



CHAPTER TWO

2. WATER AND ITS PRIVATIZATION

“Wherever the river goes, every living creature that swarms will live, and there will be very many fish, once these waters reach there. It will become fresh; and everything will live where the river goes” (Ezekiel 47:9).

2.1 INTRODUCTION

It is widely recognized that water is vital or multiple and universally agreed-upon aspects of human well being, like health, economic security, and freedom from drudgery. More than a billion poor people are deprived of access to water of sufficient quantity and quality to meet even minimal levels of health, income, and freedom from drudgery.

Several people die annually from water-borne disease. Women and children especially do not have access to clean water and are as such exposed to infected water, which affect them adversely. Women and children again have to walk several kilometres to water sources to get clean water, and they do this daily carrying big and heavy water containers.

Globally, water is abundant but unevenly distributed in time and space. According to Dr Rogate R. Mshana, a Tanzanian scholar, inequality in water use is a major concern in water management. “There is also a global inequality in water use. The population of Nairobi, Kenya, pays five times more for water than a North American citizen does; for when a toilet in North America is



flushed, a person is using the same amount of water that one person in the developing world uses all day to wash, clean, cook and drink”(Stirring the waters 2006:17).

This is an indication that some people have more water as compared to others and this brings inequality as well as inaccessibility into the system. In some parts of the globe, water is wasted especially where people regard it as priceless or where it is under-priced. Value must be given to water in the sense of collecting, cleaning and its distribution. Another problem that the globe faces when it comes to water is its overuse for the wrong purpose.

The church cannot underestimate the fact in Genesis 2 that: “Water flows out of God’s Paradise over the world.” As paradise is a gift for all, water should be regarded also as a gift for all. If this is so then clean fresh water should be available to meet the basic needs of all, instead of being bought and sold.

Christians use water in different ways, like baptism; some sprinkle the water on the cleansing. A new life begins any time water is used for cleansing. Any time we get up in the morning, we wash our faces; take a shower all signs of beginning a new life. In the book of John, Jesus referred to himself as the stream of life-giving water.

Figuratively, water is used for salvation because water is life. Wells in the biblical times were a great treasure because it provides safe drinking water. Jesus asking the Samaritan woman



at the well for water to drink is an example (John 7:38-39). It is the duty of the church to make sure that water, which is a symbol of life, reaches all human beings whether rich or poor.

2.2 GLOBLIZATION OF WATER RESOURCES

In the book of Isaiah God assures the children of Israel that He never allows what the children of Israel have laboured for to be enjoyed by the foreigners. He promises them that they will now be able to enjoy the gifts given to them by the nature as well as the fruits of their labour (Isaiah 12:8-12). Psalm 24 begins with the words. “The earth is Yahweh’s, with its fullness; the world, and those who dwell therein.” Isaiah assures the children of Israel that the gifts of nature belong to God and he had created them to be enjoyed by all mankind. He is the only one who had power on them.

While Isaiah indicates that the world belongs to God, the current world is in the hands of Global Trade and multinational companies. Everything had been globalized and traded in the international markets, including basic commodities such as water. Global trade is important for all the citizens of the world, because it helps continents and countries to share.

The brighter side of global trade is that it helps the world to share resources, i.e. countries that do not produce certain commodities are able to share them from those that produce them. For an example, the European and North American climates cannot produce certain products such as coffee, bananas, cocoa, yet they need them for their survival. They have the skills of producing or



manufacturing beautiful and useful items, but for them to do so, they need to import them. The darker side of global trade is that often global trade is carried out at the expense or exploitation of the poorer nationals. The grain of the third world is and continues to be the food of the first world.

Africa is a rich continent. It is indeed a paradox that Africa has immense human and material resources, yet it is faced with utmost poverty. Africa is rich in natural resources such as gold, diamonds, oil, platinum, coal, water etc. If these resources were managed efficiently, and effectively, poverty, wars and civil conflicts would be part of folklores told to children. Because Africa is not equipped to process the raw materials it has, it relies heavily on developed countries and nations. These are taken away from the continent and processed elsewhere. The raw materials help to give employment to people in other countries while those who produce them earn nothing. To add salt to the wound is that when the finished products return from the first world factories, they are too expensive for the people who produced the original raw material.

Africa is rich in water resources yet the agricultural sector of the continent is doing badly. Rivers such as the Nile, the Congo, The Limpopo, the Zambezi, Lake Tanganyika, Lake Victoria, Lake Malawi, the Lesotho Highland water etc, all have water that can help the continent to produce enough food for its inhabitants. The first world has seen potential in these rivers and they have globalised their water. Waters from these natural resources were channelled by the African colonizers to feed their industries and



even went to an extent of restricting its use by the indigenous people.

Millions of litres of water is being exported from Africa in so-called “Mineral Water” content and sold bottled in the developed countries. People are discouraged from using natural water from the rivers and wells and are sold bottled water. Global companies have come into the continent to build huge water companies such as the Rand Water Board and everybody has to pay for the use of water.

Therefore Africans cannot enjoy the fruit of the gifts of nature given to them by God as Isaiah says: “water does no longer belong to nature, God but to companies. Anyone who want to use it, be it for domestic or commercial use, one has to pay.”

2.3 OTHER KEY PROBLEMS AND ASPECTS CONCERNING WATER

This research reflects on the critical nature of water-related issues caused by privatization of water system, global warming, climate change, pollution, encroaching aridity and salinity, diseases, water access and political conflict.

Following are some of the key problems and aspects concerning water which the researcher offers to the church leadership, other stakeholders and communities who want to engage their responsibilities for environmental stewardship and economic justice through study, reflection and action:



- Too many people around have little or no access to clean water.
- A key reform option, preferred by many donors and agencies, is the privatization of water system, making it a conditionality for aid, and taking responsibility for making water accessible to all out of governments' hands.
- The poor are the worst off because they cannot afford high prices. For example, in Nouakchott (Mauritania), low-income families now pay up to a fifth of their household budget on water alone, while in Cochabamba (Bolivia) water prices doubled overnight after privatization (Marcus et al 2002; Schultz 2002). In the poor township of Fort Beaufort (South Africa), water prices increased by 600 percent between 1994 and 1996 following privatization (Afrol News 2002).
- Women and children are especially affected: it is they who, in many contexts, have to fetch water for their household needs.
- There is no one to really be held accountable for the implications of privatization of water system.
- Every day, more than 25,000 die from waterborne diseases.
- Approximately 80 percent of diseases and over one-third of death are caused by contaminated water.
- 65 percent of infant deaths from diarrhoea and cholera could be prevented in developing countries by providing safe water and sanitation.
- A child dies every 15 seconds from bad water and sanitation.
- Billion people lack access to an adequate supply of water.
- 2.4 billion people lack access to adequate sanitation.



- Over 2 million people mostly children, die annually from water related diseases (www.wateraid.org).

In addition, poor women bear a disproportionate burden of the unpaid chore of fetching water for domestic use, while they are excluded from many opportunities to create wealth with water. Water has rarely been a “free good” for women in many parts of the world. If poverty is defined as living below generally accepted standards of well being, for multiple and interrelated dimensions of well being, water deprivation is typically one of its characteristics.

One facet of water deprivation that is widely recognized as a typical characteristic of poverty is sub minimal access to safe water and sanitation facilities, which results in severe waterborne diseases, and often in exorbitantly high costs in labor or cash. A comprehensive approach is necessary, one that recognizes that poor people’s water needs are multifaceted.

Water especially affects income generation, another major element of well being, of which poor people are typically deprived. Poor people’s self-employment and wage employment opportunities in urban and especially rural areas depend on water, as well as other factors.

2.4 NO WATER NO LIFE

Water is a symbol of life. In the book of Genesis, the Bible affirms water as the cradle of life, an expression of God’s grace in perpetuating for the whole of creation. Water was there even before life was. “In the beginning of creation, when God made



heaven and earth, the earth was without form and void, with darkness over the face of the abyss, and a mighty wind that swept over the surface of the water” (Genesis 1: 1-2).

It is a basic condition for all life on Earth (Gen. 1:2ff) and is to be preserved and shared for the benefit of all creatures and the wider creation. Water is the source of health and well-being and requires responsible action from us human beings, as partners and priests of Creation (Rev. 22:1ff). As churches, we are called to participate in the mission of God to bring about a new creation where life in abundance is assured to all (John 10:10; Amos 5:24). It is therefore right to speak out and act when the life-giving water is pervasively and systematically under threat.

The World Alliance of Reformed Churches describes water as “God’s Gift for life”. It is central to the conditions of life on earth and the survival of all creatures on our planet, from the moment of conception to the second of death. The critical nature of this resource has become clearer in discussion and research about global warming, climate change, endangered species, encroaching aridity and salinity, diseases and conflict (Fisher 2006:10).

The question to ask is: “Why should water be equated to life?” Water, to all living things is very vital for various reasons. Water relates to both spiritual and geopolitics. Faith symbols and sacraments nurture our souls while safe drinking water ensures our physical survival.



The life of nearly every creature on earth depends on water for survival. At sunset, a chirping bird, an opening rosebud, a friendly dog receiving us home, a hug from our friends and for those we love. All of these moments need water to occur. Sunsets are more beautiful with some light clouds and there are no clouds without water; as there are no birds, no flowers, no human kind without water. Life as we know it, is just not possible without water.

Out of water God created life. No person can live without water including all living things. “God provided water so as to sustain all life”. It is out of this that the slogan “water is God’s gift for life is derived.” This gift should be respected by creation in appreciation. It should not be wasted but preserved at all cost because it sustains all living creatures. It makes the world beautiful. Where there is no water there is no life. When one saves water, one is saving life. Everybody should have to learn to be water wise, meaning that people must use water sparingly and responsibly, i.e. not pollute it, waste it, etc.

In all ages, water has been precious and people have expressed appreciation to the almighty God for the provision of water, more especially in times of need such as drought etc. People as recorded in the book of Numbers here below, became excited over the wells because they knew that they were going to live again:

“Well up, spring water!

Greet it with song,

The spring unearthed by the princess,

Laid open by the leaders of the people



***With sceptre and with mace,
A gift from the wilderness” (Numbers 21:18).***

God’s greatest gift to creation is the gift of water. He initiated water as gift on the day of creation. This is demonstrated in the divine plan of the universe. It is for this same reason that water was given as a gift of life that human being should trust in Him the giver of life rather than trusting on human beings.

The statement: No water-No life is so significant in the life of all living things on our earth. Nothing will have life on this earth without water. The most serious thing that can happen to life on this earth is the absence of water. As such, many people equate the rainfall to ‘a sign of God’s favour and goodness’ (The new Bible Dictionary 1980:1317), and the absence of it is regarded as a curse on the people.

To symbolize this, water is used for several reasons. Christians see water as God’s blessing and of spiritual refreshment. The prophet Jeremiah describes God as the fountain of living waters. “Two sins have my people committed: they have forsaken me, a spring of living water” (Jer. 2: 13).

Water is therefore very significant in the entire Bible. It is sacred and central to many ceremonial rituals like feet washing and religious sacraments like baptism. Priests, for example, were washed during their consecration. The Levites as well as the chief priests went through the removal of ceremonial defilement by the use of water as recorded in the book of Ezekiel.



