

**THE RIGHT TO WATER IN RESPECT OF HIV/AIDS IN THE DEMOCRATIC REPUBLIC
OF CONGO**

**Submitted in partial fulfilment of the requirements of the degree LLM (International Human
Rights Law and HIV in Africa)**

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October 2013

DECLARATION

I, Luketa Mukuna Emile, declare that the work presented in this mini-dissertation is original. It is never been presented to any other university or institution. Where other person's works have been used, references have been provided and, in some cases, quotations made. In this regard, I declare this work as originally mine. It is hereby presented in partial fulfilment of the requirement for the award of the LLM Degree in Human Rights in Africa and HIV.

Signed.....

Date.....

Supervisor: Prof Frans Viljoen

Signature.....

Date.....

DEDICATION

This work is dedicated to my father, Robert Mukuna and my Mother, Marie Nswaya.

ACKNOWLEDGMENTS

I would like to give a special thanks to HRDI team, Gedeon, Esther, Christian, Dan and Asha for being an inspiration. I acknowledge the support of my family: Robert, Marie, Michel and Sandra, Patrick and Sandra, Serge, Tony, Castro, Tiffany, Bob junior and Carmel.

I would like to sincerely thank my supervisor, Prof Frans Viljoen for all good comments and contribution toward this work.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired immune Deficiency Syndrome
ASUREP	<i>Association d'Usagers de Réseau d'Eau Potable</i>
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CESCR	International Covenant on Economic, Social and Cultural Rights
Committee on ESCR	UN Committee on Economic, Social and Cultural Rights
CRC	Convention on the Right of the Child
BTC	Belgium Technical Cooperation
DESC/RDC	Défense des Droits Economiques, Sociaux et Culturels
DRC	The Democratic Republic of Congo
DSCRIP	Growth and Poverty Reduction Strategy Paper
HIV	Human immunodeficiency Virus
ICCPR	International Covenant on Civil and Political Rights
ICP	Inductively Coupled Plasma
MDGs	Millennium Development Goal
MIBA	<i>Minière de Bakwanga</i>
PLWHA	People Living With HIV and AIDS
REGIDESO	National Company of Water
SCPPHR	UN Sub-Commission on the Promotion and Protection of Human Rights
SNEL	National Company of Electricity
SNHR	National Service for Rural Water Supply

UN

United Nations

UNICEF

United Nations International Children's
Emergency Fund

Universal Declaration

Universal Declaration of Human Rights

WASH

water, sanitation and hygiene

CHAPTER I

INTRODUCTION

1.1 Background

It has been demonstrated that Human Immunodeficiency Virus (HIV) is the causative agent of Acquired Immune Deficiency Syndrome (AIDS), the most devastating global epidemic humanity has ever been obliged to deal with.¹ HIV damages a person's immune system and leaves it more susceptible to opportunistic diseases which can kill the person, unless the treatment with anti-retroviral drugs starts before the onslaught of AIDS.²

While 22,5 million people living with HIV and AIDS (PLWHA) are located in sub-Saharan Africa (68% of the global total), more than 11 million of them are in Southern Africa.³ Most of the Southern African countries are low- and middle-income countries or developing countries. A huge part of the population in those countries does not have adequate access to basic needs such as proper food, adequate sanitation and sufficient and clean water. Because of the weakness of their immune system and their susceptibility to opportunistic infections, PLWHA require precise attention.⁴ But, in reality most of them in Sub-Saharan Africa do not have adequate access to medical services, medication, proper food, adequate housing, sufficient and clean water; and they do not live in a clean and healthy environment. That is why they do not enjoy the highest or the best attainable standard or state of physical and mental health.⁵

Among the issues faced by PLWHA, only the issue of water and issues related to water will be discussed in this study. Indeed, '[w]ater is a basic need for all living organisms, including humans. However, water is also a vector for different organisms, including viruses, bacteria, fungi, and parasites.'⁶ In order to avoid diarrhoea and skin diseases (most common opportunistic infections faced by PLWHA) and also in order to take medicines, PLWHA are more in need of effective access

¹A Samie et al 'Diversity and Antibigrams of Bacterial Organisms Isolated from Samples of Household Drinking-water Consumed by HIV-positive individuals in Rural Settings, South Africa' (2012) 30 3 *Journal of Health Population and Nutrition* 1 available at <http://www.biomedsearch.com> (accessed 10 November 2012)

²E Kamminga & M Wegelin-Schuringa 'HIV/AIDS and water, sanitation and hygiene'(2003) Thematic Overview paper IRC *International Water and Sanitation Centre* 10 available at <http://www.kit.nl> (accessed 12 November 2012)

³[Http://www.unaids.org/globalreport](http://www.unaids.org/globalreport) (accessed 17 November 2012)

⁴CL Obi et al 'Scope and frequency of enteric bacterial pathogens isolated from HIV/AIDS patients and their household drinking water in Limpopo Province'(2007) 33 4 *Water SA* 539 available at <http://www.researchgate.net> (accessed 14 November 2012)

⁵See article 12 International Covenant on Economic, Social and Cultural Rights (CESCR) and article 16 African Charter on Human and Peoples' Rights

⁶Samie et al (n 1 above) 1

to sufficient and clean water supply.⁷ Worldwide it has been proved that PLHWA are vulnerable to organisms transmitted through water and approximately 90% of them have suffered from chronic diarrhoea which is a common cause of morbidity and mortality among them.⁸

Access to clean water is already recognised as a human right and it is particularly important for PLWHA that states respect, protect and fulfil this right. There is an undeniable linkage between HIV/AIDS and water; PLWHA are more in need of sufficient and clean water supply than ordinary people, because of the fragility of their immune system to opportunistic infections. They need sufficient clean and safe water for taking medications, for cooking and even for washing hands and cloths.

In the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and in the Convention on the Right of the Child (CRC), a specific reference to water is made, respectively in article 14(2)(h) CEDAW and article 24(2)(c) CRC. It has been also interpreted that the right to water is implicit in the right to life, the right to an adequate standard of living and the right to health.⁹ However, between 2000 and 2002 there was a step forward. First of all, the UN Committee on Economic, Social and Cultural Rights (Committee on ESCR) adopted the General Comment No 14 about the right to the highest attainable standard of health and one of the underlying determinants of health is access to safe and potable water.¹⁰ Secondly, although the right to water is an implied right under other rights, it is mainly and properly defined by the Committee on ESCR in the General Comment No 15 with specific obligations to States, but unfortunately not binding obligations.¹¹

Also, as the 1948 Universal Declaration of Human Rights (Universal Declaration) is not binding on States, many of its provisions have been strengthened in many other binding international instruments. For instance, the right to a standard of living adequate for the health and well-being of people (article 25 Universal Declaration) has been reasserted in the right to adequate standard of living and the right to health (article 11 and 12 International Covenant on Economic, Social and Cultural Rights CESCR).¹² The best will be to see the right to water as a standalone right in a specific binding international instrument, even if the right to water can be recognised as a means to

⁷Kamminga & Wegelin-Schuringa (n 2 above) 15

⁸Samie et al (n 1 above) 2

⁹M Wegelin-Schuringa & E Kamminga 'Water and Sanitation in the Context of HIV/AIDS: The Right of Access in Resource-Poor Countries' (2006) 9 1 *Health and Human Rights* 156 available at <http://www.kit.nl> (accessed 12 November 2012)

¹⁰Committee on ESCR General Comment No 14 para 11 available at <http://www.unhchr.ch>

¹¹Committee on ESCR General Comment No 15 available at <http://www.unhchr.ch>

¹²PH Gleick 'The human right to water' (1999) 1 *Water Policy* 491

achieve other rights, such as the right to life or the right to health.¹³ So, what is desirable is to see the right to water as a stand-alone right in a binding international instrument.

According to the principle of minimum core, economic, social and cultural rights are progressively realisable; states are required to take positive steps to implement these rights, to the maximum extent of their resources.¹⁴ But the Committee on ESCR in the General Comment No 3 clarified that the state obligation not to discriminate has immediate effect.¹⁵ So, all people in a state party to CESCR have to be considered without any discrimination in the progressive realisation of economic, social and cultural rights and the rights implied such as the right to water.

1.2 Problem statement and research questions

The HIV prevalence in the Democratic Republic of Congo (DRC) is one of the lowest in Southern Africa, standing at approximately 1,3% of the population.¹⁶ However, because of the difficulty of conducting effective HIV surveillance campaigns due to the persistent civil war,¹⁷ the vastness of the country and the inaccessibility of certain parts of the country, this rate may be inaccurate. As a low-income country, the DRC has weak institutions and policies, which are unable to meet all the basic needs of the entire population.

The DRC is one of the countries which promptly ratifies international human rights instruments but which have huge problems when it comes to the actual implementation of the rights enshrined in those instruments. It has ratified, for instance, the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (CESCR) since 1976; CEDAW and CRC have been ratified by the DRC respectively in 1986 and 1989.¹⁸ The DRC, as a monist country, is already familiar with the right to water implicitly or explicitly under the previous covenants and conventions which have generated obligations for the state.

Even though the DRC is Africa's most freshwater resource-rich country, it is facing a critical drinking water supply crisis.¹⁹ 50 million Congolese (75% of the population) do not have access to safe water.²⁰ The DRC's current water access rate is around 26% of the population, one of the lowest

¹³EB Bluemel 'The Implications of Formulating a Human Right to Water' (2004) 31 *Ecology Law Quarterly* 963 available at <http://www.ais.up.ac.za> (accessed on 10 November 2012)

¹⁴AF Bayefsky *How to complain to the UN Human Rights Treaty System* (2002) 32

¹⁵F Viljoen *International Human Rights Law in Africa* (2007) 120

¹⁶DRC National Strategic Plan against AIDS (2010-2014) 18 available at <http://www.ilo.org/aids> (accessed 19 November 2012)

¹⁷PJ Ashton & V Ramasar 'Water and HIV/AIDS: Some strategic considerations for southern Africa' (2002) *African Water Issues Research Unit* 219 available at <http://www.ais.up.ac.za> (accessed 10 November 2012)

¹⁸See <http://www.justice.gov.cd> (accessed 19 November 2012)

¹⁹Water Issues in the Democratic Republic of Congo: Challenges and Opportunities' (2011) Technical report of United Nations Environment Programme UNEP 4 available at <http://www.unep.org> (accessed 18 November 2012)

²⁰Water Supply and Sanitation in the Democratic Republic of Congo' (2010) Report of African Ministers' Council on

in Sub-Saharan Africa.²¹ Both the Millennium Development Goal (MDGs) targets for water supply and the national targets (Growth and Poverty Reduction Strategy Paper DSCR), for the year 2015, are officially out of reach.²²

