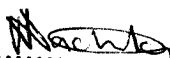


DECLARATION

I, VICTORIA NGAO NACHULA, do hereby declare that this Directed Research Essay is my authentic work and to the best of my knowledge, information and belief, no similar piece of work has previously been submitted to the University of Zambia or any other Institution for the award of a Bachelor of Laws Degree. All other works in this essay have been duly acknowledged. No part of this work may be reproduced or copied in any manner without the prior authorization in writing of the author. All errors and other shortcomings are my own.


.....

VICTORIA NGAO NACHULA

..... 08 / 08 / 2013

DATE

THE UNIVERSITY OF ZAMBIA

SCHOOL OF LAW

I recommend that the Directed Research Essay prepared under my supervision by:

VICTORIA NGAO NACHULA

(Computer No. 10014411)

Entitled:

**SUSTAINABLE DEVELOPMENT AND THE RIGHT TO CLEAN AND SAFE
DRINKING WATER IN ZAMBIA**

Be accepted for examination. I have checked it carefully and I am satisfied that it fulfils the requirements relating to format as laid down in the regulations governing Directed Research Essays.

..... *A. Chanda*

..... *08/08/13*

MRS. A.C. CHANDA

Date

ABSTRACT

Development is defined as the process that improves the well-being of the people in a given nation. There are several factors that are responsible for the improvement of people's wellbeing and these include: education, health, shelter, food and water. Water is critical to all sectors of the economy. It is used for, agriculture, energy, health, industry, transport and tourism, and it is also used for domestic purposes such as cooking, drinking and bathing.

The quality of drinking water is a powerful determinant of health. Drinking contaminated water can result in contracting waterborne diseases, such as cholera, dysentery, typhoid fever and diarrhea, and this can eventually lead to deaths and huge public expenditure on medical care. Access to clean and safe drinking water positively contributes to sustainable development.

Zambia has vast water resources with 45 percent of the total water resources of the southern African sub-region being found in Zambia. Water sources include: lakes, rivers, wells, streams, piped water and boreholes. Yet only 41 percent of the households in Zambia have access to improved sources of water.

People in urban areas especially low density areas have access to adequate water supply than the people in peri-urban and rural areas. Therefore, the research recommends that government should make efforts to develop and implement projects that aim at providing access to clean and safe drinking water especially to the people in peri-urban and rural areas.

Time and again it has been reported that people draw water from shallow wells even in areas where there are communal taps in an effort to try and avoid paying for the service. Therefore, it is recommended that people should be continually, sensitized on the importance of drinking clean and safe water as a means of preventing waterborne diseases, and its impact on sustainable development.

DEDICATION

This dissertation is dedicated to my God, who has been my shield throughout my life and has enabled me to reach this far in my life, to you my God be the glory and praise; I will always wait upon your promises which are yes and amen. Thank you for your abundant blessings. To my late mother Grace Nachalwe, my children, Njavwa Grace Musonda and Evans Mapalo Musonda, their attachment to my soul has greatly encouraged me and enabled me to complete my undergraduate studies. It has not been easy.

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I finally wish to convey my heartfelt thanks to all those who made comments on my work either positively or negatively as such made my work perfected.

TABLE OF STATUTES

The Constitution of Zambia

The Environmental Management Act No. 12 of 2011

The Environmental Protection and Pollution Control Act No. 12 of 1990.

The Local Government Act, Chapter 281 of the Laws of Zambia

The Public Health Act, Chapter 295 of the Laws of Zambia

The Water Resources Management Act No. 21 of 2011.

The Water Supply and Sanitation Act No. 28 of 1997

TABLE OF CASES

Citizens for a Better Environment v Bwana Mukubwa Mines Limited (2002/ HK/ 513)

George Bulaya and Five Others v The Attorney General, Clifford Mbewe and 208 Others
(2005/HP/1113)

James Nyasulu and 200 Others v Konkola Copper Mines PLC, Environmental Council of
Zambia and Chingola Municipal Council (2007/HP/1286)

TABLE OF CONTENTS

DECLARATION.....	ii
ABSTRACT.....	iv
DEDICATION.....	v
ACKNOWLEDGEMENTS	vi
TABLE OF STATUTES	vii
TABLE OF CASES.....	viii
CHAPTER ONE	1
1.0 INTRODUCTION.....	1
1.1 STATEMENT OF THE PROBLEM	3
1.2 OBJECTIVES OF THE STUDY	4
1.3 RESEARCH QUESTIONS	4
1.4 JUSTIFICATION OF THE STUDY.....	5
1.5 SIGNIFICANCE OF THE STUDY.....	6
1.6 METHODOLOGY.....	6
1.7 OUTLINE OF CHAPTERS	7
1.8 CONCLUSION	8
CHAPTER TWO	9
2.0 LEGAL AND INSTITUTIONAL FRAMEWORK GOVERNING WATER SUPPLY IN ZAMBIA	9
2.1 THE CONSTITUTION OF ZAMBIA	9
2.2 THE WATER SUPPLY AND SANITATION ACT NO. 28 OF 1997.....	10
2.3 THE ENVIRONMENTAL MANAGEMENT ACT NO.12 OF 2011	10
2.4 THE WATER RESOURCES MANAGEMENT ACT No. 21 OF 2011.....	13
2.5 THE LOCAL GOVERNMENT ACT, CHAPTER 281 OF THE LAWS OF ZAMBIA.....	14
2. 6 THE PUBLIC HEALTH ACT, CHAPTER 295 OF THE LAWS OF ZAMBIA	14

2.7 INSTITUTIONAL FRAMEWORK.....	14
2.7.1 NATIONAL WATER AND SANITATION COUNCIL (NWasCO).....	15
2.7.2 FUNCTIONS AND POWERS OF NWasCO	19
2.8 THE ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY	22
2.9 CONCLUSION	24
CHAPTER THREE.....	25
3.0 THE EXTENT TO WHICH CLEAN AND SAFE WATER IS AVAILABLE IN ZAMBIA	25
3.1 WATER ACCESSIBILITY	26
3.2 ACHIEVEMENTS IN THE WATER SECTOR.....	28
3.3 CHALLENGES IN THE WATER SECTOR	31
3.4 WATER QUALITY	37
3.5 CONCLUSION	40
CHAPTER FOUR.....	41
4.0 CONCLUSION AND RECOMMENDATIONS.....	41
4.1 RECOMMENDATIONS.....	45
4.2 CONCLUSION	46
BIBLIOGRAPHY	47

CHAPTER ONE

1.0 INTRODUCTION

Development is said to be the process that improves the economic and social wellbeing of the people or the nation. This means that the growth of any given nation or the people therein is not static. Several factors in this growth continually change thereby improving the livelihood of the people from one level to another level. According to *Todaro*¹, development should represent the whole gamut of change by which an entire social system moves away from a condition of life perceived as unsatisfactory towards a situation or condition of life regarded as better. This can be seen in the education sector where more and better facilities are introduced for the benefit of the people. Further, this can be seen in the health sector where with advanced knowledge and facilities are being used to treat and cure diseases. Finally, development can be seen in a situation where there is improvement in the general standard of living for the people, where people can afford three meals a day.

An improvement in the standard of living for the people calls for access to economic and social facilities that are mostly provided by the government. Economic facilities include things like access to financial institutions for loans. On the other hand, social facilities include employment, education, health, shelter, food and water and sanitation. The continuous improvement in the development of people's lives leads to sustainable development as individual development leads to family development which in turn leads to community development and eventually national development. The principle of sustainable development was first coined in the International Union for the Conservation of Nature report of 1980. Sustainable development is defined as "development that meets the needs and aspiration of the present generation without deteriorating and compromising the ability to meet the needs

¹Michael P. Todaro and Stephen C. Smith, *Economic Development*, 10th Edition. (New York: Pearson Education, 2009), p.16

of the future generation.”² This means that as the people’s standards of living are improving, the factors responsible for that improvement must be those that promote continuous development without adverse effects on the current generation and the one to come. It is important therefore that the economic and social facilities available to the people are those that promote people’s welfare and sustain them in a manner that does not compromise their lives and general wellbeing.

Every human being has rights which are usually protected by certain legal frameworks in any given country. In Zambia, these are guaranteed in Part III of the Constitution which is the Bill of Rights. Human rights are defined as “inalienable entitlements that each person has by virtue of being human.”³ These rights are of different types such as Civil, Political, Economic, Social and Cultural rights. In Zambia, the Constitution guarantees Civil and Political rights while Economic, Social and Cultural rights are in Part IX of the Constitution which provides for the Directive Principles of State Policy whereby the government undertakes to progressively realise them. Economic, Social and Cultural rights include the right to health, education, clean and safe environment and sufficient water resources. The Constitution provides that the State is mandated to promote sustenance, development and public awareness of the need to manage resources in a balanced and suitable manner for the present and future generation.⁴

The right to clean and safe drinking water falls under the social rights and as such it is not justiciable in Zambia, meaning that a person cannot claim it as of right.⁵ Despite this, clean

²S.Treurnicht “Sustainable Development” in *Introduction to Development Studies*. (Cape Town: Oxford University Press,2002), p 62

³Carlson Anyangwe, *Introduction to Human Rights and International Humanitarian Law*. (Lusaka: University of Zambia Press,2004) p1

⁴The Constitution of Zambia, Chapter 1 of the Laws of Zambia, Article 112(i)

⁵The Constitution of Zambia, Chapter 1 of the Laws of Zambia, Article 111 provides that: “The Directive Principles of the State Policy set out in Part IX shall not be justiciable and shall not thereby, by themselves, despite being referred to as rights in certain instances, be legally enforceable in any court, tribunal or administrative institution or entity.”

and safe water is one of the main issues that the government is concerned about. For example, in one of the Ministerial Statements⁶ it was stated that “with regard to water and sanitation, efforts are being made to ensure effective coordination and collaboration in the implementation of programmes aimed at improving rural, peri-urban and urban water supply and sanitation systems through a massive construction and rehabilitation of piped water supply schemes such as boreholes and municipal water supply extensions to all upgraded peri-urban settlements.” As the saying goes ‘water is life and sanitation is health’, water is a major component in sustaining people’s lives and therefore realising the right to life. Human developmental activities such as mining, agriculture, construction and hydro- electricity generation utilise a lot of water and if not properly managed, might be unsustainable in so far as access to clean and safe water is concerned. This research therefore seeks to establish the relationship between sustainable development and access to clean and safe drinking water.

