

WATER USE AND SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA

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DECLARATION

I declare that “Water use and sustainable development in South Africa” is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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ABSTRACT

This study is non-empirical and is based on the conceptualisations and theoretical foundations that gave rise to the global issue of sustainable development. It also traces the evolution and meaning of sustainable development in the South African socio-cultural context, and shows how the legacies of colonialism and apartheid contributed towards the national policy of sustainable development. This study explains the reasons for the presence (or lack) of sustainable development paradigms in apartheid and post-apartheid South Africa, as well as their implications for the future development of the country as a whole. There is also an analysis of the effects of the liberalisation of the water sector on the citizenry, and how this can disempower millions of poor South Africans. Finally, this study offers solutions for the lack of sustainable use of water in South Africa. Amongst the findings and conclusions are the deleterious effects of employment equity, cut-backs in municipal funding that resulted in the outsourcing of critical services such as water provision, and the deployment of party cadres to local councils.

KEY WORDS

Sustainable development, sustainability, development and underdevelopment, developed and developing societies, Department of Water Affairs and Forestry, Water Research Commission, Palmer Development Group, marginalisation and exclusion, poverty alleviation, colonial and apartheid legacies, Bantu education, privatisation and commercialisation of water and public utilities, developmental state in Africa and South Africa, development and natural capital, development and moral capital, water and development, water and sanitation, water and poverty alleviation, neoliberalism.

DEDICATION

This dissertation is dedicated to the loving memory of my late father Mr. Pius Chima Ukwandu (Aguiyi), whose groundwork, love and vision has enabled me to achieve this wonderful milestone in my life.

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My bones will grow weak if i stop to praise the unmerited grace and favour of God in my life, and throughout the trying times of this research. The grace of God has been new every morning and every year of this period, and I solemnly praise and bless the Holy name of Jehovah El Shaddai.

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CHAPTER ONE

THE NEED FOR THE STUDY OF WATER USE AND SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA

1.1 BACKGROUND TO THE STUDY

Environments are always contested. People see them differently, have different interests in them, and have different relationships with them. In September 1992, a meeting in Managua of representatives of NGOs and grassroots groups from Central America discussed the meaning of the environment and found the following (Neefjes, 1993:20): “Environment is both nature and society, which relate to each other and co-exist. In the environment we find forests, human beings, land, mountains, water, air, animals, etc., which are mutually inter-relating. This relationship can be good or bad. It is good when human beings can make adequate use of other environmental components, like water, forests, and, air. It is bad when humankind has destroyed them (for example with deforestation), or when a few people appropriate resources and thus endanger our survival and reproduction. That is why we need conservation, equity between human beings, and harmony between human beings and nature” (Neefjes, 2000:10).

People depend on environmental resources, particularly deprived, excluded or poor communities, both rural and urban. The above statement does not stress the exploitation of resources, economic growth or its likely effects - it emphasises equity instead. It talks of harmony between people and nature and, significantly, of a whole entity, and of connections between social and natural resource conservation. In conducting research on water use and sustainable development, it is imperative to look at the impact of human behaviour on environmental resources, and to determine whether our way of life has a positive or negative influence on the environment. This is the primary reason why we have to identify the activities of human beings, as part of the environment, as this will help us ultimately in analysing solutions to the gamut of environmental issues, especially water use in the world in general, and South Africa in particular.

It is interesting to note that the participants at the meeting separated “nature” from “society” - in other words, they saw people as being different from their natural environments. This is not a universal view, as some belief systems hold that people are

as “natural” as plants or rocks. In fact, according to some religious traditions, the concept of ‘nature’ is similar to that of God. However, the participants emphasised the interrelationship between nature and society, and expressed a high level of concern for environmental resources, which suggests that they regarded environments as being more than merely useful resources that could be controlled and exploited. They suggested that humanity has a responsibility in terms of the future of the relationship between society and nature, as well as (implicit) responsibilities with regard to the future of the natural environment and future generations (Neefjes, 1993: 26).

The definition of “environment” includes people and their relationship towards nature as an entity, called the environment. For some (Neefjes, 1993:35), this concept is unnecessarily complicated. Dictionaries usually define the environment as “surroundings of human beings”, and thus exclude people from the environment. Indeed, many people who use the word ‘environment’ exclude themselves and others from this notion, either consciously or unconsciously. The use of the word in development circles has, however, broadened its meaning, and it has now come very close to that agreed on by the participants at the meeting in Managua.

This study will argue that it is useful to think of the environment in broad terms, and to include people and social relationships. The environment thus becomes a vehicle for analysing and describing relationships between people and their surroundings, now and in the future. Nevertheless, the word is used in several places in terms of its narrower meaning of “surroundings”. Nature can be seen as being both broader and narrower than mere natural resources - it encompasses life (including human life), and could also involve relationships between human beings.

1.2 VISIONS OF THE FUTURE

From the arc of the bridge to which his guide has carried him, Dante now sees the

Diviners...coming slowly along the bottom of the fourth chasm. By help of their incantations and evil agents, they had endeavored to prey into the future which belongs to the almighty alone, and now their faces are painfully twisted the

contrary way: and being unable to look before them, they are forced to walk backwards' - Dante Aligheri. *Divine Comedy: The Inferno*, translated by Carlyle 1867(cited in Tietenberg, 2004:16).

Around the time that American colonies became independent, Gibbon (1789) completed his monumental work entitled *The History of the Decline and Fall of the Roman Empire*. In a particularly poignant passage that opens the last chapter of his opus, he recreates a scene in which the learned Poggius, a friend and two servants ascend the Capitoline Hill after the fall of Rome. They are amazed by the contrast between what Rome once was, and what Rome has become:

In the time of the poet it was crowned with the golden roofs of a temple; the temple is over-thrown, the gold has been pillaged, the wheel of fortune has accomplished her revolution, and the sacred ground is again disfigured with thorns and brambles...The forum of the Roman people where they assemble to enact their laws, and elect their magistrates is now enclosed for the cultivation of potherbs, or thrown open for the reception of swine and buffaloes. The public and private edifices, that were founded for eternity lie prostrate,naked,and broken, like the limbs of a mighty giant; and the ruin is the more visible, from the stupendous relics that have survived the injuries of time and fortune [Vol.6, pp.650-651] (cited in Tietenberg, 2006:1).

This illustration from the demise of the glorious Roman civilization lends credence to the fact that our civilization is not cast in stone, and if we do not use scarce resources such as water judiciously, we may be on a long road to perdition. Evidence from the rise and fall of empires and civilizations attests to the fact that everything we hold sacred and holy may be lost if our present mindless pursuit of consumerism, economic growth and development at all costs, and the crass materialism that pervades our contemporary world, is not halted or adjusted. The assumption that societies could germinate the seeds of their own destruction has long fascinated scholars. In 1798, Malthus (cited in Webster et al, 2000:3) published "An Essay on the Principle of Population", in which he foresaw a time when the urge to reproduce would cause population growth to exceed the land's potential to supply sufficient food, resulting in starvation and death. In his view, the adjustment mechanism would involve rising death rates caused by environmental constraints, rather than recognition of impending scarcity

followed by innovation or self-restraint. Actual historical examples suggest that Malthus's vision may have merit. The examples below examine specific instances of societal implosion.

1.2.1 Historical examples of ecological and self-extinction

The Mayan civilization, a vibrant and highly cultured society that occupied parts of Central America, did not survive. One of the major settlements, Copán, has been studied in sufficient detail to identify the reasons for its collapse (Webster et al, 2000: 23). Webster et al.'s (2000) study reports that after A.D 400, population growth began to result in environmental constraints, especially in terms of the agricultural carrying capacity of the land. The growing population depended heavily on a single, locally grown crop (maize) for food. By early in the sixth century, however, the carrying capacity of the most productive local lands had been exceeded, and farmers began to depend upon more fragile parts of the ecosystem. The economic result was diminishing returns on agricultural labour, and the production of food failed to keep up with the increasing population.

By the mid-eighth century, when the population was reaching its historic apex, widespread deforestation and erosion had set in, thereby intensifying the declining productivity problems associated with moving onto marginal lands. By the eighth and ninth centuries, evidence reveals not only high levels of infant and adolescent mortality, but also widespread malnutrition. The royal dynasty, an important source of leadership in this society, collapsed rather abruptly sometime around A.D.820-822.

The second case study, Easter Island, shares some remarkable similarities with both the Mayan example and the Malthusian vision. Easter Island lies some 2000 miles off the coast of Chile. Current visitors note that it is distinguished by two features: (1) its enormous statues carved from volcanic rock and (2) a surprisingly sparse vegetation, given the island's favourable climate and volcanic conditions, which typically support fertile soil. Both the existence of the imposing statues and the fact that they were erected such a long way from the quarry suggests the presence of an advanced civilization, but to current observers this is nowhere in evidence. What happened to this society?

The short answer is that a rising population, coupled with a heavy reliance on wood for housing, canoe building and statue transportation, decimated the forests (Brander and Taylor, 1998). The loss of the forests contributed to soil erosion, declining soil productivity and, ultimately, diminished food production. How did the community react to this impending scarcity? Apparently, the social response was war, cannibalism and ultimately destruction.

One would like not only to believe that in the face of impending scarcity, societies will react by changing their behaviour to adapt to the diminishing resource supplies, but also that this benign response will automatically follow a recognition of the problem. There is even a cliché to capture this sentiment: “necessity is the mother of invention”. While these stories do not imply that the cliché is always wrong (it isn't), they point out that there is nothing automatic about a problem-solving response. Sometimes, societal reactions not only fail to solve the problem, but may even make it worse (Webster et al., 2000; Brander and Taylor, 1998; Sabloff, 1971; Brown, 1981).

1.3 PROBLEM STATEMENT

Given South Africa's political history of centuries of colonialism and apartheid, it is important to examine the issue of water use and sustainable development in South Africa. In view of the gamut of difficulties surrounding the distribution of resources such as water in South Africa, it is important to understand that issues such as racial considerations dominated and influenced sustainable development in apartheid South Africa, and subsequently excluded the majority of the black population. It is also imperative to note that in the modern, free and democratic South Africa, market fundamentalism is threatening to become an obstacle to the implementation of sustainable development in the country. Understanding the reasons for the absence (or lack) of sustainable development in government's policies is particularly relevant, as the massive growth and development in the country calls for a new growth paradigm that is both sustainable and inclusive.

Another class of threats is posed by the rising demand for resources in the face of a finite supply. Water provides a particularly interesting example because it is so fundamental to life. According to the United Nations (2001), about 40 percent of the world's population lives in areas with moderate-to-high water stress. Moderate stress is

defined in the UN assessment of freshwater resources as “human consumption of more than 20 percent of all accessible renewable freshwater resources, whereas severe stress denotes consumption greater than 40 percent. By 2025, it is estimated that about two-thirds of the world’s population - about 5.5 billion people -will live in areas facing such water stress” (UNDP, 2002).

Had we known long ago that human activities could seriously impact environmental life support systems and threaten or deny future generations the quality of life to which our generation has become accustomed; we might have chosen a different, more sustainable path for improving human welfare. The fact that we did not have the knowledge, and therefore did not make that choice years ago, means that current generations are faced with making more difficult choices with fewer options. These choices will test the creativity of our solutions and the resilience of our social institutions.

Tietenberg (2002:61) was eloquent in postulating that the scale of economic activity has moved steadily upwards, and the scope of environmental problems triggered by this activity has transcended both geographical and generational boundaries. Whereas the nation state used to be a sufficient form of political organisation for resolving environmental problems, this may no longer be the case. Whereas each generation used to have the luxury of satisfying its own needs without worrying about the needs of generations to come, this too is no longer the case. Solving problems such as poverty, climate change, loss of biodiversity and water accessibility and crises throughout the world requires a new understanding, insight and international cooperation, which were not available before. Because future generations cannot speak for themselves, we must speak for them. Our policies must incorporate our obligations to future generations, however difficult or imperfect this incorporation might prove to be.

International cooperation is by no means a foregone conclusion (Tietenberg, 1992: 70). Global environmental problems can trigger very different effects on countries that will be sitting around the negotiating table. While low-lying countries could be completely submerged by the sea level rise predicted by some climate change models, or arid nations could see their marginal agricultural lands succumb to desertification, other nations may see agricultural productivity rise as warmer climates support longer growing seasons in traditionally intemperate climates (WRI, 2004).

The fundamental question is how societies will respond to these challenges. In Lovelock's (1979) view, one way to think systematically about these emerging threats involves feedback loops: positive feedback loops are those in which secondary effects tend to reinforce the basic trend. An example of a positive feedback loop is the process of capital accumulation. New investment generates output which, when sold, generates profits. These profits can be used to fund additional new investments. This example suggests a way in which the growth process is self-reinforcing. In contrast, negative feedback loops are self-limiting rather than reinforcing. Perhaps the best-known planetary-scale example of negative feedback is provided in a theory advanced by Lovelock (1979) called the Gaia hypothesis, named after the Greek name for Mother Earth, and this view of the world suggests that the earth is a living organism with a complex feedback system that seeks an optimal physical and chemical environment. Deviations from this optimal environment trigger natural, non-human response mechanisms that restore the balance. In essence, according to the Gaia hypothesis, the planetary environment is, within limits, a self-regulating one.

Is the economy on a collision course with the environment? Or has the process of reconciliation begun? One group, led most notably by Lomborg (2001), concludes that societies have resourcefully confronted environmental problems in the past, and that environmentalist concerns to the contrary are excessively alarmist. In his book entitled *The skeptical Environmentalist* (2001), he states that:

The fact is, as we have seen, that civilizations over the past 400 years has brought us fantastic and continued progress...And we ought to face the facts-that on the whole we have no reason to expect that this progress will not continue.

On the other side of the spectrum is the World Resources Institute (WRI, 2004; Tietenberg, 2002), which believes that current development paths and the attendant strain they place on the environment are unsustainable. As reported in the State of the World (2004) (cited in WRI, 2004):

this rising consumption in the United States and other developed societies of Europe, coupled with the rise of China and India , and many developing countries of the world is much more than the planet can bear. Forest,

wetlands, and other natural places are shrinking to make way for people and their homes, farms, malls, and factories. Despite the existence of alternative sources, more than 90 percent of paper still comes from trees-eating up about one fifth of the total wood harvest worldwide. An estimated 75 percent of global fish stocks are now fished at or beyond their sustainable limit. And even though technology allows for greater fuel efficiency than ever before, cars and other forms of transportation account for nearly 30 percent of world energy use and 95 percent of global oil consumption. And the world is gradually running out of water resources.

These two contrasting views regarding the direction and future socio-economic growth and development of the world is very relevant in South Africa, as it highlights the reason why research into the sustainability of our present rate of development is necessary in order to use the earth's depleting water resources judiciously. Human beings are among the billions of species inhabiting the earth who, like other species, live by developing a relationship with their environment, which comprises both living organisms and non-living substances. However, unlike other species, the relationship between man and nature has changed significantly over time due to the development of human consciousness, represented by science, technology, values and culture. Aided by science and technology, human beings have transformed the resources of nature into products, according to their value system, for consumption and enhancement of their well-being.

There are those who believe (Daly and Cobb, 1994:4, Diefenbercher, 1994:8) that during the phase of capitalist development which began centuries ago, the indefinite accumulation of capital and generation of surpluses became the driving forces behind the growth of economic activities, with the institution of market forces providing the mechanics for attainment of social well-being. This phenomenon has triggered unprecedented growth and an appetite for natural and environmental resources to support resource-intensive development among the burgeoning human population, as well as the massive economic growth and development which has taken place in Asia, especially China and India. Such a demand for the biosphere's resources was not considered for a long time to be causing any stress or putting any strain on nature's functional system or disturbing the ecological balance. Now, however, it is becoming

clear that the current rate of economic growth and material consumption of scarce resources such as water is unsustainable for the global community in decades to come.

Reports from world's leading organisations (UN, 2005; WRI, 2004; World Bank, 2005a) suggest that economics, until the last quarter of the twentieth century, ignored the limitations on the functioning of an economy, except for diminishing returns on land. With the world population explosion (6.6 billion) (cited by UN, 2005), and the mind-boggling pace and scale of industrialisation and development throughout the world, the situation today, at the end of the twentieth century, has vastly changed. Today, evidence abounds of the adverse impact of unregulated and unguarded expansion of economic activities driven by the forces of capitalist accumulation on the ecological balance, for example air and water pollution, desertification, climate change, and biodiversity losses.

This study was motivated by the fact that South Africa is undergoing huge economic growth and transformation, unprecedented in its modern history, characterised by fourteen years of solid economic growth and development. The motivation for this study is to explain the relationship between access to water and economic growth, good sanitation and health standards, and even poverty alleviation, in a poor and uneven society such as South Africa. In this context, it is critical that costs and affordability cannot and should not be the only determinants in a historically unequal and divided country such as South Africa. This study will seek a better understanding of nature-economy interaction in this country, and of the concepts of and conditions for the sustainability of development, especially with regard to the water sector.

In 1972 (Dieren, 1995:1), a report was published by scientists of high repute from different regions of the world, and they entitled their report "Limits to growth", which caused worldwide outrage. Many years after the first phase of environmental awareness and shortly before the first oil crisis (1973), "*Limits to growth*," brought the gospel message and truth to millions of people globally that the world was heading for disaster because of unfettered population growth, industrial expansion, exhaustion of natural resources (oil, water and gas), environmental destruction, and food shortages.

The researcher decided to undertake this study because he is convinced that as South Africa and the world enters its longest period of economic growth and development in

its modern history, it is imperative to gain new insights into the condition and state of both renewable and non-renewable resources, especially water, which is critical to human survival and existence. This study will look at the reasons that have hindered sustainable development in the past, and why the principle has not dominated government's policies, even with the demise of minority rule in South Africa, and the big challenge of real development and growth facing the new government. It will help in forging a more inclusive nation, and moving from separate development to sustainable development.

This study will also examine the close relationship between the use and availability of water for poverty eradication, better health and sanitation, economic development and the general well-being of the population. It will also explain how all the variables mentioned above affect the sustainable development of the country as a whole.

1.3.1 Economic growth and Western society

Leading authorities (Giarini and Stahel, 1993:21) of the Enlightenment era believe that a better understanding of the contemporary world can be obtained by going back to the dark ages of humanity. Most times, it is necessary to go back to the youth of individuals in order to understand and gain clearer perspectives with regard to their complexes and obsessions. In order to shed light on ideas regarding the necessity of material progress and economic growth, which without exaggeration and doubt can be called the two central obsessions of modernity, which is driving the present economic growth and development worldwide, including in South Africa, it is useful to look at their origins in the cultural heritage of Western society- here we find a standard account of the values that helped to create modern society. It tells us that the beginning of modernity, with its dreams of progress and growth, spelled out a new awakening for mankind. This period is often referred to as the Renaissance, or later as the Enlightenment period.

According to Dieren (1995:15), with the rise of postmodernism, this standard account is coming under increasing attack. In philosophy and the humanities, the dark side of the beginnings of modernity is drawing ever more attention. The confident and optimistic story of modernity is slowly being unravelled and deconstructed, dreams are turning out to be nightmares or at least attempts to keep nightmares out of sight, and promises are being unmasked as desperate responses to fears and anxieties, instead of being simple

beacons for a brighter future. This can be illustrated by the continuing poverty and deprivation (deprivation of resources like water and good sanitation) which still exist in developing countries of the world, especially sub-Saharan Africa, despite the opulence and insane wealth available to people in developed countries. These current levels of marginalisation and economic exclusion of billions of global citizens are evident - despite all the achievements of globalisation and capitalism in the 21st century, more people in the world live in abject poverty and penury than those who do not. Modernism's promise of a better life for all is nothing but an illusion and a myth, at least for many people living in sub-Saharan Africa.

