909, p.213). Other laws such as the Roman-Dutch Law were later introduced to draw a line between public and private use, with the state given power to control both.

When the British took control of South Africa from 1806 to 1910, before the Union of South Africa in 1910, they replaced the Dutch Law by the English Law. Many changes took place like the proclamation of the riparian principle, which met with many challenges. Streams had to be shared resulting in conflicts in some cases, like the users in the upper stream closing the water to erect dams, resulting in users in the lower stream not receiving water (Thompson,2006, p.44).

After the union of South Africa in 1910, the year 1912 saw the promulgation of the Irrigation and Conservation of Waters Act to codify all the laws of the union. Thompson et al. (2001,p.12) highlight that the 1912 Act was a compromise between the northern (Transvaal and Orange Free State) and southern (Cape and Natal) provinces. Though based on the Irrigation Act of 1906 from the Cape, it was modified to tackle the situations (dry and low rainfall conditions) in the northern provinces. The greatest

disappointment about the Act was that it vested most of the rights to water resources in Whites only, thus discriminating against the African majority (Van Koppen,2005,p.4).

The National Party (NP) came into power in 1948 and introduced the system of apartheid. Turton et al. (2004), as cited in Tewari, (2009,p.701) hailed the NP for introducing large water projects to encourage economic development , but criticised it for the fact that this was done only in rural areas where a large part of the NP's support base was located. The Water Act of 1956 was promulgated and replaced the Irrigation and Conservation of Water Act of 1912. The Act managed to harmonise water regulation in the interest of the economic heavyweights; agriculture, mining, and industries. DWAF (1986,p.19) shows that among other roles, the Act ensured an equitable distribution of water for industrial and other competing users, as well as imposing strict control over abstraction, use, supply, distribution and pollution of water, artificial atmospheric precipitation and the treatment and discharge of effluent.

It should be noted that all these developments were aimed at developing Whites and excluding Africans. Stein (2005, p.2167) cites the use of the following Acts to control African people's access to land, and hence to water: Native Land Act 27 of 1913, Development Trust and Land Act 18 of 1936 and the Group Areas Act 41 of 1950. Ten Bantustans (later generally referred to as homelands), covering 14% of the country's land were created from the former "native reserve" (The Colombia Electronic Encyclopaedia,2010). As a result, four were proclaimed independent: Transkei (1976), Bophuthatswana (1977), Venda (1979), and Ciskei (1981). However, no foreign government recognised them as independent nations. The remaining six, viz., Gazankulu, Lebowa, Ka-Ngwane, Kwa-Ndebele, Qwaqwa and Kwa-Zulu were considered dependent states. According to Tewari (2009 p.702) these territories had legislative power to repeal, amend or replace the 1956 Act. Only Bophuthatswana made changes to the Act, adopting the principle of *dominus fluminus*. This principle also called absolute ownership principle requires complete control of the water resource by the governing party. This meant that water resources in one country were controlled differently by the ten homelands and by the central apartheid government.

2.4. The democratic South African government's role in water provision

Democracy in South Africa brought about social, economic and political changes; however, the change came with challenges. The major challenge for the democratic government was to find a balance between the traditional view that water is a public good and the modern view that water also has a commercial value (Tewari,2009 p.702). The 'White Paper on Water Supply and Sanitation' was published in November 1994. It laid the foundation on how to manage, distribute and control water resources inclusive of all people of South Africa. The Constitution of South Africa which was promulgated in 1996 laid the basis for a shift from previous water laws, seeking to address the social inequities and environmental concerns on the one hand and efficiency-related issues on the other. The Bill of Rights contained in the Constitution makes it the most important document in the country, because it gives every person a right to many opportunities such as having access to health care services, sufficient food and water.

The Water Services Act number 108 was promulgated in 1997 to enhance the management and control of water. The key objective of the Act is to ensure the effective partnerships between various water institutions to sustain water use in the country. It also sets out national standards and norms and standards for tariffs in respect of water services and many other roles, like focusing on the conservation of water.

The National Water Act (NWA) number 36 of 1998 followed the WSA of 1997. It repealed over 100 Water Acts related amendments and extinguished all previous public and private rights to water (NWA 1998, Schedule). The Constitution (1996) allocated the management of water resources to the national government, which later shifted the responsibility to water boards which were set up in terms of Section 34(1) of the WSA of 1997. The National Water Act (1998) created a comprehensive legal framework for the management of water resources, while the Water Services Act regulates water services (Gowlland-Gualtieri, 2007, p.3).

The South African government's institutional framework has been categorised into a three tier system. The first tier is the National Government represented by the Department of Water Affairs. It major tasks include management of water resource, support to local government, setting of norms and standards and monitoring and administering the Water Act (Abrahams,1996, p.4). The second tier refers to the water boards whose role is to supply bulk treated water on a commercial basis to institutions, e.g., municipalities and other organisations and communities. The third tier is the local government which supplies water and sanitation services directly to consumers.

The challenge with the current government is to ensure that policies are implemented for the better of service delivery to communities. Some researches made on 'developmental water services' established that the water sector was in transformation. This required a shift in paradigm resulting in challenges of integrating technical factors with other factors such as business aspects. In order to equip local municipalities to meet developmental objectives, with an emphasis on poor communities, Ryneveld and Sproule (2006,p.401) propose three types of competencies required for technical professionals and decision-makers, viz., methodical (academic and practical), social and personage as well as judgmental competence.

Methodical competencies are further categorised into academic and practical competencies. Academic competencies include active life-long learning, knowledge analysis and technical decision-making and problem solving, while practical competencies include technical know-how and skills, numeracy, and information.

The social competence and competence personages are divided into administrative, intrapersonal and interpersonal. Administrative competences include business sense, environmental awareness, ethical, and time-management. Intrapersonal competences include listening, creativity, adaptability and awareness of self in context. Interpersonal competences on the other hand include teamwork, people management and relationship, working with stakeholders and communication.

Judgment is the last major form of competencies. It overlaps to all of the above competencies. It includes the ability to evaluate information, isolate central issues in decisions, balance competing interests and check viability of decisions.

If people who are supposed to carry out development initiatives lack some of these competencies, it will be very difficult for service delivery to take place. Therefore, there is a serious need for all technical professionals and decision-makers to acquire such competencies.

2.5. Non-Governmental Organisations and water provision

The current government is offered assistance in water services and provision by non-governmental organisations(NGO). The Mvula Trust is the largest water and sanitation NGO in South Africa. It was established in 1993 to improve water supplies and sanitation for disadvantaged South Africans living in rural and peri-urban communities (www.mvula.co.za). The website goes on to indicate that Mvula Trust has met its mandate in the past 15 years by working to meet marginalised people's need for clean water and sanitation on a sustainable basis, and works tirelessly to ensure that South Africa does indeed meet the MDG for water and sanitation by 2015.This, however remains to be seen through the outcome of this study. The government is hailed to be making progress on meeting this particular MDG because of its strong partnership with NGOs working in this field.

There are many other NGO for water in South Africa. The Association for Water and Rural Development (AWARD) is an NGO of interest to this study. It is based in South Africa and in Bushbuckridge (Acornhoek), where the study was conducted. AWARD works on water supply in the broader context of managing water resources and their wise use, with a focus on learning about water security issues in the Sand River Catchment area.

AWARD's mission is to develop and test new and appropriate ways of managing water to address water security issues of wise resource management and equitable allocation

in the catchment. It focuses on water in two dimensions, viz., water resource and water supply. On water resources, it focuses on the Integrated Water Resources Management (IWRM) in the catchment through :

- Research based enquiry on implementation,
- Writing up and sharing learning and findings,
- Influencing and supporting institutions with responsibility for policy and,
- Working with approaches that impact on the livelihoods of the poorest.

As a water supplier, AWARD has developed the Securing Water to Enhance Local Livelihoods (SWELL) at village level. The main focus area of the strategy is through:

- Multiple Use Systems (MUS)
- Vulnerability
- Rain water harvesting
- Local government in water services planning based on water resources

2.6. Community-based Organisations(CBO)

Community-based organisations also have a crucial role to play in water provision and distribution. Dlamini (2008, p.40) suggests that there are three forms of community-based organizations: water committees, Community Development Forums (CDF) and ward committees. Water committees are community structures whose roles are water related only. They take community needs in relation to water services to the CDF. The Community Development Forum is the forum that caters for the needs of all developmental issues in a village. Chairpersons of CDF's from all villages assemble together with the councillor to prioritise the needs of the ward (ward council). The ward plan is then taken by the ward councillor to be merged with priorities from all other wards in the municipality to form an Integrated Development Plan (IDP). Dlamini (2008, p.36) further indicates that the IDP also considers sectoral plans from sector departments (DWAF, Agriculture, Health and Welfare, Social Development, etc) by aligning them with the overall municipal plan.

2.7. International Organisations and Communities

Many international organisations have also played a crucial role in the supply of water and sanitation in South Africa. Some of these organisations include the United Nations (UN), the World Health Organisation (WHO), the World Bank and the International Monetary Fund (IMF). It should, however, be noted that some of these international organisations were used by the rich countries to come under the pretext of offering assistance, while their objectives were to enrich themselves. Apart from the negative part played by international organisations, there were also many positives to the country.

The UN was formed in 1899 at a peace Conference held in The Hague, Netherlands. Its main purpose was to elaborate instruments for settling crises peacefully, preventing wars and codifying rules of warfare. During the First World War, it adopted the name 'League of Nations' under the Treaty of Versailles in 1919. The UN ceased its activities after failing to prevent the Second World War. The name UN was first used during the 'Declaration by United Nations' of 1 January 1942, during the Second World War, when representatives of 26 nations pledged their governments to continue fighting together against the Axis Powers. The UN officially came into existence on 24 October 1945 when representatives of 50 countries met in San Francisco to draw up the UN Charter and signed it (www.un.org).