The DRC does not have a central water ministry. The Ministry of Environment, Nature Conservation and Tourism has the duty to protect its aquatic ecosystem from all types of polluting activities, including waste-water treatment and solid waste management. The Department of Water and Hydrology under the Ministry of Energy has the role of supervisor over REGIDESO, the national company in charge of providing urban drinking water supply services. While the Ministry of Rural Development through the National Service for Rural Water Supply (SNHR) has the duty of developing rural and peri-urban drinking water supply services, the Ministry of Public Health is in charge of supervising the potability of drinking water, 'but its capacity to monitor water quality is seriously deficient.'²³ In order to coordinate the water sector through these ministries, there is under the Ministry of Planning the National Committee for Water and Sanitation which is also in charge of resources mobilisation and donors' facilitation.²⁴

The multiplicity of public actors and the real lack of a focal point of intervention have seriously handicapped the development of the water sector. Although there is the water code under parliamentary scrutiny since 2010, the dysfunctional attitude of all public water actors impedes the population's ability to enjoy their right to sufficient and clean water recognised under international instruments ratified by the DRC, even provided for under the DRC Constitution.²⁵ Moreover, the DRC government is not able to mobilise enough resources for the water sector, 95 percent of public expenditure for the water and sanitation sector is provided by external donors, who push the Government to privatise and to decentralise the water sector through the water code drafted with their support and submit to Parliament.²⁶

Approximately 44 million of Congolese live in rural areas, approximately only 7,5 million have access to safe drinking water. While the majority of Congolese are living in rural areas, the rural water supply sector receives only 15 percent of overall water supply investments, even though springs, as a main source for rural water supply in the DRC, require minimal investment to develop

Water (AMCOW) 2 available at <http://www.amcow.net> (accessed 18 November 2012)

²¹n 19 above, 6

²²n 20 above, 8

²³n 19 above, 22

²⁴n 23 above, 23

²⁵See article 48 DRC Constitution available at <http://www.leganet.cd> (accessed 19 November 2012)

²⁶n 20 above, 17

and maintain.²⁷ This discrimination is incomprehensible.

Paradoxically, because of mismanagement of investment, lack of qualified personnel, old state of the pipe system and the growth of the urban population, the urban water supply sector does not respond properly to the needs of the urban inhabitants.²⁸ Moreover, in Katanga province for instance, where there are many mining activities, rivers, aquifers and water sources are polluted by mining companies.²⁹ People are using polluted water for drinking and for producing food; sometimes they eat dead fishes from the polluted river, like river Kafubu around Lubumbashi.³⁰ This sad reality results in a critical situation for the health of Congolese people and moreover for the health of Congolese PLWHA.

The vulnerability of PLWHA to opportunistic infections due to water has been the motivation for conducting this study; and, so the outcome should be the respect, the protection and the fulfilment of an effective right to sufficient and clean water for all Congolese by the DRC Government.

The problem statement leads to the following research questions:

How can the quality and the quantity of water affect PLWHA? And what is the link between water and HIV/AIDS?

What are the nature and the content of the DRC's national, regional and international human rights obligations to respect, protect and fulfil the right to water for all Congolese generally and for PLWHA particularly?

What is the current water supply situation on the ground, in respect of quality and quantity, both in urban and rural areas, for all Congolese in general and for PLWHA particularly?

What are the reasons for the DRC's non-compliance with its national, regional and international human rights obligations regarding the right to water?

What are the suggested solutions and the recommendations to concretely adjust the water supply situation in the DRC?

1.3 Methodology of the study

The study will be undertaken through both a library research approach and a conducting of interview approach. The library research will be mainly entail the use of text books, journal articles,

²⁷n 19 above, 34

²⁸n 27 above, 30-32

²⁹Unpublished: HA Mulungulungu 'Caractéristiques des eaux de consommation et tendances sanitaires dans l'hinterland de Lubumbashi' unpublished PhD thesis, University of Lubumbashi, 2007 120

³⁰'La Pollution de la Rivière Kafubu Mayi Ni Uzima' (2011) Rapport d'enquête de la Plateforme des Organisations pour la Promotion et la Défense des Droits Economiques, Sociaux et Culturels DESC/RDC 51, 63 available at <http://www.congomines.org> (accessed on 19 November 2012)

reports and legal instruments (national, regional and international). In order to answer the specific research question about the quality of water, there will be a combined approach of legal dimension and microbiological perspective. The only application of law cannot give an answer to this specific question.

A total of twelve people from different cities of the DRC, namely Lubumbashi, Kinshasa and Mbuji-Mayi were interviewed. For each city, an official from the urban and rural water supply service was selected for these interviews. See the attached annexe of questionnaire.

1.4 Literature review

There is a dearth of specific literature available on the DRC's international human rights obligations about the right to water in the context of HIV/AIDS. However, worldwide, a number of scholars have written on the linkage between HIV/AIDS and water, bacterial or management studies. While some scholars have focused only on the human right perspective of the right to water, others have combined the right to water and HIV/AIDS. There are many studies on the impact of the mining activities on water worldwide and specifically in the context of the DRC. Also, there are two main reports on the specific water issues in the DRC made in 2010 by the United Nations Environment Programme (UNEP) and the African Ministers' Council on Water (AMCOW).

In relation to the linkages between HIV/AIDS and water, Ashton and Ramasar concluded that these links reflect some of the often unanticipated effects of the pandemic on society, with long-term implications for effective water resource management and the provision of wholesome water supplies to communities. Their concern is about the implications of the HIV/AIDS pandemic for water resource management in Southern Africa.³¹ While Obi have conducted a study on the impact of the enteric bacterial pathogens on the health of PLWHA in Limpopo Province from their household drinking water,³² Samie analysed the cause of the antibiotic resistance to bacterial organisms of PLWHA in South Africa's rural settings in relation to their household drinking water.³³ These two studies highlight the vulnerability of PLWHA in developing countries to diarrhoea which increases their morbidity and their mortality. Many diarrhoea-causing agents are often transmitted through water.

About the linkage between HIV/AIDS, water and human rights, Obi conducted a bacterial study on the cross-paths of HIV/AIDS and water in Southern Africa generally and in South Africa

³¹ Ashton & Ramasar (n 17 above) 1-22

³² Obi et al (n 4 above) 539-548

³³ Samie et al (n 1 above) 1-9

particularly.³⁴ He enforced the evidence that PLWHA are more likely to suffer from diarrhoea due to drinking water infected by bacteria pathogens. He examined the difference between rural and urban water and sanitation access and gave the linkages between HIV/AIDS and water, sanitation and hygiene. He also highlighted the human rights aspects of water, hygiene and sanitation in the context of human development, poverty reduction, environmental sustainability and integrated management of water resources.³⁵ Wegelin-Schuringa and Kamminga outlined the linkages between the particular need of PLWHA of access to safe water and sanitation and the state's duties from a rights perspective; they gave suggestions for strategies to be undertaken by state and non-state actors to promote access to water and sanitation as a right in an HIV/AIDS context.³⁶

Hardberger advocated for a standalone human right to water, because even if the Committee on ESCR General Comment No 15 on the right to water is an excellent guideline, but its non-binding nature is problematic. He suggested that, as water, health and life are close parallels; people can claim their right to water under the right to life and the right to health.³⁷ In 1999, Gleick was already advocating for a human right to water and proposed the same logic as Hardberger: a right to water from right to life and right to health.³⁸ Bluemel had the same approach than Hardberger and Greick with a specific analysis of legal developments in South Africa, India and Argentina to illustrate the ways in which these states have implemented a legal right to water.³⁹

In the specific context of the DRC about pollution related to mining activities, Banza studied the impact on the health of inhabitants of Lubumbashi to the exposition to high levels of plumb and cadmium in drinking water.⁴⁰ In the same way, Mulungulungu⁴¹ argued on the quality of drinking water free from mining waste and the importance of proper sanitation in order to avoid contamination of water by bacteria. About the pollution of Kafubu River, Kisanguka⁴² and la Plateforme des Organisations pour la Promotion et la Défense des Droits Economiques, Sociaux et Culturels DESC/RDC⁴³ examined the effect of the mining activities on the health of the population

³⁴CL Obi et al 'The interesting cross-paths of HIV/AIDS and water in Southern Africa with reference to South Africa' (2006) 32 3 *Water SA* 323-343 available at <http://www.wrc.org.za> (accessed 18 November 2012)

³⁵n 34 above, 323-343

³⁶Wegelin-Schuringa & Kmminga (n 9 above) 152-172

³⁷A Hardberger 'Life, Liberty, and the Pursuit of Water: Evaluating Water as a Human Right and the Duties and Obligations it Creates' (2005) 4 2 *Northwestern Journal of International Human Rights* 331-362 available at <http://www.ais.up.ac.za> (accessed 10 November 2012)

³⁸Gleick (n 12 above) 487-503

³⁹Bluemel (n 13 above) 957-1006

⁴⁰Unpublished: L Banza 'Exposition au plomb et au cadmium dans la ville de Lubumbashi' unpublished these, University of Lubumbashi, 2004

⁴¹Mulungulungu (n 29 above) 1-143

⁴²Unpublished: M Kisanguka 'La perception de la pollution de l'eau par les riverains de la Kafubu' unpublished Dissertation, University of Lubumbashi, 2010

⁴³n 30 above, 1-97

around Kafubu River and the failure of the DRC government to protect this population.

Finally, in 2010, UNEP and AMCOW conducted two separate inquiries about water issues in the DRC and water supply and sanitation in the DRC. These inquiries lead to two interesting reports almost similar on the critical situation of water supply in the DRC. Among the important issues raised, it has been demonstrated that 95 percent of the DRC water sector investment comes from external donors and that the rural water sector is discriminated against in the investment; there is a huge risk of bacterial contamination of water both in rural areas and urban areas due to the dysfunctional state of the water sector, lack of maintenance and misuse of investments and the DRC, due to a poor planning, cannot meet the 2015 Millennium Development Goal targets for water supply and sanitation.⁴⁴

In as much as the above literature has focused on the right to water in different ways, this study will combine this literature and will specifically focus on the right to water for PLWHA in the context of the DRC, highlighting the state obligations and proposing solutions to the issue and recommendations.

1.5 Outline of the work

The mini-dissertation is made up of six chapters. Chapter 1 provides the background of the study and presents the problem, the research questions, the methodology and the literature review. Chapter 2 shows the linkage between quality and quantity of water with HIV/AIDS. Chapter 3 is about the nature and the content of the right to water. First, it assesses the nature of the right to water: a stand-alone right enforceable or a right implied under the right to life and the right to health and, secondly, it gives the content of the national, regional and international DRC's obligations about the right to water. Chapter 4 shows the reality on the ground about the quality and the quantity of water supply for ordinary people and for PLWHA both in rural and urban areas, through different parts of the DRC where the situation is different. Chapter 5 analyses the reasons why the DRC does not comply with its human rights obligations according to the right to water. Finally, Chapter 6 provides concrete solutions and recommendations to adjust the water supply situation in the DRC.