One of the main critiques of modernity can be found in *Cosmo polis* by Toulmin (1990: 16, cited in Dieren, 1995). In this study, the English philosopher undertakes to reveal the hidden agenda of modernity. The problems facing mankind at the end of the second millennium are warning us that the way ahead is no longer feasible. The old battle-cries of modernity no longer suffice. Instead, we should look back at the way in which the modern project was conceived, and at the philosophical, social and economic assumptions on which it rested. The researcher will attempt to explore the idea that the economic growth that we are enjoying now, without recourse to the environment, is an answer to our anxieties, fears and the scarcity of resources. The theory of Toulmin (1990) goes on to explain that the way in which modern society was conceived influences the way in which it uses non-renewable resources such as water.

A further illumination of the roots of modernity can be found in *La peur en Occident*, (1978) a celebrated book that characterises the transition from the Middle Ages to modern times as an era of many and major perturbations. From the middle of the fourteenth century, there was a multiplication of fears all over Europe. Fear of the devil, fear of women, Jews, strangers, nature and death are some of the issues discussed by Delumeau (1978:18). During this era, new enemies were invented, perfectly illustrated not only by the witch-hunt and persecution of Jews, but also by the idea that nature was the enemy of man, to be defeated and subdued, an idea that dates back to the beginning of the modern era.

In Delumeau's view (1978:21), the anxieties of the late Middle Ages - also vividly described by the renowned Dutch historian Huizinga (1963) in his famous work entitled 'The warning of the Middle Ages' - can be largely attributed to the loss of traditional

structures and attitudes. Delumeau's work (1978) showed that the belief in progress served largely as compensation for the veiled fears of the era. The beautiful dream of better times was just one side of the coin (cited in Dieren, 1995:19).

The reason for us needing to get an idea of the ungrounded faith humanity has in unprecedented economic growth and development lies in the fact that this study will examine the extent of the role of market fundamentalism in enthroneing the principles of sustainable development in the use and distribution of water resources in South Africa. Is neo-liberalism relevant in a divided and unequal society such as South Africa?

What are the effects of the African National Congress government's market fundamentalism since the demise of apartheid in terms of entrenching sustainable development in the country, especially with regard to the issues of water use and availability?

1.3.2 Intellectual foundations of the modern economy

Towards the end of the seventeenth century, Locke (1960) described modern images of nature and the idea of unlimited progress and growth. Locke's understanding of scarcity at that time was that it was a state of war. Locke (1960) disagreed with Hobbes' (1983, 1960) view that scarcity originates in human social relations, and believed that scarcity was an economic, quasi-natural fact, a perpetual relationship between mankind and nature. Locke's (1960) view was that scarcity simply spelt out the fact that earth and nature have failed to provide enough for all. Therefore, our only solution lies in producing goods and services to alleviate scarcity or put an end to it. Economic growth and expansion were the answers to the threat of scarcity, and this idea of Locke became the accepted view of modernity. Mankind thus began rushing ahead in order to fulfill its dream.

Nature does not provide any benefits for mankind, and man has to struggle and labour with her and subdue the earth, in order to produce more and more. In the many comparisons of Locke (1960) in his second Treatise, nature loses its traditional meanings - it is devalued and destroyed at the expense of labour. Locke is exasperated at the thought of leaving an acre of land fallow instead of planting coffee or sugar on it. In the works of Locke (1960, cited in Dieren, 1995:23), one can see where the

foundations of some myths of modern society originated from, as society has been influenced by the philosophies and economic thoughts that propagated the idea of the relentless destruction and decimation of nature at all costs, and that happiness and abundance lay within the bowels of Mother Nature. This is the root cause of rapid economic growth without recourse to the sustainability or unsustainability of our way of life, actions and activities going on in our ecosystem.

It is the researcher's belief that while economic growth, as propounded by the founding fathers of economics such as Hobbes (1983) and Locke (1960), has resulted in many positive benefits for human societies in the past, unless future economic philosophy and behaviour are housed securely within the framework of sustainability, millions of humans as well as countless other species are destined for a short and unhappy voyage on "spaceship Earth", to borrow the term coined by the futurist, Fuller (cited in Beaton and Maser, 1999:2). The dominant economic worldview is at present profoundly profit-oriented and increasingly rooted in the ubiquitous and rapidly progressing phenomenon called globalisation. However, the unfathomable reality remains that globalisation of trade and investment has still not impacted on extreme poverty in Sub-Saharan Africa.

The idea that the world has to find a balance between economy and ecology also has its origin in the works of some famous economists of the 19th century. In his principles of political economy, Mills (1985, cited in Dieren, 1995:26) gives extensive attention to the necessity for a stationery economy. These passages of Mill were very dominant in "The Limits to growth", the first report for the club of Rome. All of Mill's (1985) assumptions and ideas are very relevant in today's theorising about the steady-state economy and the necessity of setting limits to growth. In a beautiful way, Mills (1985) succeeds in summarising the essential arguments that can still be found today in the debate on economic growth and how to escape from its intrusive pit holes and dangers. The inability of Mills, who is probably one of the most influential economic thinkers of the last century, to persuade his peers, can serve as a timely reminder in contemporary discussions.

The researcher decided to undertake this study on water use and sustainable development because discussions on economic growth and expansion need to be broadened and raised above the narrow "rational" economic context, and not only by looking at our society's obsession with economic growth. Critical factors such as equity,

justice and fairplay should be factored into the decision-making processes that determine accessibility to non-renewable resources such as water, especially given South Africa's centuries of marginalisation and exclusion. Mills (1985) warns that:

It must always have been seen, by political economists, more or less distinctly that the increase in wealth is not boundless, that at the end of what they term the progressive state lies the stationery state, That progress in wealth is but a postponement of this, And that each step or advance is an approach to it...if we have not reached it long ago, It is because the goal itself flies before us. I cannot regard the stationery state of capital and wealth with the unaffected aversion so generally manifested towards it by political economists of the old school. I am inclined to believe that it would be on the whole, a very considerable improvement on our present condition. I confess I am not charmed with the ideal of life held out by those who think that the normal state of human beings is that of struggling to get on, that the trampling, crushing, elbowing and treading on each other's heel Which form the existing type of social life, are the most desirable lot of human kind, or anything but the disagreeable symptoms' of one of the phases of industrial progress.

It should be noted in this context that strict adherence to market fundamentalism will not be a good foundation for sustainable development in South Africa (or anywhere in the world), as there are millions of South Africans who are poor, unemployed, marginalised and vulnerable. As a result of South Africa's racial history, most of the poorest of the poor in the country cannot really compete in a free market economy if insufficient 'safety nets' are put in place to safeguard them from the vagaries of globalisation and privatisation. In these circumstances, it will not help in forging a more inclusive and stable society if market forces are allowed to be the overall determinant in the allocation of resources such as water.

The predicament described by Mills (cited in Dieren, 1995:28) clearly resembles the scarcity that Hobbes (1600) and Locke (1600) were acknowledging in their century; people were struggling, trampling and elbowing to get ahead in order to achieve the final goal of prosperity and abundance. Mills is adamant and unequivocal in his firm belief that the goal is flying before them. He states that a mere increase in production and accumulation are as much ado about nothing. Mill's (1848) plea for a steady state

also runs counter to the idea that humanity must subdue nature in order to hasten economic growth and production, nor is there much satisfaction in contemplating the world with nothing left for the spontaneous activity of nature, with every rood of land brought into cultivation which is capable of growing food for human beings, every flowery waste or natural pasture plowed up, all quadruplets or beds which are not domesticated for man's use exterminated as his rivals for food, every hedgerow rooted out, and scarcely a place left where a wild shrub or flower could grow without being eradicated as a weed in the name of improved agriculture. An unlimited and boundless increase in economic growth and wealth, in Mill's view, devastates the earth and makes it lose its beauty and value.

Keynes (1930) wrote that within two or three generations, industrial and Western societies will finally achieve the ultimate goal and ambition of humanity - an end to the problems of scarcity, poverty etc. Keynes (1930), seeing his contemporaries still struggle down the dark tunnel of scarcity and want, perceived a glorious future that would bring light in the form of satisfaction of all the basic needs of man:

When that day came, a change in moral codes would also be possible, we shall be able to rid ourselves of many of the pseudo - moral principles which have hag - ridden us for two hundred years by which we have exalted some of the most distasteful of human qualities into the position of the highest virtues....The love of money as a possession....will be recognized for what it is, a somewhat disgusting morbidity, one of these semis - criminal, semi - pathological propensities which one hands over with a shudder to the specialists in mental disease. When scarcity is overcome, we shall be able to return to the traditional virtues of mankind, we shall honor those who can teach us how to pluck the hour and the day virtuously and well (Keynes, 1930:15).

There is abundant evidence in these well-known phrases of Keynes (1930:18) that scarcity as a concept has a beginning, and somewhere before the beginning in the past, virtuous and orderly living of nature with man was possible and existed. However, the situation has been reversed with the advent of the modern economy - within the phrases of Keynes lies a hidden promise that somewhere or sometime in future, it will still be possible to live humanely and virtuously within the economy and on earth.

Boulding (1966:20) published a short article entitled "The economics of the coming spaceship Earth". In this article, Boulding (1966) takes a good look at the state of the world, with a critical examination of the goals and values which had been accepted as the norm for a long time. With an increase in population, exhaustion of natural resources and restricted space for disposal of all kinds of industrial and agricultural waste, Boulding (1966) expressed grave doubts about the desirability and sustainability of economic growth, which is the main objective of all governments on earth. These 20th century philosophers and economists have long argued about the fragility of the ecosystem and finiteness of resources available throughout the world if the present consumerism and crass materialism that has gripped the new world continues in its present form and style. According to Boulding (1966:20) and Keynes (1930:15), humanity is doomed to an ecological apocalypse if there is no radical change of paradigm in the way we use our non-renewable resources such as water.

Taking the exhaustibility of non-renewable resources such as oil, water and gas into due consideration, Boulding (1966:23) believes that transformation is needed in the way we produce and consume natural resources of the earth, or else circumstances will force us to do it in future under much tougher conditions. Boulding (1966) puts it plainly that in a spaceship context; the crucial factor in the ionosphere is the maintenance of natural (non-renewable resources) capital which sustains all forms of production, consumption and life itself. Boulding (1966:25) warns against complacency or postponement in the establishment of a structure for the spaceship economy. which invariably means that adequate measures have to be put in place by all stakeholders throughout the world (both public and private), which will ultimately convince all global citizens of the need for restraint and a change of attitude with regard to consumption patterns and values, especially those in the developed and highly industrialised countries of the world, whether in Europe, Asia or North America.

Against this background comes the need for a critical study of and research into the impact of the rapid and tremendous economic transformation that South Africa has witnessed in its modern history. The absence of sustainable development in the distribution of water in a divided and unequal society such as South Africa requires more and better intervention by government to help the marginalised and vulnerable segments of the country, given its history of exclusion and marginalisation. The wider

implications of South Africa's declining water resources, which faces imminent shortage by 2025 (DWAF, 2001), and the ability of the water resources in the country to cope with the massive changes taking place in the South African economy need to be investigated. This study will also look at mechanisms to increase efficiency in the distribution and delivery of water by the councils and how policy makers can best address the imminent shortage and inculcate the principle of sustainable development in the use of water throughout the country.

Many experts agree (Boulding,1966:20; UN-WWAP, 2006:442; Gleick, 2000) that there exists an attitude such as " let us multiply, eat, drink, spend, extract and pollute" - i.e. let us grow in the usual way, as the spaceship Earth is still a good way off his harmful journey to perdition. In many instances, the spaceship economy has actually arrived, as we have already run out of clean air and water in many developed and developing societies, many lakes have become cesspools, forests have disappeared and there has been massive pollution or overuse of freshwater sources throughout the world. However, the greatest harm will be done to future generations, as they are likely to inherit an even more contaminated spaceship, with less and less natural resource deposits in it. Boulding (1966) believes that for this reason, there can be no moral benefit to society. A society which loses its responsibility towards future generations soon falls apart, as history has demonstrated many times over.

The intellectual foundation of most modern economies (which is economic growth and profits at all costs) also permeates the thinking behind the South Africa government's belief in the benefits of globalisation, which necessitated the government's cut-back in funding to municipalities throughout the country. One of the problem statements of this study will be to examine the effect of this policy on the availability and use of water in South Africa.

This study will look at the effect of the government's cut-back in funding to councils and changes in the municipal council acts, and how this has impacted on service providers in terms of the delivery of water, and the subsequent effects on the country's sustainable development.

In the final analysis, it is important to remember the words of Schumacher (1973:15) in his classic diatribe against the ills of modern society, when he said that:

This dominant modern belief (in the benefits of growth at all costs) has an almost irresistible attraction, as it suggests that the faster you get one desirable thing the more securely do you attain another. It is doubly attractive because it completely bypasses the whole question of ethics.

Our current levels of consumption need to be completely altered in order for our civilization not to implode in years to come.

1.4 SIGNIFICANCE OF THE STUDY

The main significance of this study is in highlighting the relationship between water, better health standards, poverty alleviation, economic growth and development. It also includes the fact that water is a social good that is difficult to commodify, because it has no substitute. If people cannot afford it, the existence of a community or people will almost completely grind to a halt without water. Many experts on water services believe that it is very important to find a better way of distributing a resource such as water, which is both an economic good (Bakker, 2000, 2001) and a common good (Assies, 2003; Barlow and Clarke, 2003; Bond, 2004a; Hukka and Katko, 2003; McDonald and Ruiters, 2005; Petrella, 2001; Shiva, 2002).

The real issue in this study is how to distribute water throughout South Africa as an economic good, while respecting the principles of equity and natural justice as rights of citizens who are unable to pay, not because they do not want to pay, but because they are unable to pay as a result of the poverty, unemployment and economic exclusion that was borne out of centuries of apartheid and neglect. Recognition of this salient phenomenon in the South African socio-cultural milieu in terms of the distribution of resources is the cardinal principle in forging development in South Africa that is both inclusive and sustainable.

Water is the primary life-giving resource - its availability is an essential component in socio-economic development and poverty reduction. Today, a number of significant factors have impacted both on this resource and on managing water in an integrated, sustainable and equitable manner. These factors include: widespread poverty, malnutrition, the dramatic impacts of demographic change, increasing urbanisation, the effects of globalisation - with the threats and opportunities this brings - and the recent

manifestations of climate change. Water is fundamental to our way of life, at whatever point in our socio-economic spectrum a community may be situated. It is likewise crucial to the preservation of the ecosystem upon which our lives depend. Whatever development initiatives are proposed over and above the provision of secure access to water - and such initiatives are many and varied - unless the requisite water services are secured and provided, these initiatives will not succeed (McDonald and Ruiters, 2005; Petrella, 2001; Shiva, 2002).

This study will examine the issues that may have affected the entrenchment of sustainable development in the use of water in apartheid South Africa, and the contemporary issues still hindering this in modern South Africa. Amongst the issues involved are the acute paucity of skills in municipalities, cut-backs in government funding to municipalities during the 1990's, the racial nationalism of the ruling party which resulted in the deployment of unqualified cadres to manage water infrastructures, employment equity even to the detriment of service delivery and sustainable development in rural areas, and the neo-liberal economic policies of the government, especially as they affect the water sector in South Africa. Access to secure water is essential to the socio-economic development of any country, and this study will aim to educate stakeholders in South African water resources (consumers and policy makers) about how crucial water is to development (Gleick, 2000; UN-WWAP, 2006:442; Biswas, 2001:4). This study will focus on the role of sustainable water use in improving the socio-economic situation in South Africa.

Furthermore, this study will strive to identify the relationship between water, sanitation and economic development. It will also explore the role of water as a veritable instrument in the alleviation of poverty in South Africa. It will also focus on the dual role of water and increased agricultural production, as South Africa and most of the continent faces a crisis of endemic poverty and pervasive under-development. For many African countries, economic performance in the immediate postcolonial era was good. However, for most of Africa (Mkandawire, 1997:20; World Bank, 1996), particularly sub-Saharan Africa, since the oil crisis of the mid-1970's economic performance has been poor and worsening. Agriculture has been one of the worst performing sectors in Sub-Saharan African economy for decades, and according to Sonou (2002:10), long-term growth prospects in Africa will depend on how well agriculture performs.

It has been argued that in most countries in Africa (Biswas, 1999:4; Sonou, 2002:11) agriculture will be the source of foreign exchange and savings. It is abundantly clear that out of all the continents of the world, Africa is the only one where growth in per capita food production has been lower than population growth. This actually means that African governments and people have to find a viable agricultural food production policy that will link the increasing scarcity of water on the continent with the impending water crisis with which it may ultimately be faced in years to come. This means that dreams of economic development without adequate food security will remain an illusion, as no country in modern history has been able to achieve sound economic growth and development without an adequate and well-researched food security plan and programme for its citizens and the population at large.

Two of the leading authorities on agricultural reform and development in Africa, Mkandawire (1997:21) and Sonou (2002:7), believe that from 1980-1994, gross domestic product (GDP) growth rates were lower than population growth rates. More recent data shows, however, that between 1996 and 1998, there has been some economic recovery, and average GDP growth rates have exceeded population growth rates for the first time in the past two decades. However, one cannot celebrate yet, as this recovery is still fragile, and there is still a long way to go in order to achieve sustainable socio-economic development, in which water will play a critical role.

Africa and South Africa in particular cannot be sufficient in terms of food production unless efforts are devoted to ensuring that the food crisis in Africa is reversed, but these noble efforts or goals will depend largely on the availability of sustainable water resources and how these are used to drive the development of the continent. The stark reality remains the fact that success is needed in other sectors of the economy in order for the government and stakeholders to be able to attract the much-needed capital and investments for sustainable water resource development and management.

There is abundant evidence (Ahmad, 2003; Biswas, 1999:8; Sonou, 2002:10) of the link between water and poverty. Because of poverty, access to adequate water and sanitation in Africa is the lowest in the world and as a result of this, there is a high incidence of communicable diseases, which reduces the vitality and economic productivity of the continent. This study will attempt to show that inadequate access to water and sanitation is both a cause and consequence of poverty. Similarly, unsustainable use of water

resources can become a constraint to improved agricultural development, food security and, consequently, the availability of resources for water resource development.

There is ample evidence in the literature (Sachs and Santariurs, 2007; UN, 2003a; Gleick, 2003) that water and socio-economic development are mutually dependent. They can be nodes in a vicious cycle that places societies in a downward spiral of poor economic development and poor access to safe and sufficient water and sanitation. Alternatively, they can reinforce each other in an autocatalytic way, leading to an upward spiral in which improved socio-economic development produces the resources needed for improved water resource development that in turn buttresses and stimulates further socio-economic development. Forty percent of the world's population in 80 countries, mostly in sub-Saharan Africa, currently suffers from serious water shortage. A billion people worldwide lack access to safe drinking water, and 2.4 billion people lack access to adequate sanitation (WHO, 2004). For 25% of Africa's population, chronic water stress is high, 13% of the population experiences drought-related water stress once in every generation, and 17% are without a renewable supply of water.