Structurally, the UN is made up of the General Assembly, Security Council, Economic and Social Council, International Court of Justice and the Secretariat. The UN's contribution to development is through its Economic and Social council which covers health, education, economic, social, and cultural issues. The main purpose of the council is to improve and promote the economic and social well-being of those living in the member states. The UN's Human development Report (2006,p.104) shows that most governments world-wide who have succeeded in securing water for their citizens, are those that have put water as priority number one in their budgets, countries such as Uganda.

The United Nations Millennium Summit in 2000 prompted 189 world leaders to agree to meet the 8 MDG by 2015. The 8 millennium goals include:

- Eradicating extreme poverty and hunger;
- Achieving universal primary education;
- Promoting gender equality and empower women;
- Reducing child mortality;
- Improving maternal health;
- Combating HVI/AIDS, malaria and other diseases;
- Ensuring environmental sustainability, and ;
- developing a global partnership for development.

The greatest challenge for the UN is to monitor progress made by its member states towards achieving goals set by the MDG. Some countries have even pledged to meet the MDG before the targeted year (2015). World-wide, international organisations are working around the clock to mobilise countries to support the attainment of the MDG.

Secondly, the World Health Organisation (WHO) is an international group of one hundred and ninety-one member states devoted to the maintenance and improvement of the health of all people throughout the world. The WHO was formed in 1945 through the initiation of Drs. Szeming Sze of China, Karl Evang of Norway, and Geraldo de Paula Souza of Brazil. It was officially launched in 1946 after the approval to form the organisation and the adoption of the constitution (www.who.org).

Safe water and basic sanitation are among the programmes offered by WHO. The WHO has also introduced other programmes aimed at improving the land and planting crops such as cereals, rice, corn and potatoes in many parts of the world. However, due to water scarcity in some regions like Africa, WHO had to face a challenge of assisting countries with the help of UNICEF for the provision of water first, before introducing the above programmes. For example, planting of crops requires water, meaning that no water, no projects.

Thirdly, the World Bank is the wing of the UN. Together with the International Monetary Fund (IMF), they came into official existence on December 27, 1945 when 29 countries signed Articles of Agreement at a UN's Monetary and Financial Conference held in Bretton Woods, New Hampshire, USA. It was created to oversee stability in international monetary affairs and to facilitate the expansion of the world trade. It assists its member states, more especially developing countries, by lending them money to develop their countries (www.worldbank.org).

2.8. Community Development and water provision in Bushbuckridge Local Municipality

The Municipal Systems Act no. 32 of 2000 (p.1) defines a *municipality* as the structures, political office bearers and administration of the municipality; a geographic area; and the community of the municipality. In other words, a municipality consists of a municipal institution (political and administrative structures), and the people who live in the local area. The Act goes on to clarify the rights and duties of the municipal councils and members of the local community. One of the interesting duties of the municipal councils is to ensure that municipal services are provided to the local community in an equitable, financially and environmentally sustainable manner. From the rights and duties of the members of the local community, the following are the highlights:

- To participate in the decision-making processes of the municipality;
- Right to access municipal services;
- Right to submit recommendations, complaints or representations to the municipality, and to expect prompt responses from the municipality.

According to Dlamini (2008,p.40) communities in Bushbuckridge register their development needs into, and participate in IDP through the water committee, the CDF, Ward Committee and then these are taken forward by the ward councillor into the IDP process. Dlamini also highlights some challenges with regard to this process. He shows that members of the CDF are the facilitators of community meetings, however, their period of serving in such communities are short-lived because of employment

opportunities outside the boundaries of the municipality. Practically, this brings about delays in servicing communities as they spend weeks and sometimes months away from the communities that they are supposed to serve.

The recent service delivery protests in neighbouring municipalities across Mpumalanga are a clear evidence to this. Rapula Moatshe reported on the Mpumalanga News of (July 1,2010) under the heading :'Up in arms over water', on how anger and frustration over scarcity of water forced residents of Teka Takho to barricade a public road in protest over poor service delivery. It should be noted that in the Bushbuckridge Local Municipality, many researches were conducted in various villages such as Welverdiend, Dingledale and Belfast as well as Mkhuhlu Township. Their findings differ greatly with the reality of how things are currently. Raab and Mayher (2009, p.107) identified in the Water Dialogues Synthesis Report of 2009 called 'Bushbuckridge Case Study' the following eleven weaknesses in the Bushbuckrdige Local Municipality as follows :

(a) BLM is currently struggling to perform all of the necessary functions, although water and sanitation services remain a top priority. This was caused by the historic underdevelopment of the area under apartheid as well as limited capacity in terms of both human and financial resources.

(b) Massive backlogs remain across the BLM. The examples of backlogs include the findings from the 2006/2007 Water Services Development Plan as follows:

- More than 60 percent of households do not have any access to portable water;
- 16 percent of households do not have any access to tap water;
- 11 percent of households rely on boreholes; and
- Three percent of households access water via springs and rivers.

(c) Continual upheaval of organisations and allocation of functions has possibly had a negative effect on service delivery. The repeated shifting of responsibilities and authority-provider functions in the BLM had a negative effect on lack of improvement on water and sanitation services as follows:

- Pre-1994 : BLM was part of the two former homelands (Gazankulu and Lebowa) which were under-resourced in funds and staff; little infrastructure was developed.
- 1995-2000: Transitional Local Council and DWAF were in charge of water and sanitation services, but little progress was made because the responsibilities were not divided between the two.
- 2000-2005: Former Bohlabela District Municipality (BDM) was established and charged with taking over water and sanitation services from DWAF. Some expansion of the system occurred through the help from DWAF and USAID programmes.
- 2006-present: Former BDM was disestablished and BLM was awarded the water services authority function. The transition has crippled much of the institutional knowledge and capacity built previously. Strained intra-organisational relationships between the Bushbuckridge Water Board, BDM, DWAF and BLM have contributed a lot to poor water services over the years. Progress has been made in this regard because in January 2008, the BLM established a Water Services Department and has also appointed a manager.

(d) The municipality reports struggle to secure adequate funding and staff capacity to eradicate backlogs in service delivery. The reason is because of scattered information among DWAF, Water Board and BLM. The BLM found it difficult to secure adequate funding, and had to rely on DWAF.

(e) While many residents do not pay for water, service levels remain low and the effects of the Free Basic Water (FBW) policy are still unclear. Those that do not pay for water services are the residents from rural communities, e.g., Welverdiend, Dingledale and Belfast, while those living in townships, e.g., Mkhuhlu, have household water connections with credit metres. Rural communities do not to pay for services because they do not have stand pipes installed. They depend on boreholes, springs and rivers. Some have installed ‘illegal’ water connections.

(f) Lack of RDP-standard access to water and sanitation services is having a negative impact on health. In rural communities there is no sufficient water to supply the entire community. The queues for water are long and others have to hire cars to fetch water from other villages. Still, others walk distances of up to one kilometre to the nearest standpipe, and so forth. It is only in townships where residents access sufficient water of good quality.

(g) Lack of access to clean water increases the gender disparity and puts women at greater risk. Women suffer the greatest during water shortages in communities, because they are the ones responsible for fetching water. If it needs traveling long distances, or queue for hours; they have to endure all the pain.

(h) Despite a reported scarcity of water, Bushbuckridge is not currently suffering from drought, and natural water resources in the area are reportedly sufficient. According to the 2006/2007 Water Services Development Plan, BLM has adequate water resources that, if exploited, would be sufficient to supply residents in the area. The Injaka Dam is the biggest dam in the area and has the capacity to supply the whole area with water.

(i) The poor condition of the infrastructure has caused operational and maintenance problems, resulting in reduced access for residents, even within the areas served by the municipal infrastructure. The water infrastructure was reported to be poor. When damaged, it also took long periods for the BLM to maintain them.

(j) The BLM needs to improve its communication with users. The BLM was reported to be making little progress in communication with the users. Lack of transparency and community participation in planning and decision-making remain the key elements that hamper water provision.

(k) The sustainability of the current water and sanitation system is of concern. Water demand was reported to be on the increase, meanwhile plans to sustain them remained unclear. However, the research study by Raab and Mayher (2008, p. 117) concluded with a number of positive strategies :

- Hiring of senior managers with solid experience in the BLM;
- Finalisation of structures and systems by BLM management;
- Signing of contracts and clarification of reporting roles;
- Creation of organogram clarifying staff reporting roles;
- DWAF Mpumalanga taking a supportive role in building capacity;
- Attempts to repair the relationship between BLM and Water Board.

2.9. AWARD's role in Bushbuckridge.

AWARD is an NGO which is based in South Africa and in Bushbuckridge (Acornhoek). It works on water supply in the BLM. It conducts research on water and water projects, and also assists in the planning sessions with regard to water aimed at assisting the municipality in closing the gaps that exist in water provision. AWARD has been piloting the implementation of a Multiple Use Services (MUS) approach in BLM. MUS is about water services provision aiming to meet all people's water demands. This approach is known as Securing Water to Enhance Local Livelihoods (SWELL). SWELL was piloted in the former ward 16, and it consisted of a participatory assessment of people's water-based livelihoods, the water services and water resources available within the villages in a ward. It involved the participation of various stakeholders such as the Department of Agriculture, DWA, the Department of Health, ward committees, BLM (regional office), and the former BDM (Maluleke et al.,2005,pp.4-9).

Other than SWELL, AWARD is also involved in other water projects in the BLM in areas such as Clare A, Acornhoek, Greenvalley, Tintswalo, and Utah. Bushbuckridge Bricks Project and many others participate in AWARD's activities. It even has the financial capacity to fund some of the projects on its own.