***“I will sprinkle clean water upon you, and you shall be clean from all your uncleanness, and from all your idols I will cleanse you. A new heart I will give you, and a new spirit I will put within you; and I will remove from your body the heart of stone and give you a heart of flesh. I will put my spirit within you”
(Ez. 36:25-27).***

Water is good, it gives life but at times we all fear water that it brings disaster and catastrophe if not well managed

Taking into account, the drowning of the Egyptians in the Red sea, the 2004 Tsunami and 2005 Hurricane Katrina. We could also say that water could pose danger to human life and the environment. People are drowned when the rain falls beyond expectation. Lives, property and the environment are at times lost in very heavy down pour. Water is very important for both human and the environment, but if not properly managed it can cause great havoc.

Without water, there would be no life. Most advanced countries depend on the electrical energy derived from water. This is the energy used in the big industries. For this energy to be renewed, there is the water cycle, which helps to keep the water flowing.

Through this we have “the water from the oceans and other exposed bodies being evaporated by the sun, formed into clouds, returned to earth as precipitation, and then flows once again from the high ground into the ocean (Friedman 1982:343). This way, it can easily be said that water movement is very critical, and it enhances the importance of the life-giving element of water.



2.5 WATER, GOD'S GIFT AND VITAL RESOURCE FOR LIFE

2.5.1 WATER RESOURCE FULFILLS MULTIPLE FUNCTIONS

Water resource is very vital for the fulfilment of so many functions. The researcher assumes that we all heard that the average adult body is 75% water and 25% solid matter. In fact, water is second only to oxygen as essential for life.

Aside from aiding in the digestion and absorption of food, water regulates body temperature, carries nutrients and oxygen to cells, removes toxins and other wastes, cushions joints and protects tissues and organs including the spinal cord from shock and damage and contribute to elasticity in the skin (which can significantly slow the development of wrinkles).

To perform so much for so many organ systems, we need lots of fresh water on a daily basis to stay healthy and in peak condition.

Water, and conversely, the lack of water, plays a major role in the functioning (or malfunctioning) of every major body system. From brain functions to proper digestion and elimination, proper hydration can ensure efficient and regular body functions. At the same time, you would be surprised at the myriad of ailments and symptoms experienced every day that are simply your



body's way of telling you subtly and sometimes not so subtly, to drink more water.

The body has more than the one 'dry mouth' indicator of water shortage. Actually the human body possesses a variety of sophisticated indicators of dehydration and thirst. Unexplained backaches and headaches are often your body's way of asking for more water. Swollen limbs are also a sign of low water intake.

Water resource is therefore very vital for the fulfilment of so many functions. Following are other main functions for water's vital role for both the environment and human:

2.5.1.1 Water and human health

The absence of water has a critical health implication. Changes in rainfall affect the presence and absence of vector and water-borne pathogens. A change in temperature and precipitation boosts the population of disease – carrying mosquitoes resulting in the increase of malaria epidemics.

Today, it is seldom noted that billions of people around the globe lack access to the most fundamental foundations of a decent civilized world which is basic sanitation services and clean drinking water. (Gleick 1998: 39).



The author is of the same view with Akhtar Hameed Khan that “access to safe water and adequate sanitation is the foundation of development. For when you have a medieval level of sanitation, you have a medieval level of diseases, and no country can advance without a healthy population (Unicef 1997).

Gleick supports the same when he says: “failure to provide basic sanitation services and clean water to so many people takes a serious toll on human health.” He continues to say: “In many developing countries, cholera, dysentery, and other water-related diseases are on the upswing” (1998:39).

Nearly 250 million cases are reported every year, with between 5 and ten million deaths. Diarrhoea diseases leave millions of children underweight, mentally and physically handicapped, and vulnerable to other diseases. Yet we are falling further and further behind in our efforts to provide these basic services (1998:39).

Between 1990 and 1997, some 300 million more people were added to 2,600 million already without adequate sanitation services, a clear indication that the world community is failing to meet the most basic need (1998:39).

The following case study illustrates what Gleick is saying regarding the outbreak of waterborne diseases



as a result of the scarcity of safe drinking water and sanitation. It is reported that:

CASE STUDY 3

“In South Africa, the former homeland of Kwa-Zulu suffered a major outbreak of cholera where more than 12000 cases were reported and 24 people died. This was in the year 1982. As part of the relief program, the then apartheid government erected nine communal taps on the border of Ngwelezane. For the first time, residents of Ngwelezane were able to access purified water. Some people were even able to connect water into their houses. For seventeen (17) years people of this community had running water.

The local municipality covered all cost of water until when the town council introduced measures for more rigorous financial management. Here, residents were required to pay a flat monthly rate of \$4.50 for water and electricity. At the end of 1989, the nine communal taps were converted to prepaid metres. To access water, residents had to pay a connection fee of \$5. Only 700 households could afford the registration fee. The No money No water principle was applied. Two thousand families remained unconnected.

In August 2000, four of the prepaid taps stopped water. Even those households who had money did not have access to water until after three weeks when the meters were working again. All this time boreholes were dry and during this time 11 percent of Ngwelezane’s residents had no choice but to get



water from the rivers streams and dams as a result of this cut-off.

People started using ponds and streams contaminated with cholera bacteria, and the disease spread like wildfire. The first cholera outbreak in the area was reported in the year 2000. Within four months there were thousand of cases of the disease, which spread through food or water contaminated with cholera.

The disease ultimately spread to the Eastern Cape, and then to the capital, Johannesburg, becoming the largest cholera outbreak in the South African history before it ended in early 2002. About 120000 people were infected and 265 were killed.

The local council eventually reacted by removing the prepaid metres from communal taps and charging people a flat rate of \$2.50 per month for water. The South African government gave Kwa-Zulu – Natal \$ 2.5. million in emergency funds to fight cholera in the province. Water was also trucked into affected areas at a cost of \$45.000 per month. How hard it is to fathom how a democratic government, which prides itself with promoting progressive water legislation, could experience one of the biggest outbreaks of cholera. The government has no way, but to do away with its policy of “cost recovery”. The state is also paying tens if not hundreds of times more dealing with the health crisis as a result of trying to recoup its water costs” (waterprivatization/metr...2006\10\30).



It is therefore important to note that safe drinking water is prerequisite for the maintenance of human health (Lundqvist & Gleick 1997:3).

2.5.1.2 Water supply and ecological / environmental health

Water is central to the conditions of life on earth and the survival of all creatures on our planet, from the moment of conception to the second of death. The critical nature of this issue has become clearer in discussions and research about global warming, climate change, endangered species, encroaching aridity and salinity, diseases and conflicts.

It is very important that church communities recognize their responsibilities of environmental stewardship and economic justice through biblical studies and theology of water.

They should raise awareness and encourage action by the faith communities. This should be done by caring for the natural environment and promoting eco-justice, using the extensive network of the churches and religions in their countries, in order to conscientise their members and to encourage environmental action by:

- urging faith communities to act to raise awareness of the crisis;
- making personal commitments to a more sustainable lifestyle;



- lobbying the public and private sectors to make appropriate policy and technology choices, to support education initiatives, and to support those who will be most severely affected by climate change; and
- working with all concerned groups seeking solutions to the crisis.
- seeking to uphold principles and ethics for sustainable living
- establishing eco-justice – that is economic and environmental justice
- caring for the earth and water resources
- stemming the extinction of plants and animals
- finding ways of reducing fossil fuel consumption, eliminating waste, and using clean energy
- designing and constructing ‘green’ buildings
- promoting sustainable livelihoods and income generation options
- educating both children and adults to better understand the splendour of creation and the role they could play in ensuring that current and future generations can enjoy it as well.

People in their own localities should dedicate themselves and educate others in better water practice and reduce waste, fight pollution and privatization and rally for the survival of endangered species and rescue



of communities threatened by drought, floods and other forces of nature.

There would be no life on earth if there was no water. Water was and continues to be the home for the earliest and most simple forms of life on planet earth. From the smallest bacteria to the biggest mammal, plants and animals need water to grow and flourish.

Lack of water due to drought can be deadly for plants, animals and human communities. Water pollution can severely hamper not only the quality of life of the communities affected, but even their health and the very existence.

2.5.1.3 Water and productive health

Water is very crucial in the production of food to feed the Earth's growing populations. Gleick quotes the 1992 Dublin Conference that acknowledged the importance of food security concerns and suggested alternative approaches ensuring that future food goals are met. The conference acknowledged that: "Achieving food security is a high priority in many countries.

Water is therefore essential for food production. Irrigating crops results in a high loss of water through transpiration and mineralization. One of the biggest problems in agriculture today is to reduce the loss of



water by irrigation. It is estimated that irrigation results in the loss of over billion gallons of water per day.

Agriculture must not only provide food for rising populations, but also save water for other uses.

The challenge is to develop and apply water-saving technology and management methods, and, through capacity building, enable communities to introduce institutions and incentives for the rural populations to adopt new approaches, for both rain fed and irrigated agriculture (1997:22).

In South Africa, approximately 50% water use is devoted to the irrigation of 1.3 million ha of land, accounting for 25-30% of South Africans total agricultural output. Water rights are a complex issue, further complicated by the difficulty of granting water rights to individuals on land held in traditional communal tenure in the former homeland territories. The national Department of Water Affairs and Forestry (DWAF) is responsible for the development of national water infrastructure, and for the allocation and control of scarce water resources.

The national Department of Agriculture (DoA) is responsible for marketing standards and norms, and the provincial Departments of Agriculture for supporting and developing irrigation farming.



The goal here is to grow enough food to meet the world's needs and to deliver it where it is needed. Water is therefore needed for the growing of food not only for international markets, but for countries and families as well.

Water-short regions cannot produce sufficient food to meet all their domestic needs. Water scarcity has a negative impact on food production at both the regional and national level. It is therefore necessary that countries formulate sound water policies that will ensure access to food security.

2.5.1.4 Water and carrier functions

Crops require water to transport the nutrients from the soil into the plants. Since there are few waste products discharged by plants, the water taken in by the plant is largely lost by transpiration. Thus it is that plants have a tremendous demand for water. In instances the agricultural activities result in interception of the water before it runs off in our streams or into the ground. Water plays an active role in diluting and transporting waste. It is also very important in the natural erosion and land processes of the global water cycle.

2.5.1.5 Water and psychological functions

Water is important in making water bodies, water views, fountains, etc. It plays a role in many religions and cultural activities, e.g. baptism.



2.5.2 Water-Nature's Thirst Quencher

The Bible from Genesis through out emphasizes the fact that water gives us life. In the book of Isaiah, it is said: "Come, all you who are thirsty, come to the water" (Isaiah 55: 1). The liquid content of our physical bodies is very great, as more than 75 percent consist of water. All living things need water to survive as St. Francis of Assisi succinctly called water *la humilde hermana*, i.e. our humble sister restores, refreshes and purifies our lives at the end of a heavy labour.

Over half of your body is made up of water. It's in every cell and every tissue. Biological processes like circulation, digestion, absorption and excretion depend on water. It forms the foundation of blood and lymph, maintains hearty muscles and young looking skin, lubricates joints and organs and regulates body temperature. You can't function without it.