Whichever way one looks at it, the picture that emerges from today's data and tomorrow's forecasts is so complex and appalling that it can leave one feeling powerless. If one wants to induce a nervous breakdown, the statistics of the worsening global water crisis are a sure-fire winner. This study will attempt to find ways in which the South African government and stakeholders (consumers and interests groups) can best prepare themselves for the emerging reality of water scarcity and the role of government, industries, agriculture and urbanisation in improving sustainability and efficiency in the use of scarce water resources.

The present situation in Africa and globally is dire - the future looks very grim and unmanageable, and if South Africa cannot increase its supply of fresh water, all it can do is change the way in which it uses and distributes its water resources. The population of South Africa is going to increase exponentially for years to come, and it is an incontrovertible fact that South Africa will witness water scarcity by 2025 (DWAf, 2001). This will have a knock-on effect on housing, road construction and other infrastructural developments in the municipal areas of the country.

This study will attempt to find ways (if any) in which available water resources in the

country can sustain the increasing rate of water consumption, whether for agriculture, construction, domestic use etc. In view of the fact that South Africa will be a water-stressed country by 2025 (DWAF, 1999; UN, 2005), and there is a fundamental need to entrench the principle of sustainable development in policies regarding water use and distribution, South Africa cannot increase its supply of fresh water - all it can do is change the way in which it uses it. How do we change the way we use water in South Africa? There is certainly room for better management of water in agriculture and industries, which currently amounts to 70% of the water we use in South Africa.

The researcher decided on this study because he sincerely believes that water plays a critical role in stimulating socio-economic development, and if Africa is going to solve its food crisis, improve health standards, and march on the road to economic growth and development, then due attention should be paid to the issue of the looming global crisis, which is water scarcity, vis- a -vis the significance and impact of the looming climatic change in terms of the availability of water resources in Africa in general and South Africa in particular. This study will explore the relationship between water scarcity, development and the role of government in accelerating or decelerating socio-economic development through proactive, relevant and meaningful water policy.

There is little doubt that the language of political debate in South Africa changed at the beginning of the second decade of democracy. Whereas the first decade (1994 - 2004) was dominated by the language of reconciliation and neo-liberal macroeconomic stabilisation, the second decade (2005 onwards) has been dominated by the challenge of poverty. What was common to both decades, however, although admittedly more prominent in the second, was the search for the elusive developmental state (Swilling, 2006). Market fundamentalism and right-wing politics present us with a veritable arsenal of stratagems and techniques to affect change. Fortunately, these have been slated by the South African government as being inappropriate for meeting our needs and development priorities (Swilling, 2006). In his address to the National Assembly on the occasion of his 2004 budget vote, former President Mbeki unequivocally endorsed a '*left*' project, quoting the public intellectual, William Hutton, when he said:

Western democracies have been characterized by one broad family of ideas that might be called left - a belief in the social reduction in inequality, the provision of public services, the principle that workers should be treated as assets rather

than commodities, regulation of enterprise, rehabilitation of criminals, tolerance and a respect for minorities'-and another broad family of ideas that might be called right; an honoring of our inherited institutional fabric; a respect for order, a belief that private property rights and profits are essential to the operation of the market economy, a suspicion of workers rights, faith in the remedial value of punitive justice, and a distrust of the new.

He went on to say that:

there can be no doubt where we stand with regard to this great divide. It is to pursue the goals contained in the "broad family "of ideas that might be called left "that we seek to build the system of governance. The obligations of the democratic state to the masses of our people do not allow that we should join those who "celebrate individualism and denigrate the state" We should never succeed to eradicate the legacy of colonialism and apartheid, If we joined the campaign to portray "the collective and the public realm ... as the enemies of prosperity and individual autonomy....opposed to the moral basis of society grounded as it should be, (in terms of right-wing ideology) in the absolute responsibility of individuals to shoulder their burdens and exercise their rights alone.

This is precisely what he meant when he said in the May State of the Nation address that:

the advances we must record demand that we ensure that the public sector discharges its responsibilities to our people as a critical player in the process of growth, reconstruction and development of our country (cited in Swilling, 2006: 15).

The key characteristics of the current phase is the all-pervasive emphasis on state-led public sector investments, which is reflected in a remarkable shift away from privatisation in favour of a strategy to use parastatals to lead massive investment increases in physical and economic infrastructure. Together with state-controlled financial institutions such as the Industrial Development Corporation (IDC), the

Development Bank of Southern Africa (DBSA), State Pension Fund (PIC) and the special funds, there is clearly a newfound commitment to demonstrating what state-controlled investments can achieve.

The government has borrowed tremendously from the economic policies and programmes of the Asian tigers, while significantly adjusting them to suit South African society and culture. This is a result of the colossal and disastrous effect of the so-called “Washington consensus” prescribed structural adjustment programmes from the Breton Woods Institutes, which impoverished most countries of Sub-Saharan Africa in the early eighties. The crux of the matter is that this study will highlight relevant issues pertaining to the consequences of government involvement in water resources (if any), and it will also seek alternatives to existing procedures adopted globally in order to improve access to water, and consequently to improve socio-economic development (Swilling, 2006:8).

This study will contribute to the limited literature available in South Africa with regard to the looming water crisis facing the country. Throughout history, water has always been considered to be a critical natural resource for mankind’s survival. Human history, from the earliest evolution of human beings around the lake shores of Northern Kenya to the development of the main civilizations on the banks of certain major rivers, can generally be considered to be water-centred. The early important civilizations developed and flourished on the banks of major rivers such as the Nile, Euphrates, Tigris and Indus centuries ago.

In fact, the history of mankind can be written in terms of human interactions and relationships with water. It is not difficult to realise why civilizations and habitats often developed along the banks of several strategically important rivers. Easy availability of water for drinking, farming and transportation were important requirements for survival. Human survival and welfare generally depended on the regular availability and control of water (Biswas, 1999:364).

1.4.1 Research objectives

The objectives of this study include finding answers to the problems mentioned in this section. It will examine South Africa’s history of colonialism and apartheid in order to

determine if the principle of sustainable development has been practised in the country or has helped in the formulation of government policies. It will provide a brief overview of South Africa's colonial and apartheid history, as well as the impact of this on sustainable development of the country.

This study will also look at the factors militating against sustainable development in post-apartheid South Africa.

What are the effects of the African National Congress government's market fundamentalism since the demise of apartheid in terms of entrenching sustainable development in the country, especially with regard to the issue of water use and availability?

This study will examine the effects of employment equity on the ability of municipal councils to improve water service delivery, take cognisance of the paucity of water engineers and technicians in the country, and also be mindful of the effects of the bantustatisation of education on the skills of the black majority.

It will also look at the effect of the government's cut-back in funding to councils and changes in the municipal council acts, and how this has informed service providers in the delivery of water and the subsequent effects of this on sustainable development in the country.

How can sustainable development be specifically promoted in the South African water sector? In view of the centuries of inequality and exclusion of the majority of the population from participation in the economy, they were thus denied the wherewithal in terms of skills and resources (money) to pay for certain amenities in a liberalised economy.

What are the merits and demerits of the concept of the developmental state and its influence with regard to the government's policy in terms of water accessibility and management in South Africa? This study will examine whether or not South Africa has the technical wherewithal to achieve a developmental state. Is the government capable of the huge capital outlay needed to maintain the water infrastructure in view of the global economic meltdown?

What role will the private sector play (if any) in alleviating the looming water crisis in the country, especially if the private sector alone cannot be trusted to apply equity and justice in the distribution of critical resources such as water?

1.5 PLACE OF THE STUDY WITHIN DEVELOPMENT STUDIES

Within the field of development studies, this study is located in the context of the reasons for the lack of sustainable development in both pre-apartheid and post apartheid South Africa in terms of the distribution of resources, especially water. It examines the reasons for the lack of sustainable development in both the old South Africa and the new and democratic South Africa. This study is also critically situated in the role of water availability in promoting economic growth and poverty alleviation in a poor and divided society such as South Africa, which is struggling with issues of poverty and unemployment after centuries of colonialism and apartheid, which impoverished the majority of the population.

This study explores the interrelationship between environmental economics (water resources), ecology, politics and sustainable development, and it aims to investigate the immense potential of this connection to influence change within South Africa and on the continent in general. It is primarily focused on the fact that there is a dominant role for the concept of sustainability in a healthy, future-oriented South Africa. It is evident that the mere mention of these four terms - environmental economics (water resources), ecology, politics and sustainable development - suggests a herculean task. Volumes of papers and theses have been written on each as a separate topic, but not much mention has been made of the relationships within and amongst them. This study will look at the interface between water, economic development, poverty alleviation, sanitation and good health.

This study also examines how the use/misuse of environmental resources (such as water) is affecting the environment and nature, and the role of the South African government (politics) in ensuring that all stakeholders are aware of the (un)sustainability of some of their actions or inactions. One of the problems of modern society lies in its inherent over-specialisation in terms of topics, studies and research, to the extent that the connection between areas of inquiry have been ignored in favour of an intense search for in-depth technical knowledge of such disciplines or topics as

individual entities.

The researcher has absolute faith and conviction in the overriding benefits of holistic systems thinking, no matter how simple or obvious some of the "solutions" might seem. In conducting this research, he does not aspire or seek to break new ground in environmental economics, ecology or sustainable development, but has the higher aspiration of revealing the interconnections and interrelationships within these disciplines, which will ultimately enrich the field of development studies in South Africa.

1.6 NATURE OF THE PRESENT UNDERSTANDING OF THE FIELD OF STUDY

The concept of the finiteness of one of the world's most precious resources, water, is well known by many (Biswas, 2001:360; UN-WWAP, 2006:442; World Bank, 2005). The South African government, industry and citizens are "in denial" about this. Although the majority of people in South Africa accept the fact that life is unsustainable without water, not much attention or research has been devoted to the (mis) use of this scarce and finite resource. Most people believe that the issue of water scarcity is exaggerated, and they do not believe that it will affect them personally. While those in industry and agriculture are happy with the status quo, the indifference or ignorance of politicians with regard to the wastage of water and its looming scarcity in a decade or two will indeed cost the country and its citizens dearly.

Ehlich (1968, cited in Beaton and Maser, 1999:3) wrote that people in power or, to be more precise, those whose ideologies are currently dominant, normally perceive fewer problems with the current state of affairs than those whose ideas are not in favour or in power (political and economic power). The Stanford University biologist, Ehlich (1968), has called this the "*I am the proof phenomenon*" and "*I have risen to a position of power in this system*". Embedded in this philosophy is the stark reality of why systems fail to reform themselves from within - powerful leaders and interest groups see no need to change the fact that the South African economy cannot sustain its current rate of water consumption, or that the economic growth and development of the country may be hindered in 25 to 40 years from now- it is treated with skepticism by people, and at best with exaggeration.

This is due to the fact that in South Africa, like in most developing countries of the world, the ruling party is always in bed with big donors and corporate capital, which fund their election campaigns. This 'marriage of convenience' between multi-nationals, big corporations and ruling parties is more pervasive in Sub-Saharan African countries, where they also directly influence some programmes and policies of governments through their indirect control (financing) of party machinery and apparatus.

This makes this field of study very critical in highlighting the fact that unregulated water use is a threat both to our survival and to the sustainability of our economy and environment. The time to start changing attitudes, policies, lifestyles and alternatives is here and now, even though market-based economic ways of thinking, complete with an emphasis on "national" economic growth, seem for the present to be in control of the major decisions with regard to the allocation of resources throughout the country and driving our nation's public policies.

Kuhn (1962:35), in his widely quoted publication entitled "Structure of Scientific Revolutions" notes the difficulty with which major new ideas and systems supplant the old established order. He points out that this has occurred historically, even in the face of overwhelming evidence, such as with the Copernican revolution, the discovery of Newtonian physics or Darwin's theory of natural selection - old established ideas die hard, even if it is only because they are in control, not because they are correct (Beaton and Mosser, 1999). In the words of Kuhn (1962), our belief is that a "sustainability revolution" will involve a more radical paradigm shift for the economic than the biological mindset. This study will examine the link between ecology and economics in view of the fact that the wanton use and mismanagement of non-renewable resources is a recipe for disaster for us and future generations.

The role of water in the sustainable growth and development of the country will be laid bare in this study, so that the "establishment", both public and private sectors, will no longer be passive with regard to the issue of the mindless consumption of finite resources, and will no longer regard our concern (about the water crisis) as being exaggerated and over-hyped. The management and protection of regional, national and international freshwater resources have reached a crucial stage in the history of human civilization and development. Over the past several decades, it has become obvious to many that traditional water policies are not up to the task of meeting the challenges of

the 21st century.

Most experts in water (Falkenmark, 1997; Gleick, 2002:1524; Biswas, 1999:364) have insisted that the traditional response to past water problems has been to focus on large-scale solutions: to build major new facilities; to use engineering solutions for ecological problems; and to treat diseases as they appear, rather than focusing on prevention. In many regions of Africa, these solutions must continue to help address water-related problems. However, new approaches are needed as well. Efforts to explore non-structural alternatives to water supply should be widely encouraged, including efficiency improvements and wastewater reuse, and demand management-focused activities to reduce threats of water-related diseases are also necessary. Large-scale climatic changes should be factored into long-range water planning and management. New water institutions should be evaluate and tested. Unless new thinking is applied, South African and international water policy makers will increasingly struggle to offer reasonable guidance for a complicated future in terms of a very critical resource.

According to Terreblanche (2002), since the fall of the Berlin Wall, the disintegration of the Soviet Union and the subsequent rise of authoritarian capitalism in China in the early nineties, the dominant development paradigm in the World has been the liberalisation of the market, Washington consensus and privatisation of public utilities. This mythical faith and dogma in the 'overwhelming power of the market' (Mkandawire, 1997) has had a deleterious effects on the poor in the developing countries of the world, especially South Africa, where scarce and non-renewable resources such as water are being commodified and made to be an economic good, instead of a social good (Narsiah, 2008).

The current lack of consensus regarding a guiding ethic for water policy has led to fragmented decision-making and incremental changes that satisfy no-one. Some suggest that the problem is primarily technical, and that we only need more efficient technology and better cost analysis (Palmer Development Group, 1994; World Bank, 1990) to satisfy the needs of all parties involved. Others believe that only a reorganisation and coordination of the water policy process to reflect the demands for justice and equity in society (Gleick, 1998; Narsiah, 2008) will rationalise water decisions. This debate will continue to be an important part of the emerging challenges to 21st century water policymakers, and this is precisely the point at which this study can contribute to

widening and deepening the literature and body of knowledge available to the country and the international community with regard to the issue of ameliorating the problem of the emerging global water crisis.

1.7 CONTRIBUTION OF THE STUDY AND THE NEED FOR RESEARCH

This study will examine the relationship between water availability, food security, good sanitation and health dimensions of adequate water supply. It will contribute to our understanding of the role of private service providers in the entrenchment of sustainable development in the use of water throughout the country. It will also enrich our understanding of the fact that, irrespective of the rhetoric from 'Luthuli House' about South Africa's unprecedented march towards a developmental state, the country has neither the technical know-how nor even the national vision to create a bureaucracy that is non-racial, non-partisan, non-sexist and highly educated, which is critical for the smooth progression to a developmental state.

In this 21st century, our understanding of the stocks, flows and condition of global water resources is still alarmingly imperfect. The international hydrological decade, coordinated by the United Nations Educational, Scientific and Cultural Organization (UNESCO), beginning in the mid-1960's, was successful in elucidating many unknown aspects of the global hydrological cycle, and some of the best references to global water resources still date from that period (Gleick, 2002:30). Presently, there has been no follow-up or adequate research and awareness of critical water issues affecting the world, and governments, stakeholders and the world population have been treating water as an infinite and inexhaustible resource, while the reality differs significantly from common beliefs and perceptions.

Coleridge (1834, cited in Gleick, 2003:1526), in his classic poem entitled "The Rime of the Ancient Mariner", effectively described the principal characteristic of the earth's water resources when he wrote: "water, water, everywhere, not any drop to drink". 97% of all the water on earth is salt water, and is therefore unsuitable for drinking or growing crops. The remaining 3% is fresh water, comprising a total volume of about 35 million km³. If this water were spread out evenly over the surface of the earth, it would make a layer that is 70m thick. However, almost all of this fresh water is effectively locked away in the ice caps of Antarctica and Greenland, and in deep underground aquifers,

which remain technologically or economically beyond our reach. Less than 100 000 km³ - just 0.3% of the total fresh water reserves on earth - is found in the rivers and lakes that constitute the bulk of our usable supply (Gleick, 2003:1530). Much of urban Africa confronts - or will be confronted by - inadequate water supplies

Falkenmark (1997), in a cross-continent survey, looked at the water crisis and predicted that Africa would be the most water-stressed continent in the world. Decades of literature with data aggregated at the global or national level has shown that water is less available on the African continent than in Europe, Asia, North America or Latin America, that the increasing population in Africa will reduce per capita water availability, and that conflict or cooperation could result as different water users - national and international - compete for a future entity.

Evidence abounds (UN, 2003a) that there is a paucity of literature regarding the implications of these conditions for African urban areas, which are experiencing some of the world's fastest rates of urbanisation. Much of the published work on water use in sub-Saharan Africa and even South Africa has focused in general on the theory and practices of water pricing, distribution and sanitation infrastructure, and little has been said about the role of the (un)availability of water resources in the socio-economic growth and development of sub-Saharan Africa. This study will help to determine the relationship between water availability in South Africa and socio-economic development, as well as its critical role in the alleviation of poverty through improved food production.

The United Nations Environmental Programme (UNEP, 2002) reported that 200 scientists in 50 countries had identified water shortage as one of the two most worrying problems for the new millennium, the other being global warming. We use about 70% of the water we have in agriculture. However, the World Water Council believes that by 2020, we will need 17% more water than is available if we are to feed the world. Therefore, if we go on as we are, millions more people will go to bed hungry and thirsty every night than those who currently do. Today, one person in five across the world has no access to safe sanitation (2.4 billion worldwide), and more than 30 000 children die before reaching their fifth birthday, killed either by hunger or by easily preventable diseases.

The world's impending water shortage could reduce global food supplies by more than 10%, and this shortage could lead not only to hunger, but also to civil unrest and war (WRI, 2000). Without increasing water supply for irrigation, major food-producing regions will not have enough water to sustain crop production. Some 40% of the world's food comes from irrigated cropland, and we are betting on this share increasing in order to feed a growing population. In addition, the threat to the productivity of irrigation is the excessive pumping of groundwater from subterranean aquifers (Postel, 1999).

Countries which are short of water are buying more and more in the world grain market. Jordan imports 91% of its supplies from abroad, Israel 87%, Saudi Arabia 50% and Egypt 40% (World Bank, 2004; Gleick, 2003), and the number of people living in countries suffering from water shortages is expected to rise from 470m today to 3bn by 2025 (World Bank, 2004; Postel, 2001). South Africa is relatively safe until 2020, (DWAF, 2001), but the current global realities cannot be ignored, and for this reason, adequate research and study is needed to prepare the country for the emerging world scenario.

Virtousek et al (1986:364) espoused the concept of carrying capacity. Biologists often apply the concept of "carrying capacity" to the question of population pressures on the environment. The carrying capacity is the largest number of any given species that a habitat or ecosystem can support indefinitely - when this maximum sustainable population level is surpassed, the resource base begins to decline - and sometime thereafter, so does the population (Cited in Van Dieren, 1995:25). The outer limit of the earth's carrying capacity is determined by the total amount of solar energy converted into biochemical energy through plant photosynthesis, minus the energy that these plants use for their own survival.