2.10. Various uses of water in villages in Bushbuckridge

A number of studies have been conducted in Bushbuckridge to establish the various uses of water to the residents of the area. It should be noted that there are five townships in the BLM. These are Mkhuhlu, Thulamahashe, Shatale, Bushbuckridge and Dwarsloop. Acornhoek is just a small town surrounded by villages all around. Therefore, all the remaining places in the municipality are villages. The degree to which water is being used by people differs from village to village. It is even worse when the use has to be compared between a village and a township. The gap is rather huge.

Soussan et al.(2004), Perez de Mendiguren and Mabalane(2001) and Maluleke et al.(2005) all agree that water is an economic, as well as a social good and should therefore be managed appropriately. Maluleke et al. (2005, p.11) and Soussan et al. (2004, pp.143-145) categorise the uses of water into reproductive and the productive uses. Perez de Mendiguren and Mabalane (2001, pp.62-65) also classify the uses of water in that manner, but they refer to the reproductive uses as the basic needs for water.

The reproductive uses or the basic needs for water include drinking, cooking, bathing and washing clothes and utensils. Maluleke et.al (2005, p.11) include boreholes, fountain/stream and rain water as the main sources for water supply in the villages. The majority of users under this category are women who also endure spending a long time fetching water from distant sources, queuing for water at communal water points or buying water from vendors (Soussan et al.,2004,p.145).

Most studies conducted also concur with one another on most of the productive uses of domestic water, although the importance of different activities varies from village to village. The productive uses of water include the following: irrigation of small vegetable gardens, irrigation of community gardens, cooking foods to sell at markets, chicken projects, livestock drinking, building, brick making for building, traditional healing and for

making traditional beer. As indicated earlier, the above-mentioned uses vary from village to village and from family to family.

It should be noted that the productive uses of water face serious challenges in many villages as there are water shortages across the municipality. Soussan et al. (2004, p.144) show that livestock drinking becomes a problem during droughts when competition for water between people and livestock is high. One interesting use of water is that of manufacturing traditional beer and for traditional healing. Traditional beer is made by very old poor women who sell it in illegal places(shebeens) to make a living. Traditional healers also make fortune out of water by bathing clients to bring about luck into their lives.

Productive uses of water show a great deal of relationship between water and poverty eradication. They show some innovative ways through which rural communities make a living out of water as a natural resource. Water-vending is one factor that was identified by Perez de Mendiguren and Mabalane (2001,p.70) as another way of making a living out of water. This usually happens during worst scenarios of water shortages, whereby, people who have installed boreholes or those that have trucks or vans fetch water from distant places and sell to those who do not have water.

2.11. How the present research fits into the water issues picture

All of the above literatures have laid the basis for this study to yield the required results. Research has shown how policy formulation on water issues evolved prior to the arrival of the Dutch settlers in 1652, during the English rule, under Apartheid South Africa, and to the Democratic South of today. Various policies were enacted and revised over different periods. Also, research has shown that there have been many studies that were conducted on water issues in Bushbuckridge. One research finding very useful to this research report was conducted in Welverdiend, Belfast and Dingledale villages and Mkhuhlu Township. Welverdiend village is about seven kilometers from Clare B and

about eight kilometers from Islington. This means that as Welverdiend is close to the two villages, most of the findings could add value to this study.

Various issues such as the causes, effects and solutions to water shortage problems in the two villages will be analysed taking into account the findings of previous studies. The final report of this study will also be submitted to the relevant authorities with recommendations on how water shortages can be avoided in future.

CHAPTER 3

3. RESEARCH METHODOLOGY

Mouton and Marais (1996, p.160) define research methodology as the study of the research process in its broadness and complexity, the various methods and techniques that are employed, data analysis employed and the subsequent interpretation of the findings. The study has adopted qualitative research methods to help the researcher to understand the historical and current issues around water scarcity in rural communities by probing an in-depth enquiry that could lead to future solutions on water problems.

3.1. Research Design

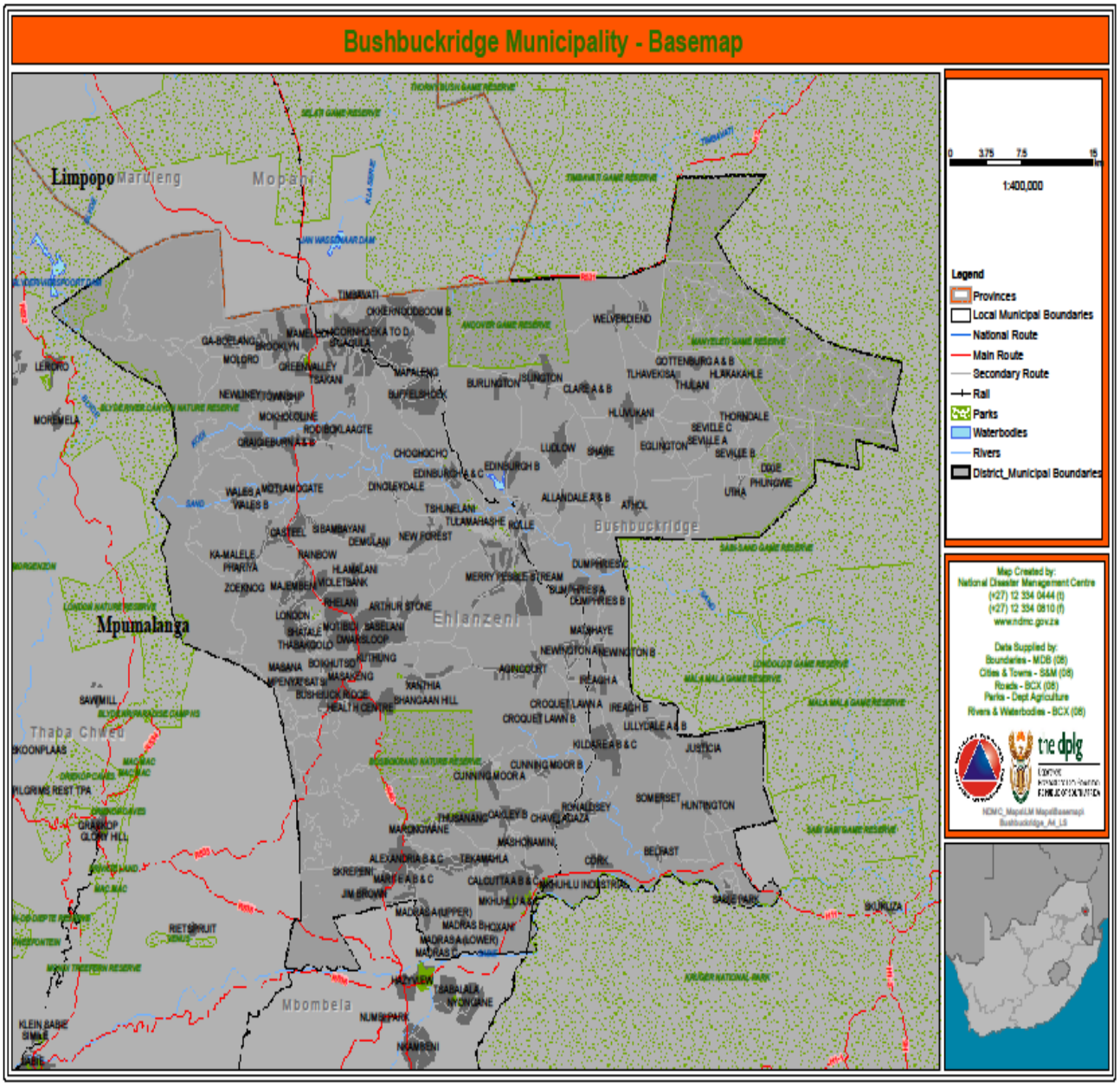
The present researcher has used the exploratory research design. Babbie and Mouton (2009, p.79) show that exploratory research designs help the researcher to explore an unknown research area. The researcher had initially perceived both Islington and Clare B villages to be in a very difficult situation. Residents were constantly living with no water coming out of their taps for a long time. The present case study wanted to evaluate the experiences that residents of the two villages went through in trying to cope with their environment.

The technique that was used to collect data was structured interviews and structured questionnaires. Research questions which were asked to the respondents included open-ended and closed- ended questions. The majority of the questions, however, were open-ended because the study required that respondents should provide their own answers. For example, they were provided with space to write in the answer as advocated by Babbie and Mouton (2009, p.233). The respondents who could not write were interviewed and their answers captured on the questionnaire.

The researcher drew a proposed plan showing proposed dates, times and venues where interviews would be taking place. The plans were sent together with letters requesting to conduct research interviews to authorities of the various population of the

study. Confirmations were made before honouring the appointments on scheduled dates.

3.2. Area of study



Map of Bushbuckridge Local Municipality

The area of study in the above map is the Bushbuckridge Local Municipality, where Islington and Clare B villages are found. Both villages are rural areas situated along the road from Acornhoek to Manyeleti Game Reserve, and are under the Mnisi Tribal Authority. These two villages fall under two different wards: Islington is in ward 34, and Clare B is in ward 33.

In 1994 during the first democratic elections in South Africa, Bushbuckridge straddled Limpopo and Mpumalanga as one of the cross-boundary local municipalities (Salga,n.d.,p.987). It was formally established in 2000 as a result of the amalgamation of the three former Transitional Local Councils (TLC's) of North, South and Midlands (Department of Provincial and Local Government [**DPLG**], 2007, p.7). It was after massive protests by community members that the year 2006 saw the official transfer of Bushbuckridge from Limpopo to Mpumalanga to fall under Ehlanzeni District Municipality after the disbandment of the then Bohlabela District Municipality (BDM). The background bears enough evidence for the current poor state of development that Bushbuckridge finds itself in.

The BLM is situated in the north-eastern part of Mpumalanga Province and is bounded by Kruger National Park in the east. The municipal area is 2,589.39km^2 with a population of 517,807 occupied by about 126,506 households. There are about 235 dispersed villages and rural settlements. The language distribution composition is: 58 percent Xitsonga, 27 percent Sepedi, 7 percent Siswati; and the remaining 8 percent is shared among Isizulu, Tshivenda, IsiXhosa and Isindebele (Salga,n.d.,p.987).