As you grow older, it becomes vital to pay attention to your water consumption. Mature persons hold less cellular water, with a loss of 10 to 15 percent of previous capacity by the age of 65. A contributing factor is the loss of thirst sensitivity. Because water is so important for digestion, a lack of fluid in your body might make it more difficult for you to digest food. You may suffer from cramps, bloating, gas, constipation, diverticulosis or even colon cancer. Drinking more water, combined with a high-fiber diet, can prevent these problems. To combat this loss of fluids, the answer is simple. Drink more water. Six to ten glasses of pure water each day are



necessary to enhance your body's functioning. Beyond helping your digestive system, getting enough fluids will give fresh skin, clear eyes and shining hair. Signs of hunger may be a warning flag that your body needs a good drink. Try consuming several glasses of water before diving into a snack to see if that takes care of your craving. Because fruits are largely made up of water, they are perfect choices for a mid-afternoon treat.

2.5.3 Water needed for keeping ourselves clean

Every human being needs to keep his / her body clean and can only be done with water apart from the spatial cleanliness. The Israelites, especially their women encountered a whole lot of problems in the wilderness especially when they got to places where there was no water.

2.5.4 Water needed for keeping the surroundings clean

We need water to clean our homes, to cook, to wash our clothes and many other things. The Bible tells us that 'Cleanliness is next to Godliness'. Therefore, water cleanses us and draws us nearer to God. In their words, water gives us life. Without water, there is no life. Plants, small and big need water to survive.

Water adds to the beauty of the earth. Whenever there is a long drought, we have dead plants around us and the blossoming of the beautiful flowers elude us. Everything around us looks dry and deadly.



2.5.5 Water needed for the brain and mental functions

Although the brain is 1/50* of the body's total weight, it uses 1720th of the blood supply. Brain cells are 85% water. The brain is one of the unique organs that is always active, even in deep sleep. The tremendous amounts of energy expended on a continuous basis require ample amounts of water to maintain proper hydration and functioning of mental processes.

Dehydration can lead to short-term memory loss, headaches including migraines, light-headedness are really an indication of severe dehydration of the brain and eyes. This explains why one of the key symptoms of the onslaught of a migraine is visual distortion and temporary blindness.

2.5.6 Water needed for digestive functions

The digestion of solid food depends on a sufficient supply of water in the body. Although it is imperative that one cannot eat and drink at the same time, (thus diluting digestive acids and enzymes and delaying the digestion of food); an amply hydrated system more efficiently eliminates waste and toxins from the body. Without proper amounts of water in the body, foods are not broken down completely enough to pass from the stomach into the intestines. This can lead to gastritis, duodenitis (inflammation of the small intestines), ulcers, heartburn and acid stomach. Constipation is also a frequent symptom of dehydration.



Chronic dehydration can lead to weight gain, poor muscles tone and water retention in the form of swelling of the limbs and bloating.

2.5.7 Water needed for skeletal functions

The cartilage tissue found at the ends of bones and between The vertebrae of the spine hold water that serves as a lubricant during the movement of the joint. When the system is well hydrated, the joints move smoothly and with ease.

When there is lack of water, the bones rub together, hindering movement and causing pain. If not corrected by sustained increased water consumption, severe pain, joint deterioration and inhibited movement of the affected joints can occur.

2.5.8 Water needed for kidney functions

The kidneys remove wastes such as uric acid, urea and lactic acid from the body. All of these substances must be dissolved in water to pass through the bladder and out of the body. When there isn't enough water, these wastes are not effectively removed. This can result in kidney and urinary infections, kidney failure and kidney stones.

A very simple way to determine whether you need to drink more water is to check the colour of your urine when relieving yourself. When the body is properly hydrated your urine will range from clear to pale yellow. If your urine is yellow or orange, drink more water immediately!



2.5.9 Water needed for medication purposes

For medication purposes, water is needed for the following:

2.5.9.1 Sterility procedures – where it is needed for:

- Personal health before and between procedures, e.g., procedures for hands decontamination
- Cleaning of theatres, wards, floors and most importantly for hygiene purposes
- Sterilizing of equipments
- Washing of hospital linen (Vlok 1983: 304-320).

2.5.9.2 Administration of oral medication and dilution of injections

2.5.9.3 Hydration:

- Water is very important for resuscitation purposes
- It is needed for intravenous (drip) therapy and oral treatment (Vlok 1991: 763-775).

2.5.9.4 For humidifying of air, water is needed for:

- Pertinent on oxygen therapy
- Intubation in Intensive Care Unit
- Nebulizing patients with asthmatic conditions
- Suctioning of airway to assist vacuum
- Air conditions in theatres to maintain particular temperatures (1991: 675).
- Reducing pyrexia by drinking cold water and bathing with cold water
- People with burns can be given water via intravenous therapy to maintain fluid loss due to burns (Vlok 1983: 350-351).

Looking critically at the above reasons for having good water



around us, one can say that all living organisms need good and clean water for survival. The reader will understand that privatization of water system makes medication to be very expensive where the poor are the ones to suffer the most as they do not afford to pay for medical expenses.

Water does not only give life to living things. It is very sacred, a gift of the creator as well as the source of life” (Women’s Magazine 2006:17). Every living thing including the environment has a right to water, but greed and poverty has driven us into the commodification of this resource. The acquisition of water, the gift of the creator must be available to both the poor and the rich, because everybody needs water.

People who claim monopoly of this very important need are committing sin against God. Water, being a free gift of God should be a public responsibility and not the property of some individuals. It is in the book of Ezekiel that we find the most appropriate text for water as a sign and gift of life. The whole prophecy of Ezekiel is marked by visions and symbolic actions. It is evident that the book of Ezekiel perceives the conception of water as an origin of life.

In the Old Testament a fundamental distinction is made between stagnant water that dirties and is not drinkable and living water that is drinkable and flows freely. Sea water is also conceived sometimes and sprouts all forms. Not only the earth but also the sea symbolizes the material breast.



What a prophet Ezekiel was! Even though he came from the priestly line, he broke all the parameters and canons of priestly theology to enter with great enthusiasm into the theology of exile, with new categories of the glory and presence of God proclaiming *a viz voz* (“in a loud voice”) that God was present, not only in the temple and in Jerusalem but in the midst of suffering people in their land of exile.

The Old Testament never restricted the action of God, of Yahweh, to the confines of Israel. All lands and all people are inside the will of the Creator. But for people in the days of Ezekiel to be exiled was synonymous with being abandoned by their God. In foreign and impure lands, Yahweh was concealed and undetected because the glory of Yahweh always glowed in Jerusalem, in the temple. Isaiah saw it there. But Ezekiel was given in exile, next to the river Chebar (Ezekiel 1:3). Yes, he saw God’s glory in the Mesopotamian valleys and not in the mountains of Zion.

“So I rose up and went out into the valley; and the glory of the Lord stood there, like the glory that I had seen by the river Chebar; and I fell on my face” (Ezekiel 3:23).

Ezekiel identified the presence of Yahweh in the difficult moments. Yahweh is there among the oppressed and enslaved people, in solidarity with the poor and next to the exiles. This provided comfort and spirit to those that looked toward the north with sadness and despair; from there, from that direction, the Babylonians had brought them to the river Chebar. What a relief! God had not forgotten their ways. How in solidarity was their God.



To provide comfort and to make the exiles reborn to a new life was the main reason for the vision of Ezekiel. The water would be spilled on them as a blessing. “I will sprinkle clean water upon you, and you shall be clean from all your uncleanness, and from all your idols I will cleanse you. A new heart I will give you, and a spirit I will put within you; and I will remove from your body the heart of stone and give you a heart of flesh. I will put my spirit within you” (Ezekiel 36:25-27).

2.6 THE NOTION ON THE SCARCITY OF WATER RESOURCE

Water has become scarce all over the world particularly in Africa and other developing countries.

There are mixed feelings about the notion of the scarcity of water resource. Terence Lee for an example argues against the scarcity of water resource saying: “in the absolute sense, however, even given climate change, water is not becoming scarcer. It is true that the amount of water is finite, but it is not only finite, it is inherently stable. We are not using up water resource, because we cannot use it up. Water is not exhaustible in the sense that coal, oil, any metal ore or other no-renewable natural resources are. The amount of water available on earth has not changed for a very long time. Why then is there this concern about water scarcity (1999:1-2).

In South Africa, however, like Lee, the author finds it difficult to accept the notion of the scarcity of water resource since a lot of water in the area of research and other areas in the country is left



to flow freely from rivers to the sea. In the area of research, rivers such as Olifants and Klein Letaba near Phalaborwa, Sabie and Sand Rivers in Hazyview, Crocodile and Komati Rivers in Nelspruit and Komatipoort respectively, Blyde River, Great Letaba and other tributaries flowing from the Drakensberg mountains to mention but a few, is left to flow to the sea.

Water from these rivers should be harvested, and stored in dams for future use by people, animals and environment. The newly constructed Inyaka Dam in Bushbuckridge is a practical example. Similarly, there are so many rivers flowing from the Republic of South Africa. This water can be harvested and stored for future use.

Many of the problems being faced in the water sector can be traced as Winpenny puts it: to the way in which both the supply and use of water are planned, regulated, managed and financed. The laws governing the use of water and the institutions that have arisen to manage it are frequently obstacles to making more rational use of the resource” (1994:32).

Many professionals, scholars in different parts of the world, share the notion on the scarcity of water resource. This expressed opinion is shared by many people involved in water management in both developed and developing countries (Uitto & Biswas 2000:226).

In the midst of such amazing water weather, it is difficult to believe the notion on the scarcity of water resource. Postel clearly point



out that “the total volume of water some 1,360,000,000 cubic kilometers, would cover the globe to a height of 2.7 kilometres is spread evenly over its surface. But more that 97% is locked in icecaps and glaciers, and a large proportion of the remaining 1% lies too far underground to exploit” (1997:27).

Postel goes on to say “Each year, evaporation fuelled by the sun’s energy lifts some 500,000 cubic kilometres of moisture into the atmosphere 86% from the oceans and 14% from the land. An equal amount falls back to earth as rain, sleet, or snow, but it is distributed in different proportions: where the continents lose about 70,000 cubic kilometres through evaporation, they gain 110,000 through precipitation.” (1997:27)

Each year therefore, about 40,000 cubic kilometres of renewable water are transferred from sea to the land. This is the water the society needs to support a moderate standard of living.

The scarcity of this resource is attributed to various factors such as:

The uneven distribution of water and the fact that two thirds of it is left to make its way back to the sea leaving about 14,000 cubic kilometres as a relatively stable resource of support. (1997:28)

It is argued that the scarcity of this resource is attributed to a number of factors such as population growth, increased demand on agricultural water, industrialization, urbanization and climatic change (Uitto&Biswas:226). Such a scarcity of this resource causes problems for both human and ecosystem health. The crisis of the scarcity of this resource is so marked as to cause serious



economic, political and social repercussions such as conflict over fresh water.

2.6.1 POPULATION GROWTH

The number of countries which population surpassed the level that can be sustained comfortably by the available water resource is increasing. Postel records that 26 countries, collectively home to 232 million people, fall into the water-scarce category. 11 of these water-scarce countries are in Africa. Many of them have high population growth rates, and so their water problem are growing fast (1997:29).

This rapid demographic change takes place as households unbundled, over crowded households split up and finds separate lodgings, posing difficult challenges to service delivery.

By 1997 the world's population was 5.8 billion where about a fifth of the population lack adequate water for their livelihood. (Postel 1997:x). Human numbers always outstrip the ability of local water supplies to sustain a moderate standard of living. (1997:18). It is estimated that by 2025 as many as 3.6 billion people could be living in countries where water supplies will be too limited for food self-sufficiency. Africa and the Middle East alone will have more than 1.3 billion people living in water stressed countries.