Implicit in Virtousek's (1986) concept of carrying capacity is the fact that it is no longer sustainable for us to continue to consume water carelessly, without knowing the full repercussions of our behaviour. Virtousek et al (1986) state that regardless of a country's water abundance or scarcity, water development and management is the only means to ease future water stress. According to Lautze (cited in Gleick, 2003:1520), it was easier for him to take a long shower in South Africa than Ethiopia, even though Ethiopia is one of the most water-abundant countries in Africa, and South Africa is one of the least water-abundant. According to Lautze (cited in Gleick, 2003:1525), "Differences in

natural water development may not be the major issue”. He goes on to say that “This presence or absence of water development can be considered to effect water stress (rather) than natural constraints in Sub-Saharan Africa”, and although agricultural development has the potential to improve African economies, it requires extensive water supplies in order for a large-scale green revolution to take place in Africa. These statistics from the Water Systems Analysis Group at the Institute for the Study of Earth, Oceans and Space at the University of New Hampshire reveal the urgent need for sustainable agricultural development to take place.

In a global study conducted by the United Nations (2005), unsafe water is responsible for around 80 percent of diseases and 30 percent of deaths in developing countries throughout the world. Experts agree that regions that suffer from water stress serve as a catalyst for the spread of disease (Postel, 2001). In Africa, which accounts for 90 percent of global cases of malaria, water stress plays an indirect role in spreading malaria because it impedes the human recovery process.

It is the view of the UNDP (2006) that in order to deal with the water crisis in the world, the United Nations formulated a number of so-called Millennium Development Goals dedicated to reducing poverty and ensuring sustainable development. Goal number 7, target 10 reads as follows: “halve, by 2015, the proportion of people without sustainable access to safe water and basic sanitation”, and the year of reference for this goal is 1990. In order to meet this water supply and sanitation target, an additional 2600 000 people per day (up to 2015) should gain access to improved water sources, and an additional 370 000 people should gain access to improved sanitation.

In the context of development outcomes and meeting the MDG 7 Target 10, it is imperative to focus on water supply and sanitation (United Nations, 2001). Indeed, it is essential to respect human values, as this ensures good health and economic benefits for all. Expanding access to water and sanitation is a moral and ethical imperative, rooted in the cultural and religious traditions of communities and countries, mostly in Sub-Saharan Africa, and also millions around the world. Dignity, equity, compassion and solidarity are values shared all over the world. Extending water supply and sanitation to poor households would contribute significantly to promoting these noble ideals. The Right to Water, recently proclaimed by the United Nations (General comment No 15, 2002), is said to be “indispensable for leading a life in human dignity” and a

“prerequisite for the realization of other human rights”.

According to the WHO (2004), safe drinking water and basic sanitation are of crucial importance to the preservation of human health, especially among children. Water-related diseases are the most common cause of illness and death among poor developing countries. According to the World Health Organization (WHO, 2004), 1.6 million children’s deaths per year can be attributed to unsafe water, poor sanitation and a lack of hygiene. The WHO/UNICEF Joint Monitoring Program estimated that meeting the MDG 7 Target 10 would avert 470 000 deaths per year, especially in Sub-Saharan Africa (WHO, 2004).

An analysis by the WHO (2004) found that achieving the MDG 7 would bring substantial economic gains - each \$1 invested would yield an economic return of between 3\$ and 34\$, depending on the region. Households with improved services suffer less morbidity and mortality from water-related diseases. The benefits would include an average global reduction of 10% in diarrheal episodes. The avoidance of health-related costs would amount to \$7.3 billion per year, and the annual global value of adult working days gained because of less illness would rise to \$750 million.

Better services resulting from the relocation of a well or borehole to a site closer to user communities, the installation of piped water supply in houses, and latrines closer to home yield significant time savings. Girls and women have better educational and productive opportunities when they have water and sanitation facilities nearby, because they can safeguard their privacy in schools and save time fetching water. The availability of water can be used to start or expand small enterprises and thus increase disposable household income.

At the national level, demand for agricultural products increases, and tourism can develop. From the ages of 0 to 4 years, the cruel toll of child mortality may be reduced. From the ages of 5 to 14 years, far more children, especially girls, could go to school if they had adequate drinking water and sanitation facilities. It would enable children to escape from their family’s poverty. From the ages of 15 to 59 years, productivity gains would be achieved with improved water and sanitation facilities, which would ultimately result in the overall socio-economic growth and development of communities and countries as a whole.

With 8 years to go until 2015, a dramatic increase in access to safe drinking water and basic sanitation services for poor women, men and children in developing countries will be required if the MDG 7 is to be met. This will only become possible if there are sufficient bodies of knowledge and research on the likely ramifications of the water crisis facing sub-Saharan Africa, especially South Africa. It is from this premise of available data and studies that solutions can be found to the problem of the water crisis in the country.

In actual fact, if South Africa is to meet the MDG 7, there have to be more insights and alternatives available to policy makers in the country in order to maintain the rapid economic growth and development that the country is experiencing. Although South Africa is on track towards meeting the millennium development goals, the critical question will be how it will deal with the imminent water stress by 2025(DWAF, 2001), while at the same time respecting and inculcating the principle of sustainable development, which is crucial to the country's future stability, growth and development.

The absence of sustainable development in the use of water in the old South Africa was influenced by the racist policies of the apartheid regime, while the lack of sustainable development in the use of water in modern and democratic South Africa is being determined by, amongst other factors, the market regime of the ANC-led government. This study will attempt to identify the reason why water is a social good, and if privatisation becomes absolutely necessary, issues such as equity and justice for the poor should be given consideration, based on South Africa's centuries of economic marginalisation and exclusion of the black majority from resources such as water.

1.8 IDENTIFYING THE RESEARCH TOPIC AND ESSENTIAL KEYWORDS

The research topic of this study is water use and sustainable development in South Africa.

The main keywords are as follows:

Developmental state

Sustainable development

Colonial and apartheid legacies' effect on sustainable development in South Africa

Natural capital and development

Moral capital and development

1.9 FORMULATING THE RESEARCH PROBLEM

The central objective of this study is to emphasise the fact that water is a scarce and finite resource, and that for South Africa to sustain its current levels of economic growth, rapid urbanisation, population growth and development, the issue of water (un)availability should be factored into the development equation by the private and public sectors. This study will attempt to investigate the impact of water (un)availability on the increasing population of South Africa. It will look at the relationship between water, food, poverty, health, good sanitation and the overall economic development of the country.

This study will examine the privatisation of water in South Africa, with a closer look at its class and racial undertones (if any) in terms of the use of water. It will adopt a holistic approach to the issues that have determined the distribution of water in South Africa for centuries. It will also take a detailed look at the reasons for separate development during the apartheid era and in modern South Africa. It will end by suggesting ways in which to entrench sustainable development practices with regard to the use of water throughout the country.

In view of the neoliberal economic policies of the Thabo Mbeki regime and the overall trajectory of the South African economy since the demise of political apartheid in the country, this study will examine the issues that enhance or mitigate the principle of sustainable development in modern and democratic South Africa. These research problems are vital and relevant, because South Africa cannot increase its supply of freshwater - all it can do is to change the way in which it uses it. Although South Africa is relatively safe for now, by 2025, South Africa will be faced with a water stress situation, and it is imperative for future research to help the country avert the looming water crisis.

1.10 EXPLANATION OF THE RESEARCH DESIGN AND METHODOLOGY

Research in the field of development studies often involves an attempt to highlight how a particular social process could change for the good of the people. In this scenario, the researcher is going to investigate how the use of water will affect the socio-economic development of South Africa, and this study will focus on the relevance and role of water (un)availability in terms of the sustainable development of the country, taking cognisance of the harm done to the ecosystem in our quest for freshwater resources to galvanise the current economic transformations occurring in the country. The literature review will attempt to identify the historical factors that have contributed positively or negatively towards implementing the concept of sustainable development during the colonial and apartheid era, and even in the new and modern South Africa.

The literature review will focus on some written works on the role, importance and place of water in global socio- economic development, with an emphasis on South Africa. It will also take a holistic look at the meaning and merits of sustainable development in South Africa, which will involve a literature synthesis and interpretation. The literature review will consist of primary sources, which include files, unpublished documents and office memos, and secondary sources, which are published books, articles, pamphlets and journal reports. The researcher will make use of the UNISA library for his research, as well as the National Library, libraries of the Departments of Water Affairs, Environmental Affairs and Tourism, the World Bank and the United Nations in Pretoria, and also the library of the University of Pretoria.

Finally, this study will suggest possible solutions to the lack of sustainable development in South Africa's water use and distribution, in view of centuries of marginalisation, exclusion and poverty. This means that there are millions of South Africans who will never achieve their dream of living a decent and healthy life if the principle of sustainable development is not implemented and made a guiding principle for all the decisions of the government.

CHAPTER TWO

DEFINITION OF SUSTAINABLE DEVELOPMENT

2.1 INTRODUCTION

In view of the fact that the promises of globalisation have not delivered on their pledge of being a ‘tidal wave that will raise all ships’ (Pezzoli, 1997), the increasing imbalance both in the standard of living and the increasing poverty within and among developing nations, has brought increasing popularity to the concept of sustainable development. This chapter is an honest attempt to look at the theoretical and intellectual background to the concept of sustainable development. It will also examine the historical origins of the concept of sustainability, and the reason why it has gained increasing popularity and recognition in all discourses pertaining to the issues of development, environment and the alleviation of poverty in developing countries of the world. This chapter also examines the role of natural and moral capital in development, and why they are critical to the attainment of sustainable development.

2.2 VIEWS ON THE RISE OF SUSTAINABLE DEVELOPMENT

The problem of finding the best way to improve human welfare and tackle human poverty, which is no doubt ethically imperative (Corbridge, 1993; Goulet, 1995), has led to a re-examination of whether or not the world is on the right path to development. This is because despite the massive reach and spread of globalisation, billions of people are still wallowing in poverty, penury and wretchedness, especially the millions who are living below the poverty line in sub-Saharan Africa (UNDP, 2003). As Goodland et al (1993) succinctly state, ‘poverty is a massive global outrage’ The perception of dramatic and unsolvable problems in the developing countries of the world (Timberlake, 1985; Morgan and Solarz, 1994), especially those in sub-Saharan Africa, is common to politicians, aid agencies, academic analysts and the media. Indeed, such perceptions have long made the crisis of poverty the commonplace motif of development writing and discourse (Brandt, 1983; Frank, 1981; Frobel et al, 1985), as this is very common to discussions and debates in Sub-Saharan Africa.

The crisis of development, or the lack of it, includes the problem of the debt crisis in most of Sub-Saharan Africa, the declining per capita food production, growing poverty and socio-economic differentials, both within countries of sub-Saharan Africa and in other regions of the world (UNDP, 2003). The international communities in the past tended to favour 'fire-fighting' approaches, as exemplified by the Structural Adjustment Programme (SAP), which involved an examination of the deeper ills and treatment of symptoms of poverty and underdevelopment in sub-Saharan Africa, not its causes (Adams, 2001). This unnecessary urgency left little time for lateral thinking about ways and means of making development feasible in sub-Saharan Africa. Thus, Nyerere (1985) commented that 'African starvation is topical, but relations between rich and poor countries which underlie Africa's vulnerability to natural disasters have been relegated to the sidelines of world discussion'. Dissatisfaction about the underlying premises of development as prescriptions given to the developing countries of the world (SAP) has not worked, and has in fact made things worse (Mkandawire, 1997; Onimode, 1988), which has led to the popularisation of the concept of sustainable development.

Several scholars have labelled such knowledge and ideas of development, as prescribed for developing societies by the international community and led by the World Bank and donor communities, as being practically irrelevant, conceptually Eurocentric, theoretically impoverished, ideologically prejudiced, paradigmatically bankrupt, philosophically parochial, narrowly focused, and lacking multidisciplinary perspectives (Braun,1990:55; Edwards,1989:121;Goulet,1983:610;Leys,1996:7, Mathur, 1989:480; Muducumura, 2002:39; Palmer, 1978:95; Pieterse, 1991; Preston, 1985:4; Wiarda, 1981:191).

Moreover, Haque (1999:7) argued that the increasing global concern for rethinking development and re-examining the traditional mode, based on the logic of industrialism, reinforced the focus on the question of sustainability, and the global crisis that resulted from widespread industrialisation shifted thinking towards sustainable development (Daly, 1991; Reid, 1995). Similarly, a special session of the United Nations (UN) General Assembly concluded that the "overall trends for sustainable development are worse today than they were in 1992' (UNDP, 1996:4). Those closely connected to the global financial institutions have acknowledged that macroeconomic policy and

international free trade alone are not improving development prospects for the world's poor, especially those in Africa, and that chronic impoverishment and environmental degradation reinforce each other to create increasingly unstable social and ecological systems (Camadessus, 2000; Sachs, 1999,cited in Muducumra,2002:137).

United Nations figures (UNDP, 1999) reveal that nearly eight hundred million people in the world today do not get enough food to eat, while approximately five hundred million are designated by the United Nations as being *chronically malnourished*. According to the World Development Report (2000-2001), 2.8 billion people live on less than two (US) dollars a day (World Bank, 2000). Even more worrying perhaps from the UN figures is that 1.2 billion people live without access to safe drinking water in their daily lives. The persistence of endemic poverty, especially in most countries of sub-Saharan Africa, has been referred to as the *pollution of poverty* (Adams, 2001: 10).

It was the view of Adams (2001:18) that the use of pollution as a metaphor in talking about poverty in most developing countries of the world is critical for a number of reasons. Firstly, while Western societies are busy boasting about the positive effects of liberalisation and unrestricted, free markets, claiming that global economic growth will filter down and that the force of globalisation will have sent a rising tide of people on an upward spiral of wealth and prosperity (Pezzoli, 1997), the reality on the ground proves that the world is on a dangerous path, as most people and citizens of the globe are being left behind in the 'rising wave'.

Many people in Sub-Saharan Africa, especially the millions of black South Africans, are sinking in the ocean of poverty and unemployment. Secondly, the term 'pollution' - understood as a harmful or unwanted good -has served to emphasise the serious types of damage and social harm which poverty causes throughout the developing regions of the world, especially in sub-Saharan Africa. Thirdly and finally, the notion of pollution also serves to emphasise the unusual concentration of poverty in most of sub-Saharan Africa - it is after all the concentration of unwanted/harmful substances which transforms them into pollution. It is the trade globalisation of the international community that has polluted many parts of Africa, where our resources are exploited and we are prevented from enjoying the benefits of our wealth.

The concomitant effects of poverty, crime, breakdown in moral and family values,

rugged individualism and consumerism, not to mention the reduction in self-esteem that comes with the prolonged lack of jobs and hopelessness, and the culture of dependency and entitlement that poverty breeds within a generation of citizens who stay for years without jobs, give one a picture of the pollution of the mind, individual, family and society, which is gradually enveloping the whole of South Africa.

In a country such as South Africa, despite fifteen years of massive economic growth and development, millions are still unemployed and poor, and one can therefore understand that the mechanisms for the availability of employment opportunities and class mobility are still skewed in favour of a few of the privileged class, both black and white, despite fifteen years of majority rule in the country. The inequality in the distribution of resources such as water in South Africa is the big challenge for the country, and this has to be eliminated before sustainable development can become a reality.

While the eradication of the social suffering associated with poverty has been a crucial goal of sustainable development, sustainability is also based upon a concern for the harm which poverty can inflict on the environment. In many ways, arguing for a link between poverty and environmental exploitation seems paradoxical and counter-intuitive (Daly, 1991). It was, after all, economic success and rapid industrial growth which generated the first forms of international political concern over global environmental pollution (Adam, 2001:23). Increasingly, however, policy makers, especially in the developing countries of the world, have been confronted with the reality that while unregulated economic growth can be harmful to the environment, poverty can also be disastrous. The link between social poverty and environmental destruction is aptly expressed by Porritt (1992:35), when he observes that 'Poverty is one of the greatest threats to the environment today. It is poverty that drives people to overgraze, to cut down tress, to adapt ecologically damaging shortcuts and lifestyles, to have larger families than they would otherwise choose to flee from rural areas into already over-burdened cities - in short to consume the very seed corn on which the future depends, in order to stay alive today'.

There is ample evidence in the literature (Blaikie, 1985; Blaikie and Brookfield, 1987) that it is not only unregulated industrial development and economic growth that is doing damage to the environment and hence leading millions of people into the trap of

poverty or *unsustainability*, but also the deleterious effects of poverty on the lives of billions of people throughout the world (Grainger, 1982:5). These abovementioned writings have been very illuminating in the sense that we have been made aware of the relationship between social poverty and environmental degradation (soil erosion and desertification). It was actually in recognition of the negative impact and effect of increasing poverty on the lives of millions of people throughout the world that the concept of sustainable development became popular, as most policy makers, both in the developed and developing countries of the world, began to search for means of creating a better and more equitable society. In the process, the principle of sustainable development acquired world-wide acclaim, currency and popularity.

Growing dissatisfaction and unease about the sustainability or otherwise of the current development pattern of the world has raised eyebrows globally, as several influential development stakeholders have sympathised with the need to change established structures while revisiting contemporary development models. World Bank former president Wolfensohn (1999:2) called for an ‘integration of effort’ and expanded partnerships among groups (aid agencies, other financial donors, the private sector and non-governmental organizations), as well as a sharing of knowledge, in order to produce a new integrated plan for development (Muducumura,2002:3a). Along the line, Camadeus (2000), the former director general of the International Monetary Fund (IMF), recognised the failure of macroeconomic policies to solve systemic and endemic poverty in Africa, and the overriding need to advance well beyond debt forgiveness to empower underdeveloped economies.

2.2.1 A look at the process that led to the establishment of the sustainable development concept

Ruttans’ (1994) brilliant treatise on establishment appropriation adequately explains the underlying reason for sustainable development lacking a coherent and sound theoretical core and foundation. One needs to carefully consider the historical process that culminated in the publication of the Brundtland Report by the World Council on Environment and Development (WCED, 1987:47). It was as a result of this report that sustainable development became firmly established as a new catch phrase, broadly embraced by governments and development agencies alike. An examination of this type demonstrates the extent to which the biases and prejudices embodied within the concept

are a legacy of the very process which led to its initial conception and ensuing development.

Exactly when the historical process began is highly debatable and is reflected by the many and varied opinions that exist within the sustainable development literature. For instance, while Barbier (1992) believes that the sustainable development concept has its origins during the 1970s, Hundloe (1991) suggests that the evolution of the sustainable development concept can be traced back to the origins of the economics discipline itself. Hundloe (1991) bases his argument on a strong belief that the concept has logical links with the founders of economics and others who have since assisted in the development of the discipline into its present state. Some commentators have argued that rather than having been born out of any single historical event, sustainable development has evolved from the foundations laid by critical actions and events in the past.

An example of this view is one expressed by van den Berg and van der Straatan (1994). They insisted that sustainable development emerged as a result of the following events:

- The Stockholm conference on the Human Environment in 1972 and the subsequent establishment of the United Nations Environment Program (UNEP)
- The Limits to Growth Report (Meadows et al., 1992).
- The World Conservation Strategy (WCN/IUCN, 1980).
- The U.S Global 2000 *Report to the President* (Barney, 1992) and its response, *The Resourceful Earth* (Simon and Kahn, 1984).
- The IIASA report on Sustainable Development of the Biosphere (Clark and Munn, 1986)
- The previously mentioned United Nations report, *Our Common Future* (WCED, 1987).