1.6 Limitation of the study

The study has for geographical scope the entire DRC. Even if the country is big like four different countries, to analyse only a reality of one part of the DRC cannot show the real picture of the situation. From Bunia via Kabeya-Kamwanga to Kasumbalesa, from Kibumba via Lodja to Matadi, people of the DRC face different problems and the water supply situation on the ground is not the

⁴⁴n 19 above, 1-95 and n 20 above, 1-33

same everywhere. In order to touch objectively the reality, in each part of the country from the north, the centre, the south, the east and the west, one or two urban and rural areas will be chosen as samples of data collection. This study focuses on the linkage between quantity and quality of water and HIV/AIDS associated to the DRC's human rights obligations in both urban area and rural area.

CHAPTER II

THE LINKAGES BETWEEN HIV/AIDS AND WATER

2.1 Introduction

The following chapter analyses how the quality and the quantity of water can affect PLWHA, with a particular focus on the links between HIV/AIDS and water. Quality of drinking water can be compromised by sanitation and personal hygiene, the concept WASH (water, sanitation and hygiene) will be mostly used in this chapter, instead of only water. This is because water, sanitation and health are inseparably connected. The improvement of hygiene practices through key behaviour such as hand washing with soap, safer water handling and storage and safe disposal of faeces are effective means of reducing the global burden of diarrhoeal diseases.⁴⁵ Indeed, access to potable water, sanitation and hygiene facilities is vital for the health of PLWHA.⁴⁶ Moreover, while the human right to safe water and adequate sanitation is nowadays considered as a human right for all, it is of crucial importance for PLWHA,⁴⁷ because of the weakness of their immune system.

The current chapter is mainly focused on the water-related diseases and further analyses the connection between HIV/AIDS and WASH through aspects including the health perspective, the gender perspective, the poverty alleviation perspective and the human rights perspective.⁴⁸

2.2 Water-related diseases

⁴⁵Obi et al (n 34 above) 334

⁴⁶Global Health Sector Strategy on HIV/AIDS 2011-2015'(2011) Guide of World Health Organization WHO 20 available at <http://www.who.int> (accessed 15 May 2013)

⁴⁷Wegelin-Schuringa & Kamminga (n 9 above) 154

⁴⁸Kamminga & Wegelin-Schuringa (n 2 above) 13-22

Water is a crucial resource for all forms of life on our planet; almost all forms of life are dependent on water. It is the essential constituent of living things; furthermore it is known that the human body is made up of about 65 percent water by weight. Hence, a human being can survive for a long period without food, but cannot survive for a long time without water.⁴⁹ Nevertheless, water can transmit dangerous pathogens to humans, which can seriously threaten the human health. Furthermore, bacteria cannot be detected by sight, smell or taste; the only way to know if water contains bacteria is to have it tested by a qualified laboratory.⁵⁰ The transmission of pathogens can be through ingestion of water (such as drinking water and, to some extent, bathing), through contact with water (bathing and wading) containing organisms, through contaminated aerosol from poorly managed water system or through vectors proliferating in water reservoirs, stagnant water or certain agricultural practices. The transmission can also be caused by lack of water linked to inadequate personal hygiene or by poor personal, domestic or agricultural hygiene.⁵¹ Furthermore, water in a swimming pool can contain micro-organisms spread by faecal-oral mechanism.⁵²

It is clear that water is related to disease in various ways; it serves as a route of transmission, a breeding site of a stage of the life-cycle of the infective agent or a harbour for the carrier of the infective agent.⁵³ All water has a presence of bacteria, but the presence of bacteria does not mean the water is unsafe to drink or to use. Only disease-causing bacteria known as pathogens lead to disease.⁵⁴

The disease burden from unsafe WASH is estimated at the international level taking into account various disease out-comes, principally diarrhoeal diseases. Exposure scenarios for estimating disease burden of infectious diarrhoea are established according to water supply and sanitation infrastructure, the level of faecal-oral pathogens in the environment and populations assigned to these scenarios.⁵⁵ Infectious disease is plausibly the biggest contributor to the disease burden from WASH, although it cannot be totally attributed to WASH, because it is also transmitted through food and air.⁵⁶ Moreover, if most of the symptoms caused by micro-organisms are enteric in nature, a couple of micro-organisms spreading through a pool can conduct to other types of diseases with

⁴⁹Obi et al (n 34 above) 331

⁵⁰SO Skipton et al 'Drinking water: Bacteria'(2008) G1826 *University of Nebraska Lincoln Publications* 1 available at <http://www.extension.unl.edu/publications> (accessed 15 July 2013)

⁵¹A Pruss et al 'Estimating the burden of disease from water, sanitation, and hygiene at global level' (2002) 110 5 *Environmental Health Perspectives* 537 available at <http://www.who.int> (accessed 13 July 2013)

⁵²Z Barna & M Kadar 'The risk of contracting infectious diseases in public swimming pools. A review' (2012) 48(4) *Ann Ist Super Sanita* 375 available at <http://www.iss.it> (accessed 11 July 2013)

⁵³Obi et al (n 34 above) 333

⁵⁴Skipton et al (n 49 above) 1

⁵⁵A Pruss-Ustun et al 'Unsafe water, sanitation and hygiene' in Ezzati M, Lopez AD, Rodgers A, Murray CJL (eds) *Comparative quantification of health risks. Global and regional burden of disease attributable to selected major risk factors. Volume 1* (2004) 1321 available at <http://www.who.int> (accessed 13 July 2013)

⁵⁶Pruss et al (n 49 above) 538

serious generalised or localised neurologic, cardiologic, respiratory or some manifestations in other organs of the body.⁵⁷

According to the study conducted by Gleick, water-related diseases are placed in four categories: water-borne, water-washed, water-based and water-related insect vectors.⁵⁸ Water-borne diseases are caused by the ingestion of water contaminated by human or animal faeces or urine containing pathogenic bacteria or viruses. These are most of the enteric and diarrhoeal diseases caused by bacteria and viruses, including typhoid and over 30 species of parasites that infect the human intestines (cholera, amoebic and bacillary dysentery etc.). Among these species, seven are distributed globally or cause serious illnesses: ameobiasis, giardiasis, taenia solium taeniasis, ascariasis, hookworm, trichuriasis and strongyloidiasis.⁵⁹

Water-washed diseases are caused by poor personal hygiene and skin or eye contact with contaminated water or by lack of sufficient clean water for washing. These include scabies, trachoma and flea, typhus, lice and tick-borne diseases and diarrhoeal diseases that can be transmitted from person to person.⁶⁰

Water-based diseases are caused by hosts that live in water or need water for part of their life cycle. These are transmitted to humans through drinking of contaminated water or use of it for washing. In this category, the most known illnesses are schistosomias, dracunculias and other helminths.⁶¹

The latest category, water-related diseases caused by insect vectors, is about diseases spread by insects that breed or feed near contaminated water, such as dengue, filariasis, malaria, schistosomiasis, trypanosomiasis and yellow fever. 'These diseases are not typically associated with lack of access to clean drinking water or sanitation services [...]. It must be noted, however, that their spread is often facilitated by the construction of large-scale water systems that create conditions favourable to their hosts.'⁶²

Pruss discussed other diseases related to WASH; these are acute hepatitis A, E and F, fluorosis, arsenosis, legionellosis, methamoglobinemia, japanese encephalitis, leishmaniasis and impetigo. They also listed some diseases that are 100 per cent due to WASH: acute hepatitis F, schistosomiasis, trachoma, ascariasis, hookworm and dracunculiasis.⁶³

⁵⁷Barna & Kadar (n 51 above) 375

⁵⁸PH Gleick, 'Dirty water: Estimated deaths from water-related diseases 2000-2020', Pacific Institute Research Report, 2002 2 available at <http://www.pacinst.org> (accessed 12 July 2013)

⁵⁹n 58 above, 2

⁶⁰n 59 above, 2

⁶¹n 60 above, 2

⁶²n 61 above, 2

⁶³Pruss et al (n 49 above) 538

Furthermore, the pathogens related to water can not only conduct to skin or enteric diseases, the high presence of iron in drinking water can cause aesthetic problems related to changes in the colour of the dental enamel and buccal mucosa.⁶⁴ The knowledge of clinical microbiology has increased and the epidemiological surveillance has improved, that is why the range of micro-organisms that have been shown to cause water-related diseases has also grown. For example, it can be added to the diseases listed above viruses such as rota viruses, Norwalk viruses, calici-like viruses; protozoa such as *Cryptosporidium*, *Entamoeba histolytica* and bacteria such as *Campylobacter*, *Salmonella*, *Shigella*, *Escherichia coli*, *Vibrio cholerae* and *Aeromonas*.

Although water-related pathogens are relatively uncommon causes of cutaneous infections, it has been demonstrated that water can be a source of skin diseases.⁶⁵ Indeed, for example, individuals whose wounds are contaminated with water may become infected with unusual organisms.⁶⁶ While some authors made a study on a huge range of cutaneous infections caused by water-borne pathogens such as *Chromobacterium violaceum*, *Erysipelothrix rhusiopathiae* and *Francisella* species,⁶⁷ others focused only on two pathogens: *Aeromonas hydrophila* and *Vibrio vulnificus*.⁶⁸

The aim of this part of the study was just to highlight different types of water-related diseases, without going deeper on the explanations. It outlined some diseases that are directly linked to quality of water for drinking or washing. Though PLWHA and immuno-competent individuals are susceptible to the same spectrum of enteric pathogens or skin diseases, PLWHA require more rigorous attention because of their increased susceptibility to opportunistic diseases.⁶⁹

2.3 Linkages between water and HIV/AIDS

HIV is mainly transmitted during sexual intercourse. Linkages between HIV/AIDS and water may appear superficial; the relationships existing between water and HIV/AIDS cannot be underestimated.⁷⁰ Rather, this relationship has to be highlighted, because there are a number of linkages between WASH and HIV/AIDS associated with different perspectives.⁷¹ Those linkages appear through the following aspects:

⁶⁴KR De Sousa et al, 'Extrinsic tooth enamel color changes and their relationship with the quality of water consumed' (2012) 9 *Int. J. Environ. Res. Public Health* 3530 available at <http://www.mdpi.com/journal/ijerph> (accessed 18 July 2013)

⁶⁵L Elko et al 'Cutaneous manifestations of waterborne infections' (2003) 5 *Current Infectious Reports* 398 available at <http://www.research.usf.edu> (accessed 19 July 2013)