Economically, Bushbuckridge is exceptionally poor as it has over 85% of households living below the household subsistence level. Only 14 percent of the adult population is employed. Sources of drinking water are as follows: 51% from public tap, 29% from piped residence, 12% from wells, 4% from stream or river and the remaining 4% is from other sources like boreholes (DPLG, 2007, p.19). This research finding above will be compared with the findings of this current study to close the gaps that might be in existence.

3.3. Population

Islington village has a population of about 1000 households and about 2500 residents, while Clare B has about 600 households and 1500 residents. Table 1 below, shows how the population of the study was selected as follows based on the reasons given.

NO	POPULATION	REASONS FOR POPULATION CHOICE
1	Residents of Islington village	Most affected people by the problem.
2	Residents of Clare B village	Most affected people by the problem.
3	Ward Councils for both villages	Facilitate provision of water services.
4	Community Dev. Workers(cdw)	Responsible for community development.
5	Bushbuckridge Local Municipality	Ensure supply of water services.
6	Bushbuckridge Water Board	Supply of water to the BLM.
7	Mnisi Traditional Authority	Traditional authority for the two villages.
8	Community-based Organisations	Form part of the affected people.
9	Non-governmental Organisations	Have the capacity to assist in the problem.

Table 1. Selection of population and the motives for selection

3.4. Sample size and selection methods

The probability sampling was used to draw a subset measurement from the population as supported by Arkava and Lane (1983). The results obtained from the sample was used to make generalisations about the entire population of the study as supported by Leedy and Ormrod (2001).This is due to the fact that few individuals were selected from the population. The probability sampling method that was used on the rest of the other population excluding the residents was the stratified sampling. The sample frame was divided into non-overlapping groups called strata. The strata comprised of male, female, employment, age, and type of institution. The sample was selected in order to get key informants on water issues, e.g., an official at water services department from the BLM.

De Vos (1998, p.191) defines a sample as a subset of measurement drawn from a population in which the researcher is interested. Random sampling was used for the residents of both Islington and Clare B villages. Newman (2006) advocates that simple random sampling gives each member of the population the same chance of being included in the sample; and each sample of a particular size has the same probability of being chosen.

The sample consisted of 25 people from Islington Village and 15 from Clare B village from different families. The two villages were divided into sections and houses were randomly selected by means of numbering them in the streets. In the sample, the total number of villagers was 40; Islington village was represented by 63% while Clare B was represented by 37%. This was because Islington had a bigger population than Clare B.

Stratified sampling was used to choose four people from the two ward councils (33&34), while 4 others were chosen from the CDW. The Ward Councillor was targeted in this regard. The BLM was represented by 2 officials from water services. The two officials from the Bushbuckridge Water Board and the Mnisi Tribal Authority chief were also part of the study and were interviewed. Indunas from the Mnisi Tribal Authority were also chosen as part of the villagers; but were selected through stratified sampling. Chairpersons of community-based organizations(CBO) were selected as well as 2 managers from two NGO. CBO focused on Village Water Committee members, Community Development Workers and some members of the ward council. The total number of the sample of the study was 57.

Below, is table 2, which shows how percentages on sample selection were calculated:

SAMPLE	**CALCULATIONS**	**PERCENTAGE**
Islington village	(25/57)x100=0.438x100 = 43.86	44%
Clare B village	(15/57)x100=0.26 x100 = 26.32	26%
Ward Council	(4/57) x100=0.070x100 = 7.02	7%
CDW	(4/57) x100=0.070x100 = 7.02	7%

BLM	(2/57)x100=0.035x100 = 3.51	3.5%
BBR Water Board	(2/57)x100=0.035x100 = 3.51	3.5%
Mnisi Tribal Authority	(1x57)x100=0.017x100=1.75	2%
NGO	(2/57)x100=0.035x100 = 3.51	3.5%
CBO	(2/57)x100=0.035x100 = 3.51	3.5%
	Total Percentage =	**100%**

Table 2. Percentage in sample selection.

3.5. Data Collection Methods

The data collection method that the study followed was the structured interviews where face to face interviews with ward councillors, community development workers, BLM, Bushbuckridge Water Board, Mnisi Traditional Authority, community-based organisations, community members and NGOs were done. Structured questionnaires were used for the community members from both villages and other members of the population.

The interviews meant to gather first-hand information about the water crisis. Seidman's (1998) advice that the participant must do 90% of the talking, because an interview is not a dialogue was followed. Questionnaires for the community members have helped to save time. The questionnaire type called *personal,* where respondents were given questionnaires to complete in their own time but in the presence of the researcher, was used. In the case of the illiterate members of the community, questions were translated in Xitsonga, the dominant language in the two villages. Also, for those who cannot read or write the dominant language, they were verbally interviewed, following the questionnaire while their responses were captured.

3.6. Data Collection Procedure

Structured questionnaires were the tools used to collect information. The questionnaires were simplified to make them understandable to the respondents. All the respondents

were first introduced to the research topic and the aims of the study. This brought about a great deal of enthusiasm to the participants, especially when they had to contribute their thoughts on a subject that affected their day to day lives. Most respondents were interviewed and their responses were captured in shorthand by the researcher. A less number of respondents completed the questionnaires and submitted to the researcher due to their busy schedules. On key respondents like the BLM and NGO, an assistant was tasked to video record the interviews on mutual agreement with stakeholders.

3.7. Data Analysis

All the collected data with regard to this research report have been fully analysed. The data were based on the experiences that all stakeholders from Bushbuckridge shared with regard to the scarcity of water problem in the BLM. Some of the data were recorded on video, while the majority of them were stored as it was and statistically analysed. Each questionnaire was thoroughly scanned to capture its data. The data were scanned through the various categories starting from the personal information coming to the water issues and concluded with solutions towards solving the water crisis.

3.8. Data Presentation

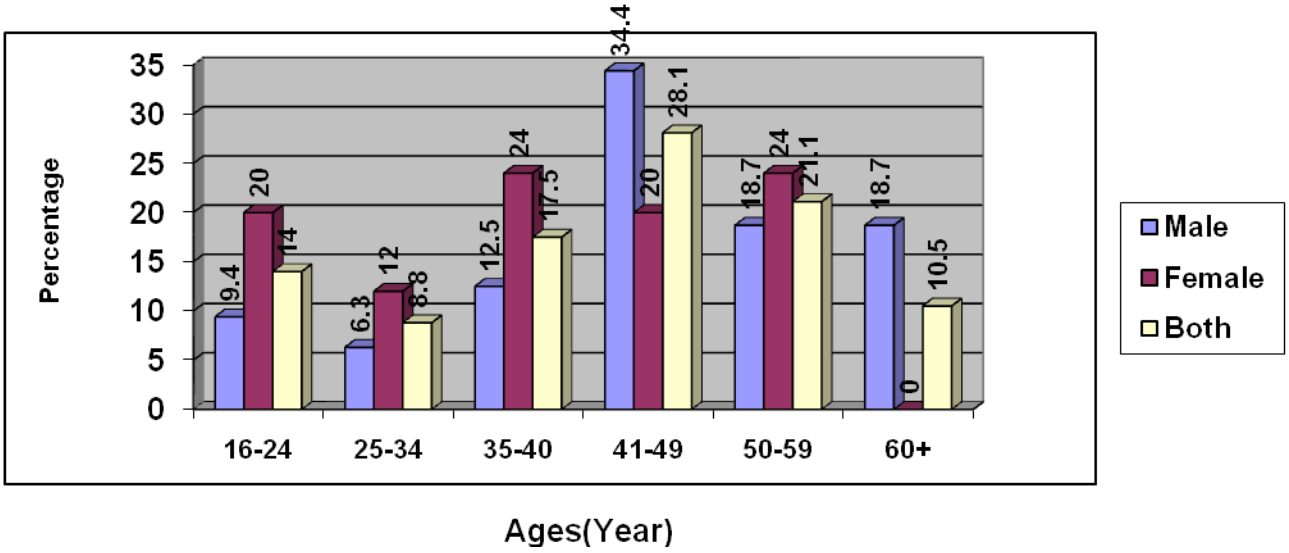
Bar graphs and pie charts were used to present the collected data. The graphs and pie charts represented the outcome of the collected data from various respondents from across the selected population group. Also, some pictures which were taken around the villages during the study were used to put more clarity on the presentation of the data. The outcome was about their experiences based on the research questions presented through the questionnaires on water scarcity in the BLM.

CHAPTER 4 : RESEARCH FINDINGS

This chapter will present the research findings through data collected during the research process. Graphs, pie charts and pictures have been used to present and discuss the research findings based on the collected data. The research findings show the impact of scarcity of water in both Clare B and Islington villages in the Bushbuckridge Local Municipality. Also, the findings represent data collected from various respondents including stakeholders that are directly or indirectly involved in water issues.

4.1. The Age and Gender level among the respondents

Figure 1: Age and gender of participants



The above graph represents the total percentages of participants who were involved in the investigation. The total number of sample of the population is 57. The graph presents the total percentages in terms of age groups between males and females; however, it also shows how the sexes were further categorised, comparing males and females in each age category. Overall, males had the highest percentage of participants in the study. All males across the age categories shared 56.1%, while females accounted for 43.9% of the population. Males and females between the ages of 41 and 49 had the highest number of participation, with males having 34.4%, while women had

28%. Males also dominated the '60 years plus' with 18.7%, while there were no females participants in that category. The lowest age category in males was the '25-34'. One noteworthy aspect about the graph is that women dominated the '16-24 years' category at 20% and the '35-40' plus '50-59' at 24% respectively.