1.1 STATEMENT OF THE PROBLEM

Water is defined as a colourless, odourless, tasteless liquid comprising the chemical elements of hydrogen and oxide. It forms a large proportion of the Earth’s surface and occurs in all living organisms and is essential for life.⁷ According to Section two of the Water Resources Management Act⁸ water means “water in its natural state, including: surface water; water which rises naturally on any land or drains or falls naturally onto any land, even if it does not visibly join any watercourse; or ground water.”

Zambia has an abundant supply of water, with 45 percent of the total water resources of the southern African sub-region found in Zambia.⁹ Water sources in Zambia include lakes, rivers,

⁶Statement by Peter Chola at the 16th Session of the Commission on Sustainable Development,(held in United States: New York on 8th May, 2008)

⁷ Paul Stookes, *A Practical Approach to Environmental Law* 2nd Edition. (New York: Oxford University Press, 2009), p328.

⁸ The Water Resources Management Act No. 21 of 201, Section 2

⁹<http://www.smartwedzambia.com>, NWASCO/About Zambia water.mht.(accessed on 29/06/2013)

streams, boreholes, wells and piped water. In rural areas, the main sources of water are streams, rivers and wells. In urban areas, people have access to piped water supplied by companies such as Lusaka Water and Sewerage Company, Mulonga Water and Sewerage Company and Nkana Water and Sewerage Company at a fee. In some high density areas people have communal taps and sometimes dig wells. In low density areas, people also drill boreholes within their living quarters. Much as people have access to this water, the question that arises and which requires an urgent answer is: Do people have access to sufficient safe and clean water capable of sustaining their development?

1.2 OBJECTIVES OF THE STUDY

GENERAL OBJECTIVE

The overall objective of the research is to investigate the relationship between access to clean and safe drinking water and sustainable development in Zambia.

SPECIFIC OBJECTIVES

- To determine whether access to clean and safe drinking water positively contributes to sustainable development.
- To establish whether Zambia's vast water resources are readily available in a clean and safe manner.
- To assess whether the legislation governing water supply in Zambia is appropriate or has adequate provisions that guarantee the right to clean and safe drinking water.

1.3 RESEARCH QUESTIONS

- Is there a relationship between access to clean and safe drinking water and sustainable development?

- Are Zambia's abundant water resources readily available in a clean and safe manner?
- Is there appropriate legislation governing water supply in Zambia?

1.4 JUSTIFICATION OF THE STUDY

As stated earlier, water is an important factor in sustaining the lives of the people. Time and again, there are reports about people not having access to clean water and not having access to water at all despite the country having abundant water resources. For example, during the World Water Day of 2013, the World Bank country director, Kundhavi Kadiresan stated that Zambia among most countries is unlikely to meet the Millennium Development Goals on water and sanitation and pointed out that inadequate access to water and sanitation impacts mostly on children under five, causing both incidences of illness and death in the population.

¹⁰ At the same commemoration of the World Water Day, the Minister of Mines, Energy and Water Development, Mr. Yamfwa Mukanga, stated that “water is a valuable resource which ought to be managed within a sound, integrated socio-economic and environmental framework and further, said that access to safe quality and adequate water and sanitation service is the foundation for the fulfilment of basic human needs.”¹¹ If it has been recognised that water is life; what effect does lack of access to water has on sustaining people's development? This research could not have come at a better time than now when access to water is reportedly compromised. It is important to establish therefore whether access to sufficient, clean and safe water contributes to sustainable development for the people and the nation at large.

¹⁰The World Bank country director, Kundhavi Kadiresan , An Article on World Water Day Commemoration, Zambia Daily Mail dated 23rd March, 2013,(<http://www.dailymail.zm> accessed on 06/06/2013)

¹¹ Minister of Mines, Energy and Water Development, Mr. Yamfwa Mukanga, An Article on World Day Commemoration, Zambia Daily Mail dated 23rd March, 2013,(<http://www.dailymail.zm> accessed on 06/06/2013)

1.5 SIGNIFICANCE OF THE STUDY

This study is important because it determines the relationship between sustainable development and access to clean and safe drinking water. It shows the importance of access to clean and safe drinking water which is one of the critical factors for maintaining the growth and improvement of people's lives and wellbeing.

The study is also important as it contributes to the existing literature on the relationship between sustainable development and clean and safe drinking water. The information provided in the study is helpful to the government, policy makers, water providers and water regulators as the findings are useful in decision making on matters relating to clean and safe drinking water. Further, the study creates an opportunity for future studies to fill in the gaps that this study has not been able to address.

The study is also beneficial to Non-Governmental Organisations (NGOs) who are mostly interested in community projects as it will expose the areas that are faced with water problems. Non-Governmental Organisations may use the findings to source for funds to be used to take up projects in the identified areas.

1.6 METHODOLOGY

This research is a qualitative one and it has involved the analysis of both primary and secondary data. The primary data involved the collection of information by way of conducting interviews with relevant officials from the National Water Supply and Sanitation Council and the Zambia Environmental Management Agency. This research has also utilised desk analysis of relevant literature relating to water and sustainable development and stakeholder participation. This has been achieved through the collection of information from already published materials such as the Constitution, Acts of Parliament, international treaties, reports, books, journals, newspapers, other relevant publications as well as

authoritative literature from the internet. Unpublished materials utilised are theses and dissertations.

1.7 OUTLINE OF CHAPTERS

CHAPTER ONE: INTRODUCTION

This chapter introduces the research and in general terms gives the synopsis of the research. The chapter gives an introduction to development in general and identify water as one of the critical factors necessary to sustain the growth and improvement of people's general wellbeing. Further, the chapter discusses the different rights that people have under the Constitution of Zambia. The chapter also looks at the statement of the problem, the objectives of the research, the justification of the research, the methodology, the outline of the chapters and the conclusion.

CHAPTER TWO: LEGAL AND INSTITUTIONAL FRAMEWORK GOVERNING WATER SUPPLY IN ZAMBIA.

This chapter deals with the legal and institutional framework governing water supply in Zambia. It also looks at some of the institutions regulating water supply in Zambia. These include Zambia Environmental Management Agency (ZEMA), National Water Supply and Sanitation Council (NWASCO).

CHAPTER THREE: THE EXTENT TO WHICH CLEAN AND SAFE WATER IS AVAILABLE IN ZAMBIA.

The Chapter looks at the extent to which clean and safe water is available and accessible in Zambia. It looks at the different sources of water. It determines whether these sources of

water in Zambia provide safe and clean water capable of promoting and sustaining people's lives and general wellbeing.

CHAPTER FOUR: RECOMMENDATIONS AND CONCLUSION

This chapter gives the conclusion of the research. It also answers the question as to whether there is a relationship between sustainable development and the right to clean and safe drinking water. The chapter also makes recommendations based on the findings of the research.

1.8 CONCLUSION

Chapter one has introduced the research on sustainable development and the right to clean and safe drinking water in Zambia. It has dealt with the basic aspects of the research which include the concept of development in general, factors that are necessary for sustaining the growth and improvement of people's general wellbeing and one such identified factor is water which is said 'to be life.' The chapter has also dealt with the statement of the problem, objectives of the research, research questions, justification of the research, significance of the study, methodology, outline of chapters and the conclusion. Chapter two looks at the legal and institutional framework governing the right to clean and safe drinking water in Zambia.

CHAPTER TWO

2.0 LEGAL AND INSTITUTIONAL FRAMEWORK GOVERNING WATER SUPPLY IN ZAMBIA

There are various pieces of legislation in Zambia, which have a direct and indirect impact on water supply. These pieces of legislation include the Constitution, Chapter 1 of the Laws of Zambia, the Environmental Management Act No. 12 of 2011, the Water Resources Management Act No.21 of 2011, the Local Government Act, Chapter 281 of the Laws of Zambia, The Public Health Act Chapter 295, of the Laws of Zambia, and the Water Supply and Sanitation Act No. 28 of 1997. The principle law governing water supply and sanitation in Zambia is the Water Supply and Sanitation Act.

2.1 THE CONSTITUTION OF ZAMBIA

The Constitution is the supreme law of Zambia and if any other law is inconsistent with it that other law shall, to the extent of the inconsistency, be void.¹² The constitution provides for Human Rights under the Bill of Rights and these are political and civil rights. Political rights include the right of the accused, including the right to a fair trial, due process of law, the right to seek redress and rights of participation in civil society and politics. Civil rights include the right to life, the right to be protected from discrimination on grounds such as race, gender, religion or disability. Further, the constitution provides for social, economic and cultural rights in Part IX, under the Directive Principles of State Policy.