⁶⁶EM Slaven & PM DeBilieux 'Skin and soft-tissue infections: the common, the rare, and the deadly' (2001) 3(1) *Emergency Medicine Practice* 10 available at <http://www.pinpub.com/emp> (accessed 10 July 2013)

⁶⁷Elko et al (n 64 above) 398-405

⁶⁸Salven & DeBilieux (n 65 above) 10

⁶⁹Obi et al (n 4 above) 539

⁷⁰Obi et al (n 34 above) 335

⁷¹Kamminga & Wegelin-Schuringa (n 2 above) 13

2.3.1 The consumer aspects

Everyone needs water, regardless of his HIV status, but WASH become indispensable for PLWHA and for home-based care to persons who have developed AIDS. Indeed, one of the important elements of care is water. Water is needed for washing soiled clothing and linen and bathing patients. Also, safe drinking-water is indispensable for taking medicines and cooking, even to make food easier to eat for the patients suffering from mouth ulcers or thrush.⁷² Moreover, in order to reduce the risk of opportunistic diseases, water is needed to keep the house environment and latrine clean. The sense of human dignity of patients and caregivers is increased by a good provision of water and sanitation facilities.⁷³

2.3.2 The health aspects

Adequate access to safe water may prevent faecal-oral transmission of diarrhoea-causing agents. PLWHA are prone to these diseases, and without safe water supply they may suffer from persistent diarrhoea and skin diseases. PLWHA have greater requirements for potable water than immunocompetent individuals. Indeed, unsafe water is a public health risk; so providing safe water has a positive impact on PLWHA and also helps to reduce deaths among childhood and adults, as well as reducing diarrhoeal diseases in PLWHA.⁷⁴

According to the health aspects, hygiene promotion and education is very important. Indeed, the availability of safe water and sanitation do not automatically result in improvements in health. Improved water handling and sanitation practices, personal hygiene, domestic hygiene, food hygiene and safe water disposal and drainage will effectively lead to reduction of water and sanitation related diseases.⁷⁵ Water can be safe at the source, but the contamination can occur when drawing water with a dirty bucket, when transporting water or when storing water in uncovered or unclean containers.⁷⁶

HIV positive mothers face a dilemma about water quality and breast-feeding. When they do not have access to safe water, they are at a crossroads as to whether to pass on the infection to their children through breast milk or deny them breast milk and bottle feed instead. When water used in infant feed is unsafe, there is an increases risk of diarrhoeal diseases and infant mortality.⁷⁷ Indeed,

⁷²WW Yallew et al 'Assesment of water, sanitation, and hygiene practice and associated factors among people living with HIV/AIDS home based care services in Gondar city, Ethiopia' (2012) 12:1057 *BMC Public Health* 1 available at <http://www.biomedcentral.com> (accessed 18 June 2013)

⁷³Kamma & Wegelin-Schuringa (n 2 above) 13

⁷⁴Obi et al (n 34 above) 336

⁷⁵Kamma & Wegelin-Schuringa (n 2 above) 15

⁷⁶ Wegelin-Schuringa & Kamma (n 9 above) 160

⁷⁷Obi et al (n 34 above) 336

during the first two months after the birth, a bottle-fed baby is nearly six times more likely to die from diarrhoea, respiratory or other infections than a breast-fed child, mostly because the bottles used are not clean and unsafe water is used to mix the formula.⁷⁸

Clean water is also needed for medications. Anti-retrovirals and treatment for opportunistic diseases in HIV/AIDS require the use of clean water. Providing clean water to PLWHA reduces AIDS related mortality. However, the provision of safe water has to be complemented by hygiene promotion and appropriate hygiene behaviour.⁷⁹

2.3.3 The gender aspect

There is a gender imbalance in the impact of HIV/AIDS on the society, sociologically, culturally and economically. Women are more vulnerable to be infected by HIV than men and they are affected disproportionately because of their socially defined roles. They take care of all family members, across generations.⁸⁰ Mostly, regardless of their age, they have many domestic responsibilities such as fetching water and transportation across long distances.⁸¹ And from time to time, in conflicts zones, women who are collecting water are raped by soldiers and rebels; this situation increases the risk of HIV transmission and other sexual transmitted diseases.⁸²

2.3.4 The poverty alleviation aspect

The impact of HIV/AIDS on rich and poor is different; it is higher among poor households, where female vulnerability is increased because prostitution may be one of various coping strategies. So, there is a link between HIV and prostitution. Poor access to basic needs such as health care, water and sanitation (indices of poverty) may increase vulnerability to HIV. Adequate water supply has been reported to save labour and energy, reduce health expenditure, generate nutritional value and has good repercussions on sustainable livelihood.⁸³

2.3.5 The human rights aspect

Access to safe water and proper sanitation is nowadays considered as a human right. In CEDAW and CRC, reference to water is clearly made. The right to water is widely interpreted as being implicit in the right to life, the right to an adequate standard of living and the right to health. The adoption of General Comment 15 on the right to water by the UN Committee on Economic, Social

⁷⁸Wegelin-Schuringa & Kamminga (n 9 above) 161

⁷⁹Obi et al (n 34 above) 336

⁸⁰Kamminga & Wegelin-Schuringa (n 2 above) 18

⁸¹Obi et al (n 34 above) 337

⁸²RB Asaba et al 'Beyond distance and time: Gender and the burden of water collection in rural Uganda' (2013) 2(1) *The Journal of Gender & Water* 33 available at <http://www.wh2ojournal.com> (accessed 12 July 2013)

⁸³Kamminga & Wegelin-Schuringa (n 2 above) 20

and Cultural Rights in 2002 was an important step forward.⁸⁴ Moreover, on July 2010, the UN General Assembly adopted an historic resolution recognising the human right to safe and clean drinking water and sanitation as essential for the full enjoyment of the right to life. Two months later, the UN Human Rights Council adopted a second resolution adding that the human right to safe and clean drinking water and sanitation is derived not only from the right to an adequate standard of living, but also is inseparably related to the right to the highest attainable standard of physical and mental health as well as the right to life and human dignity.⁸⁵

Human rights are at the centre of the HIV/AIDS response, according to the Declaration of Commitment on HIV/AIDS by the UN General Assembly in 2001. HIV/AIDS is relevant to numerous fundamental human rights like the right to life, the right to health, the right to non-discrimination, equal protection and equality before the law, the right to education, the right to an adequate standard of living, the right to share in scientific advancement and its benefits, the right to participate in public and cultural life and the right to freely receive and impart information.⁸⁶

A human rights perspective has been introduced in the water and sanitation sector. Accepting access to water and sanitation, not only as a need, but also as a human right, has important policy and programming implications, because it needs more effort and funding for total coverage.⁸⁷

Another human rights issue related to water and sanitation is the stigmatisation of infected people and affected people by HIV/AIDS. Indeed, infected people and their families can become excluded from community-based water decision-making. Measures have to be taken in order to ensure that the voices of PLWHA are heard directly or indirectly. Also an effective strategy to tackle taboos and incorrect health beliefs around HIV/AIDS has to be put in place. PLWHA can also be employed in water and sanitation improvement programmes, with the added benefits of breaking down prejudices and providing income generation opportunities.⁸⁸

2.4 Conclusion

On one hand, this chapter focused on water-related diseases and their mode of transmission. Indeed, there is an undeniable correlation between water, sanitation, personal hygiene and HIV/AIDS. Water-related diseases are strongly associated with HIV/AIDS. Even though, immuno-competent individuals and HIV/AIDS patients are susceptible to the same kind of enteric pathogens,

⁸⁴Wegelin-Schuringa & Kamminga (n 9 above) 156

⁸⁵M Barlow 'Our right to water: A people's guide to implementing the United Nations' recognition of the right to water and sanitation' (2011) *The Council of Canadians* 4 available at <http://www.blueplanetproject.net> (accessed 24 September 2013)

⁸⁶Wegelin-Schuringa & Kamminga (n 9 above) 155

⁸⁷Obi et al (n 34 above) 337

⁸⁸Kamminga & Wegelin-Schuringa (n 2 above) 17-18

HIV/AIDS patients need more attention, because of the weakness of their immune system to the threat of opportunistic infections.

There is a myriad of diseases related to water, including gastro-enteric diseases and skin diseases. The transmission of pathogens can be through drinking-water, bathing or wading. The transmission can also be through lack of water linked to personal hygiene or through activities in swimming pool. Water-related diseases can be divided in four categories: water-borne, water-washed, water-based and water-related insect vectors.

The chapter also highlighted the linkages between water, sanitation, hygiene and HIV/AIDS through different aspects such as the consumer perspective, the gender perspective, the poverty alleviation perspective and the human rights perspective.

CHAPTER III

THE HUMAN RIGHT TO WATER

3.1 Introduction

Access to safe and clean water is no longer considered only as a need or an economic good, but also as a human right. In international human rights law, some hard laws (CEDAW, CRC, Disability Convention) and soft laws (ICESCR: GC 15, UN resolutions) have mentioned the right to water, but many questions still remain around the nature and the scope of this right. Hence the current chapter focuses on the nature and the content of the right to water. First, it assesses the nature of the right to water: a stand-alone right enforceable or a right implied under other rights such as the right to life, the right to health and, secondly, it gives the content of DRC's national, regional and international obligations pertaining to the right to water.