4.2. The education Level of the population in the study area

Figure 2: Educational level of participants according to gender

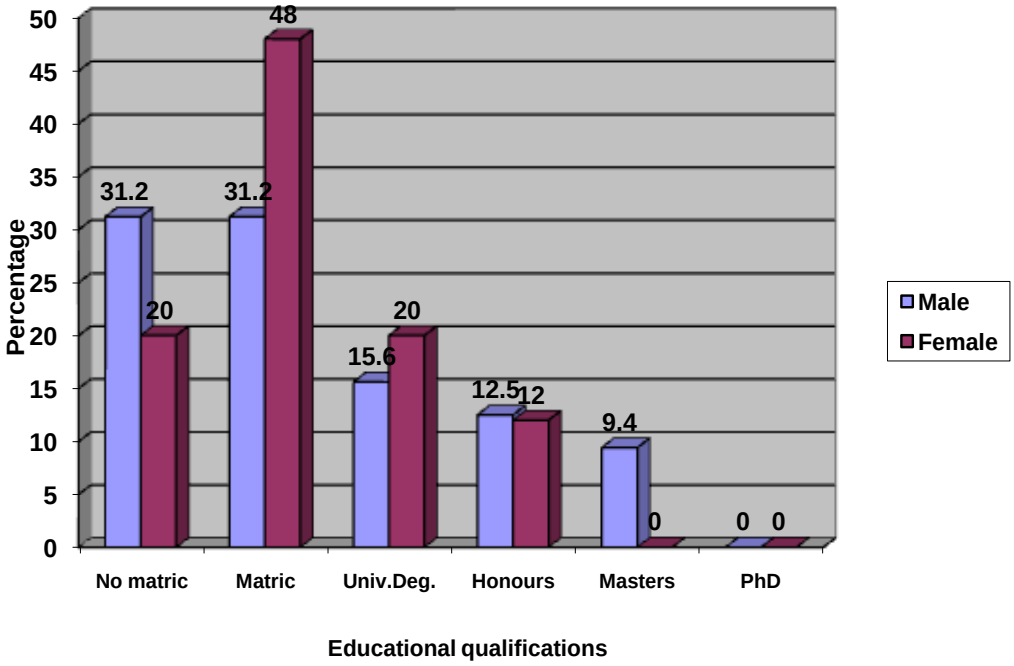


Figure 2 shows the distribution of the respondents according to their level of education. The highest percentage number of participants was 48% for females with matric, while the highest percentage number in male participants was 31.2% for those that are without matric and those that have passed standard ten or grade twelve. Also, no participant had a doctorate degree, but 9.4% of males did have a master's degree while no female had a master's degree.

4.3. Working status of respondents

Figure 3: Working status of respondents

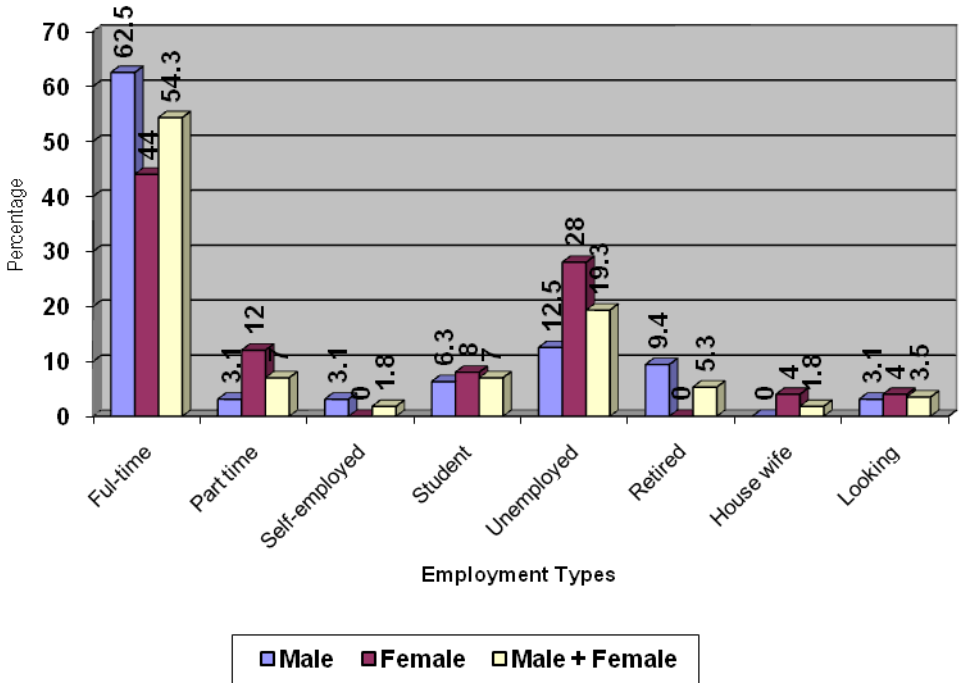
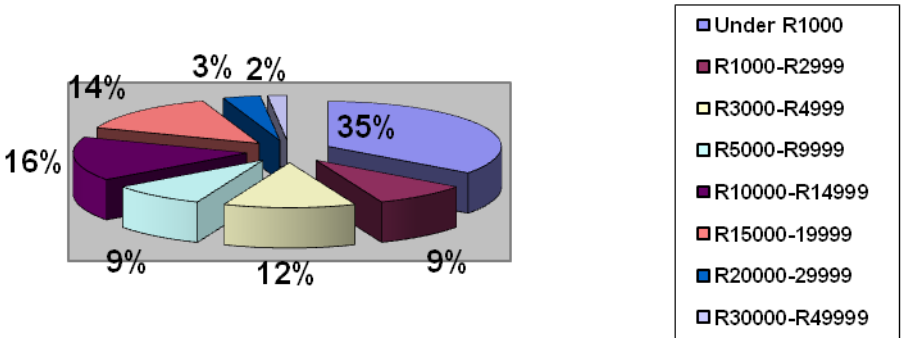


Figure three, looks at the working status of the respondents. The study found that the highest percentage according to employment was those that work full-time at 54%. Also, males working full-time when compared to females constituted the highest number at 62.5%. An area of concern about the findings of this study is that there was a huge gap between the percentage of those that work full-time and the rest. However, contrary to the concern above, 44% of women in the study were working. Another factor of concern was that 28% of the female population were unemployed compared to 19.3% of males. The lowest percentage was for the respondents who were self-employed at 1.8%.

4.4. Monthly income of respondents

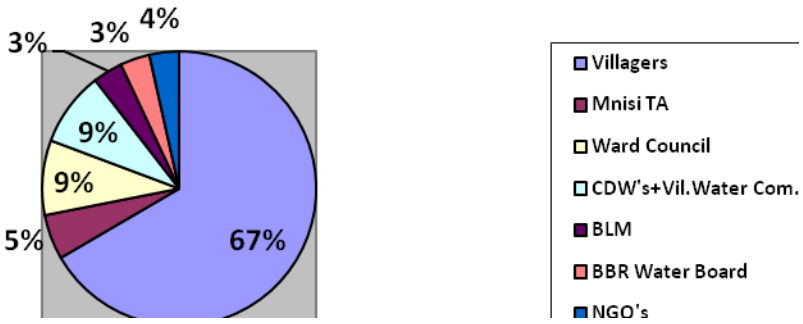
Figure 4: Monthly family income of respondents



The pie chart above shows the distribution of respondents with regard to the levels of their monthly salary income. The 2% of respondents earning between R30,000.00 and R49, 999.00 per month are respondents from NGO and officials from parastatals like the water board and many others. The study found that 35% which is the highest was for those that were working, but earning less than R1,000.00 a month. These people live below the poverty line. Together, respondents earning less than R10,000.00 a month constituted 65% of the whole population, i.e., 35% + 9%+12%+9% = 65%.

4.5. Representation of the organisations in which respondents belong.

Figure 5: Organisations, Institutions and places representing the respondents



Respondents in this study were selected to represent a number of stakeholders from various organisations, institutions and places representing a wide range of the population. The pie chart above shows how each and every organisation was represented in the sample. Villagers from Islington and Clare B accounted for 67% of the total population, while the Bushbuckridge Local Municipality and Bushbuckridge Water Board shared the lowest percentage of 3% each. NGO were represented by 4% of the population. The CDW and the ward council were represented by 9% each of the population. Overall, villagers from Islington were represented by 60% compared to those from Clare B who were represented by 40% when comparing the two of them.

4.6. Various sources of water servicing people in Bushbuckridge

Figure 6: Sources of water in Bushbuckridge

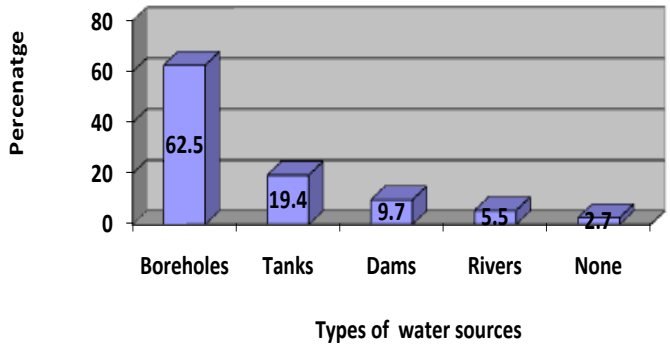


Figure 6 shows how the respondents viewed the various sources of water in Bushbuckridge. The research has found out that 62% of the respondents believe that boreholes are the main source of water supply in the two villages and the entire BLM as a whole. Boreholes were followed by tanks including reservoirs at 19.4%. Rivers were perceived to be the lowest at 5.5.%. The gap that was discovered in this aspect is that 2.7% of respondents opted for none. When asked about it, they argued that due to the fact that for more than a year there has been no water, therefore, it means that there is no source of water. The Injaka Dam is the largest dam in Bushbuckridge, and many respondents believe that it has the capacity to provide water to the whole of the BLM. Other smaller dams include the Zoeknog Dam.