The constitution only guarantees political and civil rights while social, economic and culture rights are not guaranteed as these rights are provided for in the Directive Principles of State Policy. The Directive Principles of State Policy may be observed only in so far as State

¹²The Constitution of Zambia, Chapter 1 of the Laws of Zambia, Article 1 (3)

resources are able to sustain their application. Water is one of the facilities responsible for improving people's lives and wellbeing. However, in the constitution water is provided for under the Directive Principles of State Policy which are not justiciable, meaning one cannot claim it as of right. Section 112 (d), of the constitution in particular provides that "the State shall endeavor to provide clean and safe water, adequate medical and health facilities and decent shelter for all persons, and take measures to constantly improve such facilities and amenities." This means that in as much as the State may wish to provide clean and safe water it can only do so where the resources are available.

2.2 THE WATER SUPPLY AND SANITATION ACT NO. 28 OF 1997

The Water Supply and Sanitation Act, is an Act to establish the National Water Supply and Sanitation Council (NWASCO) and define its functions; to provide for the establishment, by local authorities, of water supply and sanitation utilities; to provide for the efficient and sustainable supply of water and sanitation services under the general regulation of the National Water Supply and sanitation Council.¹³ NWASCO is the regulatory body of water supply in Zambia. It issues operating licences to all water supply and sanitation service providers in Zambia such as Lusaka Water and Sewerage Company, Mulonga Water and Sewerage Company, Chambeshi Water and Sewerage Company and others. NWASCO also provides guidelines giving certain minimum requirements of services. The functions and powers of NWASCO are discussed in detail under institutional framework governing water supply in Zambia.

2.3 THE ENVIRONMENTAL MANAGEMENT ACT NO.12 OF 2011

The Environmental Management Act is the principal Act that governs environmental protection and management, the conservation of the environment and the sustainable management and use

¹³ The Water Supply and Sanitation Act, No. 28 of 1997, the preamble

of natural resources in Zambia.¹⁴ The Environmental Management Act in Section 3 provides that: where there is any inconsistency between the provisions of the Environmental Management Act and the provisions of any other written law relating to environmental protection and management, the provisions of the Environmental Management Act shall prevail to the extent of the inconsistency.¹⁵

The Environmental Management Act in Section 4 provides that every person living in Zambia has the right to a clean, safe and healthy environment and the right includes the right of access to the various elements of the environment for recreational, education, health, spiritual, cultural and economic purposes. Further, the Act, provides that “a person may, where the right referred to in Section 4 (1) is threatened or is likely to be threatened as a result of an act or omission of any other person, bring an action against the person whose act or omission is likely to cause harm to human health or the environment”.¹⁶

As regards water, the Environmental Management Act in Section 46 prohibits the pollution of water by providing that “a person shall not discharge or apply any poisonous, toxic or obstructing matter, or other pollutants into the aquatic environment in contravention of water pollution control standards established by the Agency in liaison with the relevant appropriate authority.” Water pollution is the introduction, directly or indirectly, of pollutants into an aquatic environment. It is any chemical, physical or biological change in the quality of water that has a harmful effect in the quality of water and consequently harms any living thing that drinks, uses or lives in water. Water pollution is usually caused by human activities such as the discharge of pollutants into the water. The case involving the Citizens for a Better Environment v Bwana Mkubwa Mining¹⁷ is an example of a situation where water are polluted due to discharge of

¹⁴ The Environmental Management Act, No. 20 of 2011, the preamble

¹⁵ The Environmental Management Act, No. 20 of 2011, Section 3

¹⁶ The Environmental Management Act, No. 20 of 2011, Section 3(4)

¹⁷ (2002/HK/513).

pollutants into the water body. In this case the Munkulungwe stream was polluted by the defendant who negligently discharged effluents into the stream.¹⁸

The Environmental Management Act in section 119 has further provided for mechanisms to help prevent the pollution of water by providing for environmental offences. The sanctions of environmental offences are designed to provide the regulator with the muscle to secure compliance with the law. One found guilty may be liable, upon conviction, to a fine or to imprisonment for a period not exceeding seven years, or to both. In the case involving James Nyasulu and 200 Others v Konkola Copper Mines PLC, Environmental Council of Zambia and Chingola Municipal Council (2007/HP/1286)¹⁹ where failure to comply with the provisions of the Environmental Management Act resulted into the pollution of the local stream that provided water to the residents for domestic use, the court ordered the defendant to compensate the plaintiffs.

Section 110 of the Environmental Management Act provides for a person to sue for damages in respect of an act or omission that constitutes a contravention of the Environmental Management Act or that is likely to have an adverse effect, whether or not that person or any other person has suffered, or is likely to suffer, any loss or harm from the act or omission. Therefore, this Act has widened the range of people who can sue on behalf of the environment. One need not be directly affected by the acts of the offenders of the environment but need only show that he or she has a public interest in the enhancement, protection or conservation of the environment. The case involving the Citizens for A Better Environment and Bwana Mkubwa Mining (2002/HK/513)²⁰ is an example where an organisation sue on behalf of others. In this case Citizens for a Better Environment claimed on behalf of the community of Munkulungwe who live along

¹⁸The Environmental Management Act, No. 20 of 2011, Section 45

¹⁹ 2007/HP/1286

²⁰ Citizens for A Better Environment v Bwana Mkubwa Mining Limited, 2002/Hk/513(unreported)

Munkulungwe stream which was polluted by the defendant who negligently discharged effluents into the stream.

2.4 THE WATER RESOURCES MANAGEMENT ACT No. 21 OF 2011

The preamble of the Water Resources Management Act among many things states that the Water Act was established to provide for the management, development, conservation, protection and preservation of the water resource and its ecosystems; provide for the equitable, reasonable and sustainable utilisation of the water resource; ensure the right to draw or take water for domestic and non-commercial purposes, and that the poor and vulnerable members of the society have an adequate and sustainable source of water free of charge.²¹

The Water Resources Management Act is important to this study as it provides the principles governing water resource management which includes the following: “water resources shall be managed in an integrated and sustainable manner; water is a basic human need and as such domestic and non-commercial needs shall enjoy priority of allocation use; there shall be equitable access to water; and water resources shall be managed in such a manner as will help combat malaria and other waterborne diseases in order to ensure access to safe water.”²²

The Water Resources Management Act in Section 48 also prohibits the pollution of water in a language similar to that of the Environmental Management Act as stated above. However, the Water Resources Management Act has taken a step further to provide for steps to control or prevent water pollution such as where the Water Management Authority is satisfied that the activities of any person may lead to water pollution, the Water Management Authority may require the person to take measures such as: to ascertain as to whether the water is drinkable

or not; to install devices to test and monitor the quality and quantity of gases, liquids or solids in any water and submit the results of the test to the Water Management Authority.²³

2.5 THE LOCAL GOVERNMENT ACT, CHAPTER 281 OF THE LAWS OF ZAMBIA

The Local Government Act, is the Act that provides for an integrated three tier local administration system (thus at central government level, the provincial level and the district level). The Act defines the functions of local authorities.²⁴ The relationship between the Local Government Act and this research is that the Act in the Second Schedule, lists the functions of a Council which states as follows, “to provide and maintain supplies of water and, for that purpose, to establish and maintain water works and water mains”.²⁵ Further, the Act provides that the council should take and require the taking of measures for the conservation and the prevention of the pollution of supplies of water.²⁶

2.6 THE PUBLIC HEALTH ACT, CHAPTER 295 OF THE LAWS OF ZAMBIA

The Public Health Act relates to this study in that the Act is responsible for monitoring sanitation; health; education; monitoring of drinking water quality; setting standards and general sanitary supervision throughout the country.

2.7 INSTITUTIONAL FRAMEWORK

According to the Government Gazette No. 547 of 2004, the Ministry of Local Government and Housing (MLGH) is charged with the administration of the local government system and ensuring that the people of Zambia are provided with the necessary municipal services. The Ministry’s main responsibilities are the co-ordination of Local Government Administration;

²³The Water Resources Management Act No. 21 of 2011, Section 49

²⁴The Local Government Act, Chapter 281 of the Laws of Zambia, the preamble

²⁵The Local Government Act, Chapter 281 of the Laws of Zambia, Second Schedule, Section 60

²⁶The Local Government Act, Chapter 281 of the Laws of Zambia, Second Schedule, Section 61

the regulation and provision of social amenities; urban planning and regional planning; water supply and sanitation and provision of municipal infrastructure services.²⁷

The Lusaka City Council is a corporate body and an agent of central government. It has delegated some of its functions to provide services to residents of the city to private companies, under the Local Government Act, Chapter 281 of the Laws of Zambia. In 1988, the Government facilitated the de-linkage of the Department of Water and Sewerage from the Lusaka City Council in order to form the Lusaka Water and Sewerage Company Limited. Lusaka Water and Sewerage Company Limited is a commercial water utility company providing water and sanitation services to Lusaka province. The Company was established in 1988 under the Companies Act, and it commenced operations in 1990.²⁸

The Lusaka City Council's Department of Water and Sewerage was thus transformed into a commercial utility company with a view to providing water supply and sanitation services within its area of jurisdiction. However, since 2008, the area of jurisdiction and operating license of Lusaka Water and Sewerage Company has been extended to cover the whole of Lusaka province and now includes the councils of Chongwe, Kafue, and Luangwa. The other stakeholders include the Sector Advisory Group, Cooperating Partners, members of Civil Society that are actively operating within the communities and the National Water and Sanitation Council (NWASCO) as the sector regulator.²⁹

2.7.1 NATIONAL WATER AND SANITATION COUNCIL (NWASCO)

From as early as the 1940s, the water supply and sanitation sector in Zambia had been increasingly failing to deliver an acceptable level of service to the people.³⁰ The escalating