3.2 The nature and the content of the right to water in international law

3.2.1 The nature of the right to water

Historically, the right to water has been implicitly mentioned in many international declarations and

covenants. The Universal Declaration, the Geneva Conventions and Protocols, ICCPR, ICESCR, CEDAW and CRC, the Stockholm Declaration, Mar Del Plata Declaration, Agenda 21 and the MDGs have all made reference to the right to water. However, the Universal Declaration (1948), Stockholm Declaration (1972), Mar Del Plata Declaration (1977), Rio Declaration (1992), Agenda 21 (1992), UN Resolution (2002) are the non-legally binding declarations.⁸⁹

Furthermore, the Stockholm Declaration asked for the protection of the earth, including the air, water, land, flora and fauna for the benefit of present and future generations. The Preamble of the Mar Del Plata Declaration of the United Nations Water Conference (1977) ensures that all peoples have the right to have access to drinking water in quantities and of a quality equal to their basic needs. The Plata Declaration contains more direct reference to right to water than any other declaration. Agenda 21 also makes direct and clear cut reference to the human right to water. The declaration states that the general objective is to make certain that adequate supplies of water of good quality are maintained for the entire population of this planet.⁹⁰

The MDGs (2000) were another step in the international recognition of the right to water. It set a commitment to divide by two the proportion of people living without sustainable access to safe drinking water and basic sanitation by 2015. The Preamble of the 2002 UN Resolution reaffirms the fundamental principles of equality, human dignity and social justice, and the right to drinking water and sanitation for every woman, man and child.⁹¹

The primary basis for the right to water and sanitation is the ICESCR. In 2002, the CESCR, as a committee of experts, adopted General Comment No 15, which is a non-binding document but it is an authoritative interpretation of the provision of the ICESCR.⁹² The General Comment No 15 was the first official document that recognised clearly the link between the human right to water and two other human rights enshrined in the ICESCR: the right to an adequate standard of living (article 11), and the right to the highest attainable standard of health (article 12).⁹³

Moreover, the General Comment No 15 explicitly called States to begin to realise the three obligations to respect, protect, and fulfil this right. Moyo has argued that the CESCR in General Comment No 15 used three methods of deriving the right to water from contemporary international

⁸⁹R Philip 'The human right to water' (2012) 121 *Pragati Quarterly Research journal* 52 available at <http://www.vicharakendram.org> (accessed 25 September 2013)

⁹⁰n 89 above, 52

⁹¹n 90 above, 52

⁹²COHRE, AAAS, SDC & UN-HABITAT 'Manual on the right to water and sanitation' (2007) 11 available at <http://www.unhabitat.org> (accessed 22 September 2013)

⁹³M Moore 'Making the international human right to water primary: recommendation for an optional protocol to the United Nations convention on the law of non-navigational uses of international watercourses' (2012) 44 *The Geo. Wash.Int'l L.Rev.* 5 available at <http://www.ais.up.ac.za> (accessed 10 November 2012)

law.⁹⁴ The first method is that General Comment No 15 recognised the right to water through derivation from articles 11 and 12 in the ICESCR (water as a component of the right to an adequate standard of living, as a component of the right to health, as a component of the right to housing, as a component of the right to food). The second method: General comment No 15 derived the right to water through an analysis of the centrality and necessity of water to other rights under the ICESCR and the other instruments, for example the derivation of water as an essential component of the right to life enshrined in the ICCPR. The third method: the CESCR also recognised the right to water as a right that already exists and recognised under various other international legal instruments. Moyo concluded that through these three analytical models, the CESCR provided a solid legal basis for recognising a human right to water under international human rights law.⁹⁵

The absence of an explicit reference to right to water in the legally binding documents and the non-binding nature of explicit reference documents became an impediment in the realisation of the right to water for millions worldwide.⁹⁶

Fortunately, after eight years, there were two United Nations resolutions that declared the right to water and sanitation a human right. Indeed, in July 2010, the UN General Assembly adopted the resolution A/RES/64/292, an historic one, recognising access to clean drinking water and sanitation as a human right. For a total voting membership of 192, the majority of States parties voted in favour of this resolution (122 states), none voted against, 41 abstentions and 29 non-voting.⁹⁷ In September 2010, the UN Human Rights Council (HRC) adopted its own resolution (A/HRC/15/L.14). The particularity of this second resolution is that the HRC said that because the human right to water was already implicitly contained within two, almost universally ratified, treaties (the ICESCR and the ICCPR) the human right to water was a legally binding right. Chociey highlighted this argument in the following discussion:

“It is important to note that the second resolution advanced by the Human Rights Council was itself a non-binding document, but the connection it established between the human right to water and these two treaties, which are binding on all signatories under international law, revealed an existent legal commitment to the human right to water. In consequence, the three-tier burden that was first mentioned in General Comment No. 15 of respecting, protecting, and fulfilling the human right to water – which requires the provision of a minimum of 50 litres of water per person per day for personal and domestic use – falls on all the governments that were party to these treaties.”⁹⁸

⁹⁴ Unpublished: K Moyo 'Water as a human right under international human rights law: implication for the privatisation of water services' unpublished PhD thesis, Stellenbosch University, 2013, 46

⁹⁵ n 94 above, 46

⁹⁶ Philip (n 88 above) 53

⁹⁷ See <http://www.unbisnet.un.org> (accessed 25 September 2013)

⁹⁸ Unpublished: Z Chociey 'The human right to water and water security' unpublished Master thesis, McMaster

As the right to water has been explicitly recognised in numerous legally binding treaties, it can be considered as a stand-alone right, but those treaties concern, for instance, exclusively women (CEDWA), children (CRC) or disabled persons (Disabilities Convention). The question is to know if the legally binding obligations upon states that have signed them can be extended to all ordinary people. Because the personal scope of these treaties is limited, the bearers of rights in these treaties are named: women, children and disabled persons.

In order to establish the universality of the right to water, it was demonstrated that the right to water is also an integral part of other human rights such as the right to life (ICCPR) and the rights to health, housing, food and an adequate standard of living (ICESCR). Indeed, the concept of interrelatedness and interdependence of all human rights is applicable at this stage. The right to water is indivisibly linked to the inherent dignity of the human being and is indispensable for the realisation of other human rights.⁹⁹

So, it is evident that the right to water is an enforceable stand-alone right. Philip argued and concluded:

“The Council specified that [the] right to safe drinking water and sanitation are part of international law and reaffirmed that states have the primary responsibility for the realization of all human rights. This is an important step as state parties to the ICESCR can no longer deny their responsibility to provide safe water and sanitation for all individuals. By the UN Human Rights Commission’s Resolution, a circle has been finally closed, the circle of the promises of the 1992 Rio Earth Declarations regarding water, climate change, biodiversity and desertification[...] Viewed in this context the UN resolution giving a legally binding status to the human right to water and sanitation is a giant leap forward. Whether or not they voted for the two resolutions, every member nation of the United Nations is now obliged to accept and recognize the human right to water and sanitation.”¹⁰⁰

3.2.2 The content of the right to water

In the previous chapter, the concept WASH was used instead of only water, because water cannot be disconnected to sanitation, according to studies made by scholars and even at the UN level. However, the Special Rapporteur on the right to safe drinking water and sanitation, Catarina de Albuquerque, discussed the question to know if it is human right or human rights to water and sanitation. She said that both the UN Assembly General resolution and the UN Human Rights Resolution on the right to water and sanitation refer to a single human right. She is of the opinion that water and sanitation should be treated as two distinct human rights, both included within the right to an adequate standard of living and with equal status. This is because she estimated that

University, 2013

⁹⁹Moyo (n 94 above) 47

¹⁰⁰Philip (n 88 above) 55-56

when water and sanitation are mentioned together, the importance of sanitation is downgraded due to the political preference given to water. She also argued that separating the right to sanitation from the right to water provides an opportunity for government, civil society and other stakeholders to define specific standards for the right to sanitation and for its realisation. This separation leads also to the recognition that not all sanitation options rely on a water-borne system.¹⁰¹

In 2006, the UN Sub-Commission on the Promotion and Protection of Human Rights (SCPPHR), an expert body to the UN Human Rights Council (replaced in 2007 by the Human Rights Council Advisory Committee), adopted Draft Guidelines for the realisation of the right to drinking water supply and sanitation. The Sub-Commission Guidelines are consistent with the General Comment No 15, with the particularity that they include clearer statements defining sanitation as a right in conjunction with access to water, as well as its components.¹⁰² But the right to sanitation cannot be totally disconnected to the right to water.

Because water, sanitation and health are inseparably linked, the right to sanitation shall be implied in the right to water, until a proper definition of a framework for the right to sanitation, as the CESCR did for the right to water in the General Comment No 15 which gives the normative content of the right to water.

The CESCR considered that different facts may affect the definition of the right to water. The substantive components of the right to water, regardless the circumstances, consist of availability, accessibility and quality of water services. The elements of the right to water have to be adequate for human dignity, life and health. General Comment No 15 explicitly states that the right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.¹⁰³

From the combination of General Comment No 15 and the Sub-Commission Guidelines, the following components of the right to water and sanitation appear:

Availability: for each person sufficient and continuous water supply for personal and domestic uses, which include drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene.¹⁰⁴ The General Comment No 15 refers to WHO Guidelines about the quantity of water available for each. The WHO Guidelines indicate that 50-100 litres of water per person per day are sufficient to cover all basic human needs. The WHO Guidelines consider 20 litres per

¹⁰¹CD Albuquerque & V Roaf *On the right track: Good practices in realising the rights to water and sanitation* (2012) 27

¹⁰² n 91 above, 12

¹⁰³ n 11 above, paras 11-12

¹⁰⁴ n 103 above, para 12(a)

person per day as the absolute minimum at which basic health can be maintained in dry or normal places.¹⁰⁵ In the 1990s, Gleick suggested that the international community adopt a figure of 50 litres per capita per day as a basic water requirement for domestic and personal use of water supply.¹⁰⁶

Accessibility: water and sanitation services are accessible within, or in the immediate vicinity, of each household, educational institution and work place, and which are in a secure location for all and particularly for girls and women collecting water, and finally addresses the needs of different groups (physical accessibility).¹⁰⁷ Water and sanitation can be secured without reducing the capacity to realise other Covenant rights and should be affordable (economic accessibility).¹⁰⁸ Access to water and sanitation is ensured for everybody, including vulnerable or marginalised groups (PLWHA), and without discrimination. Finally, accessibility includes the rights to seek, receive and impart information concerning water issues.¹⁰⁹

Quality: clean and safe water that is free from pathogens and bacteria, chemical substances and radiological hazards that are susceptible to compromise human health, and whose colour, odour and taste are acceptable to users for personal or domestic use.¹¹⁰

With the recognition of the right to water, three following obligations are imposed upon the states:

The obligation to respect requires that the state must refrain from any action or policy that interferes with the enjoyment of the right to water.¹¹¹

The obligation to protect means that the state is obliged to prevent third parties from interfering with the enjoyment of the right to water.

The obligation to fulfil can be divided into the obligations to facilitate, promote and provide. The state is required to adopt any additional measures directed towards the realisation of the right. This demands the extension of public water and sanitation facilities to those communities and people not covered now on account of their inability to pay. The state must adopt the necessary measures to ensure that water is affordable, sufficient and safe for present and future generations.¹¹²

In accordance with paragraph 29 of the General Comment No 15, the relationship between water and sanitation is highlighted in a way that ensuring that everybody has access to adequate sanitation is not only fundamental for human dignity and privacy, but is also one of the principal mechanisms

¹⁰⁵Moyo (n 94 above) 80

¹⁰⁶PH Gleick 'Basic water requirements for human activities: Meeting basic needs' (1996) 21 *Water International* 90 available at <http://www.pacinst.org> (accessed 28 September 2013)

¹⁰⁷n 11 above, paras 12(c)(i), 29, SCPPHR Guidelines sec 1.3(a)-(c)

¹⁰⁸n 107 above, para 12(c)(ii)

¹⁰⁹n 108 above, para 12(c)(iii)-(iv)

¹¹⁰n 109 above, para 12(b)

¹¹¹n 110 above, para 21

¹¹²n 111 above, para 25-28

for protecting the quality of drinking water supply and resources.