It is therefore evident that there will be insufficient food to feed the population, and that even in the case where food should be imported; the price will be too high.

2.6.2 INCREASED DEMAND ON AGRICULTURAL WATER

In order to feed the above-mentioned population including the ever-increasing figures, it is obvious that agriculture should claim the biggest share of water supplies as compared to other water users.

It is estimated that 65 percent of water taken from rivers, lakes and aquifers is used for food production. This percentage rises as the population grows (Postel 1997:20). Industries are the second largest claim of water after agriculture. A large amount of water for example is used to generate electricity, papermaking, street production, plastics manufacturing and other materials needed on the daily bases. All these takes copious amounts of water.

It is estimated that by the end of this decade, some 22 cities worldwide will have populations of 10 million or more of the 22 cities, it is estimated that 18 of them will be in the Third World. (1997:21) Surely, this will need more water.

2.6.3 INAPPROPRIATE WATER MANAGEMENT

In most cases, people have taken water for granted that its use and abuse threaten the very life-support systems we all depend



on (Postel: xxxiv). People abuse water and the environment in different way:

2.6.3.1 *Destruction of Forests*

In cutting down trees to sell wood or to clear the land for cultivation, the results are that many of the plants and animals that live in forests become extinct.

We also lose the firewood, medical plants and other products that come from the forests. With trees and other vegetation gone, rain runs off the land faster, leading to devastating floods.

2.6.3.2 *Water Pollution*

As already indicated, the growing human populations have reduced the amount of water available per person and increased pollution of drinking water by fertilizers and pesticides from farms carried by rain water. This ends up contaminating a lot of usable water and such water ends up not usable.

It is very important to protect rivers so that they remain healthy and well functioning. This is fundamental to the workings of the natural world as their decline represents a crippling of the planet's circulatory system and a crumbling of its ecological foundation. (Postel 1997:xvii) Rivers, flood-plains, lakes swamps, wetlands and deltas



are fresh water-ecosystems that performs a host of vital functions such as:

- (i) delivering of nutrients to the sea for the nourishment of marine food webs.
 - (ii) sustenance of fisheries.
 - (iii) dilution of our waste products.
 - (iv) Provision of convenient shipping channels.
 - (v) maintenance of soil fertility including offering some of the most inspirational natural beauty on the planet. (1997:xiii)
- Postel goes on to remind us that “these ecosystem services are now deteriorating rapidly.

Numerous human activities from the construction of dams, dikes and levees to uncontrolled pollution, excessive river diversions and the draining of wetlands are destroying ecological functions before they have been properly valued or sometimes even before they have been identified” (1997:xviii)

2.6.4 INDUSTRIALIZATION AND URBANIZATION

As already indicated, industries make the second largest claim on water. Generating of electricity, production of paper, steel, plastics and other materials used on daily bases takes copious amount of water. It is estimated that by the end of this decade, some 22 cities worldwide will have a populations of 10 million or more. Of the 22 cities 18 of them will be in the Third World.



(Postel 1997:20–21) Surely this will increase the consumption of water which is already scarce

The rapid urbanization in many towns and cities in South Africa exacerbate the problem of the scarcity of water as Buhlungu and his co-writers put it: “In the Western Cape, for example, it is estimated that the Cape Town area receives an additional 16000 households per annum, many from the Eastern Cape” (2007:72).

As people move in search of jobs, causing the level of migration to be very high, resulting in the housing and service backlogs to be almost impossible to reduce. HIV/AIDS on the other hand contributes to the household poverty, furthering demographic changes as households re-bundle in the wake of the death of wage earners (2007:73).

2.6.5 CLIMATE CHANGE DUE TO GLOBAL WARMING

Global warming is affecting Africa more than the industrialized world despite being the inhabited continent least to blame for the greenhouse effect.

Scientists believe that the world is now on the verge of changing our climate through human activities that produce gases, the burning of fossils fuel, the destruction of forests, and a wide range of industrial and agricultural activates. This greenhouse effect has widespread consequences for every aspect of life on earth. (Gleick 1998:137)



Climate determines where people live, how we live, the kind of crop we grow, their success and failure, the location, size, operation dams and reservoirs, the kinds of structures we build along our coastlines, and even the clothes we buy.

The greenhouse effect has a negative impact on water resources. Water managers and their stakeholders have to start thinking about long-term water planning and management. The change in climate impact in the rainfall and those depending on agriculture for their livelihood suffers greatly, particularly the poor.

African economies are overwhelmingly agriculture – based and highly susceptible even to minute variations in temperatures and rainfall. Farmers in the developed world can often make up for short rainy seasons by using man-made water sources. Africa’s farmers on the other hand often labor without the most basic irrigation systems.

Burdened by decades of underdevelopment and impoverishment, the agricultural industry so crucial to African economies is now increasingly crippled by periodic droughts. In addition to its environmental impact, climate change in Africa is made even drier by the continent’s limited resources.

The capacity of most African nations to respond to rapid environmental changes is diminished by infrastructures and budgets already strained by a multitude of competing challenges. In Africa, climate change does not act in isolation,



but instead it is just one additional problem as we already contend with a lot of problems such as poverty, food insecurity, civil wars and conflicts.

Sub – Saharan African countries are slowly being starved of their lifeblood – water. Rain, upon which we all rely, but upon which the reliance of farmers in non industrialized countries is more acute, are shorter, more unpredictable and often more intense. Three million people on the African continent alone survive by growing crops or rearing cattle.

Climate change due to global warming is the cause of this change resulting in the scarcity of rainwater and “changes in precipitation, evapotranspiration, runoff, and soil moisture: In short, from changes in the most important variables for water planning and management” (1998: 140) this has a negative impact to the African poor masses.

As water becomes more and more scarce and its quality continues to deteriorate. Policy makers have been compelled to explore new approaches to improve the management of water resource. Water pricing reforms are among various measures designed to encourage the efficient use of water resources.

Surveys demonstrate that many countries have been engaged in such pricing reforms lately. As already stated one key reform option, preferred by many donors and agencies, is the privatization of water system taking it all out of government's



hands, making it a conditionality for aid, and taking responsibility for making water accessible.

Water has therefore, become the “oil-fights”, the commodity gold, of the future living people particularly the poor of the developing countries without potable clean water for drinking, cooking, washing and mostly that for agricultural purposes (farming), the purposes why it was freely given. Poor people depend on water for their alleviation and eradication of their abject poverty and sustenance.

The research is therefore aimed at defending the rights of the poor and the rest of creation and educating the rich. All human actors (rich and poor), therefore, must be accountable to standards and norms greater than themselves, which then acts as regulations measurers.

In spite of the reasons given, water should be kept away from markets, which are thirsty for money and big profits at the expense of the poor by making water to be unaffordable. In fact, the strongest and most emotional criticism of the activists against privatization of water system is that it has a devastating impact to the poor and the rest of creation.

Barlow puts it very well when he says: “When water is privatized, prices are set on the open market. As a result, millions of poor people have been cut off” (1999:16). This makes their lives more difficult. The following case study



illustrates the negative impact as a result of privatization of water system.

The author will share two case studies in order to show the devastating impact of privatization of water system resource.

CASE STUDY 4

“In the South African area of Nkobongo, where David Radebe lives, the French water company Saur won a 30-year concession in 1999 to provide water and purification services to the area’s diverse population of 40,000. Saur formed a local company in consortium with four South African companies, called Siza Water Company. Saur was the majority shareholder, while the majority black South African companies shared the rest.

Water that was once free for the poor suddenly carried a price tag. Initially, families such as Radebe’s could afford it. Pleased to have cool, fresh running water in his new home for the first time in his life, Radebe gladly paid the connection fee and his first water bill totalling 63.58 Rand (\$6.40) a copy of which he retains as a keepsake.

But in 2001, Radebe lost his job as a gardener at a construction company. School fees, food costs and rising water and power rates quickly drove the family into debt. The household’s electricity was cut off, and the water stopped flowing. Radebe tried to install a pipe to bypass his water meter but was arrested and released on a warning. He had to



beg the school headmaster to reschedule the kids' school fees. With no water, his vegetable patch dried out and the electric stove was of no use since the electricity had been cut off. Radebe did not have money to pay for the stove, and it ended up repossessed.

Radebe told city officials he would never be able to pay. So they removed his water meter altogether. Many of his neighbours and friends also experienced cut offs. Ninety percent of township residents now access water from sources other than the Siza Water Company” (waterprivatization\metr....2006\10\30).

The author argues that scarce as it is, the management of water resource should be left in the hands of sovereign states that have the responsibility to ensure that all people have access to it. These big companies like Vivendi, Suez and Aquas de Barcelona are there to make profit and not for service to the people. They are there to monopolize (“they have the ability to influence the market price of water services) (MIT 1986:286) the service delivery of this resource, as water supply will now be transferred from a state monopoly to a private sector monopoly.

People living in poorer areas, particularly those living in slums are left without access to safe drinking water. They cannot manage to dig wells to get underground water as digging a well is expensive and that underground water is often polluted.

The second story concerns an emerging farmer who also had a problem in obtaining water for his farm:



CASE STUDY 5

One emerging farmer at the Shikundu Village, in Limpopo Province, of the Republic of South Africa sharing his frustration with the researcher concerning accessing ground water says:

“In attempting to solve the problem of the scarcity of water for my small farm, I decided to spare some money for a borehole. It took me more than ten (10) years to raise the amount of R30 000 for this project.

I finally managed to have a borehole erected. I was now happy that the problem of water had come to an end, and that I will be able to recover the money I spent on the borehole, only to receive a statement from water affairs department charging me the water I pumped with my borehole. This has taken me back to my initial problem”.

This research is meant to mobilize and raise awareness to the church and its stakeholders that access to water is one of the basic-human rights for all living creatures and ecosystem, earth should have (Gen 9:8-17). The research is aimed at lobbying them to find ways to protect water and to ensure that everybody has access to it in an equitable way including all the other creatures on earth.

2.7 PEOPLE’S PERSPECTIVE ON WATER

Perspective on the value of water changes considerably from one society to the other, from culture to culture, and from one time period to the next. The author grew up in a very fertile area in the



Limpopo Province of the Republic of South Africa. Here people could grow anything without the use of fertilizers, if we had water.

Rain came only every three years so we had to get water from rivers and hand-dug wells. Wells would go dry if not carefully managed by the whole community, which depended on them for survival. So water was used only for what was really essential to the household, that is, cooking, drinking, washing, and weekly showers, so that we would have enough for livestock and gardens.

Water was so precious to us! Stewardship of water left a lasting impression on those of us who lived in the area. Wasting water, and misusing it, were two important taboos, which children were taught from an early age. The author grew up to learn that respect for water was one of the values that held our community together. It brought solidarity and cohesion so that, despite the scarcity of water, no one died of thirst.

The researcher has lived in modern societies for many years now. In these societies, one has seen that water has been “tamed” for the convenience, comfort and enjoyment of people. With the help of technology, water comes to some homes and other public places in abundance particularly in the white communities. Environmentalists have put much effort into conscientizing urbanites to use it with moderation, but how effective can such a campaign be, given the consumer mentality that measures quality of life by purchasing power? “If I can afford to pay for a bath twice a day, why should I settle for a shower once a day?”



In addition to domestic overuse of water, there is industrial exploitation of water, e.g. building dams and mills. One sees total disrespect and arrogance when water – river, sea or ocean, which is home to a myriad of living creatures is used as a dumping place for industrial and toxic waste. There is also increasing overuse of water for entertainment, e.g., swimming pools, fountains and golf courses.