²⁷ <http://www.mlgh.gov.zm>, Lusaka Water Supply, Sanitation and Drainage Project, (accessed on 19/06/2013)

²⁸ <http://www.lcc.gov.zm>, Partners for the Lusaka Water Supply, Sanitation and Drainage Project, (accessed on 19/06/2013)

²⁹ <http://www.mcaz.gov.zm>, Lusaka city Council, (accessed on 19/06/2013)

³⁰ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

poor performance of the institutions charged with the responsibility of service provision raised serious concern. Some of the key problems identified at the time included lack of a comprehensive sector policy; nonexistence of a comprehensive legislative framework; unclear roles and responsibilities; deteriorating infrastructure, erratic and insufficient funding; and shortage of qualified and experienced manpower.³¹ Critical analysis of the problems revealed that they were not necessarily technical, but rather the result of weaknesses in the institutional, legislative and organizational framework of the sector. To address this required the reformation of the water sector.³²

Initial attempts to reform the sector were made in 1976. Three years later, in 1979 a report issued by the Department of Water Affairs (DWA) proposed a “Zambian National Water Authority”. The Authority would be responsible for Water Supply and Sanitation as well as Water Resources Management. However it was not until 1984 that a National Conference on “Zambian Plan of Action for Water Supply and Sanitation” was held from which the International Drinking Water Supply and Sanitation Decade (IDWSSD) Secretariat in Zambia issued recommendations on how to reorganise the sector which for one reason or the other were not followed. In the same year, several ministers met to discuss the re-organisation of the water sector. Unfortunately, none of these attempts were successful as they did not fit in the decentralization policy of the time. In 1985, the Zambian Industrial Mining Corporation (ZIMCO) issued a report called: “Proposed National Water Authority”, which again proposed the establishment of one authority to manage Water Supply and Sanitation (WSS) and Water Resource Management (WRM).³³

³¹ <http://www.nwasco.org.zm> Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

³² <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

³³ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

Following this proposal, In 1986 Cabinet Office was instructed by Government to hold a high level meeting to discuss the establishment of the proposed authority. It was at this stage that the proposal also included the set-up of a regulator for Water Supply and Sanitation (as a ministry department) and a national water and sewerage company. However, again the reform process stalled as there was neither a suitable project structure nor consistency with the decentralisation policy at the time.³⁴

1991 saw a change in Government that introduced general public service reforms and the liberalisation of the economy. This created a conducive environment for water sector reforms. In that same year, the country suffered a drought which lasted until 1993. These events raised the need for reform of the water sector. A workshop on the water sector policy was held in August 1991 and generated the necessary decisions on the way forward in the reform. There was renewed political support by Government, and cooperating partners pledged to offer assistance, particularly Germany, Norway and Ireland. Finally, after almost 20 years of attempts, in March 1993 the Government launched a comprehensive water sector reform and established the Programme Coordination Unit (PCU), an inter-ministerial committee, with the responsibility of steering the implementation of the sector reforms. From September to November 1993, the Ministry of Energy and Water Development (MEWD) under the National Water Policy Development Initiative undertook an extensive consultative process that culminated in a policy document for the water sector. The National Water Policy was adopted in November 1994 as a framework for future development of the water sector.³⁵

³⁴ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

³⁵ National Water Policy, (Lusaka: Ministry of Tourism, Environment and Natural Resources, 2007) p.15

In order to implement the reforms, a guide was required for the entire process. Thus, the seven sector principles outlined in the 1994 National Water Policy were adopted as a first step to the implementation of the water sector reforms. The Seven Sector Principles:³⁶

- Separation of water resources functions from water supply and sanitation;
- Separation of regulatory and executive functions within the water supply and sanitation sector;
- Devolution of authority to local authorities and private enterprises;
- Achievement of full cost recovery for the water supply and sanitation services through user charges in the long run;
- Human resource development leading to more effective institutions;
- Technology appropriate to local conditions and
- Increased GRZ spending priority and budget spending to the sector.

A consultative process that involved all key stakeholders was utilised in developing the institutional framework. It was agreed to begin by first defining the institutional framework that would then be incorporated into a new legal framework. The main objective was to create new institutions which would be able to provide cost-effective and sustainable Water Supply and Sanitation services throughout Zambia. The options were elaborated by taking the seven sector principles into consideration. Therefore, the institutional structure for the Water Supply and Sanitation sector draws its authority from the Cabinet decision of 1994, which states in part that "...a regulator NWASCO to be responsible to the Ministry of Energy and Water Development shall be put in place."³⁷

³⁶ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

³⁷ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

In line with the sector principles, the institutional set-up for the water sector is as follows: All water resources management functions are the responsibility of Department of Water Affairs under Ministry of Energy and Water Development, while all functions related to provision of water supply and sanitation services are a responsibility of the Local Authorities under the overall supervision and support of Ministry of Local Government and Housing. Through commercialisation, the Local Authorities outsourced the management of Water Supply and Sanitation services to private enterprises formed by joint ventures with other Local Authorities. Regulatory functions lie with NWASCO while executive functions are with Ministry of Local Government and Housing. The Department of Infrastructure and Support Services (DISS) later renamed Department of Housing and Infrastructure Development (DHID) under Ministry of Local Government and Housing coordinates interventions and mobilises resources for Water Supply and Sanitation.³⁸

With the institutional framework in place, this needed to be translated into law through the enactment of a new legislation prior to the 1948 Water Act which did not include Water Supply and Sanitation.

In 1997, the new Water Supply and Sanitation Act No.28 was enacted. Part II Section 3 (1) of the Act states: “There is hereby established the National Water Supply and Sanitation Council which shall be a body corporate with perpetual succession and a common seal, capable of suing and being sued in its corporate name and with power, subject to this Act, to do all such acts and things as a body corporate may by law do or perform.”³⁹

2.7.2 FUNCTIONS AND POWERS OF NWASCO

Section 4 of the Water Supply and Sanitation Act provides for the functions of NWASCO and these functions include: the development of guidelines on the provision of water and

³⁸ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

³⁹ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

sanitation services; the establishment and enforcement of standards for water supply or sanitation; and the design, construction, operation and maintenance of water supply and sanitation facilities. The use of the Guidelines and Standards is not mandatory, but will have authority when incorporated in licenses for Water Supply and Sanitation provisions issued and regulated by NWASCO⁴⁰ and these guidelines provides a basis on which the service providers can be measured. The guidelines help water utility companies to operate within the framework of the Water Supply and Sanitation Act of 1997. They also facilitate the dissemination of information to the public on service delivery expectations. Some of the guidelines developed are on minimum service levels, accounting standards, water quality, human resource development, extension of service to peri-urban, cooperative governance, investments, and financial projections. Managers at the commercial utilities are trained on how to use these guidelines to ensure understanding and effectiveness.⁴¹

NWASCO has also set certain desirable targets for the water sector in Zambia, which are in line with the Millennium Development Goals, for example in order to avoid deterioration of services and ensure continuous improvement and financial sustainability, service providers are required to sign Service Level Guarantees and Agreements with NWASCO. To ensure maximum consumer benefit, service providers are required to guarantee a specific service standard which may differ among the various service providers and service areas for a particular provider due to geographical location and the differences in the state of the inherited infrastructure.⁴² A Service Level Guarantee is signed at the time of licensing and subsequently every three years. It stipulates the minimum expected service from the providers on which the ruling water tariffs are set. Service providers are therefore mandated to make the

⁴⁰The Zambia Environment Outlook Report 3,(Lusaka: Environmental Council of Zambia,2008), p.71

⁴¹C.K. Mbilima, An Article on Water Supply and Sanitation in Zambia: Reform and Regulation, <http://www.nwasco.org.zm>,(accessed on 06/06/2013), p7

⁴² Chola K. Mbilima, An Article on Water Supply and Sanitation in Zambia: Reform and Regulation,<http://www.nwasco.org.zm>,(accessed on 06/06/2013),p9

service level guarantees public and inform both the consumers and the regulator should they fail to offer the guaranteed service. Over time, service providers are expected to progressively improve their guaranteed service towards the required service standard.⁴³

NWASCO has also implemented a number of organizational innovations and procedures to make regulation effective through the introduction of Desk Officers. NWASCO tries to carefully monitor all the Commercial Utilities and Local Authorities through the use of Desk Officers. Each of the service providers is assigned a member of staff as Desk Officer and the Desk Officer is required to have all the relevant information of the provider readily available, so as to do everything possible to ensure continuous improvement in the performance of their provider. The Desk Officer is required to follow up operations of the provider, give regular updates to the other members of staff and raise alarm if things are not heading the right direction.⁴⁴

Reprimands or praises to deserving providers are initiated by the Desk Officer. The Desk Officer also keeps constant contact with the provider, conducts physical inspections and spot checks whenever needed. The Desk Officer is also expected to validate information coming from the provider. Further, NWASCO conducts regular physical inspections of the water providers. These inspections are planned at the beginning of each year. Each Desk Officer is mandated to carry out at least three inspections of their providers. During the inspections, providers are checked on their compliance to license conditions and also improvements being made to service delivery. After the inspection, a provider is given directives with specified deadlines to correct areas of non-compliance. With the inspections, providers have the opportunity to get expert advice on various aspects of operation. The introduction of the Desk

⁴³ Chola K. Mbilima, An Article on Water Supply and Sanitation in Zambia: Reform and Regulation, <http://www.nwasco.org.zm>,(accessed on 06/06/2013), p.7

⁴⁴ NWASCO Urban and Peri-Urban Water Supply and Sanitation Sector Report of 2006/2007, p.17

Officer concept is not only effective for monitoring service providers but also enhances Management skills of staff at NWASCO.⁴⁵

Some of the challenges NWASCO anticipates facing in the next decade include: Inadequate investments in infrastructure development; Limited focus on improving sanitation coverage in the urban areas; Inadequate protection of both the underground and surface water resources which have huge cost implications on service provision if not attended to; and Poor coordination between service providers and planning authorities leading to expansion of both residential and commercial land development without corresponding services. NWASCO will therefore develop its strategic plans with a bias to influence stakeholders in the water and sanitation sector to address these challenges and any that may arise.⁴⁶

2.8 THE ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

The Environmental Council of Zambia established in 1992 under the repealed Act, (The Environmental Protection and Pollution Control Act) has continued to exist as a body corporate as if established under the new Act and has been renamed the Zambia Environmental Management Agency (ZEMA).⁴⁷ The agency exists under the umbrella of the Ministry of Lands, Natural Resources and Environmental Protection.