3.2.3 Progressive realisation and minimum core obligations

Even if human rights have equal importance and impact, economic, social and cultural rights are addressed in a different manner than are civil and political rights, which require immediate realisation. The progressive realisation means that states parties to the ICESCR have to take steps to progressively achieve the full realisation of economic, social and cultural rights, to the extent of their maximum resources. All appropriate means for the realisation of those rights, including the adoption of legislative measures.¹¹³ But the Committee on ESCR in the General Comment No 3 clarified that the state obligation not to discriminate has immediate effect.¹¹⁴

Furthermore, while full realisation may take time, due to limits of available resources, certain steps must be undertaken immediately. The General Comment No 15 states that these steps must be deliberate, concrete and targeted towards the full realisation of the right to water. So, particular attention should be put on the following nine core obligations:¹¹⁵

- In order to prevent disease, access to sufficient and safe essential amount of water has to be ensured for personal and domestic uses;
- Access to water and facilities and services has to be on a non-discriminatory basis;
- Access to sufficient, safe and regular water has to be ensured at a reasonable distance from the household;
- The personal security during the collection of water has to be guaranteed;
- Equitable distribution of water has to be guaranteed;
- A national water strategy and plan of action has to be set up;
- The realisation or the non-realisation of the right to water has to be monitored;
- Low-cost water programme for vulnerable and marginalised groups;
- Measures to prevent treat and control water-related diseases have to be taken, with a particular focus on the adequate access to sanitation.

The ICESCR imposes a minimum core obligation on states parties to ensure the satisfaction of, at the very least, minimum essentials of the right. It is important to note that core obligations do not replace the full extent of the obligation to realise the right.

¹¹³Committee on ESCR General Comment No 3 para 11 available at <http://www.unhchr.ch>

¹¹⁴Viljoen (n 15 above) 120

¹¹⁵n 11 above, para 37

3.3 The DRC's national, regional and international obligations regarding the right to water

The right to 'access safe water' is specifically mentioned in the DRC Constitution.¹¹⁶ The question is to know if there is a difference between the right to water with its all components, as discussed above, and the right to access safe water in the context of the DRC. Article 48 of the DRC Constitution states that the arrangements for the exercise of this right shall be set forth in a specific law. Until now, Congolese, bearers of this right, are still waiting for this specific law. So, the scope of the DRC national obligations to the right to water is not yet properly defined. The statement about the right to access safe water in article 48 of the Constitution does not explain the DRC's national obligations related to the right to water.

In the African context, at the regional level, the DRC has ratified the African Charter on Human and Peoples Rights (ACHPR) and the Protocol to the African Charter on the Rights of Women in Africa (Maputo Protocol). The right to water is not specifically provided for in these documents. However, in the Maputo Protocol, safe and clean water is mentioned as a condition that enhances the realisation of the right to health of women. The debate on the personal scope of the right to water within the Maputo Protocol can be raised, as discussed above about CRC and CEDAW. Nevertheless, the African Commission's Guidelines on Economic, Social and Cultural Rights expressly provide for the right to water, even if these Guidelines are soft law, non-binding on states. 'The Guidelines impose an obligation on states to ensure the realisation of the right to water by ensuring the availability, affordability and accessibility of clean and safe water to all.'¹¹⁷

The above analysis shows that the right to water is a recognised right within the African human rights system. The African Commission has adopted an approach to interpreting the African Charter in a way that reinforces the concept of interdependence of human rights. For instance, in the case of *Free Legal Assistance Group and Others v Zaire*,¹¹⁸ the petitioners made numerous allegations of human rights violations against the State. Among these allegations, there was the failure of the government to provide basic services such as safe drinking water. At paragraph 47 of its decision, the African Commission concluded that article 16 of the African Charter, which provides for everyone the right to enjoy the best attainable state of physical and mental health, had been violated. The failure by the State to provide basic services such as safe drinking water was also a violation of article 16.¹¹⁹

¹¹⁶n 25 above

¹¹⁷SM Wekesa 'Right to clean and safe water under the Kenyan constitution 2010' (2013) 14(1) *ESR Review* 3 available at <http://www.reference.sabinet.co.za> (accessed 28 September 2013)

¹¹⁸*Free Legal Assistance Group and Others v Zaire* (2000) AHRLR 74 (ACHPR 1995)

¹¹⁹Moyo (n 94 above) 70

At the international level, as the DRC has ratified the ICESCR, is member of the UN and has participated at the July 2010 UN GA and voted yes for the UN GA resolution on the right to safe drinking water and sanitation, the DRC has the obligations to respect, protect and fulfil the human right to water and sanitation. The discussions in the previous sections determine the nature and the content of the DRC international obligations on the right to water.

It is important to highlight the fact that PLWHA do not benefit from specific provisions within the international law, according to the realisation of their human right to water. Even though, the General Comment No 15 proscribes discrimination on a range of grounds including HIV/AIDS and ensures that the obligation of non-discrimination is spread through every part of the Covenant obligations,¹²⁰ the situation of PLWHA has to be analysed specifically and deeply. The DRC legislation, for instance, does not organise specific rights for PLWHA in the context of their human right to water. The 2008 DRC law protecting the rights of PLWHA is also mute about the right to water for these vulnerable people.

3.4 Conclusion

This chapter demonstrated that the right to water means the right to water and sanitation and it is a stand-alone right nowadays and is enforceable. It was shown that the CESCR through General Comment No 15 recognised the right to water as a derived right by an analysis of the centrality and necessity of water to other rights under the Covenant and the other international instruments. The adoption of the two 2010 UN resolutions, of the GA and HRC, was a very important step forward for the recognition of the right to water and sanitation. The chapter gave also the normative content of this right. It looked at the state obligations to the right to water which come from the scope of the right to water. Finally, the chapter analysed DRC's national, regional and international DRC obligations on the right to water.

¹²⁰n 11 above, para 13

CHAPTER IV

THE WATER SITUATION IN THE DEMOCRATIC REPUBLIC OF CONGO

4.1 Introduction

This chapter focuses on the water issues in the DRC. On the ground, the reality shows that the quality and the quantity of water supplied to ordinary people and PLWHA in both rural and urban areas, throughout the different parts of the DRC is quite different. Apart from placing reliance on from literature sources, the picture of the DRC water situation is shown through interviews conducted in Lubumbashi, Mbuji-Mayi and Kinshasa. It was planned to conduct interviews in

Kisangani and Goma, but due to time constraints and insecurity in the east of the DRC, the interviews were not conducted.

A research protocol was submitted to the Faculty of Law Research Ethics Committee, University of Pretoria, and written approval has been granted by the Committee. The study has been structured in accordance with ethical considerations such as the protection of the identity of all participants. The following chapter gives first and globally the water issues and challenges faced by the DRC; secondly, it highlights the water issues in the above three towns and in three rural areas or peri-urban areas around those towns.

4.2 The DRC water crisis

The current rate of access to water of the population in the DRC is around 26%. This rate is one of the lowest in Sub-Saharan Africa,¹²¹ although the DRC is Africa's most freshwater resource-rich country. The country is facing a critical drinking water supply crisis.¹²² 50 million Congolese (75% of the population) do not have access to safe water.¹²³ Both the Millennium Development Goal (MDGs) targets for water supply and the national targets (Growth and Poverty Reduction Strategy Paper DSCR), for the year 2015, are officially out of reach.¹²⁴

The DRC does not have a central water ministry. The Ministry of Environment, Nature Conservation and Tourism has the duty to protect aquatic ecosystem from all types of polluting activities, including waste-water treatment and solid waste management. The Department of Water and Hydrology under the Ministry of Energy has the role of supervisor over REGIDESO. While the Ministry of Rural Development through SNHR has the duty of developing rural and peri-urban drinking water supply services, the Ministry of Public Health is in charge of supervising the potability of drinking water, 'but its capacity to monitor water quality is seriously deficient.'¹²⁵ Under the Ministry of Planning, the National Committee for Water and Sanitation coordinates the water sector through these ministries. This committee is in charge also of resource mobilisation and donor facilitation.¹²⁶

The multiplicity of public actors and the real lack of a focal point of intervention have seriously handicapped the development of the water sector. Although there is a water code that has been under parliamentary consideration since 2010, the dysfunctional attitude of all public water actors impede the population to really enjoy their right to sufficient and clean water recognised under

¹²¹n 19 above, 6

¹²²n 121 above, 4

¹²³n 20 above, 2

¹²⁴n 123 above, 8

¹²⁵n 19 above, 22

¹²⁶n 125 above, 23

international instruments ratified by the DRC, even under the DRC Constitution.¹²⁷ Moreover, the DRC government is not able to mobilise enough resources for the water sector, 95 percent of public expenditure for the water and sanitation sector is provided by external donors, who push the Government to privatise and to decentralise the water sector through the water code drafted with their support and submitted to Parliament.¹²⁸

Approximately 44 million of Congolese live in rural areas, only approximately 7,5 million have access to safe drinking water. Although the majority of Congolese are living in rural areas, the rural water supply sector receives only 15 percent of overall water supply investments, even though springs, as a main source for rural water supply in the DRC, require minimal investment to develop and maintain.¹²⁹ This discrimination is going against one of the nine core obligations of the right to water: non-discrimination.

Paradoxically, because of mismanagement of investment, lack of qualified personnel, old state of piping system and the growth of the urban population, the urban water supply sector does not respond properly to the need of the urban inhabitants.¹³⁰ Moreover, in Katanga province for instance, where there are huge mining activities, rivers, aquifers and water sources are polluted by mining companies.¹³¹ People are using polluted water for drinking and for producing food; sometimes they eat dead fishes from polluted rivers, like river Kafubu around Lubumbashi.¹³² This sad reality is a critical situation for Congolese health and especially for the health of Congolese PLWHA.