As part of modern society and sharing in its responsibility, there is what one would call “domestication of water.” Water is tamed and exploited for its energy, and life-giving and sustaining quality. As in all forms of domestication – human, animal, natural element – domestication of water is exploitative, disrespectful and abusive. As in all forms of domestication, it creates ripples throughout the ecosystem. One of these is the exploitation of weaker communities through privatization of water system.

Looking at Africa in particular, one needs to be aware that many African countries have experienced the destructive effects of drought in the past few years. Such a situation could be blamed on climatic changes, but human responsibility towards care of the environment cannot be overlooked.

Deforestation in search of arable land, for instance, caused desertification in countries where demographic growth had increased exponentially. Where there is no forest, rain is also scarce. In some places, deforestation precipitated the clogging and eventual “death” of rivers due to slit formation from soil erosion. The use of hand-dug wells, if not effectively supervised,



may also cause desertification due to the depletion of underground water that irrigates soil from beneath.

On the other hand, there is another African reality that needs to be considered and discussed among us. In traditional Africa, water is given an important spiritual role. In many countries, traditional cultures see water as the medium through which life and healing flow to, and within, the community. Water is also the medium used for the giving of blessings. It is used in many religious rites, thereby symbolizing life in abundance.

However, it is also common for some communities to worship water springs, lakes and rivers. One might argue that people worship spirits dwelling in the water, and not the water itself. But in some communities, the distinction between spirits and water is unclear. In many cases, as a place or object of worship, water becomes inaccessible to the community. Because of religious taboos associated with the worship of water, community development work is often hampered: for example, water cannot be used for irrigation or even for consumption.

How do the church, address issues of water? Does the church have a simple answer to this complex problem? Will the church be able to come up with clear directions on how to address these issues within a limited time? The church needs to be realistic and see her task in perspective. Consultations at the sub-regional and national levels should be done.



From this perspective, the author sees a need to address faith-based organisations approach to the issues of water. This means inquiring as to how one's faith informs the way one addresses these issues. In our case, it is to inquire as to what value, if any, does the Christian faith assign to water, and what does Christian faith say about human responsibility in relation to water? What the author attempts doing is to draw a broad picture of the biblical perspective that forms the basis of Christian teaching on water.

2.8 THEOLOGICAL AND ETHICAL FOUNDATION FOR WATER AS GIFT AND RIGHT

The biblical creation story in Genesis lays down some of the fundamental understandings of water. In the beginning the spirit of God was hovering over the water (Gen 1.2) even before creation began, signifying the fact that water is pre-creation source and becomes the basis for the creation that followed. Heaven and earth were called out of the waters (Gen 1.6-10). The waters were blessed with abundant living creatures (Gen 1.20-21).

God uses water to nourish and sustain creation, and gives it as a blessing on the whole of creation (Gen 1.20-23, 2.6.). Water becomes a means of God's creation. In other words, it is the lifeline of God's creation. It is also important to note that water can become a tool of destruction in the face of human wickedness (Gen 7.1-24) and ecological destruction e.g. the 2004 tsunami and Hurricane Katrina in 2005.

The New Testament carries on this symbolical importance of water. John's gospel abounds in references to it. (Koester



2003:175-2006) During Jesus' baptism, water becomes the context of divine revelation (John 1.31-33). It is also considered to be purifying in nature, as it is closely identified with the Spirit of God. "Living water" (John 4.10) is another expression that needs our attention, as it signifies the new life, which Jesus promises. The gospel of John also narrates two important healing stories by the pool side (John 5:1-9 & 9:1-14).

The purpose of this brief biblical overview is to highlight the creational thinking that underlines the significance of water in human communities as life-giver and sustainer of this complex ecosystem. It is important for us, as Christians, to recognize this aspect of the life and ministry of Jesus Christ. The presence of water ensures life and the absence of it spells death. In other words, water comes to represent the divine among creation.

In the Judeo-Christian faith, water plays a primordial and central role. Scripture, i.e. both the Old and the New Testaments, speak of water in a manner quite astonishing to us today. Water is more than one of the natural elements essential for our existence. It has a special meaning in Christian spirituality.



One could write the whole theology, and ethics, based on water, but the author chooses to write briefly about three biblical themes on water among many others. These three themes are selected to crystallize for us how scripture understands and speak on water, and to help us move into the ethical implications from faith perspective. The three themes are water and God, water and life and water, a gift of life. In

2.8.1 WATER AND GOD

In Christian theological reflection, creation begins with the spirit of God “brooding over the face of the waters” (Gen. 1:2). Later, drought becomes a symbol and image of divine judgement (Isaiah 33:9), and the eschatological hope of the prophets comes to be expressed through the promise that rivers will spring up in the desert (Isaiah 43:19). Communities experience threat not only through the absence of water but when there is too much, as in sea level rise, and when it is impure as a result of inadequate sanitation. For the Christian community these images are further developed in baptism where water becomes the image of renewal, of promise, and of hope.

According to the creation story in Genesis, time began with the creation of light. Before there was light, water was already in the embrace of God’s spirit. Before everything else was created, water was already with God in the beginning, in other words, creation began with water.



2.8.2 WATER AND LIFE

According to biblical cosmogony, it was in the womb of water that time and space were formed to allow for life to unfold. There was water in the heavens above and water in the deep below (Gen 1:6-8, 8:2) being thus surrounded by water depicts a depth of great mystery, beauty (cosmos, and both security and precariousness).

Water is therefore the cradle and source of life, and one of the most potent bearers of cultural and religious meanings. Christian theological reflection has its roots in these two observations. Life in all its form is impossible without water. It was only the development of planetary conditions that allowed for the presence of large quantities of water in its liquid state that made possible the emergence of life on earth. Without water and its particular qualities, biological life as we know it would be impossible. Water is a precondition for life, a given and a gift from God.

Water is a symbol of life. The Bible affirms water as the cradle of life, an expression of God's grace in perpetuity for the whole of creation (Gen. 2:54ff.). It is a basic condition for all life on Earth (Gen. 1:2ff) and is to be preserved and shared for the benefit of all creatures and the wider creation. Water is the source of health and well-being and requires responsible action from us human beings, as partners and priests of Creation (Rom. 8:19ff., Rev. 22). As churches, we are called to participate in the mission of God to bring about a new creation where life in abundance is assured to all



(John 10:10; Amos 5:24). It is therefore right to speak out and to act when the life-giving water is pervasively and systematically under threat.

It is for this reason that the World Alliance of Reformed Churches describes water as “God’s Gift for life”. Water is central to the conditions of life on earth and the survival of all creatures on our planet, from the moment of conception to the second of death. The critical nature of this resource has become clearer in discussion and research about global warming, climate change, endangered species, encroaching aridity and salinity, diseases and conflict (Fisher 2006:10).

The question to ask is: “Why should water be equated to life?” Water, to all living things is very vital for various reasons. Water relates to both spirituality and geopolitics. Faith symbols and sacraments nurture our souls while safe drinking water ensures our physical survival.

The life of nearly every creature on earth depends on water for survival. Fisher puts it succinctly that: “At sunset, a chirping bird, an opening rosebud, a friendly dog receiving us home, a hug from our friends and for those we love. All of these moments need water to occur. Sunsets are more beautiful with some light clouds and there are no clouds without water; as there are no birds, no flowers, no human kind without water. Life as we know it, is just not possible without water” (2006:47).



Water was there even before life was. “In the beginning of creation, when God made heaven and earth, the earth was without form and void, with darkness over the face of the abyss, and a mighty wind that swept over the surface of the water” (Genesis 1: 1-2).

Out of water God created life. No person can live without water including all living things. “God provided water so as to sustain all life”. It is out of this that the slogan “water is God’s gift for life is derived.” This gift should be respected by creation in appreciation. It should not be wasted but preserved at all cost because it sustains all living creatures. It makes the world beautiful. Where there is no water there is no life. When one saves water, one is saving life. Everybody should have to learn to be water wise, meaning that people must use water sparingly and responsibly, i.e. not pollute it, waste it, etc.

In all ages, water has been precious and people have expressed appreciation to the almighty God for the provision of water, more especially in times of need such as drought etc. People as recorded in the book of Numbers here below, became excited over the wells because they knew that they were going to live again:

***“Well up, spring water!
Greet it with song,
The spring unearthed by the princess,
Laid open by the leaders of the people
With sceptre and with mace,***



A gift from the wilderness” (Numbers 21:18).

God’s greatest gift to creation is the gift of water. He initiated water as gift on the day of creation. This is demonstrated in the divine plan of the universe. It is for this same reason that water was given as a gift of life that human being should trust in Him the giver of life rather than trusting on human beings.

The statement: No water-No life is so significant in the life of all living things on our earth. Nothing will have life on this earth without water. The most serious thing that can happen to life on this earth is the absence of water. As such, many people equate the rainfall to ‘a sign of God’s favour and goodness’ (The new Bible Dictionary 1980:1317), and the absence of it is regarded as a curse on the people.

To symbolize this, water is used for several reasons. Christians see water as God’s blessing and of spiritual refreshment. The prophet Jeremiah describes God as “the fountain of living waters (Jer. 17: 13), water is very significantly in the entire Bible. Priests were washed during their consecration. The Levites as well as the chief priests went through the removal of ceremonial defilement by the use of water. Water is good, it gives life but at times we all fear water.

Taking into account, the drowning of the Egyptians in the Red sea, the 2004 Tsunami and 2005 Hurricane Katrina, we could also say that water could pose danger to the human



life. People are drowned when the rain falls beyond expectation. Lives and property are at times lost in very heavy down pour. Water is very important to the human life, but if not properly managed it can cause great havoc.

Without water, there would be no life. Most advanced countries depend on the electrical energy derived from water. This is the energy used in the big industries. For this energy to be renewed, there is the water cycle, which helps to keep the water flowing.

Through this we have “the water from the oceans and other exposed bodies being evaporated by the sun, formed into clouds, returned to earth as precipitation, and then flows once again from the high ground into the ocean (Friedman 1982:343). This way, it can easily be said that water movement is very cyclical, and it enhances the importance of the life-giving element of water.

Human community is therefore dependent on water, not just physically, but socially and culturally. In the scriptures we see the identification of particular cultures with the rivers from which their sustenance is drawn. When the people “refuse the gentle water of Shiloah” (Isaiah 8:6), we are being told that they have forgotten their divine vocation. The consequence of this is a judgement lived out in exile beside the wrong river (Ps. 137).



This correlation between culture and the water systems beside which people live, and in relationship to which they gain their livelihood, provides a basis for the church's solidarity with Indigenous People and, indeed, with all peoples who are displaced from their home and alienated from the waters that have traditionally given them life.

To show the fragility of the human habitat the Psalmist sings of God having "spread out the earth on the waters" and calls on the congregation to "give thanks to the Lord for God's steadfast love endures for ever" (Ps 136:6). Water is brought to the fore; and sustains life, as we know it.

2.9 CONFLICT OVER FRESH WATER

Access to fresh water supplies is becoming an urgent matter across the planet. The survival of 1.2 billion people is currently in jeopardy due to lack of adequate water and sanitation. Unequal access to water causes conflicts between and among people, communities, regions and nations. Biodiversity is also threatened by the depletion and pollution of fresh water resources or through impacts of large dams, large-scale mining and hot cultures (irrigation) whose construction often involves the forced displacement of people and disruption of the ecosystem. The integrity and balance of the ecosystem is crucial for the access to water. Forests are an indispensable part in the ecosystem of water and must be protected. The crisis is aggravated by climate change and further deepened by strong economic interests. Water is increasingly treated as a commercial good, subject to market conditions.