The function of the agency is to do all such things as are necessary to ensure the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution.⁴⁸ In order to ensure this the agency has established an inspectorate with the necessary technical staff and facilities required to administer, monitor and enforce measures for

⁴⁵NWASCO Urban and Peri-Urban Water Supply and Sanitation Sector Report of 2006/2007,(Lusaka: NWASCO,2007), p10.

⁴⁶ <http://www.nwasco.org.zm>, Ten years of regulating the water and sanitation sector, (accessed on 09/07/2013)

⁴⁷Environmental Management Act, No. 12 of 2011, Section 7 (1)

⁴⁸Environmental Management Act, No.12 of 2011, Section 9(1)

the protection of the environment , prevention of water pollution, air pollution and land pollution.

Section 15 of the Environmental Management Act states that the inspectors have powers to enter and search any industrial facility or plant, undertaking, business or any other premises, where the inspector has reasonable ground to believe information or documents which are relevant to the investigation are kept or an activity discharging or likely to discharge a contaminant or pollutant into the environment.⁴⁹ It is essential that inspectors have adequate powers of entry and inspection in order to ensure compliance with the licences granted and also to identify instances where processes are being carried on without the appropriate licence. The powers given under this Section may be exercised for the purposes of determining whether any pollution control legislation is being or has been complied with.

Section 11 provides for a Board of the Agency which shall be appointed by the Minister and the Minister shall further, appoint the Chairperson and the Vice- Chairperson of the Board. The fact that the Zambia Environmental Management Agency is made up of members nominated by the Minister may generate concerns about the independence of the Zambia Environmental Management Agency. Almost everything that the Agency does, its regulatory arrangements, charging schemes, corporate plan and financial arrangements has to be approved by the Minister.

Concern may be expressed about the degree of ministerial control and the extent to which ministers can give guidance to the Agency or the extent to which the Minister can overlook the report and recommendations of the Agency with respect to its aims and objectives. In the case involving *George Bulaya and Five Others v The Attorney General, Clifford Mbewe and*

⁴⁹Environmental Management Act. No.12 of 2011, Section 15(1)

208 Others (2005/HP/1113)⁵⁰ the Environmental Council of Zambia as it was then called, rejected the proposed project by Universal Mining and Chemicals Industries Limited but on appeal to the Minister the decision by the Council was overturned. This shows that the Zambia Environmental Management Agency is not fully independent of government interference and this has a negative impact on its decision making, subsequently, affecting the environment as was the situation in the above case.

2.9 CONCLUSION

The Chapter has discussed the legal and institutional framework governing clean and safe water supply in Zambia. The legal framework discussed includes salient provisions concerning water in the Constitution, the Water Supply and Sanitation Act No. 28 of 1997, the Environmental Management Act No. 12 of 2011, the Water Resources Management Act No.21 of 2011, the Local Government Act, Chapter 281 of the Laws of Zambia and the Public Health Act Chapter 295 of the Laws of Zambia. The chapter has also discussed the institutions that directly or indirectly govern water supply in Zambia. The institutions discussed are: The Ministry of Local Government and Housing; the Lusaka City Council; the Lusaka Water and Sewerage Company; the National Water Supply and Sanitation Council; the Zambia Environmental Management Agency. The chapter has also discussed judicial decision.

The following chapter looks at the extent to which clean and safe water is available and accessible in Zambia. The chapter looks at the different sources of water and determines whether these sources provide clean and safe drinking water in Zambia.

⁵⁰ 2005/HP/1113

CHAPTER THREE

3.0 THE EXTENT TO WHICH CLEAN AND SAFE WATER IS AVAILABLE IN ZAMBIA

Unlike many other countries in the region Zambia has an abundant supply of water with 45 percent of the total water resources of the sub region found in Zambia. These water resources comprise both surface and ground water. Out of the total land area of 752,614 square kilometers, water covers an estimated 11,890 square kilometers. The main river catchments⁵¹ are the Zambezi and Congo with five main river systems: Zambezi, Tanganyika, Mweru, Bangweulu, Kariba and Itezhi-tezhi. Rainfall remains the primary source of fresh water although it varies in amount, duration and intensity.⁵² The Country has rainfall ranging from 680mm in the south to over 1,400mm in the north with an annual average of about 1000mm rainfall. Most parts of the country receive good rainfall, resulting in improved river flows. River flows depend on groundwater discharged into the river channel and on direct runoff, an important contributor to the flow in the rainy season.⁵³

As regards groundwater, the Zambia Environment Outlook Report⁵⁴ states that Zambia has sufficient quantities of groundwater well distributed in many parts of the country. An example of one of the best aquifers is nearly 25,000 square kilometer of Kundelungu dolomite (limestone) that extends from Lusaka to Copperbelt. This aquifer is a source of water for domestic and other uses for some of the most populated areas in the country such as Lusaka, Kabwe and Ndola. A typical borehole of around 50-70 m below ground level in the

⁵¹Catchment is a geographical area which naturally drains into a water resource and from which the water resource receives surface or ground flow which originates from rainfall. National Water Policy, 2010, p.iv

⁵²The State of the Environment Zambezi Basin, 2000. SADC, IUCD, ZRA and SARDC,(Zambia, Zimbabwe: Lusaka,Harare, 2009), p.8

⁵³Zambia Environment Outlook Report 3, (Lusaka:Environmental Council of Zambia, 2008), p61.

⁵⁴ Zambia Environmental Outlook Report,(Lusaka: Environmental Council of Zambia, 2008), p52

Karstic section of the aquifer can yield a substantial amount of water. The other aquifers include the Kalahari system in areas of coarse sediments mostly in the western part of the country. However, crystalline basement rocks in other areas of the country present a challenge as groundwater is not readily available because water is found within fractures, joints or weathered rock. Unfortunately, some of this groundwater has come under threat from pollution especially in densely populated areas of Lusaka and the Copperbelt.⁵⁵ Further, it is reported in the National Water Policy of 2010 that the groundwater resources are not fully developed to contribute to increasing demands of water for different uses. In many areas, particularly in rural areas, ground water is the most reliable source for safe drinking water and other economic activities.

From the foregoing it is established that Zambia has more than adequate water resources. Therefore, with all the water sources that Zambia has, the question that arises is whether people have access to sufficient water resources to guarantee clean and safe water?

3.1 WATER ACCESSIBILITY

Water plays an important role in all sectors of the economy, and this is provided in the Section 6 of the Water Resources Management Act which states that “water has an economic and social value and this shall be reflected in its use”. Water is critical to food and agriculture, energy, health, industry, transport and tourism development. Water is also critical for domestic purposes such as drinking, cooking, washing, bathing and sanitation. In addition water is used for subsistence gardening and support of domestic animals, subsistence fishing, the making of bricks and the dipping of domestic animals. People in Zambia draw water from different sources and these include: boreholes, piped water, wells, rivers, springs, hot-springs,

⁵⁵The Environmental Outlook Report, (Lusaka: Environmental Council of Zambia,2008), p.62

pans, lakes, ponds, swamps, marshes, streams, watercourses, aquifers and other bodies of naturally flowing or standing water.

As stated above water plays a cardinal role in socio-economic development and it is fundamental for sustaining all forms of life. According to the Water Resources Management Act⁵⁶ water is a basic human need and as such there should be equitable access to water. The importance of accessing water has been recognized by the government. For example, during this year's Water Day commemoration it was stated by the Minister of Energy, Water and Mines Development, Mr. Yamfwa Mukanga that water is a valuable resource which ought to be managed within a sound, integrated socio-economic and environmental framework by all stakeholders. He further stated that universal access to safe quality water and adequate water is the foundation for the fulfillment of basic human needs and can contribute effectively to achieving Millennium Development Goals. However, in as much as the importance of access to clean and safe water has been recognized worldwide, the situation on the ground in Zambia is not too good. The National Water Policy of 2010, states that access to safe and adequate water supply in Zambia is still low. And it is further reported that in 2010 only 61 percent of the population of Zambia had access to improved sources of water supply. According to the United Nations Survey it was established that, concerning water supply, there is a stark contrast between urban areas and rural areas. In urban areas 87 percent of the people had access to improved water supply whereas in the rural areas 46 percent of the people had access to improved water supply. From these statistics it can be said that the water sector in Zambia is characterized by achievements and challenges.