Without underestimating the significance of any of the preceding events, it is the researcher's belief that the sustainable development concept emerged largely from the forces generated by the "limits-to-growth" debate of the early 1970s. The limits-to-growth debate was ignited by the findings of the so-called Club of Rome Report (Meadows et al., 1992). This controversial and widely publicised report involved an in-

depth study of the environmental and resource limits to growth, and the potential role of technological change in removing such limits. The resultant public outcry it generated indicated the rapid depletion of many key resources and the fast approaching limits to the growth in resource use and macroeconomic systems (Daly, 1991:10). In keeping with its findings, the Club of Rome condemned what it considered to be the reckless growth orientation of the many policies and programmes implemented by both governments and international development agencies (cited in Lawn, 2001:12).

Given the nature of the Club of Rome Report, it became uncomfortably clear in the early 1970s that any broad acceptance of its findings would require radical policy changes directed toward the possibility of low- or no growth economies. As a result, a range of socially and politically unpalatable questions in relation to economic growth quickly emerged and were hotly debated. To avoid these questions and obvious ramifications, an acceptable change in the course of the limits-to-growth debate ensued -a process that can be likened to Ruttans' (1994) description of "establishment appropriation".

Establishment appropriation occurs when dominant institutions subvert legitimate external challenges by appropriating or embracing the symbols promoted by opposition forces. By playing a significant role in the evolution of these emerging symbols, dominant institutions are able to demobilise external challenges and ensure their own longevity and continued dominance (Ruttans, 1994:36). As an upshot of the process of the establishment appropriation that followed the publication of the Club of Rome report, it was the sustainable development concept that eventually emerged as the central focus or symbol of the newly directed debate. However, because of the influence of dominant institutions such as the World Bank, International Monetary Fund (IMF) and the United Nations (UN), the sustainable development debate proceeded in a manner that deliberately avoided critical issues concerning the desirability of economic growth (for example, what the optimal physical scale of the macro economy is, and the non-recognition of issues such as equity and justice in the distribution of resources throughout the world).

As a result, dominant institutions were able to legitimate and justify the status quo. Furthermore, by ensuring that the sustainable development concept remained vague and obscure, dominant institutions succeeded in engendering a widespread belief that these

growth-based policies warranted little more than cosmetic changes (Lele, 1991:607; Ekins, 1993:23). By backing away from any attempt to distinguish quantitative growth from qualitative development, the WCED avoided having to consider whether or not continued growth was genuinely desirable and ecologically sustainable. It simply assumed that growth was a laudable macroeconomic objective by advocating a five-to-ten-fold expansion of the global economy (WCED, 1987:48). Despite occasional references to the need for a qualitative change in the nature of all future economic growth, as opposed to development, the WCED successfully evaded many of the concerns initially raised in the Club of Rome Report. This illustrates the fact that the WCED was hijacked and dominated by the dominant institutions and ideology of the day, led by capitalist America and Western Europe, as it turned away from properly debating whether or not rampant economic growth is desirable for society in the long-term.

Drawing inferences from Ruttans' (1994:36) treatise on the role of dominant institutions in appropriating symbols and demobilising external challenges, one gets a better understanding of why the concept of sustainable development lacks the required intellectual rigour and robustness to embody all that is needed to get most of Africa out of poverty and deprivation of scarce resources such as water.

2.3 MEANING OF SUSTAINABLE DEVELOPMENT

In order to fully appreciate the variety, complexity and pervasiveness of the current development problems, Meir (1995) reminds us to be aware of their historical perspectives, since this is one of the best safeguards against taking a superficial view of development problems. In addition, the notion that particular human practices would prove to be unsustainable has been mentioned in the literature as far back as the ancient Greeks, over the last 200 years (Malthus, 1820), and has gained more prominence since World War II (WCED, 1987:8-9).

It is the view of Daly (1990:20) that over the past decades, the concept of sustainable development has increasingly come to frame international debates regarding environmental and development policy-making. Catapulted into prominence by the report of the Brundtland Commission in 1987, sustainable development was formally endorsed as a policy objective by world leaders at the Rio summit five years later, has

been absorbed into the conceptual lexicon of international organisations such as the World Bank and the OECD, been accorded its own global secretariat in the form of the UN Commission on Sustainable Development (CSD), and achieved near-constitutional status in the European Union through its incorporation into the Maastricht and Amsterdam treaties. Around the world, political leaders and public administrators now routinely justify politics, projects and initiatives in terms of the contribution they make towards sustainable development. Sustainable development has become something with which practically everybody from all walks of life wants to be identified.

This phenomenon gained more attention during the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro (1992), where world leaders demonstrated that no single nation or group of people could continue progressing while the majority remained hungry and poor (Dwivedi, 1994). However, while the idea has come to assume a central place in contemporary discussions of environmental and development-related issues, there has been little serious comparative research on the practical political ramifications of the “turn” towards sustainable development. Among academics, we have seen a great deal of discursive “smoke”, but little in the way of empirical “fire” (Baker, 1996).

Sustainable development is a very problematic concept, because its language and definitions differ according to the ideological perspectives of groups advocating *sustainability*. Hundreds of definitions of this concept have been proposed, and they have quite different connotations. For example, sustainable development has been variously conceived as vision expression (Lee, 1993), value change (Clark, 1989; Farrel, 1999), moral development (Rolston, 1994), social reorganisation (Gore, 1992), and a transformational process (Viederman, 1994) towards a desired future or better world. Some of the vocal critics of sustainable development, such as Beckerman (1992), have even referred to sustainable development as ‘motherhood and apple pie’.

Nevertheless, sustainable development was defined most significantly by the World Commission on Environment and Development (the Brundtland commission) as ‘development that meets the needs of the present without compromising the ability of future generations’ (WCED, 1987:8). The needs mentioned in the report included food, water, shelter, education, health care and employment, and these are the basic and fundamental human needs which are proving to be unattainable for millions of people

living in most countries of sub-Saharan Africa.

This seminal definition of sustainable development is usually translated into the simultaneous satisfaction of three objectives: economic efficiency, environmental protection, and social justice (Catri, 1995; Healey and Shaw, 1993; Pearce et al, 1990; Sadler and Jacobs, 1989; Muducumura, 2002:139). As such, sustainable development depends on dynamic relationships between people in the same society and from different societies, between people and their technology, and other species and their shared natural environment (Downs, 2000). From this perspective, the Brundtland Commission's definition shifted the focus from a mono-dimensional to multidimensional view of development.

Although it was criticised, the Brundtland definition reiterated Ruskin's (1849) stewardship concerns, emphasising the responsibility of the current generation towards the future, while looking at the future to determine how best to use its inheritance from the past (Howe,1997). Similarly, Solow (1992:5) extended the Brundtland definition to highlight the duty imposed by sustainability and development. This duty (Muducumura, 2002) is not to bequeath to posterity any particular thing, but rather to endow posterity with whatever it needs to achieve a standard of living at least as good as one's own, and to look after the next generation in the same way.

In addition, Pronk and Haq (1992) introduced the concept of fairness in their conception of sustainable development, by emphasising the rationale behind economic growth. Thus, sustainable development should provide fairness and opportunity for the entire world's people, not just the privileged few, without further destroying the world's finite natural resources and carrying capacity. Furthermore, with special reference to equity, Briassoulis (1999) viewed sustainable development as a form of development that allows the pursuit of well-being by present-living generations, while caring about the legitimate right of future generations to look after their own welfare. Thus, intra- and intergenerational justice in the distribution of the costs and benefits of development should be a basic consideration in all development policies and programmes, albeit a very thorny aspect of sustainable development (cited in Muducumura, 2002:141).

Liou (1999) expanded on the sustainable development concept by stressing its broader scope of total development, which takes human resources development, the balance

between environmental protection and economic growth, the appreciation of cultural differences, the cultivation of local administrative systems, and the importance of performance accountability into account. The above position finds similar sentiments in the writings of Chambers (1983:180) on the need for development to take cognisance of community sentiments, realities and values in order for it to succeed. Similarly, the underpinnings of sustainability are captured in Carley and Christie's (1992:48) definition of sustainable development as a 'continuing process of mediation among social, economic and environmental needs which results in positive socioeconomic change that does not undermine the ecological and social systems upon which communities and society are dependent'.

In addition, sustainable development sometimes refers to a managerial and operational process meant to improve patterns of stability and adaptability of current development (Beckerman, 1994). More often than not, sustainable development evokes an alternative, ideological model of development that is inherently contradictory to present practices (Redclift, 1987). Redclift (1987) is trying to explain that much of what is presently advocated as sustainable development is in direct opposition to the increased globalisation and massive economic growth and industrialisation being led by China and India. In this context, sustainable development calls for an 'alternative to growth at all costs syndrome', which is presently plaguing Western civilization.

Notwithstanding the extraordinary growth of sustainability literature in the past few years, much of the analysis and discussion of this concept remained mired in terminological ambiguities, as well as disagreements about facts and practical implications (Lele, 1991; Reid, 1995). Thus, Tolba (1984) lamented the fact that sustainable development had become an article of faith often used by many, but poorly explained or even understood. The United States National Academy of Engineering noted (Daly, and Cobb, 1989) that sustainable development would remain little more than a slogan unless disciplines interested in development could provide operational concepts that improved the economy and the environment.

Moreover, other scholars have acknowledged the lack of a rigorous theoretical framework: 'The absence of a clear theoretical and analytical framework makes it difficult to determine whether the new policies will indeed foster an environmentally sound and socially meaningful form of development' (Lele, 1991:608). Consequently,

theorists and practitioners have been grappling with the sustainability concept for at least the past two decades, and Jacobs (1993) believed that no one has been able to fully explore this complex phenomenon.

Skolimowski (1995) was of the view that despite its ambiguity, the concept of sustainable development struck a middle ground between more radical approaches – in other words, the concept of sustainable development is like a religion that everybody wants to identify with, but it also raised crucial issues when one recalls how earlier models of development have largely failed to meet the needs of the present population in both the North and the South over the past 50 years (the terms *North* and *South* are used respectively to refer to industrialised countries especially those of Europe and North America, while *South* means countries with little industrialisation, commonly known as developing countries, which are mostly in sub-Saharan Africa).

The 1960s and 1970s were marked by an intensification of concern about pollution, as well as an awareness that environmental problems arise within the context of a complex interrelationship between humankind, the global resource base and social and physical environments (Turner, 1988). As a result, questions regarding the acceptability of conventional growth objectives, strategies and policies were brought to the forefront of public debate. Initially, this was followed in some quarters by a call for zero-growth strategies (Daly, 1977). An important inspiration for this argument was the publication of the Club of Rome report, *Limits to Growth*, in 1972 (Meadows et al, 1992).

The limits to growth argument was widely criticised and partially displaced by the argument that environmental protection and continued economic growth could be seen as mutually compatible (Beckerman, 1994) and not necessarily conflicting objectives. The term “sustainable development” was used to refer to this new point of view (cited in Baker et al, 1997:14). In 1980, it entered the public arena when the International Union for the Conservation of Nature and Natural Resources presented the World Conservation Strategy, with the overall aim of achieving sustainable development through the conservation of living resources (WCN/ IUCN, 1980). However, the World Conservation Strategy was limited in the sense that its prime focus was on ecological sustainability, as opposed to social and economic sustainability (Baker et al, 1996). The World Conservation Strategy was incapacitated by its narrow perception of sustainability as a strictly environmental concern, while the sustainability concept took

a more holistic view of the issues of sustainability and environmental protection with regard to its long-term viability in relation to the social and economic development of a country.

The Brundtland Report's (WCED, 1987:43) understanding of sustainable development contains two key concepts. Firstly, there is the concept of needs, in particular the essential needs of the world's poor, to which priority must be given. Viewing needs as being socially and culturally determined, Brundtland argued that sustainable development requires the promotion of values that encourage consumption patterns that are within the bounds of the ecologically possible, and to which all can reasonably aspire. Changes in consumption are particularly important for Northern, developed societies. Secondly, there is the concept of limitations on the environment's ability to meet present and future needs, limitations that are imposed by the state of technology and social organisation.

However, while the fundamental objectives of sustainable development were brief, the commission was much more elaborate regarding what Lele (1991) has termed the "operational objective" of sustainable development. The Brundtland Report (WCED 1987:44; Turner, 1988) linked the achievement of sustainable development at the global level with a number of major political and social changes: elimination of poverty and exploitation, equal distribution of global resources, an end to the current pattern of military expenditure, new methods of ensuring just population control, lifestyle changes, appropriate technology, and institutional changes, including democratisation, achieved through effective citizen participation in decision-making.

According to the Brundtland Report, sustainable development also implies a concern for both inter-generational and intra-generational equity in resource use. Inter-generational equity refers to including the needs of future generations in the design and implementation of current policy. Intra-generational equity highlights the importance of meeting the basic needs of present generations, where poverty is seen as both a consequence and cause of unsustainable behaviours. In addition, intra-generational equity applies to those trapped in poverty in most of Sub-Saharan Africa, where massive pillaging of natural resources is taking place daily. In short, sustainable development was linked to questions of power and the removal of disparities in economic and political relationships between developed and developing countries of the

world (WCED, 1987:45).

However, a number of commentators, including Achtenberg (1993:86) have pointed out that the Report also strikes different, non-anthropocentric notes. For example, the Report argued that the case for the conservation of nature should not rest only with development goals as part of mankind's moral obligation towards other living beings and future generations (WCED, 1987:48). Mankind has a moral obligation with regard to the preservation of species and organisms (Berkes and Folke, 1994), not only for themselves, but also for future generations. It also involves leaving the earth a better place than we found it. Buckley (1995) also postulated that if sustainable development is ever going to be feasible, we also have to bear in mind the concept of 'critical natural capital', which refers to those parts of natural capital that cannot be replaced if lost (or at least, not within feasible time frames) and cannot therefore be replaced with human capital or compensated for by positive forces elsewhere. It is important to look at the distinction between natural and man-made capital.

Economists have traditionally defined capital as things people have built that have value, such as roads or factories, and these are the things that environmental economists define as 'human-made capital'. "Natural capital" is created by bio-geophysical processes rather than human action, and helps environments to meet human needs through the provision of raw materials (fish or timber) or what are referred to as 'services" (cited in Adams,2001:10). Such services would include the role of global bio-geochemical cycles in maintaining the ecological conditions necessary for human life, or the more mundane way in which wetlands moderate floods or absorb pollutants (Barbier, 1998). Using these economic concepts as an illustration (Beckerman, 1994), sustainable development can be conceived of in various ways. The first and most obvious is to stipulate that constant stocks of both man-made and natural capital should be maintained over time. Economic development has always implied increasing capital stocks, but looks at man-made and natural capital separately. Thus, development that increases stocks of man-made capital only by the depletion of natural capital is not sustainable.

2.3.1 An examination of a range of sustainable development definitions

Over the past decades, a plethora of sustainable development definitions has emerged, of which only some have been genuine attempts at establishing an intellectually rigorous and operational sustainable development concept. The aim here is to briefly examine a number of definitions. This is necessary, not only to build on their strengths, but to reveal why their many weaknesses are a legacy of the failure to establish a sustainable development concept from a sound theoretical foundation.

Perhaps the most appropriate place to start is with the definition provided by the WCED itself. They concluded that sustainable development is:

....development that meets the needs of the present, without compromising the ability of future generations to meet their own needs (WCED, 1987:43).

Further on in the report, they argue that:

Sustainable development is a process of change in which the exploitation of natural resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance the current and future potential to meet needs and aspirations (WCED, 1987:46).

There is little evidence that both definitions have self-evident appeal. The widespread reference to them in the sustainable development literature is testimony to this. However, both definitions are devoid of specific parameters, guidelines or minimum positions. One must question whether or not they leave us any more knowledgeable in terms of what truly constitutes sustainable development - for example, if meeting needs and aspirations constitutes development, then:

- Exactly what needs and aspirations are the WCED referring to?
- Is the WCED referring only to basic physiological needs or the full spectrum of human needs, including “higher-order” needs?
- Does development include wants as well as needs?
- Is development achieved through the attainment of any needs, wants or aspirations, irrespective of their moral content - that is, irrespective of whether or not they are virtuous in terms of accepted standards of right and wrong?

- Who determines the needs or wants that, if attained, constitute development?
- Is development to some degree dependent upon how effectively these needs are being met?
- Is the continued growth of macroeconomic systems necessary for these needs and wants to be achieved? (Lawn, 2001:150).

In addition, if not compromising the potential of future generations to meet its own needs is an example of sustainability, then:

- What are the necessary or minimum conditions required to ensure that such potential is not compromised?
- Does this mean having to bequeath to posterity a stock of suitable assets?
- If so, what types of assets - man-made, naturally occurring or both, and in what combinations? (Lawn, 1998:20).

The apparent fluidity of the many definitions of sustainable development, as mentioned in the Brundtland report, lends credence to Ruttan's (1994:15) theory of establishment appropriation, whereby dominant institutions subvert legitimate external challenges by appropriating the symbols of sustainable development that are promoted by people, both in the developed and developing world, so that economic growth and globalisation have not led to the eradication of poverty and misery in poor countries. This concern led to the coining of the term 'sustainable development', but it was hijacked by powerful institutions that made sure that sustainable development has as many definitions as possible, thereby meaning many things to many people, even when referring to poor women, environmental equity and justice in the distribution of world's resources .

The current orthodoxy, thinking and definitions of sustainable development are all deficient in a number of ways, but the few definitions that have encapsulated the inclusive nature and meaning of sustainable development are listed below. One should consider the following definitions, which represent the broad range of sustainable development concepts to be found:

- sustainable development involves "...a pattern of social and structural economic transformations which optimizes the economic and other

social benefits available in the present, without jeopardizing the likely potential for similar benefits in the future. A primary goal of sustainable development is to achieve a reasonable and equitably distributed level of economic well-being that can be perpetuated continually for many human generations” (Goodland and Ledec, 1987:35-36).

- Sustainable development is a concept which involves”...satisfying the multiple criteria of sustainable growth, poverty alleviation, and sound environmental management” (World Bank, 1987:10).

Sustainable development is “...development that is likely to achieve lasting satisfaction of human needs and improvement in the quality of life” (Allen, 1980:23).

- Sustainable development involves “...learning how long-term and large-scale interactions between environment and development can be better managed to increase the prospects for ecologically sustainable improvements in human well-being” (Clark and Munn, 1986:5).

Not unlike the sustainable development concept proposed by the WCED, one could easily ask the following different but clearly related questions concerning the aforementioned definitions. In terms of development considerations:

- What is meant by economic well-being and how is it related to development?
- How does one determine a reasonable and equitable distribution of economic well-being - that is, to what extent must economic well-being be redistributed in order to constitute development?
- Is sustainable growth possible, and if so, does it necessarily equate to development?
- In what ways do the satisfaction of human needs and improvement in the quality of life constitute development? What about needs and wants? (Cited in Lawn, 2001:17).

In terms of the sustainability considerations implied by the above definitions and concepts:

- What are the minimum conditions required to prevent the endangerment of economic and social benefits in the future – in other words, how can a flow of economic and social benefits be perpetuated for many generations?
- Because “many generations” does not imply all future generations, how many is many?
- If sustainability is conditional upon ensuring that future generations are not made “worse off”, what is meant by worse off? Moreover, once known, what does its prevention entail?
- How does sound environmental management constitute sustainability - in other words, could human management be more important than environmental management?
- What are the minimum requirements for ensuring mankind’s ecologically sustainable interaction with the environment? (Beckerman, 1992, 1994).