Scarcity of water is also a growing source of conflict. Agreements concerning international water courses and river basins need to be more concrete, setting out measures to enforce treaties made and incorporating detailed conflict resolution mechanisms in case disputes erupt.

Vandana Shiva, a well-known scientist and activist from India has published a book titled *Water Wars*. In this book, Vandana analyzes the erosion of communal water rights in different parts of the world, and points to the increasing number of conflicts concerning access to water, e.g. “the failure of the basin’s three countries of Iraq, Syria and Turkey to reach water-sharing agreements has created an atmosphere of competition and mistrust that could breed future conflict (Postel 1997:80).

We see many cases of post-modern society and governments maliciously beginning to fight for control over water resources and against the sell out of public water services to private companies. Postel makes the example of the Middle East who have heard more than one leader voice the possibility of going to war over the scarcity of water resources. “Talk of a water crisis in the Middle East has become almost legendary with some of the highest population growth rates in world and heavy reliance on irrigation for their agricultural productivity. Middle East countries have much at stake when, it comes to distributing the regions supplies of water. Enough leaders have spoken of the potential for wars over water that new warnings have begun to lack bite “(1997:74). Another example is that of the former USSR president Michael Gorbachev who told the Third world Water Forum in Kyoto that



failure to reverse the global water crisis could lead to “real conflict” in the future.

Mr Gorbacher warned that all countries in river basins would have to co-operate to prevent tensions and those legal powers must be made tougher to forestall any potential flash point.

(<http://news.bbc.co.uk/2/hi/science/nature/2867583.stm>)

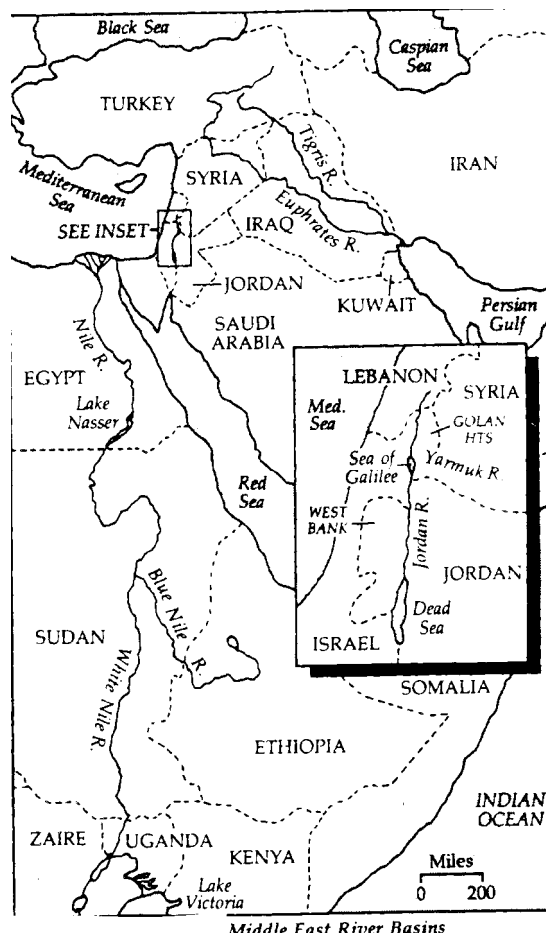
This is so because countries share waters of the rivers bordering them e.g. Israel, Jordan and the occupied West Bank who share waters of the Jordan River basin. If a country near a river’s source begins using more water, this lowers the amount that reaches countries further downstream.

In Southern Africa the following countries share the following rivers, which might “foster either an unprecedented degree of cooperation or a combustible level of conflict, “(Postel 1997:74). Following are River basin of SADC and the Middle East Regions:

RIVER BASIN	BASIN STATES	BASIN AREA (KM2)
Buzi	Mozambique, Zimbabwe	30,000
Cunene	Angola, Namibia	110,000
Cuvelai	Angola, Namibia	125,000
Incomati	Mozambique, South Africa, Zimbabwe	54,000
Limpopo	Botswana, Mozambique, South Africa, Zimbabwe	385,000
Maputo	Mozambique, South Africa, Swaziland	34,000
Nata	Botswana, Zimbabwe	n.d
Okavango	Angola, Botswana, Namibia	585,000
Orange	Botswana, Lesotho, Namibia, South Africa	950,000

Pungue	Mozambique, Zimbabwe	32,000
Rovuma	Malawi, Mozambique, Tanzania	167,000
Save	Mozambique, Zimbabwe	100,000
Umbeluzi	Mozambique, Zimbabwe	5,500
Zambezi	Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, Zimbabwe	1,420,000
Congo (Zaire)	Angola, Cameroon, Central African Republic, Congo, Burundi, Rwanda, Tanzania, Zaire, Zambia	3,800,000

Source: UN 1978; Ohlsson 1995; Heyns 1995; Conley 1996.



Around the world, competition for water is increasing everyday particularly among irrigators and between agriculture, industry,



urban water supply and other needs. It is for this reason that people get killed fighting over water (Bruns and Meinzen – Dick).

The first and therefore often publicized case was the resistance of the people of Cochabamba in Bolivia to the contract between their local government and the US Bechtel Corporation. Despite all odds and with much international solidarity, the people of Cochabamba succeeded and pushed the corporation out of the contract. But after that they had to start the struggle to find a financially and politically viable basis for a communal water project.

The Southern African countries of Angola, Botswana, Lesotho, Malawi, Moçambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe are largely dependent on rainfall and river runoff for water supply. In most cases, every major perennial river in these countries is shared by two countries or more, hence disputes are very often inevitable. Mozambique and South Africa for an example share rivers like Limpopo and Incomati:

“One unusual aspect of the dispute involves the connection between the dispute over the shared rivers between the two countries and those rivers that flow through the Kruger National Park in South Africa along the border with Mozambique of particular concern to the Mozambican government is the operation of a number of South African dams and increased agricultural withdrawals on tributaries of the Limpopo, Injaka, and Incomati rivers effectively cease flowing by the time they reach the border “(1998:120).



Following are tributaries to the Limpopo and Incomati Rivers shared by South Africa and Mocambique:

River basin	basin area (km²)	Natural flow (mcm/yr)
Levubu River	3,568	395
Letaba River	13,400	553
Shingwendzi River	5,400	78
Olifants River	54,575	1,950
Sabie River	7,096	1,950
Crocodile	10,526	1,238

Source : Breen et al. 1994

The three countries of Botswana, Namibia and Angola share the use of the Okavango River resulting in disputes over the use of its water for an example:

“Botswana proposed a major project called Southern Okavango integrated water Development water Development project. The project aimed at providing water for irrigators and urban users, livestock, and, in particular, a large mine. This was refused by the International Union for the conservation of Nature (IUCN) which was critical about its environmental implications” (1998:121)

Again, “more recently, the relationship between Namibia and Botswana has been strained by Namibian plans to construct a 250 kilometer pipeline to divert water from the Okavango River to eastern Namibia and its capital Windhoek. Namibia intends to build an emergency pipeline to connect their Eastern National Water Carrier with the Okavango to help deal with severe drought and anticipated water shortages. This development would extract about 20mcm of water from the Okavango for urban water needs, though some plans have called for as much as 100 mcm per year” (1998:122)



Another well-publicized conflict arose in South Africa when the water supplies and distribution were privatized. The bank wanted to recover the cost of the loans given to the apartheid government to finance the very expensive Lesotho Highlands Water Project. The French company Suez Lyonnais introduced water meters and new pricing schemes, people insisted on their guaranteed right to water.

The Johannesburg case played a prominent role in the encounters between the World Council of Churches (WCC) and the International Financial Institutions (IFIs) Program, the World Bank and the IMF. In co-operation with scientist and activists from a local university and the townships, an alternative pricing scheme was presented that would allow the financing of free access to water for the poorest.

We could go around the globe and identify similar stories from Buenos Aires in Argentina, Manila in the Phillipines, Grenoble in France, and many other cities. The WCC delegation to the United Nations Twelfth Session of the Commission on Sustainable Development shared the following examples.

- Local farmers and villagers in Kerala, India, were met with mass arrest in 2003 when they tried to protest the unsustainable withdrawal of up to a million gallons of water daily from sixty-five area bore holes by the Coca-Cola Company. Nevertheless, persistent community pressure, and a supportive local council, led to a ban on further withdrawal until the arrival of June 2004 monsoon season.



Coca-Cola is appealing the ruling (Rogate R Mshana Washington DC, WCC Publication 2004:46-61).

- In Brazil, civil society organizations are drawing on grants from local banks and the government to build rainwater cisterns with the objective of creating 1,000,000 low cost water facilities for poor communities (2004:73).
- Civil society groups are demonstrating that an eco-village model can transform waste into renewable energy and channel domestic water to restore the environment. Protecting the Nakivubo wetlands in Uganda in this way can, through natural processes, carry out a task that normally would cost USD 2 million annually in traditional sewage purification services (www.publicintegrity.org/water/report.aspx).
- An international network of social groups, environmental organizations, women's networks, trade unions and faith-based communities is mobilizing a campaign to prevent water from being included in world Trade Organisation negotiations as "goods and service" (The Economist 2004:19th-25 July).
- Michigan (USA) Citizens for Water Conservation and other plaintiffs were successful in convincing a judge in 2003 to force the Nestle Corporation to terminate withdrawals of spring water in Mecosta Country on the grounds that Nestlé's water operations unlawfully demised lakes, streams, and



wetlands (CBC News – in depth water: (March 20
www.cbc.ca/news/features/water).

2.10 THE AFRICAN UNDERSTANDING OF THE IMPORTANCE OF WATER

The abundance of rain, according to the African culture is the sign of wealth and prosperity as well as a blessing from God. The African economy is based on agriculture and therefore the presence of adequate water supply is very important. Whereas the absence of water, drought, may be associated with poverty, famine and hunger and punishment from gods and God.

Irrigation development offers a range of possibilities for poverty alleviation, and the budgetary implications of many of the options are modest. A new institutional framework for water management and allocation will facilitate irrigation development through creating spaces for the representation and self-development of small-scale irrigators.

What is required are clear policy principles and relevant information to guide provincial Departments of Agriculture and local authorities. The discussion documents produced so far represent only a preliminary move towards policy formulation.

It is interesting to note that in South Africa, even in Europe, almost all the villages, and towns, including big cities have been established along rivers. This was intended to be near water for domestic purpose, agricultural and for the domestic animals. This eliminated the need to draw water from distances. The other



contributory factor is that at that time land was not owned by anybody hence a decision to settle in a particular area did not cause problems. People could move at will to follow the water supply.

The concept of privatization of water system has not been thought of as water has always been regarded as a gift from God. For decades, water has been drawn from rivers and therefore there was no reason for it to be sold.

2.11 WATER SUPPLY AND SANITATION

In South Africa, infrastructure services such as communications, power, transportation, provision of water and sanitation are central to both the activities of households and a nation. It should be borne in mind that development in the old South Africa had ensured that rural areas were not provided with such facilities.