In order to obtain a clear idea of what happens on the ground, interviews were conducted in the following towns, peri-urban or rural areas:

4.2.1 Kinshasa and its vicinity

Kinshasa is the capital of the DRC. Although Lubumbashi and Matadi, are the most important centres of REGIDESO,¹³³ most of its inhabitants still lack safe and clean water; only one person out of three can get water through REGIDESO urban water connections.¹³⁴ This town-province is growing and contains more than 9 million inhabitants; but the REGIDESO's infrastructure dates from the colonial period and was initially destined to service only 500.000 persons.¹³⁵ It is not only

¹²⁷ n 25 above

¹²⁸ n 20 above, 17

¹²⁹ n 19 above, 34

¹³⁰ n 129 above, 30-32

¹³¹ n 130 above 120

¹³² n 131 above 63

¹³³ n 132 above 31

¹³⁴ Interview of Mr L., assistant of the director of water distribution (Ngaliema-Kinshasa) 25 October 2013

¹³⁵ n 19 above 31

lack of maintenance and rehabilitation which impede REGIDESO Kinshasa, but also non-payment of water bills by public institutions.¹³⁶

Funded by Belgium, European Commission and French Agency of Development, the Belgium Technical Cooperation (BTC) developed, in association with the National Committee of water and sanitation (CNAEA) and the Organ of Interdepartmental Coordination in the sector of water and sanitation, a mini water network by drilling technique was initiated. Water is taken from the ground by an electric pump and distributed by taps without any supplementary treatments.

In four peri-urban communes of Kinshasa (Kimbansheke, Kisenso, N'sele and Maluku), a mini water network was set up and run by an association called *Association d'Usagers de Réseau d'Eau Potable* (ASUREP).¹³⁷ This association is composed of a General Assembly, an Executive Board and an Administrative Unit. People from the community obtain safe water at a cheap price: 5cents (US Dollars equivalent to almost 50 Congolese Francs) for 20 litres. As it is a non-profit association, money collected is used for the maintenance of the fountain and office expenditure such as salaries and consumables. The aim of the association is to increase the access to potable water for people who do not benefit from the water distribution of REGIDESO and where the REGIDESO pipelines are non-existent. The association also focuses on the improvement of hygiene by increasing the communal sanitation infrastructures. It is difficult to get safe water in a bad environment or where there is absence of a proper sewage disposal.¹³⁸

The daily provision of water cannot exceed 20 litres per person. Water for bathing, washing and sometimes cooking are taken from wells and rivers, because 20 litres is not enough to cover all the daily needs. The consequence of this situation is water-related diseases. The fountains are placed in the vicinity of the household, in a way that beneficiaries cannot walk more than 250 meters to get water. In order to overcome the issue of the electricity provision, the ASUREP has a generator.¹³⁹

4.2.2 Lubumbashi and its vicinity

The second most important town of the DRC according to its infrastructure and its economic role, Lubumbashi, is located in the Katanga province in the southern part of the DRC. Almost 40 percent of the population have access to water supplied by REGIDESO in the household or in the vicinity.¹⁴⁰ The water supplier (REGIDESO) has written agreements with the population but in reality, because of financial problems faced by the population, industries get more water than the

¹³⁶n 134 above

¹³⁷Interview of Mr M., administrator of ASUREP/N'sele-Kinshasa, 25 October 2013

¹³⁸n 137 above

¹³⁹Interview of Mrs S., ASUREP/N'sele user, 25 October 2013

¹⁴⁰Interview of M. K., Technical Direction/REGIDESO-Katanga, 29 October 2013

ordinary people. Indeed, more than 50 per cent of the beneficiaries of the REGIDESO water supply do not settle their monthly water bills; while there are many companies that use water to enhance their production or manufacturing of different items and pay their water bills promptly. So, REGIDESO sometimes privileges companies, in order to cover the water production cost, maintenance and to pay salaries. Ironically, more or less 50 per cent of the population, who pay their water bills, could lack water supply.¹⁴¹

The lack of electricity is another issue which impedes seriously the REGIDESO water supply. There is a recurrent theft of electrical cables of the National Company of Electricity (SNEL). Indeed, water machines need a lot of electricity.¹⁴²

The water situation in Lubumbashi is critical. Because of the pollution from mining companies and the old state of the pipeline, people avoid drinking water from the tap without supplementary treatment. Some people use a filter, others drink boiled water. One person out of ten drink literally mineral water which is expensive (dollars US 0,7 per litre equivalent to 700 Congolese Francs).¹⁴³

In order to have a sufficient quantity of water, some inhabitants of Lubumbashi take groundwater with the drilling technique without any bacteriological or toxicological studies conducted before the drilling as is required.¹⁴⁴ There is a dilemma on the choice to make between quantity and quality of water.

There is around Lubumbashi a phenomenon called 'Kishimpo'. The latter is the combination of 'Kishima' (well) and 'Mpompi' (tap or pipeline). In some areas of Lubumbashi, like Mbongonga, Kinkalabwanga or Kamisepe, where some years ago there were few pipeline networks of REGIDESO, but in bad state, people make a hole around the pipeline and section it in order to obtain water like a spring. It becomes like a well providing water by a pipeline. People use that water even for drinking. That is why many people suffer from water-related diseases like cholera. The former administrator of the Kampemba commune, in March 2013, tried to assist people who were sick from cholera, got the disease and even died.¹⁴⁵

In Kaponda village, a rural area that is 25 kilometres from Lubumbashi, people are using water from wells and rivers, but since 2010, people from this area are beneficiaries of the programme named *Village et Ecole Assainis*, conducted by UNICEF and the Congolese Ministry of Health. The project provides free groundwater from a manual pump and training on personal hygiene and sanitation.

¹⁴¹n 140 above

¹⁴²n 141 above

¹⁴³Interviews of Ms N. and Mr T., inhabitants of Kampemba and Ruashi in Lubumbashi, 29 October 2013

¹⁴⁴CL Banza et al *Santé environnementale* (2013) 160-164

¹⁴⁵Interview of Mr W., inhabitant of Bongonga in Lubumbashi, 29 October 2013

The management of this source of water is given to the authorities of the village and the follow up for maintenance is in the hands of the NGO World Vision. People can get only 20 litres per person per day and as the village is small, people have the physical access to this source of water.¹⁴⁶

4.2.3 Mbuji-Mayi and its vicinity

The water situation in Mbuji-Mayi is worse in comparison with Lubumbashi and Kinshasa. Mbuji-Mayi is located in the centre of the DRC; its economy depends on the diamonds mostly extracted by the artisanal way and industrially by a national company called Minère de Bakwanga (MIBA) which has slowed down its activities, because of lack of investment. There are two water supply networks, from REGIDESO and MIBA, but only 5 to 10 per cent of the population can have a limited access to water. MIBA has its own water network, as well as its own electricity network, for its industrial needs and for its employee's houses which are located in a fancy square. But water and electricity is provided only for 7 hours per day.¹⁴⁷

People have to rely on others sources of water, like spring water or rivers which are few and located far away from the town. In the communes of Dibindi, Bipemba and Kanshi, the CTB has set up some ASUREP, like in Kinshasa. Those ASUREP provides water in the same conditions like in Kinshasa, but only for 10 per cent of the inhabitants of Mbuji-Mayi.¹⁴⁸

We met a septuagenarian woman who told us:

“Katsha bandela, ntu nwa anu mayi ya mpokolo; tshena ni mushidu wa ku sumba mayi ya mpompi. Nzambi udi ulama, udi umpesha bukola bwa mubidi. Tshitu mpeta tusama sama to.”

That means: Since my childhood, I have been drinking only spring water; I cannot afford to get water from the tap, it is expensive. God is taking care of me and gives me a good health. I do not get the opportunistic diseases.¹⁴⁹

4.3 The particular situation of PLWHA throughout

Honestly, we did not meet PLWHA in Kinshasa and Mbuji-Mayi to whom we could ask questions related to water. The HIV/AIDS prevalence in the DRC is one of the lowest in Southern Africa, approximately 1,3% of the population.¹⁵⁰ However, because of the difficulty of conducting effective HIV/AIDS surveillance campaigns due to the persistent civil war,¹⁵¹ the vastness of the country and the inaccessibility of certain parts of the country, this rate may be inaccurate.

¹⁴⁶Interview of Mr Z., traditional authority of Kaponda village, 29 October 2013

¹⁴⁷Interview of Mr T., water technician at REGIDESO/Mbuji-Mayi, 28 October 2013

¹⁴⁸Interview of Mr C., administrator of ASUREP/Dibindi-Mbuji-Mayi, 28 October 2013

¹⁴⁹Interview of Mrs B., inhabitant of Dibindi in Mbuji-Mayi, 27 October 2013

¹⁵⁰n 16 above, 18

¹⁵¹Ashton & Ramasar (n 17 above) 219

So, out of 100 persons, only one or two can be HIV positive and are not ready to disclose their HIV status easily to a stranger. Some people we have met in those two towns even asked for money; they were ready to give false stories and we did not trust them.

In Lubumbashi, there are some well-known associations which are involved in HIV/AIDS matters. We met a former president of the national association of PLHWA. As a response to our questionnaire, he said that he collects water directly from the tap in his household. He is taking ARVs and time to time, he got some skin diseases. For him, water collected from the tap seems safe; but sometimes, when it is raining, water from the tap contains soil and the health can be compromised. In that particular circumstance, he used a filter, because he cannot afford bottled water.¹⁵²

4.4 Water quantity versus water quality

The Congo River is the second biggest river in the world according to its debit which is at least 40.000 m³/sec. The basin of Congo River is large and contains thousands of small rivers. The rainfall is abundant, a minimum of 1.500 mm per year.¹⁵³ This water recharge natural rivers, groundwater, lakes and it is easy to capture for distribution, but it requires a treatment with chlorine.¹⁵⁴

There is a lot of water in the DRC, but this water is not always clean and safe for personal use.

There are many studies that have been conducted on the quality of water related to the toxicological aspect, but there is a dearth of specific studies about the microbiological state of water in the DRC. On 08 September 2013, using the Ontario water collection guideline, we collected water from a tap in Kinshasa at 8 am and we put it in cool box. We spent 45 minutes from the hotel to the airport of Kinshasa. In the plane, the water collected was in a fridge. We arrived in Lubumbashi around 1pm and conserved the water in a fridge at the airport of Lubumbashi and there we collected another sample of water from a tap. At 4 pm, we took a plane to Johannesburg. We landed at 6:30 pm and put the two samples of water in a fridge at 7:45 pm. The guide on water collection for analysis requires that the sample can be exposed in an ordinary environment for 2 hours at least.¹⁵⁵

For the microbiological analysis, I interacted with Professor Maggie Momba from Tshwane University of Technology in Pretoria. I asked her for an analysis for *Escherichia coli*, *Salmonella*, *Campylobacter*, *Vibrio* and *Aeromonas*. She told me that selective media for these organisms are

¹⁵² Interview of Mr Q, former president of Lubumbashi PLWHA, 29 October 2013

¹⁵³ n 134 above

¹⁵⁴ Banza et al (n 143 above) 163

¹⁵⁵ 'Practices for collection and handling of drinking water samples' (2009) Ontario, Ministry of the Environment, Laboratory service branch 14

very expensive and she ordered them from overseas; the results reach Pretoria after 4 to 6 weeks. Also, results for a scientific work must be statistically meaningful. This means that water samples should be analysed for a period of 6 months on a weekly basis to come up with conclusive evidence.¹⁵⁶

The toxicological analysis of the same samples of water was conducted at University of Johannesburg, where I got facility for a free analysis.