2.3.2 Sustainable development as a social and political construct

Viewing sustainable development as a social and political construct makes it possible to move beyond the search for a unitary and precise definition, and to focus instead on the objectives underlying the original formulation of each of the two concepts - “sustainable” and “development”. The concept ‘sustainable’ - or to be more precise “sustainability” - originated in the context of discussions about harvesting and managing renewable resources such as forests and fisheries in some countries of the industrial metropole, such as Britain (Sheail, 1976; Allen, 1976; Evans, 1992) and even continental America (Nash, 1973; Worster, 1985; Hays, 1959, 1987), in such a way as to not damage future supplies. Most proponents of sustainability (Lele, 1991:609; Ekins, 1993) take it to mean the maintenance of ecological conditions necessary to support human life at a specific level of well-being through future generations. In short, sustainability has its roots in the notion of ecological sustainability. This highlights the constraints and opportunities that nature presents in terms of human activity.

The major development in the debate has been the realisation that in addition to, or in conjunction with, the need to maintain ecological conditions, there are social conditions

that influence the ecological sustainability of the interaction between mankind and nature (Pronk and Haq, 1992). By combining “development” and “sustainability” (Lele, 1991:610), sustainable development becomes a form of societal change that, in addition to traditional development objectives, has the objective or constraint of maintaining ecological sustainability.

The promotion of sustainable development forms part of a conscious process of achieving social change. Thus, it comes as no surprise that policy makers are increasingly using the term to cover a broader set of concerns than those embedded in the original idea of ecological sustainability, including health, education and social welfare concerns. This reflects a growing understanding that the promotion of sustainable development involves a new focus on the impacts of policies that were previously conceived more narrowly. The governments of most developing nations of the world, especially in sub-Saharan Africa, are including sustainability considerations in their conception and design of policies and programmes, and this emphasises the growing global popularity and relevance of the concept. This can be illustrated by the recent decision of the electricity giant (ESKOM) in South Africa to incorporate renewable energy policy into their 2015 energy policy for the country, in view of the worsening energy crisis. Another example is the current campaign of the Department of Water Affairs (2001) to ameliorate the water stress that South Africa will face in 2015, by devoting energy and capital to responsible use of water, and discouraging waste by public and private sectors.

Understanding sustainable development as a social and political construct also makes it possible to see the variety of positions on sustainable development that have developed since Brundtland as reflecting differing sets of beliefs about the world. These differences are deeply embedded in religion, philosophy and history. As many commentators have argued, especially Lafferty (1995:223), Jacobs (1995b:52) and O’Riordan (1985:50), sustainable development is best regarded as being similar to concepts such as “democracy”, “liberty” and “social justice”. For concepts such as these, there is both a readily understood “first-level meaning” and general political acceptance, but around a given set of “core ideas”, there lies a deeper contestation. Similarly, sustainable development is an essentially contestable concept (Connolly, 1983, quoted in Lafferty, 1995: 224).

According to Jacobs (1995b) and Lafferty (1995), in liberal democracies, the debates around these contested concepts form an essential component of the political struggle over the direction of social and economic development. Substantive political arguments are part of the dynamics of democratic politics and the process of conscious steering of societal change. O’Riordan (1985:52) also agrees with this, arguing that rather than seeing sustainable development as an end in itself, which is a tendency among those who seek out an ever-clearer definition of the term, it is best to see sustainable development as a catalyst for genuine creative thinking and practice.

If attention is focused on sustainable development as a social and political concept, energy and time can be turned away from sterile debates about the precise meaning of the term, and focused instead on the contemporary process of implementing sustainable development policies and the alternative conceptions that are developing with regard to how sustainable development should be practised. Sufficient energy will also be devoted to how the concept of sustainable development can best help to alleviate the problems of poverty and the water crisis that are plaguing most of the developing world, especially sub-Saharan Africa.

2.4 MODELS OF SUSTAINABLE DEVELOPMENT

These models identify the political scenarios and policy implications associated with each rung of sustainable development, and focus on a number of alternative frameworks for placing sustainable development within specific contexts: the treadmill model; weak sustainable development; strong sustainable development; and the ideal model.

2.4.1 Philosophical underpinnings of models of sustainable development

The variety of models of sustainable development is an indication of differing ideological beliefs about the natural world, which, for the sake of simplicity, can be divided into “anthropocentric” and “ecocentric” positions. According to the literature, the ecocentric perspective is based on a view of nature in which nature is used as a metaphor for unity, interdependence and a new moral order (O’Riordan, 1985:54; Eckersley, 1992). Those who hold this view (Pepperman Taylor, 1996) locate the cause of environmental problems in the anthropocentric worldview. Sustainable development therefore requires the construction of a new moral and ethical view of nature which

takes the interests and values of all living things into account.

As such, ecocentrics have visualised sustainable development as part of “nature’s way”, a way designed to assist society by allowing nature to set the parameters of economic behaviour. This interpretation of nature “serves to put mankind in its place in the cosmic order” (O’Riordan, 1985:55). Here, mankind is situated in nature, not above it, and in the final analysis, nature is seen to be conditioning economic, social and political activity. As Seymour (1989:11) asserts:

We are part of nature that is the primary condition of our existence. And only when we recognize this, will we awake from the evil dream that has led us down the path of self-destruction for the last two or three hundred years. That is the dream that we, mankind, ‘can conquer nature’. For only when we abandon this dream will we realize again that you cannot conquer something of which you are part.

Implicit in Seymour’s (1989) argument is the fact that mankind is part and parcel of the cosmic universe called nature, and the continued existence, survival and stability of the universe and the world at large is actually to our own benefit, because our survival and quality of life on earth is directly linked to the health and stability of the environment and Earth in general. In this context, sustainable development is an “externally guided” policy option aimed at the creation of a partnership based on the reciprocity between human beings and nature.

In contrast, the anthropocentric view is based on a more interventionist approach to nature, because the wealth of nature is seen only in relation to what it can provide in the service of mankind (O’Riordan, 1981). This was epitomised by the Industrial Revolution of the eighteenth and nineteenth centuries, and the development of a techno-centric model of nature - the subjects of Seymour’s strictures in the above extract (Seymour, 1989). Certainly, the extreme form of the anthropocentric position sees sustainable development as a challenge to enhance mankind’s superiority on earth, although nowadays through the superiority of creative effort rather than brute force. From this perspective, sustainable development is seen as an “inner-directed” notion, which establishes a much more human-conditioned approach to planning and management (cited in Baker et al, 1997:10).

These two perspectives have important implications for the design and implementation of policies aimed at the promotion of sustainable development. The ecocentric model espouses “appropriate” technology - that is, technology that is in keeping with natural laws, small in scale, understandable to lay people, workable, and maintainable through local resources and labour. This is also closely connected with a belief in community empowerment, achieved through co-operative endeavours and local initiatives (Baker et al, 1995:14). This ecocentric view believes that technology is important and necessary to improving the lives of mankind, but that it should not be construed to such an extent that it becomes a deterrent to meaningful life for mankind.

A typical example of the ecocentric view is in the area of genetically modified crops (GM). This ecocentric view believes that GM crops should be a blessing to solve the problem of hunger and starvation in the developing world, and not diminish the quality of life of local people by providing crops that are not nutritious, damaging and sometimes fatal to indigenous species in the ecosystem, and that they should contribute towards the maintenance of the balance in the environment. In this scenario of sustainable development, the ecocentric view believes that technology and its use should be carefully debated and questioned.

In contrast, in the anthropocentric model, at least in its extreme form, economic behaviour is viewed in terms of the brute forces of industrial, economic and technological advancement. This model is, according to O’Riordan (1981), identified by a number of elements, including rationality, a so-called “objective” appraisal of means to achieve given goals, managerial efficiency, the application of organisational and productive techniques that produce the most of the least, and by a sense of optimism and faith in the ability of man to understand and control physical, biological and social processes for the benefit of present and future generations. O’Riordan (1981; Seymour, 1989) goes on to argue that these elements form the ideology of techno-centrism that downplays the sense of wonder, reverence and moral obligation that are the hallmarks of the ecocentric approach.

The techno-centric model has left its mark on environmental policy-making in a number of ways. Firstly, there is its *optimism* over the successful manipulation of techniques to extract and allocate resources. Secondly, it has a determination to be “*value free*” in terms of advice and analysis, leaving the “tough” judgments’ to a

political arena that is already shaped by their advice. Thirdly, there is its *disavowal of widespread public participation*, especially the element of lay opinion, a philosophy much admired by politicians equally intent on preserving their rightful role in acting authoritatively on behalf of the public. Finally, there is its disquieting *fallibility*, the constant evidence of error and misinterpretation, and of hunches that do not quite pay off (O’Riordan, 1981). The techno-centric model of sustainable development gives a lot of latitude to governments and policy makers to decide on the best course of action available to the country, and to proceed in implementing those decisions (cited in Baker et al, 1994:14).

This type of model may be more easily implemented in the developed societies of Western Europe and North America, where democracy has been firmly established, and the bureaucracy can be believed and expected to act in the national interests. However, it is doubtful whether this model is relevant to most developing countries, especially those in Sub-Saharan Africa, where the bureaucracy is loaded with party loyalists and tribal warlords who have neither the competence nor the wherewithal to properly articulate ideas and policies devoid of party and tribal or even racial considerations.

This can best be illustrated by looking at the inability of the state in sub-Saharan Africa to adequately conceive and implement sustainable development policies, especially at the municipal level in South Africa, which is dominated by cadres deployed by the ruling party to manage the councils. This policy of *cadre deployment* is at the root of the lack of service delivery in most of the municipalities in South Africa. It can be seen with the crisis in the Niger-Delta area of Nigeria, where the federal government of Nigeria, in collaboration with multi-national oil companies, is busy building mansions and palaces for tribal leaders, while neglecting the concerns of the poor masses and the environmental pollution occurring within communities of the region. This flagrant disdain and contempt for local communities by state governments is prevalent in most of Africa, as can also be seen with the crisis in the Darfur region of Sudan, where the primary cause was the struggle of black Africans for land and water for their cattle, and the support of the federal government of Sudan for its Arab neighbours, instead of for the people of Southern Sudan and Darfur in general.

In a nutshell, the researcher believes that state authorities cannot be trusted, in terms of the techno-centric model of sustainable development, to adequately take care of the

needs of local communities, because they are either too far away from the scene of local problems or they are simply ill-equipped to objectively handle problems within communities in which they are only 'visitors'. Or, as in the case of sub-Saharan Africa, state politicians may not necessarily be the true representatives of the local communities which they claim to represent, as the problems facing most areas of South Africa are also present in the dysfunctional electoral system and democracy in the country.

This can be illustrated by the proportional representation in South Africa, where the party is the sole guardian of the citizen's rights and needs. In this context, the clamour by the new breakaway faction from the ruling party in South Africa (ANC), and backed by opposition parties, for a change in the flawed electoral system towards a representative-based system will deepen local participation in politics and help in the election of credible leaders for the people.

2.4.2 The treadmill model of sustainable development

This model is epitomised by transnational industrial corporations and the world of high finance. Adherents to this model - for example, Simon and Kahn (1984:12), who represent the most extreme expression of this belief, view development in terms of an expansion of Western capitalism into areas which have not as yet felt the benefits of development in material terms. The underlying assumption of this model is that given the freedom to innovate, human ingenuity, especially as it is expressed through technology, can solve any environmental or technical problems. According to Simon and Kahn (1984:13), there is no limit to the capacity for human understanding, and hence mankind's ability to manipulate environmental systems.

In the treadmill model, the natural environment is seen in terms of its usefulness to the economic system. This model of sustainable development (Pearce et al.,1989:ch.34) becomes merely a synonym for sustainable growth whereby, in its crudest form, development is measured solely in terms of the expansion of gross national product (GNP) conventional approaches in order for accounting remain intact. In this conventional approach, the focus is on a narrow range of variables, in particular income, investment, profits and exports. In the treadmill model, policy tools continue to aim at maximising production and growth. The limitation of this model in the context of sustainable development is that it focuses on the monetary dimensions of economic

activity, and ignores its environmental impact.

This model's strict adherence to the positive effects of the gross national product and gross domestic product (GDP) to serve as a leveller of economic well-being is as a result of its classical and European economic roots, led by the invisible hand theory of Adam Smith (1999). Senator Robert Kennedy was correct when he postulated in 1968 (cited in Smith, 2003) that:

The gross national product includes air pollution and advertising for cigarettes, and ambulances to clear our highways of carnage. It counts special locks for our doors, and jails for the people who break them. GNP include the destruction of the redwoods and the death of Lake Superior. It grows with the production of napalm and missiles and nuclear warheads. And if the GNP includes all this, there is much that it does not comprehend. It does not allow for the health of our families, the quality of their education, or the joy of their play, it is indifferent to the decency of our factories and the safety of our streets alike. It does not include the beauty of our poetry or the strength of our marriages, or the intelligence of our public debate or the integrity of our public officials.....GNP measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country. It measures everything, in short, except that which makes life worthwhile; and it can tell us everything about America-except whether we are proud to be Americans.

The major weakness of using GDP as a measure of economic growth and well-being can be seen in most of Sub-Saharan Africa, where millions of citizens work in informal settings as carpenters, bricklayers, petty traders etc, and are outside the net of the formal sectors which are counted and measured in terms of the GDP. In this instance, as in the case of most of Africa, the figures arrived at through the GDP may be flawed and baseless, as they may not reflect the true reality on the ground and the standard of living experienced by people in these economies. A typical example is that of oil-producing countries in West Africa, especially Nigeria, Angola and Equatorial Guinea. They were quoted by the World Bank (2006) as having a higher GDP and better economic growth than most countries of the world in 2006, but the reality in these countries tells a story

of acute deprivation, poverty, crime and food shortages. The GDP as a measure of economic growth and development may be feasible in developed countries of the world, but not in developing countries, especially those in Sub-Saharan Africa. More information on the weaknesses of the GDP can be found in section 2.12.1 of this chapter.

Conventional growth has a knock-on effect on road traffic, energy and water consumption, land use etc, whereas the promotion of sustainable development requires the elaboration of accounting systems that monitor whether or not different approaches to economic development are reducing the negative environmental impacts of economic activity (Pearce et al.,1989: ch.4). Essentially, the treadmill model is geared towards massive economic growth and production, with little or no concern for the environmental consequences. This was the dominant position adopted by European and North American industries in the early 1980s, and is still to a large extent reflected in the behaviour of small and medium enterprises, especially in Europe, North America and South East Asia. It was encapsulated in a 1985 (Cazalet, 1985:88) statement by the Managing Director of BP (Britain). In discussing growing environmental awareness and the increase in regulatory environmental regimes, he argued that:

As far as industry is concerned, the primary aim must be to ensure that environmental regulations do not place them at a disadvantage with their international competitors and....that their costs do not render the project concerned uneconomic.

2.4.3 The weak model of sustainable development

The main aim of weak sustainable development is to integrate capitalist growth with environmental concerns. This position is closely associated with Pearce (1987) and the highly influential Pearce Report, which argued that the principles of neo-classical economics can be applied to the solution of environmental problems (Pearce et al., 1989:9; Grayson and Hobson, 1994:32). The objective of policies to promote weak sustainable development remains economic growth, but environmental costs are taken into consideration through, for example, accounting procedures. This is possible

because the environment is considered to be a measurable resource.

In this respect, the treadmill model is subject to a lot of constraints: humans will identify the environmental costs of growth and decide whether or not there should be a trade-off; the finite nature of the earth's resources is recognised in the setting of "resource harvest rates" at levels no higher than natural or managed regeneration rates; and the use of the environment as a 'waste sink' is based on the principle that waste disposal rates do not exceed the rate of natural or managed assimilation by the counterpart ecosystem. According to this approach, sustainable development is economic growth achieved through economic efficiency within a system, and subject to constancy of the natural capital stock - that is, the stock of environmental assets is held constant while the economy is allowed whatever social goals are deemed appropriate (cited in Baker et al., 1994:12; Pearce et al., 1989:10).

Pearce (1987) argues that there are two fundamental dimensions of sustainability: the first is sustainable development, which he believes refers to the sustainable growth of per-capita real incomes over time - the traditional economic growth objective. The second dimension is the sustainable use of resources and the environment. According to him (Pearce, 1987), the issues are reduced to the belief that "just as sustainable economic development... implies some reasonable constant rate of growth in per capita real incomes, without depleting the nation's capital stock, so the sustainable use of resources and the environment...implies some rate of use of the environment which does not deplete its capital value". This is a position he later reaffirms (Pearce, 1990). Weak sustainable development has had a growing influence on international agencies, including the World Bank and the United Nations, and, according to Redclift and Goodman (1991:5), has become synonymous with environmental management.

This model (Baker et al., 1997:25) is closely associated with the anthropocentric and techno-centric view of nature, whereby nature is seen as providing both material and environmental wealth, although both forms of growth have only a social purpose: nature is seen as being full of potential in terms of the service of mankind. Material and environmental wealth creation are viewed as a partnership, but one which is capable of technical manipulation by enlightened managers, albeit with the aid of new managerial and administrative tools. These tools include environmental impact assessment and cost benefit analysis, which takes the non-market aspects of environmental goods and

services (through, for example, the creation of environmental shadow prices) into account, and marginal adjustments to market forces to take market failure into account through such policy tools as fees, taxes and tradeable permits.

Many scholars are critical of this model of sustainable development. Redclift and Goodman (1991:7), for example, argued that the resource accounting method that it endorses is highly ethnocentric and biased in favour of the Northern view (European) of the development process. It neglects the huge disparities between developed and developing countries (Redclift, 1993:13), especially those living in poverty and squalour in Sub-Saharan Africa. Another limitation is that weak sustainable development values the environment only in monetary terms, and not for what it is worth - for example, in cultural or spiritual terms. It thus leaves the neo-classical paradigm, with all its limitations, intact.

The weak sustainability paradigm is an approach that is heavily influenced and dominated by the European and classical school of thought, which gives little consideration to the intended and unintended effects of globalisation and development on the poor. In essence, European countries have accumulated surpluses for centuries through slavery, colonialism and imperialism, and their citizens have been educated to the level where they can simply find other jobs or get retrained if there are any adverse effects of rampant globalisation and the deregulation of markets. This situation is non-existent in most countries of sub-Saharan Africa, where illiteracy, unemployment and heavy dependence on state patronage is still the order of the day. This model of sustainable development may be difficult to implement in developing countries of the world, as the adverse effects can increase poverty, crime, anarchy and civil wars.

Most people in Sub-Saharan Africa will not cope with an unfettered market, because they have neither the education nor the accumulated surpluses needed to maneuver in event of rapid changes in the market. Thus, they still need the protection of their governments, just as European governments protected their citizens during the early years of capitalist development on the European continent (List, 1909; Gerschenkron, 1962). More limited examples of state-led development and interventions in the process of social transformation to correct societal imbalances can be found in Mauritius, Brazil and India (Grindle, 1996; Rocha Menochal, 2004).

Arrow and Debreu's (1954) Nobel prize-winning work shows the impossibility of the market being forever free, as the information needed to make decisions in the market are not fixed, costless or perfect. This is because knowledge within a society changes over time, and human beings must invest energy, money and time in order to acquire the information needed to survive in society, and we all know that the resources needed to gain this knowledge are unevenly or 'asymmetrically distributed' within populations (Greenwald and Stiglitz, 1986). Within this context, the weak sustainable development paradigm will not be the best model for developing countries such as South Africa, where generations of the Black majority have been denied access to water resources for centuries, based solely on their race. In this context, the intervention of the state is needed in order to alleviate and address historical injustices and inequalities in the country. In the same vein, the sole distribution of scarce resources should not be left to the mercy of the (imperfect) market.