“In 1996, virtually all white and coloured households had running water and flush toilets on site, as well as electricity. In contrast, less than half of African households had these amenities. By 2004, half of African households had water on site and three-quarter use electricity for lighting. For most services, the share of African households in total recipients had risen to two-thirds, up from about half eight years earlier. Still, African communities continued to lag substantially behind” (2007:147).

In exceptional cases in which these were provided, these were prepared communally and the use there of was limited. In some



cases, these facilities such as water were even shared with domestic animals, and it was always contaminated with water-related diseases such as cholera etc.

In order to ensure that growth is consistent with poverty alleviation, infrastructural development needs to be extended to all sectors of the population; access to at least minimum infrastructure services is one of the essential criteria for defining welfare. Links between poverty and infrastructural services in rural South Africa are always easy to define because they are directly linked. Access to utilities in these parts of the country has always not been an issue with the government development strategies as the initial intention was to develop urban South Africa and leave the rural homelands to the tribal or ethnic leadership.

Basic infrastructure was developed as during that time the homeland system was intended for cheap labour for the industries in the urban areas. The dilemma, in which the new government finds itself in, is the enormous imbalance in the access to basic infrastructure such as water.

While the big cities, particularly former white suburbs and settlements had access to quality infrastructure, some rural areas, even up to this stage, still do not know what it means to have electricity and running water in the house. Those fortunate enough have access to water in the streets where the whole neighbourhood come to draw water and it can only be used for washing of clothes and cooking as it is not clean to be used for drinking.



Moreover, the different infrastructure sectors have different effects on improving quality of life and reducing poverty: access to reliable energy, clean water and sanitation helps reduce mortality and morbidity and saves time for productive tasks; transport enhances access to goods, services and employment; communications allows access to services, and information on economic activities.

Redress of current imbalances in infrastructural services requires considerable investment in the short- and medium-term, despite fiscal constraints. Resolving this fiscal dilemma - generating sufficient public and private investment without incurring excessive public debt is essential in order to secure the growth and poverty reduction linkages of infrastructure investments.

The absence of potable water and sanitation services affect the health and well-being of the population at large in innumerable ways. It makes people vulnerable to poor health, which reduces the quality of life and productive capacity of people, and burdens health care and social welfare services. Provision of dependable water supplies can have a strong positive effect on food security and income generation for rural women.

Substantial livelihood gains are likely to be made by releasing labour time spent on obtaining water, and providing water for small farming and other enterprises. In a report compiled for the office of the South African Executive Deputy President, and the inter-Ministerial committee for Poverty Inequality, the following facts are observed: only 21 % of households have piped water, and only 28% have sanitation facilities.



In rural areas, more than 80% of poor households have no access to piped water or sanitation, and 74% of rural African households need to fetch water on a daily basis. Most people without access to basic supply and sanitation services live in rural areas, which is why the Community Water Supply and Sanitation Programme (CWSS) of the Department of Water Affairs and Forestry (DWAFF) focuses on these areas.

The DWAFF vision is to achieve a situation where there is equitable access to water on a permanent basis at a minimum level. The CWSS aimed to provide water supplies to 90% of the currently non-serviced population by 2004, and since its inception in 1994 has provided basic water supply only to 1.3 million people.

Many actors (government, parastatal, non-government and private) are involved in the delivery of water supply and sanitation services:

- (a) the DWAFF sets and supports the achievement of basic norms and standards for service provision;
- (b) the CWSS (initially funded from the RDP budget but now by the DWAFF) uses local governments (or if local government lacks capacity, community-based organisations (CBOs and NGOs) to implement water supply and sanitation projects in rural areas;
- (c) the Water Boards traditionally deliver bulk supplies of purified water for urban and industrial use, but are now being called upon to provide water directly to consumers and provide support services to local structures handling water supply;
- (d) local government carries primary responsibility for



provision of water supplies and sanitation, but in many cases local authorities do not have the capacity to effectively deliver and manage water services; and

- (e) the Mvula Trust is a non-profit organisation, funded largely by the DWAF, which finances and implements water supply and sanitation projects to rural communities.

Despite all this progress in water provision, however, the problem of non-payment for services is there as people particularly the poor are not able to pay. Many municipalities face severe financial problems, and improving income from service charges would help to stabilise the position of local government. Sanitation delivery at certain provinces like Mpumalanga has just taken off. There has been an important process of involving different government departments and setting of policies for the provision of sanitation services.

Although water is treated as a common good in South Africa, water services have been privatized. Vivendi, Biwater and Saux are already active. The use of pre-paid metres is a source of concern especially in the low-income, particularly in the rural areas of the former homelands. Trade unions, especially the South African Municipal Workers Union (SAMWU) have been very vocal against privatization of water.



2.12 THE WHITE PAPER ON A NATIONAL WATER POLICY FOR SOUTH AFRICA

The White Paper on a National Water Policy for South Africa (1997) has recently been adopted. A new National Water Bill has been drafted, and a separate Water Services Bill has been prepared covering provision of water by local authorities. As a consequence of apartheid policies, distribution of access to water is as skewed as access to land, and the new water policy provides a framework and principles to redress present inequities.

Agriculture, which, as mentioned above, accounts for half the nation's water use, will have to re-evaluate its usage, and will have to pay a price for water that reflects its real economic, social and environmental cost. Water will be allocated through a new licensing system founded on achieving beneficial use in the public interest. Proposed new irrigation policy would found irrigation development on farmer management and participative planning, which would open up access to previously disadvantaged users of water for productive purposes.

The separation of water rights from title deeds to land will open access to those without freehold tenure, and the establishment of Water User Associations at a local level will provide for the effective representation of small farmers and community gardeners on irrigation schemes.

2.13 ACCESS TO CLEAN WATER A BASIC HUMAN RIGHT

Everyone has a right to access to water. Governments have through conventions committed themselves to provide clean water



and sanitation for its citizens. They have the primary responsibility, which cannot be delegated to private organisation.

Women have a right to participate actively, meaning that they can take part in making decisions concerning their water needs. Everyone has a right to water, to make use of their own potential to live in dignity. Women and children have a right to the assistance they need to live full and productive lives. Governments have responsibility under international law to provide clean water and sanitation for its citizens.

Most recently however, with the onslaught on neo-liberal economic globalization and the prevalent market mentality sweeping across modern societies around the globe, the term “white gold” has been coined to indicate the potent market value of water as an indispensable but costly commodity. The world is therefore faced with another dimension of the issue, i.e., that of commercialization of water for private gain.

When water is turned into a commodity by private enterprises, the question of human rights, the basic right to water need to be addressed. Looming in the background is the danger of regional and international wars to compete for control over water.

People are encouraged to stand up for and claim their rights to water and life. They are claim-holders and have a right to claim assistance that is relevant to their specific needs. Churches must engage with governments and get involved with politics in defending the rights of those who don't have access to water.



Through diakonia, the church should be concerned with assuring that people's rights are respected, including their right to water resource.

The statement by an ecumenical team to the United Nations' 12 Session of the Commission on Sustainable Development (CSD), put it very clearly that "The centrality of water to life, and the experience of water as a gift are two sources of our affirmation of water as a basic human right. Just as the Biblical Jubilee declared that land belonged to God and not to any particular individual, so we could affirm that water should be part of global common goods.

To treat water as a gift from God and a human right implies that clean freshwater should be available to meet the basic needs of all, rather than be treated as a private commodity to be bought and sold" (19-30 April 2004). The issue on water as Human Right will be discussed in depth in Chapter 5 of this dissertation.

2.13.1 REGIONAL, LOCAL AND GLOBAL WATER IMBALANCES

The question of the scarcity of water is not a global issue. Globally water is enough to meet the needs of every human being. This is also true at the continental level, except that per capital there exist large regional disparities.

Gleick gives an example that "in Europe, each million cubic meters of water available per year is shared by over 150 people, on average, while in South America only 25 people must share that much water.



Comparison with Asia shows even more extreme differences” (1997:4). This difference in the usage of water is even bigger in Africa as compared to Europe because of the difference in population.

This difference in the scarcity of water is more marked at the national level, even from one country to the next. This difference indicates imbalances between the overall availability and the growth in need and demand, causing implications such as countries not able to produce enough food they require.

2.13.2 THE DISTINCTION BETWEEN NEED AND DEMAND

Basic need for water by ordinary citizens cannot be compared to the demand by big water consumption agencies such as the golf clubs, the water sport and other affluent users of water. The ‘need’ for water exists independently of economic or political status and cannot be manipulated. The difference between the two: need and demand, is that those in need have no power or choice whereas those who demand have power and choices.

The 1997 Mar del Plata Conference officially recognized the need for provision for the basic human needs. It defined the basic human need for domestic purposes and quantifies it as ‘a basic water requirement’.

Demand for water can be changed and even reduced without necessarily diminishing the overall utility for the individual user of water.



2.13.3 WATER A FIRST THING IN DEVELOPMENTAL STRATEGY

- Water resources must now be recognized as a major determining factor for socio-economic development.
- When human demands on water were low and when hydrological cycle behaviour and the climate were thought to be fairly predictable, water was the last thing to be considered in the developments decision-making.
- Today, because of demand and pressure on the use of water, decision-making on water has been changed. Water has become the first thing in decision-making in development.

It is now imperative that decision makers in all sectors, and particularly those responsible for socio-economic planning, financial analysis and security, make development decisions with explicit attention to water reservoirs. Management of water and environmental issues are now high on the diplomatic agenda.

The effects of these developments can be generally summarised in the following points:

2.14 MAXIMUM PARTICIPATION IN WATER MANAGEMENT

The motivation for consultation process is for the people to be integrally part of determining the development of their communities and their lives. It is an empowering and ongoing process where



people, most of whom have been politically, socially and economically marginalized in the past are given a voice. This opportunity to articulate their needs leads not only to a growing sense of their own role as agents of change in their village, but also makes planning more collaborative and increases chances of successful implementation and maintenance.

Good and accountable governance in water is key for sustainable water services in economic, social and ecological dimensions. This is only achievable with transparency and participation. If users can take an informed decision about the service level they want, they are more likely to be able to pay for it. If consumers are informed about the cost and can take influence on the design of tariff structures and subsidies they can better contribute to the costs.

Water planning and decision-making should therefore be democratic, ensuring representation of all affected parties and fostering participation of affected interests. Communities as the rightful custodian of water should not be left out in water management. People need to be taught that the management of water resource is not exclusively the responsibility of governments. It must involve full public consultation and decisions from the lowest levels of water users in planning and implementation.

The author shares the same view with Lundqvist and Gleick that: "Involvement of users and sharing of responsibilities and management tasks is a prerequisite for proper choice of technological and organisational approaches. Awareness should



be raised to communities that they are needed for augmentation, management, and equitable use of water resource.

Water bodies need to be handed over to appropriate groups within the communities, i.e. women's group, water-user associations and others instead of private companies. Participation in decision-making produces more efficient and more sustainable use of water. When communities influence or control the decisions that affect them, they will have greater stake in the outcome and are more committed to ensuring success.

2.15 WATER MANAGEMENT AND COMMUNITY FORA

It is the task of the church leadership, municipalities and other stakeholders to initiate discussions with village residents. This will ensure that a wide range of community voices form part of the very first contact with the municipality. This effort will in turn offer a guarantee that the process is as inclusive as possible.

The ideas and desires of local leadership, established development forums and traditional leaders are important, as it is often these people that have a wholistic sense of developments within their community. It is also important to discover smaller groups' perceptions. The voices of women's groups, entrepreneurial groups, stokvels and growers' associations should shape an idea of the village commitment to water management.