⁵⁶ Water Resources Management Act No. 21 of 2011, Section 6

3.2 ACHIEVEMENTS IN THE WATER SECTOR

The water sector in Zambia has made some achievements to enhance access to safe and adequate water supply. These achievements include the following:

The Local Government Act ⁵⁷ gives the Local Council the powers to delegate its functions to others and this has facilitated the creation of regional commercial utilities for urban areas to replace fragmented service provision by local governments. In 2011 there were eleven commercial utilities, each covering between three and seventeen municipalities. These commercial utilities are owned by the local authorities and provide water services to more than 86 percent of the urban population. The size of the utilities ranges from 3,000 to more than 75,000 connections.⁵⁸

The other achievement in the water sector can be seen in the establishment of a regulatory agency that has substantially improved the availability of information in urban areas. As discussed earlier the Water Supply and Sanitation Act has provided for the established of the National Water Supply and Sanitation Council (NWASCO) which oversees among many areas the tariff adjustments and minimum service levels. NWASCO is supported by watch groups and part-time inspectors who monitor the quality of services on the ground. Where a service provider performs below reasonable standards, NWASCO has the power to suspend the licence of the said provider. For example, NWASCO⁵⁹ suspended the operating licence for Chambeshi Water and Sewerage Company, the provider for water supply and sanitation services to Northern and Muchinga provinces. The suspension was invoked under the provisions of section 21(1) of the Water Supply and Sanitation Act No. 28 of 1997. Chambeshi Water and Sewerage Company failed to comply with the Water Supply and Sanitation Act which mandates the Utility to provide sustainable water supply and sanitation

⁵⁷ Local Government Act, Chapter 281 of the Laws of Zambia, Section 35

⁵⁸ <http://www.lcc.gov.zm>, Lusaka City Council, (accessed on 19/06/2013)

⁵⁹ <http://www.nwasco.org.zm>, Involving Consumers through Water Groups, (accessed on 19/06/2013)

services. The issues that led to the suspension of the licence were: the failure to provide water supply and sanitation services as provided for in the licence conditions; and the non-adherence to service level guarantees, water quality guidelines, and flouting of procurement rules and regulations.

Further, in other cases where a service provider has failed to provide adequate water and sanitation services NWASCO has been seen to have taken reasonable steps to ensure that the people are provided with adequate services. For instance, when Luwingu and Mbala district Councils failed to provide adequate water and sanitation services, NWASCO consequently directed the two Councils to join Chambeshi Water and Sewerage Company (before the suspension), and subsequently, NWASCO granted Chambeshi Water and Sewerage Company their request to amend their licence to include the two districts.⁶⁰

Another achievement in the water sector can be seen in the establishment of a Devolution Trust Fund as a financial vehicle for low-income, peri-urban areas. The Devolution Trust Fund became operational in 2004 and facilitated the introduction of water kiosks in low-income and peri-urban areas of Zambia such as Itimpi in Kitwe and Maiteneke in Chingola. Water kiosks are operated by private individuals who have signed an agreement with water utilities and municipalities. The kiosk operators buy piped water in bulk and sell it at a slightly higher regulated price at about K500 rebased per 20 litres to users who carry the water in jerrycans to their homes. In 2008, there were about 170 water kiosks in Zambia, providing water to 200,000 people and this has helped to improve access to improved water supply in Zambia especially to citizens who can afford to buy the water.

The enactment of laws that govern water supply and sanitation is another achievement that can be noted in the water sector. As discussed in chapter two there are various pieces of

⁶⁰National Water Supply and Sanitation Council Urban and Peri-Urban Water Supply Sector Report 2006/2007,(Lusaka: NWASCO,2007), p.20

legislation that govern water supply in Zambia. Among them the Water Supply and Sanitation Act No. 28 of 1997 which provide for the efficient and sustainable supply of water and the Water Resources Management Act No.21 of 2011 which states in its preamble among other things that the Act will provide for the equitable, reasonable and sustainable utilization of the water resource; ensure the right to draw or take water for domestic and non-commercial purposes, and that the poor and vulnerable members of the society have an adequate and sustainable source of water free from any charge. These laws are a great achievement in the water sector as they provide a legal framework in which water supply services are regulated for the betterment of the people of Zambia.

The other achievement in the water sector has been the establishment of external cooperation. A good number of external donors support the water and sanitation sector in Zambia. The bilateral and multilateral development partners in the water and sanitation sector include: Denmark, Germany, the Netherlands, Japan, Ireland, the World Bank and African Development Bank. Donor investment is crucial to increasing sector financing in order to meet the Millennium Development Goals. The donors have been assisting Zambia in the following ways:

The African Development Bank has been supporting the local authorities in the Central province in institutional reforms and infrastructure rehabilitation. The Bank supports water supply and sanitation in Nkana;⁶¹ Germany supports the water and sanitation sector in Zambia through financial cooperation carried out by German Technical Cooperation. The German aid has been particularly channeled towards expanding services to the urban poor through water kiosks, supported by the Devolution Trust Fund, and further, more recent pilot projects for the construction of latrines. Concerning rural water supply, German aid is used in the

⁶¹ <http://www.afdb.org/en/projects-and-operations/project-portfolio/#c10693>, (accessed on 22/01/2013)

Northwestern Province. The Project is working with the Councils of Kasempa, Kabompo and Mufumbwe District to reach out to a population of about 2.5 million people beginning in 2004 through the construction of boreholes and hand-dug wells;⁶² Japan through Japan International Cooperation Agency (JICA) provides grants for investments in groundwater development in Luapula Province. Japan also provides technical cooperation for the sustainable operation and maintenance of rural water supply and capacity building for commercial utilities;⁶³ The World Bank assists the Lusaka Water and Sewerage Company with finances for water sector performance improvement project;⁶⁴ while Denmark supports the Mulonga, Kafubu and Western Water and Sewerage Companies. The Danish government provides financial assistance to support Water Support Programs, such as water supply and sanitation in rural and peri-urban areas, as well as integrated water resources management.⁶⁵

3.3 CHALLENGES IN THE WATER SECTOR

Understanding climate change is of particular importance in Southern Africa as it can adversely affect development goals and initiatives. Climate scenarios for Zambia consistently suggest a significant increase in temperature which subsequently affects the rainfall pattern across the country, with the southern and central regions anticipated to receive less rainfall. The implications of the reduced rainfall on the water supply include reduced run-off, reduced groundwater recharge in affected areas and increased water demand through increased evaporation, evapo-transpiration and increased consumptive demand by humans and

⁶² http://zambia.ded.de/cipp/ded/custom/pub/content.lang.2/oid.2134/ticket.g_u_e_s_t/~Water_and_Sanitation, (accessed on 03/03/2013)

⁶³ <http://www.jica.go.jp/zambia/english/activities/activity02.html>, the DED in Zambia: Water and Sanitation, (accessed on 6/05/2013)

⁶⁴ <http://web.worldbank.org/external/projects/main>, (accessed on 6/05/2013)

⁶⁵ <http://www.irc.nl/page/28479>, IRC: Zambia: Denmark commits EUR 33 million to 5-years water programme, (accessed on 6/05/2013)

animals.⁶⁶ Climate change, spatial variability and distribution of rainfall have reduced available water resources in Zambia.

The other challenge facing the water sector has to do with the aspect of population growth and increased human activities, which lead to a subsequent increase in water demand. In Zambia the increase in population, especially in urban areas has led to problems of accessing sufficient clean water and sanitation services. The development of the infrastructure for water supply and sanitation services cannot match with the population growth. As a result, at least 56 percent of the population has no access to safe water and as much as 90 percent do not have access to satisfactory sanitation facilities.⁶⁷ Furthermore, the State of the Environment Zambezi Basin⁶⁸ reports that the gap between demand and supply of water in the basin is fast closing, resulting in water stress or scarcity.⁶⁹

The reduction in the water resources has been seen to affect both the urban and rural people by subsequently reducing access to safe and adequate water supply. Professor Imasiku A. Nyambe, has described the difficulties faced by rural communities in sourcing and managing water for their daily needs during drought periods and has stated that many people in rural areas do not have access to clean and safe water.⁷⁰ The problem of reduction in water resources has also been reported at regional level: According to Watson⁷¹ ten of the region's countries due to reduction in the water resources end up over using renewable freshwater

⁶⁶ The Economics of Climate Change in Zambia. (Lusaka: Ministry of Tourism, Environment and Natural Resources, 2011), p.41

⁶⁷ National Policy on Environment. (Lusaka: Ministry of Tourism, Environment and Natural Resources, 2007), p.6.

⁶⁸ The State of the Environment Zambezi Basin, 2000. SADC, IUCD, ZRA and SARDC, (Zambia,Zimbabwe: Lusaka,Harare, 2009), p.9

⁶⁹ The State of the Environment Zambezi Basin, 2000. SADC, IUCD, ZRA and SARDC, (Zambia,Zimbabwe: Lusaka,Harara), 2009, p.9

⁷⁰ Imasiku Nyambe, A, *Integrated Water Resources Management Centre*. (Lusaka: University of Zambia, 2012),

resources, some at rates that will cause further massive water shortages, with possibly devastating health and economic effects early in the next century. Nearly 50 million people in Africa live without safe drinking water and close to 85 million are without adequate sanitation and with lower water tables.⁷² Further, according to Zedediah Phiri, a number of international declarations have sought to ensure access to safe water and sanitation for the majority of the world's people. Despite these declarations, however, the reality is that clean water and safe waste disposal remain a life and death problem in much of the world.⁷³

In Zambia, the reduction in water supply has come with various social problems. For example, the Environment Outlook Report states that the standard maximum walking distance to a water point (a borehole equipped with a hand pump) has been set at 500m but this has not been achieved as people still walk longer distances to fetch for water. In most areas it has been difficult to achieve the target due to mainly scattered settlement patterns and lack of infrastructure and subsequently, this has not met the target of 200 people per water point with access to safe water.⁷⁴ The lack of access to clean and safe water is a serious problem as it forces people to collect water for domestic purposes from unsafe source such as unprotected shallow groundwater wells which are situated near pit latrines.⁷⁵ Water from such sources is often contaminated with faecal material, domestic and industrial wastes, subsequently such polluted water results in an increased public health risk of waterborne disease outbreaks.⁷⁶ "Waterborne diseases refer to basically dirty-water diseases; mainly attributed to water that has been contaminated by human, animals or chemical wastes".⁷⁷

⁷² Robert Watson, The World Bank Group.(Washington D.C: World Health Organization, 2011), P 65

⁷³ Zedediah. Phiri, An Article on Water Law, Water Rights and Water Supply in Zambia- Issues and Perspectives, 1st November, 2000.p1

⁷⁴The Environmental Outlook Report.(Lusaka: Environmental Council of Zambia, 2008), p.66

⁷⁵Imasiku Nyambe, Zambia National Water Resources. (Lusaka: Ministry of Energy and Water Development, 2009),p 10

⁷⁶A. Mahvi, and H. Karyab. Risk assessment for microbial pollution in drinking water in small community and relation to diarrhea disease. American-Eurasian.Journal of Agricultural and Environ Science,no.2.4046, 2007

⁷⁷Chabalala, et.al. Prevalence of Water-borne Diseases within Health Facilities in Nakuru, Kenya.