The determination of elements in the collected waters was conducted using a standard calibration method.¹⁵⁷ The multi-elements reference materials standards solutions containing seven elements with different concentrations were prepared which include Mg (Magnesium), Fe (Iron), Mn (Manganese), Co (Cobalt), Zn (Zinc), Cu (Copper), Al (Aluminium) (1, 5, 10,20, 30 and 40 ppm). The measurements were performed using a GBC Inductively Coupled Plasma optical emission spectrometry (ICP-OES), equipped with Quantima sequential 3.01. Results are shown in Table 1 and table 2 for the waters collected in Kinshasa and Lubumbashi (Democratic Republic of Congo) respectively.

Table 1. Element concentration in water from Kinshasa

Elements	Wavelength (nm)	Concentration (mg/l)
Mg	279.553	3.16
Fe	259.94	0.4782
Mn	257.61	-
Co	228.616	-
Zn	213.856	0.4512
Cu	324.754	0.1914
Al	309.271	0.2948

Table 2. Element concentration in water from Lubumbashi

Elements	Wavelength (nm)	Concentration (mg/l)
Mg	279.553	38.6106
Fe	259.94	0.397

¹⁵⁶E-mail from M Momba on 28 September 2013

¹⁵⁷ A Chochorek et al 'ICP-OES determination of select metals in surface water- a metrological study' (2010) 19 1 *Polish J. of Environ. Stud.* 59-64 available at www.pjoes.com (accessed on 30 September 2013)

Mn	257.61	-
Co	228.616	-
Zn	213.856	1.1324
Cu	324.754	0.1878
Al	309.271	0.1143

The high level of magnesium in water from Lubumbashi shows the interference of mining activities on the quality of drinking water in Katanga. Further analyses need to be conducted with a team of specialists to assess the effect of the different elements found in the waters collected in Kinshasa and Lubumbashi.

4.5 Conclusion

As mentioned above, the DRC is the Africa's most freshwater resources country. But a big part of its population does not have adequate access to drinkable water. Apart sources from literature, the picture of the water situation in DRC was shown through interviews conducted in Lubumbashi, Mbuji-Mayi and Kinshasa. It was planned to reach Kisangani and Goma, but it was impossible to proceed, due to time and insecurity.

In order to obtain a clear idea of what happens on the ground, interviews have been conducted. Samples of water have been taken in Lubumbashi and Kinshasa and analysed in South Africa. Only the toxicological analysis was carried out while the bacteriologic test requires more funds and expertise to get accurate results.

CHAPTER V

THE REASONS FOR THE WATER CRISIS IN THE DEMOCRATIC REPUBLIC OF CONGO

This chapter gives the reasons why the DRC does not comply with its human rights obligations according to the right to water. It enumerates only these reasons without a deep analysis, further works could focus on the details. These are the reasons:

- The corruption throughout the country;

It is informally well known that there is a high percentage of corruption in the government. The state should focus on putting together a task team to probe the issue of corruption in the DRC. This will help ministries to function optimally and to work together with other ministries dealing with water affairs.

- The multiplicity of ministries involved in water issues;

Many ministries are currently dealing with water affairs in the DRC which affects the accuracy of the ministries to tackle serious water problems faced by the population especially PLWHA due to interference from each other. The government should allocate water affairs to one ministry which could help enhance the tackling of problems on the ground.

- Lack of qualified personnel;

The main water supplier in the DRC (REGIDESO) should focus on screening in the employment process and initiating a robust training of its personnel especially people working on the design of the water supply pipe network and treatment of water.

- Pollution from mining activities;

The mining industries in the DRC should implement solutions for the purification of waste water such as funding research at local universities for solutions to purify waste water from the mines. This will not only increase the research within universities, but also reduce water borne disease in the population especially PLWHA.

- Old state of pipe system and the growth of the urban population;

As previously said, the lack of a proper piping network has a serious effect on the production and distribution of drinkable water. Government needs to address the issue by, for example, enhancing research at university level, training artisans and technicians and employing skilled people in the management team of the water supplier (i.e. REGIDESO).

- Absence of budget allocated to the water sector;

The DRC government is not able to mobilise enough resources for the water sector, 95 percent of public expenditure for the water and sanitation sector is provided by external donors, who push the Government to privatise and to decentralise the water sector through the water code drafted with their support and submitted to Parliament;¹⁵⁸

- Bad collection of taxes

The existence of various offices for taxes collection is a handicap to the development of the water supply network in the DRC since many entities have controls over taxes generated from the payment of water bills.

- The dysfunctional attitude of all public water actors;

The main water supplier in the DRC (REGIDESO) must engage with the population and stakeholders in trying to solve the water problems in the country. This could help in reducing the consequences of the lack of proper water infrastructure.

- Absence of a proper sewage disposal throughout the country

The lack of good infrastructure and incompetence of staff while allocating plots or giving the right to build to individual or industries without a prior thorough investigation on the building of proper sewage. This is usually due to the high price of the construction of sewages which individuals and companies try to avoid and corruption within the municipalities.

- Absence of water law and specific policy;

The government should focus on drafting and implementing a solid right to drinkable water to its population to reduce the growth of water borne diseases. This could also help reduce the vulnerability of PLWHA to contract water borne diseases.

- Recurrent war in the eastern part of the country;

The high percentage of rapes in the eastern part of the DRC has increased the number of PLWHA

¹⁵⁸n 20 above, 17

even though there are no reliable publications on the real percentage of PLWHA living in that part of the country. In the long term and due to the recurrent war in the east on the DRC, the number will rise and if there is still no implementation of the right to drinking water, PLWHA will be the most to suffer.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The objective of this study was outlining the problems faced by the lack of a proper right to water with a focus on PLWHA.

The DRC is one of the countries which ratify promptly international human rights instruments and which have huge problems with the actual implementation of the rights enshrined in those instruments, including the right to water. Although the DRC is Africa's most freshwater resource-rich country, it is facing a critical drinking water supply crisis.¹⁵⁹

REGIDESO water (main water supplier) were collected from Kinshasa and Lubumbashi and were analysed using ICP-OES. Results show a high level of magnesium in the water from Lubumbashi which was suspected to be contaminated by the waste water from the mining activities, thus demonstrating the negative effect on the quality of drinking water in Katanga.

Furthermore, interviews were also conducted on the challenges faced by the population to access to drinkable water. These interviews were conducted in Kinshasa, Lubumbashi and Mbuji Mayi.

In Kinshasa, with a population of 9 million inhabitants, one person out of three has access to potable water. It was found that this was due to the state of the water supply network which was built during the colonial era and was only meant to supply 500.000 people. Efforts have been made in Kinshasa to reduce the lack of drinkable water by international organisms but challenges on getting proper water is still a problem.

Lubumbashi, the second most important town in the DRC according to the infrastructures and its economy, is also facing a similar problem. It was found that though the water supplier (REGIDESO) has agreements on paper with the population but in reality, because of financial problems faced by the population, industries get more water than the ordinary people. This was partially due to the non-payment of water bills. Companies on the other hand do honour their contracts with the water supplier which tends to give privilege to them in order to cover the water production cost, maintenance and pay salaries. Ironically, more or less, 50 per cent of the

¹⁵⁹n 19 above, 4

population, who pay their water bills, could lack water supply.¹⁶⁰

Lastly, interviews were conducted in Mbuji Mayi which is the worst affected by the lack of proper water infrastructures compare to Lubumbashi and Kinshasa. It was found that there are two water supply networks, from REGIDESO and MIBA, but only 5 to 10 per cent of the population can have a limited access to water. Most of the population have to rely on other sources of water, like spring water or rivers which are few and located far away from the town. It was assumed, after the completion of the interview and due to the state of the water supply network, PLWHA will be the most affected due to their low immune system.

6.2 Recommendations

A good foundation has been placed while conducting this study; there are still some aspects that require further investigation. These include:

- Water from other locations in the DRC need to be collected and microbiological and toxicological analyses must be carried out to establish the level of contamination. The investigation must be conducted with analytical chemical, specialist in corrosion of pipes and waste management specialists in order to know the origin of the contamination of different water samples from different locations.
- To conduct an investigation on the effect of the non-access to clean and safe water to meet PLWHA in particular and the whole population in general.
- To engage with the government in speeding the process to implement the right to water for the population of the DRC.

¹⁶⁰n 139 above

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Interview of Mr L., assistant of the director of water distribution (Ngaliema-Kinshasa) 25 October 2013

Interview of Mr M., administrator of ASUREP/N'sele-Kinshasa, 25 October 2013

Interview of Mrs S., ASUREP/N'sele user, 25 October 2013

Interview of M. K, Technical Direction/REGIDESO-Katanga, 29 October 2013

Interviews of Ms N. and Mr T., inhabitants of Kampemba and Ruashi in Lubumbashi, 29 October 2013

Interview of Mr W., inhabitant of Bongonga in Lubumbashi, 29 October 2013

Interview of Mr Z., traditional authority of Kaponda village, 29 October 2013

Interview of Mr T., water technician at REGIDESO/Mbuji-Mayi, 28 October 2013

Interview of Mr C., administrator of ASUREP/Dibindi-Mbuji-Mayi, 28 October 2013

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ANNEXE

QUESTIONNAIRE

Categories of people:

- People from urban areas (a)
- People from rural areas (b)
- PLWHA from urban areas (c)
- PLWHA from rural areas (d)
- Agent/ official of urban water supply service (e)
- Agent/ official of rural water supply service (f)

Type of questions for (a) (b) (c) and (d)

1. What is your source of water supply? Tap/river/bore hole/well/stream/lake.....?
2. If the water is not available inside your home, how far away from your home do you or your assistant need to go to collect the water? Who collects the water for you? How often do you need to do this? How many litres do they collect? What do you use your water for? Where do you bath? Where do you wash? Where do you go to the toilet? Where do you wash your clothes? How much of water do you use for each of these activities? Do you boil the water or treat in any way before consuming it? Or cooking with it? Or washing fruit, vegetables and food? Brushing teeth? Bathing? How do you dispose of dirty water?

DECISION OF RESEARCH ETHICS COMMITTEE:

LUKETA MUKUNA EMILE

After review of the submitted research proposal and supporting documentation
ETHICAL CLEARANCE for the proposed research is hereby APPROVED.

Signed: _____ (Chairperson of the Committee)

Date: October 2013

In the case of undergraduate research relevant supervisor notified.

In the case of postgraduate research relevant supervisor/promoter notified as well as the
Chairperson of the Postgraduate Committee.