4.7. Key issues on Water shortages, causes and effects

One of the key research questions of this study was to find out exactly as to what causes the scarcity of water in the two villages. There have been many responses coming from all the corners of BLM. One of the key issues to note is that 100 % of the respondents all agreed that there were water shortage problems in many villages. Some of the villages that were named alongside Islington and Clare B included Hlalakahle, Dixie, Servile B, Utah, Tlhavekisa and Welverdiend. However, the list of villages that did not experience water shortage problems was very short with villages such as Eglington

A(Hluvukani), Delani (Ka-Shorty), Serville A, Serville C, Ludlow and Lephong. It should be noted that the list of villages that were not experiencing water shortage problems was provided for by the representatives from ward councils. The majority of the residents indicated that there was no village that was not experiencing water shortages.

Many causes of the shortage of water were given. The following is a summary of the causes that were regarded as the main ones for the scarcity of water in Islington and Clare B including other villages:

- There were six boreholes in Islington, but only two or one would be working, making it difficult to supply the whole of the village with water;
- Most of the boreholes would breakdown constantly; while some had their engines stolen;
- It took the municipality and the National Department of Water affairs a long time to fix the damaged boreholes;
- Lack of borehole maintenance plan;
- Wrong method of installing and operating boreholes;
- Mechanical problems in boreholes;
- Lack of infrastructure (pipes to transport water from Injaka Dam to all villages in BLM);
- Lack of a dam near the villages;
- Politics among stakeholders (BLM, Water Board, Traditional Authorities & NGO);
- Negligence of villagers by the ward councillors who represented the BLM;

The study also found that the effects of water shortages were rather damaging. The following is a summary of the effects:

- People stay for long periods without water, a basic human need.
- In Islington, the only borehole that function properly is able to supply one section of the village called Tsakani. This draws a large number of people from the village as the picture below shows.

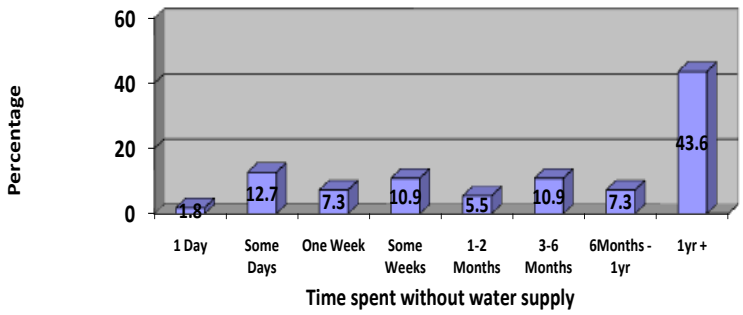
Picture 1. Villagers and their 25/ containers queuing for water at Tsakani section of Islington village (Photograph by Maluleke T.E)

- In other sections such as Divanani, Pholani and Maluleke, villagers hire cars to places such as Edinburgh to fetch water;
- In Clare B, villagers from Basa , Mugena, Matikinya and Maputo sections cross the busy road from Acornhoek to Manyeleti Game Reserve to fetch water at Eglington A.
- Paying for water exorbitantly, at R1.00 per 25litre container;
- Inability to use water for bathing, washing , gardening, cooking and other uses by villagers;
- Water taking money away from other basic needs like food;
- Women spending long hours queuing for water, at times failing to get them;
- Hard work. Women pushing wheelbarrows to fetch water from distant places more than one kilometre;
- Abuse of animals like cattle and donkeys as water transport for those that cannot afford to hire cars;

- Use of alternative sources of water like rivers which cause diseases such as cholera;
- School children wasting study time; children having to queue for water than studying.

The most worrying factor about the research findings is found in figure 7 below. This figure represents the frequencies that occur in water shortages in the two villages. The highest percentage of frequency is at 43.6%. The study noted that these frequencies occurred most in Islington, where some sections had no water for more than a year. Most of the water pipes installed in their streets had become “white elephants”. In Clare B, the longest period without water could be a month. Clare B is very close to Eglington A which does not have many problems with regard to water, so, the majority of women push wheelbarrows to sections of Eglington A. The lowest frequency is at 1.8 %, which represents shortage of water for a single day.

Figure 7: Water Shortage frequencies



The pictures below show the state of water points in Islington village.

Picture 2: School girls walk past 'white elephant' water point

Photograph by Maluleke T.E.

Picture 3: A closer view of a former water point

Photograph by Maluleke T.E.

4.8. People's views on solutions to the water shortage problem

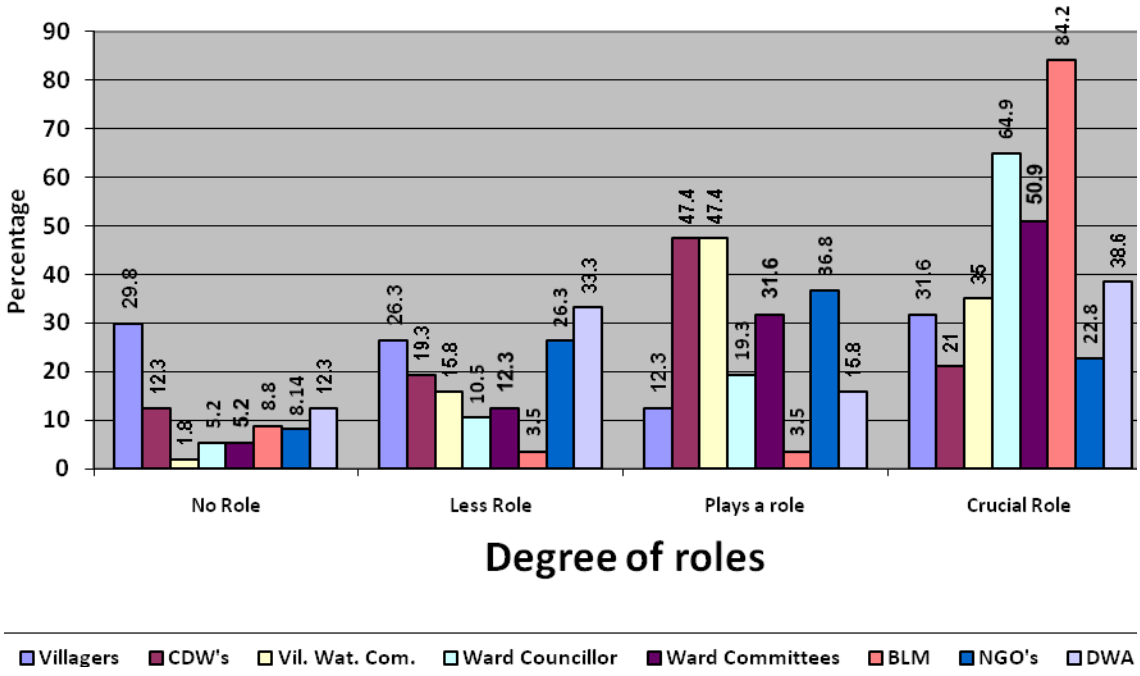
Water shortages have become frequent in Islington and Clare B villages. The majority of residents from both villages were open to contribute positively towards finding solutions to the water problem. Below is the summary of proposals from respondents to solve water shortages:

- Water cans to supply water to all villages experiencing water shortages;
- Councillors to conduct water meetings with residents;
- Installation of new boreholes;
- To procure water infrastructure services, e.g., transport water from Injaka Dam to all Islington and Clare B residents;
- Building of water reservoirs in every village;
- Train councillors to listen to the people's problems;
- Involvement of NGO in projects and programmes;
- Monthly meetings between residents with water committee plus councilors;
- Completion of all IDP projects;
- Fixing of boreholes timeously;

- Residents to assist in reporting people who steal borehole engines;
- Water board to reduce the tariffs that it charges the BLM municipality;
- Replace borehole operating staff;
- Campaigns by local authorities to educate water users;
- Erection of water purification plants, and;
- Purchase of boreholes replacement parts;
- The Injaka Dam to supply water to all villages in BLM.

There were different opinions with regard to who is responsible in providing a last solution to the water shortages problem. Figure eight below show the different opinions with regard to the issue.

Figure 8: Views on roles played by stakeholders on water



The highest percentage of the respondents at 84.2% believes that the BLM has a crucial role to play in the provision of water to the two villages under study. The ward councillor was second in linear order with 64.9%. The third crucial role players are ward committees at 50.9%. Some respondents felt that the ward councillor was neglecting them. Village water committees and community development workers were also

indicated as having a role to play on water issues at 47.4% each. The villagers were regarded as the people with no role to play at 29%.

4.9. Conclusion of the findings

This chapter dealt with the presentation of the research results through graphs, pie charts and pictures to highlight the most important findings of the study. The next chapter looks at the detailed discussion of the findings of the study.

CHAPTER 5

5. INTERPRETATION AND ANALYSIS OF THE FINDINGS

This chapter discusses and analyses the findings from the interpreted data in chapter four above. All the findings from the research study were analysed using the qualitative data analysis. The analysis was descriptive in nature. The correlation analysis was as well followed. Steven (2001) defines correlation studies analysis as a measure of relationship between two items, i.e., the dependent and the independent items. The cross-sectional analysis as advocated by Babbie and Mouton (2009:92) was used to analyse the causes and effects of water shortages. The causes and effects were compared with those from previous studies. Attempts to close the gaps that were left out by previous researches which were identified by the study were made through the analysis and recommendations.

Based on the information presented in chapter 4 through graphs, pie charts and pictures, the analysis were done in three ways, i.e., positive observations, areas of improvement and conclusion.

5.1. Positive Observations

5.1.1. The impact of the level of education of the respondents to the water problem

The research findings were that 56.1% of the respondents were males, while 43.9% were female. Also, the fact that females with matric only represented the highest number of respondents at 48% showed that there is a higher percentage of poverty levels. Overall, 54.3% of both males and females of the respondents were working full-time. In real sense, the majority of the people who constituted that highest percentage were those that had matric only. This went further to affect their monthly household income. The research findings were that respondents who were earning under R1,000.00 a month represented 35% of the population which is the highest. During the

writing of this research report, even the old age pension grant was above R1,000.00 a month.