<http://www.un.org/esa/population/publications/charting/12.pdf>, (accessed 05/01/2013)

Drinking contaminated water can result in contracting waterborne diseases, such as cholera, dysentery, typhoid fever and diarrhea which can eventually result in deaths. It has been reported that waterborne diseases are number one killer in the tropical regions of Africa and that lack of safe drinking water is responsible for over 2-3 million deaths a year.⁷⁸ Unless the challenge of attaining clean and safe water is adequately dealt with, incidences of waterborne diseases will continue negatively impacting on humans, mostly, the vulnerable groups, such as children, women, immune compromised people such as Acquired Immune Deficiency Syndrome patients, and the elderly.

In turn the above has an adverse impact on sustainable development, because in achieving sustainable development, human well-being and development are strongly interlinked. According to Dr. *Nanda*,⁷⁹ human beings are at the centre of sustainable development hence they are entitled to a healthy and productive life in harmony with the environment. The term environment includes the natural or man-made surroundings at any place, comprising air, land, water... and other constructions.⁸⁰ This being the case, it is therefore critical for any nation seeking development, to acknowledge the importance of providing adequate and safe water for human health to secure a healthy and productive population which is capable of fostering economic and sustainable development.

This entails that the provision of clean and safe water to the people can help prevent the spread of waterborne diseases which as discussed above, have been categorized as the number one killer of people in the tropical region of African. According to Clark⁸¹ improved water supply, sanitation and hygiene used in combination are effective at achieving better health for poor people in developing countries.

⁷⁸ World Health Organization, *Global Water Supply and Sanitation*.(Geneva: WHO Press,2007)

⁷⁹ Dr. S.K. Nanda, *Environmental Law 2nd Edition*. (Allahbad: Central Law Publications, 2009), P46

⁸⁰ The Environmental Management Act. No. 12 of 2011, Section, 2

⁸¹ R. Clark, et.al, *The Prominence of Health Donor Policy for Water Supply and Sanitation*. *Journal for Water Health*, Vol. 3 157-67.

from a source that is not immediately accessible to the household may be contaminated during transport or storage.⁸⁴

The Zambia Demographic and Health Survey shows that only 41 percent of the households in Zambia have access to improved sources of water. Households in urban areas are more likely to have access to improved sources of water than those in rural areas (83 percent compared to 17 percent). More than half of the households (56 percent) draw their water from an unimproved source. Almost half of the households in urban areas (49 percent) have water on their premises, while one in every ten households (eight percent) in rural areas have water on their premises. Overall, 23 percent of the households take 30 or more minutes to obtain water; 8 percent in urban areas compared with 30 percent in the rural areas.⁸⁵

It has also been recorded that most of the households (65 percent) do not treat their water, while only 34 percent use an appropriate method to treat their water. The most common methods that households use for treatment of water are boiling and adding bleach, chlorine or Clorin to the water. Treating drinking water with Clorin, a locally produced solution of 0.5 percent sodium hypochlorite, is promoted throughout Zambia to make the water safer to drink. Statistics show that 91 percent of the Zambian people have heard of Clorin. The sources of Clorin messages are heard or seen by both the urban and rural people through messages on radio, television, booklets, leaflets, posters, community-based agent or at health facilities. The overall results of urban people and the rural people who use Clorin for treatment of water is only 13 percent.⁸⁶

⁸⁴ Zambia Demographic and Health Survey, 2007.(Lusaka: Central Statistical Office, 2009), p.22

⁸⁵ Zambia Demographic and Health Survey, 2007.(Lusaka: Central Statistical Office, 2009), p.23

⁸⁶ Zambia Demographic and Health Survey, 2007.(Lusaka: Central Statistical Office, 2009),p 24

3.4 WATER QUALITY

As discussed above, the quality of drinking water is a powerful determinant of health. As the saying goes ‘water is life’ but it can also be a medium of diseases if not well protected from contamination and consequently resulting to deaths in a given population. This being the case, the assurance of safe drinking water is a foundation for the prevention and control of waterborne diseases. Prior to the commissioning of new drinking water supply, a wide range of analysis should be carried out, to determine the quality of water before people can access it for drinking or for other domestic purposes.⁸⁷ The analysts determine water quality by testing for specific chemicals and microbial water quality. Chemical water quality includes the testing for chemicals of concern (for example, chlorine, alkalinity and others) and may be done at the end of the treatment of water. Microbial water quality typically includes testing for Escherichia Coli (E- Coli) as an indicator of fecal pollution. It indicates the bacteria in treatment of water and water distribution.⁸⁸

The water quality analysis is done by the water suppliers or the surveillance agencies that provide a check on overall performance of the drinking water supply chain and the safety of drinking water being supplied to consumers.⁸⁹ In Zambia there are agencies that have the mandate to regulate operations of water and sanitation services to ensure that the citizens are being supplied with the appropriate services in accordance with the laid down standards. For example, the National Water Supply and Sanitation Council (NWASCO) has the task of regulating water supply and sanitation services. It oversees tariff adjustments, minimum service levels, financial projections and investment planning and corporate governance.⁹⁰ As discussed NWASCO has the powers under the Water Supply and Sanitation Act to revoke

⁸⁷ World Health Organization, (London: IWA Publishing,2002), p 67.

⁸⁸ World Health Organization, (London: IWA Publishing,2002) , p 55.

⁸⁹ World Health Organization, (London: IWA Publishing,2002, p 67

⁹⁰ <http://www.nwasco.org.zm>,The National Water Supply and Sanitation Council Zambia, (accessed on 6/05/2013)

any license of the water service provider that fails to provide adequate and safe water to the consumers.

As regards the quality of water, Zambia has various pieces of legislation that have a direct or an indirect impact on water supply. These includes, the Environmental Management Act which provides for the right to a clean, safe and healthy environment which includes the right of access to the various elements of the environment for recreational, education, health, cultural, spiritual and economic purposes;⁹¹ The Local Government Act, which directs the councils to provide and maintain supplies of water and further, to take measures that conserve and prevent the pollution of water;⁹²the Water Resources Management Act which provides that water is a basic human need, there shall be equitable access to water and that water resources shall be managed in such a manner as will help combat malaria and other waterborne diseases in order to ensure access to safe water; and the Public Health Act which is responsible for monitoring sanitation and the quality of drinking water. It also sets the standards and general sanitary supervision throughout the country.

Despite having legislation stated above, the quality of water is seen to decline. This decline in water quality is due to factors such as pollution, eutrophication and siltation.⁹³ The Environmental Management Act⁹⁴ in Section 45 defines Water pollution as the introduction, directly or indirectly of pollutants into an aquatic environment. It is any chemical, physical or biological change in the quality of water that has a harmful effect in the quality of water and consequently harms any living thing that drinks, uses or lives in water. Water pollution is usually caused by human activities such as the discharge of pollutants into the water. For example, in the case involving the Citizens for A Better Environment and Bwana Mkubwa

⁹¹ The Environmental Management Act, No.12 of 2011, Section 4

⁹² The Local Government Act, Chapter 281 of the Laws of Zambia, Second Schedule, Section 60 and 61

⁹³ The State of the Environment Zambezi Basin, 2000. SADC,IUCD,ZRA and SARDC,(Zambia,Zimbabwe: Lusaka,Harare,2009), p 54.

⁹⁴ The Environmental Management Act No. 12 of 2011.

Mining⁹⁵ where the defendant negligently discharged effluents from mining activities into the *Munkulungwe* stream which consequently polluted the water in the stream, the defendant was found liable by the court and was ordered accordingly.

The intention of the law is to ensure that sources of drinking water are used and maintained in approved standards in an effort to ensure that people have access to clean and safe water supply. The law imposes sanctions on anyone found to operate inconsistent with the law. For example, in the case involving *James Nyasulu v 200 Others and Konkola Copper Mines PLC, Environmental Council of Zambia and Chingola Municipal Council*⁹⁶ where the defendants failed to comply with the provisions of the Environmental Management Act on how to dispose of waste from the mining activities and ended up polluting water, the defendants were made to compensate the plaintiffs.

From the foregoing, it entails that legislation governing water supply in Zambia is adequate and appropriate but the question that rises is that apart from governing water supply, do these pieces of legislation have provisions that guarantee the right to clean and safe water in Zambia?