Within this context of redressing past 'wrongs', the South African government is in a better position to use the instruments of the state to leverage centuries of marginalisation and economic exclusion of the black population from the national economy, but they need to find a way to obtain the skills and human capital needed for a developmental state. The racial nationalism of the African National Congress is not helping matters, because the black population does not have the intellectual wherewithal for a centralised and developmental federal government, thanks to apartheid Bantu education, which laid waste to the intellectual foundation of blacks. In this situation, the government, if it is serious about acting as a catalyst for economic growth and development in the country, and not leaving events in the hands of the market, needs a well-equipped and well-educated civil service, which is unfortunately not present in the country. More information on the role of developmental states can be found in chapter three of this study, sections 3.5 - 3.10.

A second pitfall of this model is that it reduces environmental problems to managerial problems, solvable within the dominant political and economic system. Environmental conservation thus becomes a key target of policy, understood as the achievement of efficiency through the removal of waste. Rather than stimulating radical reform, sustainable development here becomes a cachet of ever-expanding improvement. However, the beneficiaries of development are primarily the present generation.

Furthermore, the environmental management approach often ignores or devalues the experience of local people and as a consequence, governments and policy makers can run the risk of applying inappropriate solutions to environmental problems from elsewhere, typically from the core to the periphery (cited in Baker et al., 1994; Redclift and Goodman, 1991; Grayson and Hobson, 1994).

2.4.4 The strong model of sustainable development

This level of sustainable development is represented by authors such as O’Riordan (1981) and Weale (1992). Whereas Pearce (1987, 1990) asserts that economic development is a precondition of environmental protection, advocates of strong sustainable development assert that environmental protection is a precondition for economic development. This, as Brundtland argued, involves a different kind of economic development, which is more focused on the environmental dimension than has been the case in the past. The strong sustainable development approach requires that political and economic policies be geared towards maintaining the productive capacity of environmental assets (whether renewable or depletable), and protecting, keeping or creating environmental assets which are either worthy of preservation as they are (for example, tropical forests) or capable of being improved (for example, degraded soils).

It is the view of the proponents of this model of sustainable development (EEA, 1995; Weale, 1992; O’Riordan, 1981) that in order for this model to be truly effective, it will require market regulation and state intervention using a wide range of tools and mechanisms, and in particular, it will require the involvement of local communities when discussing changes to the local economy and the sustainable utilisation of the local environment. There is less emphasis on quantitative growth with this approach - the overall objective of economic growth remains. This approach is epitomised by “ecological modernisation” among some of the larger firms in Europe and North America.

While playing a role in both the weak and strong approaches to sustainable development, the use of policy instruments is particularly important with the strong approach. For example, legal, economic and fiscal instruments are advocated in order to influence or force changes in behaviour. In the environmental field, these include legal regulations and land-use planning, financial incentives and economic instruments such

as green taxes and pollution charges, tradable resources and pollution permits, subsidies and deposit-refund schemes, various kinds of public expenditures, and encouraging changes in behaviour through information, publicity and persuasion (Baker et al., 1994).

This model can be seen in the dominant role of the state in the socio-economic development of the Asian tigers, led by Taiwan, South Korea, Malaysia, etc. In this model of development, the state plays a key and strategic role in the transformation of the economy, and this is in the form of the policy shifts that one might see in South Africa in the days and years ahead, as the Jacob Zuma-led faction of the African National Congress (ANC), supported by trade unionists and communist party stalwarts, have taken over the reins of power in the ruling party (ANC) on the basis of greater state intervention and involvement in the market and economic policies of the government.

It is also debatable as to the ability of governments in most of Africa to properly initiate and implement policies. The bureaucracy in parts of Africa is slow, partisan, corrupt and inefficient, as the insipidness of the electricity giant in South Africa (ESKOM) vividly illustrates the inability of the ANC-led government, through its parastatals, to properly monitor and deliver on set mandates (sustainable and efficient electricity supply). State agencies in Africa can be redundant or at best mediocre, and as such, this model of sustainable development may not be easy to implement on most of the African continent.

2.4.5 The ideal model of sustainable development

The top rung of the ideal model of sustainable development is closely associated with scholars such as Naess (1989), Echlin (1993,1996) and Goldsmith (1992).The ideal model offers a more profound vision aimed at structural change in society, the economy and political systems, which is based upon a radical change in the attitude of mankind towards nature. This position has been termed the “ecologist” approach, as represented, for example, by the deep ecology movement (Achtenberg, 1993). It envisages a form of pure sustainable development whereby mankind puts as much into the ecosystem as he takes out. There is no overall growth in quantitative terms – it is through quality of life rather than standard of living. There might be, for example, quantitative growth in some areas, notably in the Third World or poorer areas of Europe, but only through negative

growth in already highly developed areas of the world.

Echlin (1993) has described this as sustainable efficiency; while Naess (1989) makes it clear that the ecological position is bio-centric, involving the totality of life on earth rather than only human life. Not only is non-human life seen as valuable in its own right, but its intrinsic value is independent of its usefulness to humans. This ecocentric worldview (Pepperman Taylor, 1996) seeks to be morally egalitarian in its understanding of the value of different forms of life, adopting a holistic approach that recognises the interrelatedness of all life forms. Value is located in natural processes and groups rather than in individual living entities.

The ideal model stresses the social dimensions of development, and sees existing approaches as offering only a limited means of measuring these (Ekins, 1992:62-71; LGMB, 1995). It thus requires the elaboration of a more detailed set of development indicators that focus on the quality of life. It also means that greater consideration must be given to work and production activities that lie outside the formal economic system in the social economy, for example through the not-for-private-profit contributions of community-based organisations. Such activities are seen as improving the quality of life and creating non-monetary wealth. The promotion of policies aimed at the ideal model would encourage these forms of activity and incorporate them into more sophisticated eco-accounting systems.

Individual scholars (Jacobs, 1995b; Echlin, 1993) hold different opinions as to the exact policy implications of the ideal model, but they all agreed that environmental protection is not only necessary but will require severe restraint in the consumption of the earth's resources and mankind's related economic activities. Deep ecologists (Albrecht, 1994), for example, argue that environmental protection requires radical constraint in terms of economic activity. Because of this, they are critical of the popularisation of the concept of sustainable development, arguing that by failing to specify exactly what degree of environmental protection is required, it offers governments and industry a means of embracing environmentalism without commitment. At the extreme end, the current international and national commitment to sustainable development gives rise to cynicism. This is a position adopted by the *Ecologist* (Ecologist, 1992). Albrecht (1994) also argued that in the eyes of many Western governments, the concept of sustainable development "has been welcomed as the means by which the existing mode of

economic production and its associated values can continue with only minor modifications”.

Thus, not all environmentalists have endorsed the concept of sustainable development, and many are deeply suspicious of its underlying assumption, namely that human beings can and ought to manage the environment. The promotion of a sustainable development project here is seen as part of a wider modernist project of societal self-determination (Jacobs, 1995b:1478), a project which ecologists reject. Ecologists (Echlin, 1996) argue that the ideal model represents not so much the top rung of a ladder of sustainable development, but a new development paradigm in its own right.

The above four approaches to sustainable development offer a useful heuristic device for understanding the policy imperatives associated with the different approaches towards sustainable development. The approaches are not entirely discrete, but rather a representation of broad schools of thought which can and do often overlap.

2.5 ECONOMIC GROWTH AS A PREREQUISITE FOR SUSTAINABLE DEVELOPMENT

In view of the fact that most multinational companies and ‘prophets’ of rampant capitalism, led by the IMF and World Bank, did not want anything to derail the globalisation of trade and investments that enrich a few but impoverish many (Sachs, 2005; Mudacumura, 2002), they made sure that the concept of sustainable development became a loose and general jargon, open to different interpretations depending on one’s outlook, perception, orientation and motive. This was in accomplishment of what Ruttan (1994:15) calls ‘establishment appropriation’. Consequently, in contemporary world economy and politics, it is a general belief (though not a correct one) that continuous economic growth is a necessary condition for the success of sustainable development. However, we know that this is an incorrect assumption, as wealth is not always distributed equally in society, and the case of South Africa is a good example of extreme opulence in the midst of destitution (Madisha, 2005).

Sufficient attention by global institutions such as the World Bank and IMF with regard to the possibility of Sub-Saharan African countries and large parts of Asia undertaking the same stages and processes of economic revolution and growth achieved by most

European countries and North America, and the environmental impact of such massive growth and development on the earth's resources and nature, is well documented (Sachs and Santarius, 2007). Evidence of the extent to which growth is regarded as a sustainable development prerequisite can be seen in the following three definitions mentioned by Daly (1991a):

- Sustainable development is “development that maintains the highest rate of economic growth fuelling inflation” (OCED, 1990).
- Sustainable development is “a dynamic concept taking into consideration the expanding needs of a growing world population, implying by this a steady rate of growth” (Sachs, 1989).
- Sustainable development requires “... a sustainable growth in the rate of increase in economic activity” (in Daly, 1991a).

By their very nature (Sachs and Santarius, 2007), the above definitions of sustainable development suggest, firstly, that economic growth constitutes development in its own right and, secondly, that economic growth is unquestionably sustainable. Yet, all three definitions fail to show in what way economic growth is related to human well-being. Furthermore, neither definition makes an explicit reference to the natural resource base that sustains economic activity. One can only conclude, therefore, that all three definitions are based on pure articles of faith. Hence, unlike the preceding definitions, they clearly lack intellectual rigour, as well as any vestige of operational value.

In one of the few rigorous examinations of the sustainable development concept, Pearce et al. (1990) point out that the explicit use of the term “development” instead of economic growth implies a broad acceptance of the fact that sustainable development embraces quality of life concerns, which are not necessarily reflected in annual estimates of production and consumption (e.g. educational attainment, nutritional status, access to basic rights, and spiritual welfare).

Hence, Pearce (1987) believes that development acknowledges the limitations inherent in the utilisation of the popular measure of economic growth - Gross Domestic Product - as an indicator of the well-being and development status of nations. Moreover, Pearce et

al. (1990) suggest that the element contained within a given development “vector” is open to ethical debate. In other words, what constitutes development is an ethical consideration, and this will always differ between and even within countries. Therefore, one may be forced to acknowledge that GDP and many other quantitative-based indicators are unlikely to serve as very good indicators of development, let alone sustainable development.

2.6 THE MEANING OF DEVELOPMENT

One reason for the overlap in the meaning of sustainable development is the highly confusing issue of what development actually means. This is a semantic, political and indeed moral minefield (Goulet, 1971). Seers (1977) argued that if poverty, inequality and unemployment were decreasing without a loss of self-reliance (for example, through foreign ownership of manufacturing plants), then development was taking place. Versions of these formulae have formed the standard basis for development discourses, but development itself remains an ambiguous and elusive concept, open to prejudice and preconception. It is “a Trojan Horse of a word” (Frank, 1987), a term which is sufficiently empty that it can be filled at will by different users in order to represent their own meanings and intentions. The word “development” is used both descriptively, to describe what happens in the world as societies, environments and economies change, and normatively, to set out what *should* happen (Goulet, 1995; Adams, 2001).

Sachs (1992) speaks of development as ‘a perception which moulds reality, a myth which comforts societies, and a fantasy which unleashes passions’. It is what Frank (1987) described as a ‘slippery value word’ used by ‘noisy persuaders’ such as politicians ‘to herd people in the direction they want them to go’. Advocates for particular ends in development, or means to achieve those ends, make explicit use of the slipperiness of the word, and the confusion created by its heavy ethical burden.

Such value-laden words become political battlegrounds. To return to Crush (1995), the discourse of development promotes and justifies very real interventions and practices, and is inextricably linked to sets of material relationships to certain kinds of activities and the exercise of power. Escobar (1995) argues that reality has been so ‘colonized by the development discourse’ that those who were dissatisfied with this state of affairs

had to struggle for bits and pieces of freedom within it, in the hope that in the process a different reality could be constructed’.

Concepts of development have a complex pedigree and etymology. There is a long history of ‘development thinking before development began’ (Brookfield, 1975). The word ‘development’ came into the English language in the eighteenth century, and soon acquired an association with ‘organicism’ and ideas of growth (Watts, 1995). Cowen and Shenton (1995) explored its evolution and the origins of ideas of underdevelopment in nineteenth-century European thought. By the start of the nineteenth century, development had become a linear theory of progress, bound up with capitalism and Western cultural hegemony, and advanced through mercantilism and colonial imperialism. Tracing what Watts (1995) calls the genealogy of development reveals the complexity of its meaning over time. In light of this (Adams, 2001), it is somewhat surprising that there has been such uniformity in development thinking since the Second World War.

This capitalistic and Eurocentric ‘developmentalism’ (Aseniero, 1985) presents development as a process that recreates the industrial world: industrialised, urbanised, democratic and capitalist. Development has been depicted as a ‘crucible’ through which successful societies emerge purified, both modern and affluent (Goulet, 1971). Developmentalism suggests that countries develop through different stages, on a linear path towards modernisation (Chilcote, 1984), and that progress down this path could be measured in terms of the growth of the economy or some economic abstraction such as per capita gross domestic product. The word ‘development’ thus came to mean the projects and policies, infrastructure, flows of capital and transfers of technology which were supposed to make this possible.

Development thus involved the imposition of the established world order on the newly independent periphery. Illich (1973) commented that:

there is a normal course for those who make development policies, whether they live in North or South America, in Russia or Israel or (Africa). It is to define development and set its goals in ways with which they are familiar, which they are accustomed to use in order to satisfy their own needs, and which permit them to work through the institutions over which they have power or control. He

concluded, harshly, that this formula 'has failed and must fail.

In practice, "orthodox development thinking" (Oman and Wignaranjah, 1991) sought to follow the success of the Marshal Plan by applying the same approach (injecting foreign aid for investment in infrastructure) to make the non-industrialised world: 'it was assumed that rapid industrialisation and generalised improvement in material conditions of life could be won quickly by following the formula that had worked in reconstructing war-damaged Europe' (Goulet, 1983). With this aid came the hegemony of values. The modernisation paradigm was built on the conceptual separation of 'modern' and 'traditional' (or 'Western' and 'non-Western') societies. Such concepts (Slater, 1993), which weaved seamlessly into ideas of development, came from the same roots in Western Enlightenment rationality, and built on profoundly encoded Western preconceptions about civilization and improvement versus barbarism.

This narrative exposes the naivety and palpable ignorance of Western knowledge, treatment and understanding of Africa's problems of poverty, believing that the massive injection of cash and aid (Marshal Plan) that helped the Allied forces to rebuild and transform much of Europe and Japan after World War II could be replicated in most Sub-Saharan African countries, such as Malawi. They discounted the fact that pre-war European societies had the technical knowledge, competence and skills that helped their economies to recover quickly from the massive destruction of the war, while many countries in Sub-Saharan Africa, after colonialism and independence, had no wherewithal and technical knowledge to even treat their water supplies (for example, the case of Zimbabwe and cholera). The West replicated their policies in Africa (structural adjustment programmes), and this exacerbated the whole economic situation on the continent.

Sachs (1992a) dates the beginning of the age of development to the inaugural speech by US President Harry Truman in January 1949, in which he referred to the southern hemisphere's 'underdeveloped areas'. From this exercise in labelling grew the exercise of economic and cultural power, which has become development practice. Development discourse is built on this foundation of the non-'developed' and non-Western 'other' as a fitting, needy and legitimate target for action. Much of Edward Said's account of the power of Orientalism could be applied to development (Crush, 1995; cf Said, 1979). The manner of this presentation and the material actions that flowed from it have been

highlighted and challenged in the extensive writings of ‘post-colonialism’ (Spivak, 1990).

In Said’s (1979) account of Orientalism, the Palestinian intellectual was able to weave a coherent and eloquent argument on how the development dictionary and language have been appropriated by European and North American intellectuals, civil society and governments alike, thereby labelling all societies and cultures, especially African and Eastern societies (Asia and Arab societies) as savages and primitives. In this context, all that the ‘primitive’ and ‘savage’ societies needed to do was to copy hook, line and sinker the civilised manners, values and behaviours of the developed societies of Europe and North America. Said (1979) debunked all these assumptions and fallacies of the European monopoly on knowledge and civilization in his extensive writings on post-colonialism.

Esteva (1992) claims that the notion of “underdevelopment” also began with Truman’s speech (although he was not the first to coin the term), suggesting that from that day onwards, 2 billion people became underdeveloped. With regard to development, ‘its meaning soon narrowed to economic growth, thence forth was defined as the escape from the sorry condition. Of course, escape proved impossible for most countries and most people, even in the narrowly defined terms’. Sachs (1992a) described the project of development as ‘a blunder of planetary proportions’. According to him (Sachs, 1992a:4), ‘development is obsolete, standing like a ruin in the intellectual landscape’.

By the time of the United Nations First Development Decade (1960-70), the certainties of developmentalism had begun to falter. Social and economic conditions for the majority of the population in many countries of the capitalist periphery steadily worsened in the immediate post-war years (Frobel et al., 1985). Commentators from a wide range of persuasions began to acknowledge (and theorise about) the glaring gap between bland and simplistic expectations and reality. Debate (Chilcote, 1984) about the nature and causes of the apparent failure to ‘develop’ has resulted in the burgeoning disputes in development studies and the proliferation of development theories.

The 1980’s saw the rise to authority of a counter-revolution in development theory and practice, one that was opposed both to the established neo-Keynesian approach to planning and to structuralist and Marxist theories of development (Toye, 1987, 1993;

Robinson, 1993). The counter-revolution emphasises the benefits of free markets and the minimisation of the activities of the state. The conversion of key Western governments (and hence the World Bank) to the doctrine of economic liberalisation (as in 'Reaganomics' and 'Thatcherism', commonly known in sub-Saharan Africa as the Washington consensus) for a while carried all before it. Thus, world financial institutions, spearheaded by the implacable economists of the World Bank and the International Monetary Fund (IMF), imposed structural adjustment in order to counteract the 'longstanding weaknesses in every economy and in international arrangements' revealed by the recession of the early 1980s, in pursuit of recovery and 'sustained and rapid growth of the kind the world enjoyed for twenty-five years after World War Two' (World Bank, 1984b).

In particular, the counter-revolution demanded that governments scale down. As the *World Development Report* commented (in the related context of the transformation of the economies of Eastern Europe and Soviet Union, the end of one-party rule in parts of Africa and the end of white minority rule in South Africa), 'the state has to move from doing many things badly to doing fewer core tasks well' (cited in World Bank, 1996). However, the incorrectness of these assumptions has been shown in the recent global financial melt-down, especially in the United States of America, as these assumptions advocated unfettered capitalism and the self-corrective abilities of the market. It is now glaringly apparent that governments need to curb the excesses of capitalists, while not necessarily putting a brake on growth and development. The impact of the global financial turmoil was minimal in South Africa, not because of some self-corrective measures in the market, but because of the good regulatory system existing in the country, under the supervision of Trevor Manuel, the Minister of Finance at the time.

Debate in development studies has reflected changing ideas about the meaning of development and the policies necessary to achieve it. With the rise of conservative economic policies in the industrialised world, and the collapse of the Iron Curtain in Europe, old certainties broke down and old enemies wavered and became confused. In radical development theory, there was extensive but unresolved debate within and about Marxism and post-Marxism (Corbridge, 1993), while the rise of postmodernism, cultural theory and post-colonialism undermined established certainties. It was widely seen that there was an impasse in development studies (Schuurman, 1993).