Furthermore, the research found out that 5.3% of the respondents had a master's degree. No participant had a Doctor of Philosophy degree. Studying requires money, and the majority of the population was living in absolute poverty. It should be borne in mind that in absolute poverty the basic necessities such as food, shelter, access to health and the ability to live under a safe environment are never realised. Also, comparison between their lifestyle with that of other members of the society who earn monthly salaries ranging between R15,000.00 and R20,000.00, showed that they were not coping at all. This is called relative poverty.

Undoubtedly, the level of education had an impact in the research findings, and has also laid the foundation for the analysis of key issues pertaining to water shortages. The level of education will show also the link between the rich and the poor when it comes to the manner in which water shortages affect the villagers.

5.1.2. Evaluation of key issues on water shortages, causes and effects

The research findings have shown that 100% of the population in the study has agreed that there was, indeed, a water shortage problem in the BLM. Even the BLM Executive Mayor, prioritised water in his state of the Municipal Address of 2010 on March 29. Under service delivery which came after administration, water was the first item in his speech. This shows the seriousness of the problem.

The causes can be categorised into four main groups, namely, infrastructure, lack of resources and capacity, lack of intervention by authorities, and politics. Infrastructure that caused the scarcity of water refers to boreholes, water points (where villagers fetch water) and the mechanical issues around boreholes that include their installation, operation and maintenance. The study found that boreholes were the main sources of water supply constituting 62.5% in the two villages. The fact that, for example, in

Islington alone there were times when only one out of six boreholes was functional, shows that measures should be taken to ensure that boreholes worked properly and water stations were fully operational. Some boreholes were reported to have been incorrectly installed, while some operators were also lacking capacity to do so. The positive in this regard is that the state of the municipal address by the Executive Mayor on the 29th March 2010 tried to respond to this aspect when he said, "…our 2010/2011 IDP/budget will change drastically where 60% of the capital expenditure will be focusing on new reticulation, refurbishment of boreholes and erection of new ones in areas where there is none as a temporary measure than providing water tankers which milks us a lot of money." The study has noted, however, that the 2009/2010 IDP on water projects included Islington to be a recipient of a 600kl reservoir at R1,440134.00 with the key performance area of accessing water by residents of the area. When the study was carried out around May 2010, the reservoir had not been erected as yet.

The study also found that lack of resources and capacity contributed negatively to the lives of the residents. Resources in this study referred to dams, perennial rivers and reliable springs that could supplement water shortages caused by borehole failures. Also, water tankers (trucks carrying water tanks) were not enough to supply all the villages that were in water crisis. Lack of capacity was used to refer to some borehole operators who lacked capacity to operate and maintain the boreholes to stay in good shape.

The study found that intervention by the relevant authorities was found to be lacking. Some of the respondents even threatened to boycott the 2011 local elections. They claimed that they were being neglected and that there was no intervention at all by the authorities even if they were aware of the problems. When attempts to intervene were made to supply water, the tankers would come infrequently. Besides, they would not move around the whole area of residents who were experiencing water shortages.

The last cause of water shortage that came under scrutiny was politics versus development. Many political battles were reported to be retarding development,

especially in villages. The relationship among the following stakeholders: the BLM, Bushbuckridge Water Board, Traditional Authorities and NGO was reported not to be amendable. This stunted development, because in instances where new projects have to be carried out in villages, severe disagreements broke out.

5.2. Areas of Improvements

The study did find some positives. Many studies conducted in the BLM on water issues have, for quite some time, proposed some areas of improvements to the authorities. This study has taken the eleven weaknesses in the BLM by Raab and Mayher (2009: 107) and summarised them into six categories as follows:

5.2.1. Poor conditions of infrastructure and sustainability of the resources.

Boreholes have been regarded as the main source of water in the villages. However, their current conditions are unacceptable. They need to be sustained so that residents in villages could access water.

5.2.2. Failure by BLM to perform all the necessary functions, although water and sanitation services remain a top priority.

Previous researches have alluded to the historic underdevelopment of the area during the apartheid as well as limited capacity in terms of both human and financial resources. During the writing period of this research report, South Africa had celebrated sixteen years of democracy, and the ruling ANC party was in power for three consecutive terms. Funds have been available in the municipality coffers, but in most instances these were channeled into other projects which were not development-orientated. Some respondents were very emotional on the so-called ‘Bushbuckridge Mayoral Cup’ This is a tournament in which the BLM Mayor sponsors unorganized teams around Bushbuckridge to play sports such as soccer, netball, ladies soccer and others. They argued that such funds could be used to repair boreholes or find a lasting solution to the water shortage problem. Some even speculated that such monies could be used to

repair or buy one borehole for many people than giving more money to unorganized structures to spend it unwisely.

5.2.3. Incorporation of DWAF into the BLM giving it the rights as a water service authority.

Previous researches have shown that the transition from former homelands, to Transitional Local Councils, to former Bohlabela District Municipality up to the present (BLM era) has contributed negatively to water management issues in the BLM. Change is not good in most cases, and that is one challenge that the BLM was currently facing. All employees from the National Department of Water Affairs have been incorporated into the organogram of the BLM. In a way, it was a duplication of responsibilities. This could take time for the staff to adjust and fit into the new operation systems of the BLM. The BLM needed to have a clear absorption plan in order to ensure that water services in the municipality went smoothly.

5.2.4. Proper use of the municipal infrastructure grant (MIG)

The South African Yearbook (2009/2010: 560) defines the MIG as a conditional grant from the national government to local governments to support investment in basic municipal infrastructure to eradicate backlogs. This relates to the present study because the money could be used to support the implementation of the tariff structure and free basic water policy, monitor water purifications and water development services. If this money was for the purposes listed above, water shortages could be minimised in the BLM.

5.2.5. Realization of the MDG

The MDG under environmental sustainability on water issues are clear. They aim to halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation. South Africa in general was hailed by the international community as one of the countries making progress towards the realisation

of the MDG's by 2014 before the actual target for internal monitoring purposes. It remains to be seen whether the same applies to the BLM which is located within the borders of South Africa.

5.2.6. Communication improvement

In every environment, communication is key. In BLM, many people suffer due to lack of water in most of the villages. The people with information on the major causes of water shortages are seated in the comfort zones of their offices surrounded by air conditioners, meanwhile their clients, i.e., the villagers do not have a basic human need, water. The study has established that many respondents were unhappy because neither the Ward Councillor nor an official from the BLM would update them on progress made towards solving the problem.

5.3. Conclusion on analysis

South Africa as part of the global society has joined the world campaign since 2000 to realise the eight MDG by the year 2015. It has even set itself an earlier target to meet the goals by 2014 so that by 2015 it should be ready to have a comprehensive report to the United Nations. South Africa was also among the top countries believed to be making progress on a number of issues pertaining to the achievements of the MDG.

The problem statement of this study was inspired by the former Minister of Water Affairs and Forestry, Ronnie Kasrils, in his Budget Vote Report Speech of 6 June 2003 when he indicated that in 1994 about fourteen million South Africans were without safe water. In 2003, the number was reported to have been reduced to five million. The Bushbuckridge Water Annual Report (2002: 3) called 'Climbing the Water Ladder' went on to show that no South African would be without clean water in 2008. This report, carried out in 2010 still shows that people, especially villagers are without water supply from the BLM.

A country which had made significant progress in a number of social and economic areas should be able to solve water shortage problems. There is a need for every municipality to evaluate their activities and to find strategies of solving some of the more pressing problems that the villagers are facing. When it came to the eradication of poverty and hunger and halving the proportion of the population without sustainable access to safe drinking water, it has not done well. Therefore, each and every municipality should be evaluating itself against the achievements of the country in meeting the MDG's.

CHAPTER 6 : SUMMARY, CONCLUSION AND POLICY RECOMMENDATION

6.1. Summary and Conclusion

This final chapter presents the summary, conclusion and recommendations of the study. The research is a case-study evaluating the impact of scarcity of water in two villages, namely, Clare B and Islington which are located in Bushbuckridge Local Municipality, Mpumalanga Province. The main purpose of the study was to evaluate the impact that scarcity of water had on the residents of the two villages through the use of research methodologies.

Various research questions were formulated in structured questionnaires to probe on responses from respondents. The population of the study was broken down into samples and was categorised into villagers, BLM, Ward Council, CDW's, Water Committees, Mnisi Traditional Authority, Bushbuckridge Water Board and NGO.

Various causes and effects (impact) of water scarcity in the two villages were established by the research study. The causes were categorised into four main groups, namely, infrastructure, lack of resources and capacity, lack of intervention by the authorities and politics. Under infrastructure, it emerged that boreholes were the main source of water in villages across BLM, and the main cause of water shortages as well. Lack of resources included shortages of fully operational water points, because the majority of them became dysfunctional for extended periods of time. Lack of intervention by the authorities referred to the reluctance of BLM including the Ward Councillor, in responding to the water shortage needs of the villages timeously. Politics was the last pillar that hindered development in BLM. Political leaders from BBR Water Board, BLM, Traditional Authorities and NGO were identified as key. The study found that the misunderstandings among these authorities have blocked much development –oriented projects. During the misunderstandings, the poor are not benefiting anything from such projects. They remain impoverished for longer periods due to political issues that could be settled amicably had both parties tried to reach one another.

The effects of the scarcity of water showed that villagers were suffering at the hands of poverty. The mere fact that 35% of the population earned under R1,000.00 a month, showed that the majority of the villagers were very poor. Coupled with poverty, the scarcity of water affected the poor in a negative manner when compared with the rich people who are staying in villages. The rich staying in villages were regarded far better of because they would drive to distant places to fetch water. Those that are business-minded, sold water or charged users to hire them to fetch water with their cars. Other negative effects of shortages were the violation of the rights of women who had to stand in long queues for water while men stayed at home. Some animals were also abused. Instead of grazing, donkeys and cows were used to transport water with the use of yokes and a sledge. School children's study time was also compromised. Instead of studying, they had to stand in queues for water.