This process, using participatory and inclusive methods, will enable the community to see their role as central to the success of the project. They will also realize that they have the ability to



manage their own scheme. This empowering idea will make people comfortable with solving their own problems. Experience has shown that when people go through a process of problems identification and when they discover for themselves linkages between problems, they start to feel ownership of the problems and responsibility for finding solutions.

2.16 WATER MANAGEMENT AND INDIVIDUAL USERS

It is also important to gather information and include people that are not organized and have generally remained marginalized or 'voiceless': women, people living with HIV and AIDS, the elderly, the very poor, and people with disabilities. These groups have a particular interest in a good water service and are likely to benefit significantly from an O&M system that function to serve the whole community. Thus all these people need to be actively involved as far as is reasonably possible.

It is the researcher's view that individuals should be involved in the decision-making processes surrounding the protection and regulation, supply and management of water.

Individuals should also participate in easing the global water crisis by changing certain household practices such as finding and stopping wasteful leaks, recycling waste water and installing water efficient devices such as shower heads and dual flush toilets.

The best way to ensure that people are eager to be involved in their community's development is by including them in decision-making processes, i.e. in identifying solutions and jointly planning actions. In this case, these actions may include:



- Opening and closing taps
- Keeping taps clean
- Reporting breakdowns to the leaders and authorities as well as
- Active monitoring role for the wider community after selection of a village water committee.

2.17 WATER MANAGEMENT AND WOMEN

The WHO estimates that 80 percent of all sickness in the world is attributable to unsafe water and sanitation. Waterborne diseases kill 3.4 million people, mostly children, annually. Millions more are sickened with diarrhoea, malaria, arsenic poisoning, trachoma, and hepatitis – diseases that are preventable by access to clean water and health-care information (Postel 1997:21). Women bear the main burden of caring for those who are ill. This does not only limits their income-generating activities and education, but medical costs associated with family illness, increase household debt and deepen poverty.

Poor women, as managers of household and community water and related responsibilities, have been first to signal problems with privatization of water system, including astronomical price hikes, in some cases, consuming a large portion of monthly income; water cut-offs due to unpaid bills; lack of accountability mechanisms for users; deterioration of water quality; and hygiene issues.

In some instances, poor and working women have been forced to decide between paying for water and feeding their children. Protests against the sale of public water services to multinational



corporations have been mounted across the globe, from Bolivia to Ukraine, and even in the USA.

The water crisis in Africa has led to shortage in food production. Household food security is undermined in many African countries today. Women and children continue to bear the burden of hunger and food insecurity. Many of the African communities depend on herbal medicine, especially women for minor illnesses. With the disappearing of forests due to deforestation, women and children are more vulnerable. This has been exacerbated by the water crisis.

Beyond the gender question of water is the foreseen issue of water-related conflicts, especially with the drying up of rivers due to deforestation and global warming. This is not only about water but also about pastures. This has already been seen where the pastoralist communities of the Karamoja in Uganda, the Turkana and the Pokots have crossed over borders in search of pastures.

There is also a need for gender-sensitive education on proper sanitation and hygiene practices and this must be made available to men as well as women. With limited investment, education could have a tremendous impact on common waterborne diseases, such as malaria and cholera. Currently, most health and hygiene education programs are aimed at women, as caregivers and managers of the household.

Women are very important in the management of water resource. Adrian van Dis puts it very well in saying: "If women are left



behind in the development of a nation, then it is as if you are trying to help a bird fly with only one wing”. “The best approach to protecting the world’s ecosystems is ensuring that women are involved in integrated land and water use planning” (The Ministered Declaration of the 2nd World Water Forum 2000).

“Water policies and water management systems should be gender-sensitive. They should reflect the division of labour – paid and unpaid – between men and women in all settings related to water” (The 2001 International Conference on Freshwater, Bonn, Germany).

In most cultures in Africa, women and men have different roles and responsibilities in the use and management of water. Women and girls are responsible for collecting water for cooking, cleaning, health and hygiene, and if they have access to land, they need water for growing food.

In rural areas, women walk long distances to fetch water, often spending four (4) to five (5) hours per day carrying heavy containers and suffering acute physical problems. In arid and drought-prone areas the challenge is compounded. In urban areas, women and girls can spend hours waiting in lines to collect intermittent water supplies at standpipes. The inordinate burden of fetching water inhibits women and girls’ involvement in other activities such as education, income generation, cultural and political involvement, and rest and recreation. (Postel 1997:21)

Conversely, men in rural areas almost never fetch water, and if they own or have access to land, their involvement with water is



related to agriculture or livestock. Furthermore, because men's work is considered as part of the productive economy of paid labor, it is generally seen more worthy of infrastructure investment. As a result, there may be infrastructure for irrigation, but not for safe drinking water within cartage distance or for other activities considered part of the care of the economy.

This limits women's engagement in a range of economic activities that depend on access to safe water, like the preparation of food and other products for local markets. The absence of women in decision-making positions results in the creation of policies that fail to address women's needs and concerns. Women's equal participation at all levels of decision-making is critical to achieving a more equitable provision of water and sanitation services.

2.18 WATER MANAGEMENT AND YOUNG PEOPLE

For the most part, young people have been left out of the decision-making process surrounding water accessibility. As young people will inherit the earth from the current decision-makers, it is of vital importance that their voice in management and distribution of water be heard.

Following are key players responsible for all decisions on water management while excluding young people:

- International Financial Institutions (IFIs),
- World Trade Organisation (WTO),
- Government of High-Income countries,
- Water Corporation, and
- Water Forums and Councils.



Young people's ability to exercise the right to water is therefore potentially threatened when water is treated as an economic good. Any payment for water services has to be based on the principle of equity, ensuring that these services, whether privately or publicly provided, are affordable for all, including the youth, and socially disadvantaged groups.

2.19 WATER MANAGEMENT AND PEOPLE WITH DISABILITIES

The practice of excluding, marginalizing, overlooking or simply disrespecting persons with disabilities has been a feature of most societies and cultures. In many places persons with disabilities are the outcast of society and treated as such, stigmatised and isolated from decision-making even in issues that affect livelihood such as water management.

It is the author's view that persons with disabilities have the right to equality of opportunity and justice, and to full inclusion in all spheres of life. They therefore, have the potential to make a distinct contribution to local, national and regional development. It is the researcher's view that people with disabilities should not be left out in all decisions that affect their livelihood particularly in water management.



2.20 PRELIMINARY CONCLUSION

Generally, water has become one of the points of global debate today. The ever increasing population and the insatiable consumer demands that the market makes on humanity, put heavy stress on natural resources, especially water, threatening global and regional food security and sufficiency. The researcher is of the same view with Gleick that: “The failure of the decade to completely satisfy basic human needs for water and water services was the result of rapid population growth, under investment, growing urbanization, and misdirected priorities.

Dependence on water is most direct and evident for a large, and in many countries the largest, group of poor people: the small holders. Because the land resources of poor farmers are typically very limited, a major income-generating strategy is to improve the agricultural output of their holdings through intensification.

Among the many factors that enable intensification, a crucial one is water in the form of year-round irrigation, supplementary irrigation, and water harvested and conserved with a range of water-management techniques. It improves yields, allows for better-yielding varieties, enables continuing production during the otherwise slack season, and, last but not least, reduces risks due to erratic rainfall.

Harvests used for household consumption and sale directly contribute to food security and fulfilment of monetary needs. More sustentative wealth creation, and even escaping income poverty through intensification, often depends on access to markets and rewarding prices. If market niches can be found, growing labor-



intensive, irrigated, high-value crops on small rural holdings, or homesteads, or peri-urban plots considerably improves incomes.

The extent of the problem means many governments; organisations and agencies must be involved in planning and implementing programs. Unfortunately, other social problems are often given higher priorities and rapid population growth makes it difficult to catch up with basic water needs” (1998:42).

One head of state’s words that if there were to be a third world war, it would be fought around the issue of Right to Water, assume that relevance in today’s global geo-political landscape. Water has been reduced to a mere commodity in the global market for the rich Multinational Companies (MNCs) to buy and exploit. This is because the World Bank and the International Monetary Fund made privatization of water system a condition for giving aid to developing countries resulting in the rising of water prices so as to attract investors.

Privatization of key public service sectors such as water resource are in many cases opposed by opposition political parties and civil society groups such as trade unions etc. As indicated, privatization of water resources has raised serious issues for the poor and the marginalized all over the world, especially in the South, causing problems such as scarcity of drinking water, pollution of water and soil, and destruction of agricultural sectors.

The researcher maintains that water is a gift of God and a fundamental human right. It should remain under public



responsibility and should not be traded. Governments must declare that water belongs to the earth and all species hence a fundamental human right. No one has the right to appropriate it for profit. It must be declared a public trust, and that all governments must enact legislation to protect the fresh water resources in their territories. An international legal framework on water is also needed. Ecumenical movements and other social movements share this view.

The World Bank, the IMF, and corporations along with some governments, favour the privatization process by trading water through three methods:

- (a) Complete sale of public water delivery and treatment systems to private corporations.
- (b) Long-term leases or concessions allowing corporations to take over the delivery of water services and collection of revenues.
- (c) Corporations contracted by government to manage water services for an administrative fee.

These institutions favour privatization of water services in the name of promoting efficiency in water delivery, forcing these three methods on the developing world. Uitto & Biswas attribute this policy shift to the fact that there is a generally disappointing performance on the side of the public sector and that there is mounting evidence that the private sector can indeed be instrumental in helping the sector develop more efficiently in the future.



In reality, privatization more often than not fulfils none of these promises, and instead creates a number of new problems. It is vulnerable to corruption and operates according to a profit-driven corporate agenda fundamentally incompatible with delivering of essential services. Private water companies are failing to provide citizens with safe and affordable water.

These companies seek to increase profit margins by cutting costs; hence privatization is always accompanied by lay-offs. Privatization therefore, does not allow the existence of the poor. As a result, the poor very often resort to getting water from shallow wells or stagnant pools that are easily contaminated with human and animal waste, resulting in waterborne diseases which account to an estimated 80 percent of all illness in developing countries (Postel 1997:21).

Water should remain a public trust, not a commodity. Governments and communities should manage its protection, consumption, and distribution. Precautions should be taken when governments make contracts with private companies. Through community involvement, increased transparency should solve issues of corruption. Structural Adjustment Programs and the current conditionalities in the Poverty Reduction Strategies PRSs) of the World Bank and the IMF, implicitly forcing poor countries to privatize water through blanket liberalization, should be resisted.

Where public-private partnership programs exist in water delivery, governments should ensure that people and the environment come before profit. People living in poverty, and the safeguard of



the environment, should be the main criteria in devising water management strategies, protection and consumption. In observing March 22 as World Water Day every year, water activists should continue to fight so that water remains in the public domain. Let criticisms levelled against public water delivery be corrected with specific proposals.

Churches and the ecumenical family should continue to demonstrate how public water management could be made efficient, leaving no space for criticism by water marketers. Struggles against privatization of water system are part of the struggle against neo-liberal globalization, which promotes private property and contracts.

The research puts it very clear on the fact that water is a free gift from God. It should neither be commercialized nor commodified, but should be distributed fairly to everyone.

Chapter three discusses the whole question of privatization strategies, its types including both arguments pro and against where it will be noticed that of all the social services, water is one service that cannot be commercialized nor commodified for profit.