The Constitution guarantees civil and political rights in Part III of the Constitution whereas the economic, social and cultural rights are in Part IX of the Constitution which provides for the Directive Principles of State Policy, whereby the government undertakes to progressively realize them. Economic, social and cultural rights include the right to health, education and sufficient water resources. This means that in as much as the other pieces of legislation adequately provide for the regulation of water supply, it does not guarantee the right to access clean and safe drinking water. This is because firstly, the Constitution is supreme and the other laws must be consistent to it. Secondly, the right to clean and safe drinking water falls under the Directive Principles of State Policy, hence, one cannot claim it as of right.

⁹⁵ (2002/HK/513).

⁹⁶ 2007/HP/1286

Therefore, from the above, it is determined that apart from providing for water supply, these pieces of legislation have no provisions that guarantee the right to clean and safe drinking water in Zambia.

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3.5 CONCLUSION

Chapter three has discussed the extent to which clean and safe water is available and accessible in Zambia and it has discussed the following, the different sources from which people draw water for domestic purposes; the achievements and challenges in the water sector; the importance of accessing clean and safe drinking water; the impact of waterborne diseases on sustainable development; the impact of legislation on the quality of water and the right to safe and clean drinking water in Zambia. The following chapter provides the conclusion of the research and makes recommendations based on the findings of the research.

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CHAPTER FOUR

4.0 CONCLUSION AND RECOMMENDATIONS

Development is the process that improves the well-being of the people in a given nation. There are several factors that are responsible for the improvement of people's wellbeing and these include: education, health, shelter, food and water. Water is critical to all sectors of the economy. The Water Resources Management Act provides that water has an economic and social value that is reflected in its uses. Water is used for food, agriculture, energy, health, industry, transport, and tourism development. It is also used for cooking, drinking, bathing and sanitation. Therefore, the role of water cannot be over emphasized and it is fundamental for sustaining all forms of life. The Water Resources Management Act further states that water is a basic need, as such without it there can be no life, as the saying goes 'water is life'. To this end, the aim of the research was to determine whether people have access to sufficient clean and safe drinking water capable of sustaining development.

The objectives of the research were as follows: To determine the relationship between the right to clean and safe drinking water and sustainable development; to determine whether access to clean and safe drinking water positively contributes to sustainable development; to establish whether Zambia's vast water resources are readily accessible in a clean and safe manner; to assess whether the legislation governing water supply in Zambia is appropriate and adequate; and to further, determine whether the legislation governing water supply has appropriate and adequate provisions to guarantee the right to clean and safe drinking water in Zambia.

The methodology used in the research was a qualitative one. It involved the analysis of both primary and secondary data. The primary data involved the collection of information by way of conducting interviews with relevant officials from the National Water Supply and

Sanitation Council and the Zambia Environmental Management Agency. This research has also utilised desk analysis of relevant literature relating to water and sustainable development. This has been achieved through the collection of information from already published materials such as the Constitution, Acts of Parliament, reports, books, journals, newspapers, other relevant publications as well as authoritative literature from the internet.

Zambia has various pieces of legislation that have a direct or an indirect impact on water supply. These includes: the Environmental Management Act that provides for the right to clean, safe and healthy environment which includes the right of access to the various elements of the environment for recreational, education, health, cultural, spiritual and economic purposes; The Local Government Act, that directs the councils to provide and maintain supplies of water and further, to take measures that conserve and prevent the pollution of water; the Water Resources Management Act which provides that: water is a basic human need, there shall be equitable access to water and that water resources shall be managed in such a manner as will help combat malaria and other waterborne diseases in order to ensure access to safe water; the Water Supply and Sanitation Act that provide for the established of NWASCO, the water supply and sanitation regulator; and the Public Health Act which is responsible for monitoring sanitation and the quality of drinking water and sets the standards and general sanitary supervision throughout the country.

The Constitution guarantees civil and political rights in Part III of the Constitution which is the Bill of Rights. Whereas the economic, social and cultural rights are in Part IX of the Constitution which provides for the Directive Principles of State Policy whereby the government undertakes to progressively realize them. This means that in as much as the other legislation adequately provide for water supply, these pieces of legislation have no provisions that guarantee the right to access clean and safe water. This is because the right to clean and safe drinking water falls under the social rights which are not justiciable in Zambia,

meaning one cannot claim it as of right. Therefore, the research establishes that legislation does not have provisions that guarantee the right to clean and safe drinking water in Zambia.

Further, the research also found that in some cases the Zambia Environmental Management Agency is not fully independent of government interference and this has negative impact on its decision making. As regards NWASCO the research found, NWASCO anticipates facing challenges in projects that require huge amounts of money such as protection of underground and surface water resources.

Human beings are the medium for carrying out developmental activities. They are at the centre of development and entitled to facilities that sustain life such as water. Therefore, without humans there will be no one to carry out any developmental activities. If there is no development, subsequently, there will be no development to sustain, hence no sustainable development. It is therefore, established that there is a relationship between the sustainable development and the right to clean and safe drinking water.

The quality of drinking water is a powerful determinant of health. Drinking contaminated water can result in contracting waterborne diseases, such as cholera, dysentery, typhoid fever and diarrhea, and this can eventually lead to deaths and huge public fund spending on medical care. It has been reported that lack of safe drinking water is responsible for over 2-3 million deaths a year. Therefore, access to clean and safe drinking water can help to prevent outbreaks of waterborne diseases, thereby saving people's lives. Further, access to clean and safe drinking water can help save money intended to be used in the treatment of these waterborne diseases. Subsequently, the money saved can be used in other developmental projects such as construction of schools and roads. Therefore, access to clean and safe drinking water can positively contribute to sustainable development.

Zambia has vast water resources with 45 percent of the total water resources of the southern African sub-region. Water sources include: lakes, rivers, wells, streams, piped water and boreholes. The Zambia Demographic Health Survey reports that, the source of drinking water is an indicator of whether water is suitable for drinking. Sources such as, a piped source within the dwelling or plot, public tap, tube well or borehole, and protected well or spring are said to be improved sources that can provide clean and safe drinking water. Whereas the non-improved sources include: unprotected dug well, tanker truck with small tank and surface water. Lack of ready access to clean and safe water may limit the quantity of suitable drinking water, even if the water is obtained from an improved source. Water that must be fetched from a source that is not immediately accessible to the household may be contaminated during transport or storage.

Despite the vast water resources that Zambia has, the research found that only 41 percent of the households have access to improved sources of water. Households in urban areas are found to have more access to improved sources of water than those in rural areas (83 percent compared to 17 percent respectively). More than half of the households (at 56 percent) draw their water from an unimproved source. Almost half of the households in urban areas (49 percent) have water on their premises, while one in every ten households (eight percent) in rural areas has water on their premises. As regards treated drinking water the research found that, most of the households (65 percent) do not treat their water, while only 34 percent use an appropriate method to treat their water.

From the above statistics, it is established that Zambia's vast water resources are not readily accessible in a clean and safe manner because most of the Zambian people have no access to improved sources of water.

4.1 RECOMMENDATIONS

The Constitution guarantees right to life, and water is life, therefore, the right to clean and safe drinking water should be included under Part III of Constitution. The Draft Constitution in Article 61(1) (d) provides that “a person has the right to clean and safe water in adequate quantities and to reasonable standards of sanitation.” The research therefore, recommends that the provision in the draft constitution should be adopted when the draft constitution is adopted.

NWASCO among other challenges indicates that it may face financial constraints in the near future. Therefore the research recommends that government should provide more financial resources to NWASCO to enable the institution to carry out its inspections of water supply throughout the nation adequately.

In the case *George Bulaya and Five Other v The Attorney General, Clifford Mbewe and 208 Others* it was reported that the Minister over ruled the decision of the Environmental Council of Zambia (now called ZEMA), despite the decision being based on expert knowledge. It is therefore recommended that the Zambia Environmental Management Agency should have all the independent powers to make decisions concerning water supply and sanitation based on expert knowledge.

People in urban areas especially low density areas have access to adequate water supply than the people in peri-urban and rural areas. Therefore, the research recommends that government should make efforts to develop and implement projects that aim at providing access to clean and safe drinking water especially to the people in peri-urban and rural areas.

Time and again it has been reported that people draw water from shallow wells even in areas where there are communal taps in an effort to try and avoid paying for the service. Therefore,

people should be continually, sensitized on the importance of drinking clean and safe water as a means of preventing waterborne diseases, and its impact on sustainable development.

4.2 CONCLUSION

The chapter has discussed the findings of the research that was conducted under the topic of sustainable development and the right to safe and clean drinking water in Zambia. The chapter has concluded that there is a relationship between access to clean and safe drinking water and sustainable development. Further, the chapter also states that, in as much as Zambia has vast water resources, clean and safe drinking water is not immediately accessible as it must be fetched. Water that must be fetched from a source that is not immediately accessible to the household may be contaminated during transport or storage. More than 56 percent of the households in Zambia draw water from unimproved sources. Therefore, there is need for the government to make efforts to provide access to clean and safe drinking water to every citizen.

The chapter has also concluded that, the legislation governing water supply has adequate provisions for regulating water supply. However, the legislation does not have provisions to guarantee the right to clean and safe drinking water. To this end, the chapter recommends that the right to clean and safe drinking water must be enshrined in the Bill of Rights.

Finally, central government is responsible for promotion of sustenance of social growth, economic development and public awareness of the need to manage resources in a balance and suitable manner for the present and future generation. Without the political will, commitment and support of the central government, systematic development in the water sector will not be effected. However, access to clean and safe drinking water can only be achieved through concerted efforts by all stakeholders such as the local authorities, civil societies, non-governmental organizations and the citizens.

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