Various areas of improvements were noted by the study. These are areas that the BLM need to work on to improve the current state of water supply in the area, and they included the following :

- Poor condition of infrastructure and sustainability of the resources;
- Failure by BLM to perform all of the necessary functions, although water and sanitation services remain a top priority;
- Incorporation of DWAF into the BLM giving it the rights as a water service authority;
- Proper use of the municipal Infrastructure grant (MIG);
- Realisation of the MDG.

The study concluded by aligning the areas of improvements to make recommendations to the authorities. The recommendations will help to curb future water shortages, and future policy formulation. The recommendations will also contribute to the pool of knowledge about water shortage in villages and will assist authorities of the affected communities to continue looking for lasting solutions to the problem. The history of water management lays a solid foundation of the past the present and the future.

6.2. Policy Recommendations

Based on the number of findings from this research report, below are the study's recommendations that could pave a way forward for service delivery to manifest in the Bushbuckridge Local Municipality, and the rest of South Africa.

6.2.1. Infrastructure

- There should be water infrastructure in all villages across the BLM. Currently, most villages are populated by dysfunctional water services points that are not serving any purpose.(See pictures 2 and 3 on page 44)
- As a temporary measure, all villages that are experiencing water shortages should have properly installed boreholes.
- Boreholes which are the main sources of water supply in villages should be well maintained.

6.2.2. Lack of resources and capacity

- There is a need for an alternative water source in Bushbuckridge. The Injaka Dam is capable of supplying the entire BLM alone if boreholes are failing.
- There is a serious and urgent need for BLM to fasten the process of installing bulk water supply pipes that will transport water from the Injaka Dam to areas of need.
- The implementation of free basic water (FBW) services through the Municipal Infrastructure Grant should be prioritised.
- The BLM does have capacity to supply water resources. Raab and Meyher (2008:25) found that senior Managers with solid experience were hired in the municipality in 2008, including experienced water services providers and corporate services managers. DWAF Mpumalanga conducted two initiatives aimed at building institutional capacity for the municipality to be able to fulfil its water services authority (WSA) and water services provider (WSP) functions. All that is left now is to implement the plans.

6.2.3. Lack of intervention by authorities

- Adoption of the planning methodology by AWARD (Maluleke et al., 2008:4) called SWELL(Securing Water to Enhance Local Livelihoods). This methodology seeks to provide a comprehensive framework and set of tools for the participatory assessment of the role of water in people's livelihoods and the planning of water resources and water services to enhance people's lives.
- Putting together of plans and the implementation part of by the BLM to find temporary solutions to water shortages in villages.

6.2.4. Communication

- Involvement of villagers in the drafting of their community needs through the IDP is of crucial importance.
- Putting in place monitoring tools for the functionality of the various community-based structures such as the village water committees, Ward councils including the ward councillor, and community development workers.
- Having regular meetings with community structures and regular updates on water and other development- related issues.
- Communication should be done across all levels in the society, even to the people living in rural areas. They should also be updated in instances where there are water shortages, like it is done in townships. In townships, even if water would be unavailable for two hours, communication is done regularly.

6.2.5. Politics.

- Politics should pave a way for development to take place than becoming a stumbling block. Politics also mean that the people should be educated in ways of solving their own problems rather than waiting for the government to intervene. In other words, politics has to make people active and proactive in issues related to their development as communities.

- The BLM should find ways and means to harmonise activities with other stakeholders in the water fraternity, e.g., AWARD, Mvula Trust, Water Board, South African Local Government (SALGA), and DWA.

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APPENDIX

The general questionnaire covering the majority of population

SECTION A : DEMOGRAPHIC INFORMATION

(Please tell us about yourself. Please note that this information will be used for research purposes only and will not be shared with any third.)

1. Your gender? ☐ Male ☐ Female

2. Your age? ☐ 16-24 ☐ 25-34 ☐ 35-40 ☐ 41-49 ☐ 50-59 ☐ 60+

3. What is the name of your local municipality? …….

4. What is the name of your village/location? ……

5. Your race? ☐ Black ☐ Coloured ☐ Indian ☐ White ☐ Other(Specify)…….

6. Your work status?

☐ Working fulltime ☐ Working part time ☐ Self-employed
☐ Student ☐ Unemployed ☐ Retired
☐ Housewife ☐ Looking for employment

7. Your highest education level

☐ Without matric ☐ Matric ☐ Completed a university degree/technikon diploma ☐ Honours level degree ☐ Master's level degree ☐ PhD or doctorate

8. Please indicate your personal and household monthly income before tax by ticking the relevant boxes.

Income	**Personal income**	**Household Income**
Under R1000	☐	☐
R1000 – R2999	☐	☐
R3000- R4999	☐	☐

R5000- R9999	☐	☐
R10000- R14999	☐	☐
R15000-R19999	☐	☐
R20000-R29999	☐	☐
R30000-R49999	☐	☐
R50000 or more	☐	☐

SECTION B : WATER ISSUES

1. Do all the villages and townships have water pipes installed in their households in the BLM? ☐ Yes ☐ No
2. Do all the villages and townships have installed water pipes in their streets less than one kilometre? ☐s ☐
3. What is the main source of water supply in the BLM? ☐ Borehole ☐ Tanks ☐ Dams ☐ Rivers ☐ None
4. It is believed that there are water shortage problems in many villages in BLM, do you agree? ☐ Yes ☐ No
5. Which of your villages do not have water shortage problems? Name any three. ……, ……, ……..
6. Which villages are worse in water shortage problems? Name any three. ……, ……....., ……
7. How often do the people experience water scarcity? ☐ One day only ☐ Some days ☐ One week ☐ Some weeks ☐ 1-2 months ☐ 3-6 months ☐ 6 months-1 year ☐ 1 year+
8. How big is the water problem in your area? Elaborate. ……,…… …… ……
9. Clare B and Islington villages are the centre of this study. Are you aware that they are among the worst villages in water shortage problems in the municipality? ☐ Yes ☐ No

10. What could be the causes of water problems in the areas?
……
……
……
……
……

11. How does the problem affect the members of the community from your villages?……
……
……

12. The Injaka Dam was built to provide water to the residents of the BLM, why is it not happening in certain villages like Islington and Clare B?
……
……
……..

12. Who do you think holds the master key in unlocking and addressing the water problems of your area among the following stakeholders?

☐ BBR Local Municipality ☐ Ward Council (Councillor) ☐ Chief
☐ The Headman ☐ I don't know ☐ Village Water Committee
☐ BBR Water Board ☐ NGO ☐ Everyone ☐ DWA

SECTION C : VIEWS TOWARDS SOLUTIONS

1. What do you think should be done to address the water problem? …….
……
……..
……

2. Is there a working relationship between the BBR Local Municipality and the Traditional Authorities on matters pertaining to the development of rural communities? Explain …….. ……
……..
……..

3. Has the IDP included Clare B and Islington for the 2010/2011 water projects?

☐ Yes ☐ No

4. Did the IDP incorporate inputs from communities and water users in its formulation?

☐ Yes ☐ No

5. The BLM has acknowledged water shortage as a challenge, what plans does it have to eradicate the water shortage problems for good?.....
……
……
…….....

6. What is the relationship like between the BLM and the Bushbuckridge Water Board on water provision to the residents? ……
……
……
……

7. The residents in the villages should be educated to conserve water. Tick the relevant box.

☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

8. What are your major roles as the BLM(**according to organisation**) in terms of water provision to the people of Bushbuckridge?……
……
…….....

9. What are your future plans in terms of eradicating the water shortage problems for good?……
……..
……
…….....

10. Rate all the following stakeholders' responsibilities, capabilities and ability to solve the water problem according to the numbers 1 to 4. (**Tick only one box per stakeholder.**)

	1= No role to play	**2= Has less role**	**3= Plays a role**	**4= Has crucial role**
10.1. Villagers	☐	☐	☐	☐
10.2. CDW	☐	☐	☐	☐
10.3. Village Water Com.	☐	☐	☐	☐
10.4. BBR Water Board	☐	☐	☐	☐
10.5. Ward Council	☐	☐	☐	☐
10.6. BLM	☐	☐	☐	☐
10.7. NGO	☐	☐	☐	☐
10.8. DWA	☐	☐	☐	☐

NB: Below is section B of the questionnaire that was answered by villagers of Islington and Clare B only.

SECTION B : WATER ISSUES

1. Do you have water pipes installed in your household? ☐ Yes ☐ No
2. Do you have an installed water pipe in your village street less than one kilometer?
   ☐ Yes ☐ No
3. What is your main source of water supply in the area? ☐ Borehole
   ☐ Tanks ☐ dams ☐ Rivers ☐ None
4. It is believed that there are water problems in your village. Do you agree?
   ☐ Yes ☐ No
5. How often do you experience water scarcity? ☐ One day only ☐ Some days ☐ one week ☐ Some weeks ☐ 1-2 months ☐ 3-6 months ☐ 6months-1 year ☐ 1 year+
6. How big is the water problem in your area? Elaborate. ……,
……..……
……

……

……

7. What could be the causes of water problems in the area?

……

……

……

9. How does the water shortage problem affect your family?

……

……

……

9. How does the problem affect the members of the community?

……

……

……

10. Who do you think that he/ she holds the master key in unlocking and addressing the water problems of your area?

☐ BBR Local Municipality ☐ Ward Council(Councillor) ☐ Chief ☐ DWA

☐ The Headman ☐ I don't know ☐ BBR Water Board

☐ Village Water Committee ☐ NGO ☐ Everyone