The multidimensional global crisis has therefore been a key theme within debates about sustainability - a crisis of development, environmental quality and threats to the material benefits supported by natural biogeochemical processes and sinks (Adams, 2001). The 1992 *World Development Report* opened with the assertion that 'the achievement of sustained and equitable development remains the greatest challenge facing the human race' (World Bank, 1992). By the 1990's, the point that there are close links between the problems of development and the environment had sunk in, although, despite significant advances (Blaikie, 1985; Blaikie and Brookfield, 1987; Redclift, 1984,1987; Redclift and Benton, 1994; Elliot, 1999), theoretical understanding of these links still tends to lag behind practical and rhetorical recognition of the problem.

By the end of the 1990s, experts in development studies and economics and those in policy positions in most developed countries of the world had seen clearly, but refused to admit publicly, the clear link between massive and unregulated economic growth and development, and the rape, damaging and pillaging of the environment in the name of development and economic growth. It was also this decade (1995) that saw the military junta in Nigeria execute an environmental and human rights activist and poet, Ken Saro-Wiwa, because of his protests against the activities of oil companies headed by Shell BP. The oil companies were irreparably damaging the Ogoni community and environment, by denuding and impoverishing crops, people and livestock in the name of prospecting for oil in the oil-rich region of the Niger Delta in Nigeria. Ken Saro-wiwa's leadership of the protest group in the Niger Delta of Nigeria created an unholy alliance between the military junta and oil companies, as a line was drawn in the sand between the needs of the community versus the needs of the oil companies and the military. The face-off eventually led to the hanging of Saro-wiwa, and his murder resulted in the present mutiny, kidnapping and arson in this region.

Chambers (1983:35) argued that it is the plight of the poor that should set the agenda for development action, and in his approach to sustainability, he directed attention to the concept of sustainable rural livelihoods, defined as the secure access to sufficient stocks and flows of food and cash to meet basic needs. He suggested that there are both moral and practical imperatives for making sustainable livelihood security the focus of development action. This is actually the principle underlying the argument of this study:

that the touchstone of every debate on the environment (non-renewable resources such as water) and development is the needs of the poor, both environmentally and more conventionally developmentally. The concerns of the poor majority should override all other considerations if development is to be achievable and sustainable. This should dominate thinking in most of the developing world, especially in sub-Saharan Africa, as debates about the environment and development are inherently political. However, as Redclift (1984) argues, it is an illusion to believe that environmental objectives are 'other than political, or other than distributive'.

Lawn (1998:32) believes that development is an evolutionary process involving qualitative improvement in the human condition over time. Because human betterment is only achievable if the human condition can be evaluated in accordance with objective assessment criteria, development demands an ethical guiding principle - an ultimate end- in order to rank the intermediate ends that man-made capital ought to serve. Clearly, to achieve development, the ultimate end must be appropriately conceived. In addition, because the ultimate end reflects the objective values pertaining to a society's belief system and, as is always the case, belief systems contain a certain number of erroneous images and beliefs, development also requires a society to revise its belief system and the ultimate end. Only then can it be certain that newly produced commodities will contribute positively to the human development process.

2.6.1 Development: A qualitative rather than quantitative phenomenon

For development to be qualitative, it must make a meaningful impact on the lives of the people, instead of being only concerned with rates of economic growth and gross domestic products. For the majority of the poor living in South Africa and most of Sub-Saharan Africa, development should and must mean a decent house with proper water and sanitation, availability and affordability of food and healthcare facilities, and good employment and education for children. Anything short of this is not real development for the man on the street, and needs to be debated.

Development of any kind is an evolutionary process involving the improvement of a particular state or condition over time. As such, human development can best be described as an evolutionary process towards human betterment (Boulding, 1990: 32). Of course, the potential for development is not always guaranteed. If deterioration in the

conditions required to sustain the well-being of mankind is imminent, development becomes a measure of how effectively human beings can minimise regressive change.

Assuming that the potential for human betterment will continue for some time, development is likely to be evidenced by the progression of a society towards a predetermined set of desirable social goals and objectives. Eventually, it is likely to be characterised by the progressive attainment of more desirable social goals and objectives, as each preceding set is fully satisfied. This suggests, firstly, that development will be difficult to achieve without a clear perception of what human betterment involves, and secondly, it will be difficult to achieve without a “rule of right action” to guide the human development process (cited in Lawn, 1998:30).

It is important for us to understand that development must conform to a particular socio-cultural context in order for it to be relevant. What constitutes development in Australia may be protection of animal rights or efforts to curb climatic change, while for the ordinary man living in a shack in the Alexandria township of Johannesburg, real development involves a proper house with sanitation for his family and job security. In these situations, it is also critical to understand that a development-based rule of right action entails bringing the local realities and values back into development discourse and policies. Most policy makers in Africa and Europe have a tendency to believe that development is a linear methodology that must follow the paradigms of developed societies, but this perception is incorrect, naive and simplistic.

Before an ordering principle can be established to serve as a development-based rule of right action, the following point needs to be emphasised from the perspective of sustainability in the use of natural resources such as water – that there is a fundamental difference between qualitative-based and quantitative-based notions of development. This distinction is best described by Daly (1990) as follows:

To grow means to increase in naturally in size through the addition of material through assimilation or accretion. To develop means to expand or realize the potentialities of bringing gradually to a fuller, greater, or better state. In short, growth is the quantitative improvement in the physical scale while development is qualitative improvement or the unfolding of potentiality. An economy can grow without developing or develop without growing, or do both, or neither

(cited in Lawn, 1998:78).

Owing to the past and present emphasis on the importance of growth, development has long been associated with the expansion of the physical quantity and technological capabilities of man-made capital. This explains why the difference in GDP as a supposed indicator of the growth of macroeconomics is used to compare the development status of all nations. Indeed, nations with per capita GDPs at the lower end of the poor-rich scale have long been considered “underdeveloped”, while more recently, some at the upper end have been outrageously described as ‘overdeveloped’.

Although GDP is not an adequate index for the measurement of the wealth and development of nations, many economists still ignore the warning of the creators of the GDP not to mistake it for a national well-being indicator (Kuznets, 1962:40). ‘The welfare of a nation can scarcely be inferred from a measurement of national income as defined by the GDP....Goals for “more” growth should specify of what and for what’.

In this respect, the weaknesses of the GDP as an index for measurement of human well-being should be duly noted as follows:

- that the same level of economic output can produce widely different levels of well-being, depending on what types of products and services are offered, how well these products match human and environmental needs, and how these goods and services are distributed throughout the community;
- GDP measures the production of defensive expenditures that are needed to correct or compensate for avoidable problems as well as expenditures that cause a boost in welfare; and
- Many additions (e.g. volunteer activities) to or subtractions (declines in the state of the environment or vitality of communities) from welfare are not part of the monetised economy and so are not reflected in the GDP figures at all.

This assertion does not in any way prove conclusively that economic growth (e.g. expansion in the size of the monetised economy) is always a bad thing. It should not be assumed that growth, development and progress are in themselves automatically bad. According to some scholars (Hargroves and Smith, 2005:60), if damaging production processes are used and damaging products are produced, then growth in the economy

will be bad. However, if the economy radically changes its production processes and products so that they are benign or even restorative, then growth in the economy caused by an expansion of these beneficial production processes and products would be a blessing.

At present, slowing down the pace of economic growth is not going to help achieve sustainability, as it is a 'red card' to businesses and governments not to invest, which in turn leads to job losses and reductions in all the positive aspects captured in the GDP indicator (Smith, 2003:18). As Dodd says (1997:122), 'discouraging economic growth would do little to encourage a more sustainable society. Indeed, engineering a recession is likely to have perverse consequences, increasing unemployment, reducing willingness of consumers and firms to adopt improved social and environmental practices, and encouraging farmers and resource-based industries to eat into our natural capital to maintain cash flows and living standards'.

Scholars such as Hargrove and Smith (2005:58) insist that we must be clear about what economic growth and development consists of. We must work very hard on the task of decoupling economic growth and development from negative environmental and social impacts. In essence, despite the pitfalls of economic growth and development, it is mind-boggling how the poverty and wretchedness of millions of people in Sub-Saharan Africa can be changed without economic growth and development. However, the real victory will be in embarking on an economic growth that will not be detrimental to the natural capital of nations in the developing world. That will be the ultimate development.

Based on the fact that we in the field of development studies focus on the qualitative nature of the human condition, man-made capital is only considered useful if it contributes positively to the human development process. Of course, development will always be a considerable function of man-made capital because, up to a point, the size of the stock and its technological capabilities are principal factors in expanding the human potential to experience a fuller and more rewarding sense of well-being (Combs, 1977). Nevertheless, the departure from quantitative growth suggests that an accumulation of man-made capital beyond a certain physical quantity need not always improve the human condition. Unless it can be shown that a qualitative expansion in economic activity genuinely contributes to the betterment of a nation's citizens, it

cannot be assumed that an increase in per capita GDP elevates a nation's development status.

2.6.2 Development requires intermediate ends to be appropriately ranked and the ultimate end to be appropriately conceived

This section argues that for development to be possible in any society, the population needs to be aware (through education and the process of socialisation) that certain needs are immediate or intermediate, and that even the needs to be deferred to later in future for the good of the individual concerned and the society in general. In essence, young university graduates in the work environment need to adopt the culture of saving from an early stage. They should know the value of investment and self-improvement through further education, and refrain from wasting their earnings on cars and designer fashion labels. To consciously deny the existence of an ordering principle in life is clearly an error in judgement. Moreover, to go a step further and consider the indiscriminate attainment of intermediate ends as equivalent to having served the ultimate end is to confuse ends with means. Hawtry (1946:364) postulated that:

Humankind will seek ends, but only right ends (an appropriately hierarchy of intermediate ends) and are destined to give true satisfaction in fruition.

And, as Hobson (1929, p.328) once explained:

It is only the extent to which we can identify the desired from the desirable that the evolution of customary standard of life becomes a sound human art.

Secondly, as critical as it is to rank intermediate ends in accordance with how will they serve the ultimate end, so is the appropriateness of the hierarchy itself. Development will not take place if, to begin with, the hierarchical ordering of intermediate ends is erroneously conceived. As Knight (1993:4) remarked:

Living intelligently involves more than the intelligent use of means in realizing ends; it is as fully important to select the ends intelligently.

Regrettably, there has been a growing tendency to blur the distinction between the ultimate and intermediate ends (Hobson, 1929; Horkheimer, 1947; Daly, 1973). This

has allowed both to become conflated and, in so doing, has freed the process of capital accumulation from objective assessment criteria that would otherwise allow desirable and undesirable forms of human endeavour to be easily distinguished. As a result, the accumulation of human capital has become an end in itself where, as Colvin (1977:108) claims, one rarely considers: “doing what for what?” Even less, it seems, does one explore the consequences of “doing what for what with what?”. Instead, it is simply assumed that an ever expanding stock of man-made capital corresponds with a logical improvement in human well-being and that, by implication, growth is always desirable. Thus, as far as Weisskopf (1971:92) is concerned, it is the conflation of intermediate ends and the ultimate end that has permitted “rational means to justify irrational and, in many instances, bad ends”.

According to Horkheimer (1947), the conflation of intermediate ends and the ultimate end began as the philosophers of the Enlightenment, following the Reformation of the sixteenth century, attacked religion in the name of reason. What was set in motion was not a process which saw the death of the Church, but one which saw the death of metaphysics and the objective concept of reason itself, (Weisskopf, 1971:17-18). Whereas objective reason had previously emphasised ends rather than means and served as a measuring rod for individual thoughts and actions, and was eventually “liquidated as an agency of ethical, moral, and religious insight, (Weisskopf, 1971:4). As far as Daly (1989) is concerned, this indicates the “temper of the modern age” - a progressive banishment of once dominant concepts as teleology and purpose in light of a deterministic, materialistic, and reductionist world view conceived during the Enlightenment itself.

The increasing secularisation, rugged individualism and lack of faith in God and the tendency of most people in the developing world, especially in South Africa, to cut the umbilical cord of family units, have had a corrosive effects on the thoughts and well-being of people, with concomitant effects on the policies and programmes of the national government, led by the ANC. The breakdown in family values and lack of proper parenting in South African families because of the marginal presence or total absence of male role figures, especially black families, have contributed to the drugs and alcohol pandemic, teenage pregnancy and the astronomical crime wave in the country. Of course, apartheid will always be mentioned and blamed, but it is

inconceivable that it is responsible for the fact that 60 percent of black families and households are headed by women.

This duly suggests deep-rooted problems that are spiritual and cultural, signifying either confusion or a lack of moral ethos in the black majority population of South Africa. The Catholic pontiff, Pope Benedict (cited in the *Economist*, 2006:18) called it the 'Dictatorship of relativism' or 'moral relativism', which means the normalisation of values to individual interpretation and viewpoints, that everything is relative, that there are no more fixed standard principles, and that behaviours, judgements and decisions, no matter how morally bankrupt, are no longer frowned upon. This amounts to what the renowned French sociologist, Durkheim (1893), called the *normalization of abnormalities*, and it is indeed sad and pathetic for this present generation, which is too permissive, secular and materialistic. This relativity of truth, thoughts, opinions and events lies at the core of the ills of modern family, society and culture, and resonates very well with sexual and violent attitudes in post-apartheid South Africa.

Broadly defined as "scientism", it has all but destroyed any notion of good and evil by reducing ethics to the level of individual tastes and preferences (Daly, 1987). The subsequent confusion of means with ends has rendered all genuine attempts to perceive, assess and measure qualitative change very difficult. Development has literally become a term devoid of substantive meaning and purpose. Virtually anything vaguely desirable is now able to constitute and can be promoted as a form of development (cited in Lawn, 2001:32).

2.6.3 The ultimate end of development

For the majority of black South Africans who have been marginalised and exploited for centuries through colonialism and apartheid, the ultimate end of development should be employment opportunities, housing with proper water and sanitation, nutritious food and good education. This does not include all the beautiful roads and stadia that the government is building, except if it will translate into employment opportunities for them. The poor need the basics of life to survive, and for them, this is the ultimate and true meaning of development, irrespective of the rhetoric coming from Washington and Westminster.

In this context, it is critical that development should have ethics as its guiding principle. Principles like justice, equity and an opportunity-driven society (which entails going back to the Freedom Charter which espoused a non-sexist, non-racist democratic society) should be the benchmark, especially in a divided and unequal society such as South Africa. Ethics and not growth at all costs should guide us because, as Tawney (1926:56) once remarked:

ideals of religion, art, and understanding are not hard to find for those who actively seek them, or those who seek them first. But if they are sought second they are never found at all (Smith, 1980:23).

It is the ultimate end of what a society seeks to achieve that actually determines and reflects the real values, images and belief system guiding such a society (Boulding, 1956). These so-called objective values constitute and determine, either correctly or incorrectly, the true meaning and purpose of human development in general. As such, they form the basis upon which intermediate ends are hierarchically ranked and which, ultimately, man-made capital ought to be produced to serve.

In essence, a society that aspires to be developed must have certain moral standards and the negative effects of moral relativism gives added impetus to this malaise in a society such as South Africa, where half of the children are raised in female-headed families. The society needs to inculcate in the men of this generation the fact that true success and manhood lies in devotion and responsibility to one's family and children, and that anything less than this is misplaced priority and not ideal for man and society. Men need to learn that responsibility does not end with the conception of a child. With the breakdown in family structures and the dysfunctional educational system in the country, especially secondary schools, it is debatable as to where this learning will take place.

It is important for a society to have values and objectives which individuals are expected to conform to because, according to Horkheimer (1947:4), this has helped society to exist as an opportunity for individual expression of:

a universal rationality from which the criteria for all things and beings are derived.

It is important to point out that the researcher's postulation for an adherence to objective values is not a validation for authoritarian leadership or the theocratic religious oligarchs of Iran and Sudan, or even to be confused or synonymous with "egotism and intolerance" (Daly, 1980:352). Instead, the individual subordination of subjective desires to a dogmatic belief in objective value should be viewed as a reflection of one wanting to belong to a "community" because, as Swaney (1981:619) has argued, "the free individual and the community grow together".

Moreover, one's freedom invariably increases in line with one's ongoing involvement in the community, because as the individual and the community grow together, so the individual "grows deep". It is in fact a clarion call for the real culture of Ubuntu in South Africa that the researcher is alive because of his community, and that love and respect for my neighbours invariably means love and respect for oneself and one's family. This is the concept that should guide us to real development and subsequent sustainable development.

While commitment to a community is likely to restrict one's ability to rank intermediate ends according to individual tastes and preferences (as opposed to choosing the means to satisfy them), what is invariably overlooked is that a commitment of this kind is a prerequisite for gaining an individual sense of autonomy and personality. Consequently, it stands as a means to individual freedom and development, particularly so if the community is open to inquiry (Swaney, 1981). It is unfortunately a measure of precisely how far many have gone in moving away from our individual concrete experience of "persons in community" that many observers continue to label an adherence to objective values as "anti-individual" (Daly and Cobb, 1989).

2.6.4 Development requires the ultimate end to be suitably updated

Many belief systems in the traditional African religion that impeded the real development of most pre-colonial African societies (like the killing of twins in Eastern Nigeria) were abolished with the advent of European missionaries in Eastern Nigeria. In this instance, societies need to constantly renew their values and belief system, so that it can fulfill the wishes and developmental needs of the communities - failure to do so will ultimately plunge the society into a state of turmoil and irrelevance. This is because it is only in creative and dynamic societies that development takes place, and the ultimate

ends of such societies need to be suitably updated and refined. To some extent, a society's belief system will always contain erroneous beliefs, images and values (Tawney, 1926:45). Quite literally, some things held to be true will eventually prove to be false. As a result, one can never expect the corresponding hierarchy of intermediate ends, even if effectively satisfied, to maximise the betterment of a society's members. Nevertheless, one can expect some ultimate ends to advance the human development process more than others.

Given the historical tendency for "fit" cultural traits to survive and multiply (Norgaard, 1992:18), the failure to update the ultimate end in light of conflicting messages and signals can lead to cultural implosion and ultimate societal extinction. Thus, as growth in knowledge reveals the extent to which a society's belief system is replete with erroneous images, beliefs and values, it is necessary, in the first instance, to question all dubious truths. This often requires questionable images and beliefs to undergo a testing process (Boulding, 1970a:20). Secondly, once conflicting messages persist long enough to reveal some established truths as falsehoods, all erroneous images and beliefs should be rejected. Thirdly, as newly emerging truths become increasingly difficult to deny, a society must endeavour to incorporate them into its belief system. Finally, because the ultimate end reflects the objective values pertaining to a society's belief system, as the belief system is systematically revised, so the ultimate end must be appropriately updated (Norgaard, 1992:13; Boulding, 1970a:25).

Unfortunately, a revision process of this nature is rarely a smooth one. It is customary for the modification of human belief systems to be painstakingly slow because they are characteristically resistant to change (Boulding, 1956). Indeed, the resistance of human belief systems to beneficial change can often hold the key to a society's development, and in some instances, its long-term survival. This having been said, the obstinate nature of human belief systems is not entirely undesirable. At least some degree of conservatism is necessary for belief systems to survive and for a shared sense of and dogmatic belief in objective value to persist for any length of time.

Many scholars have argued (Boulding, 1970a:30; Norgaard, 1992:20; Lawn, 2001) that exactly how resistant a society's general belief system is to its beneficial revision often depends on the nature of its institutional structures and arrangements. Successful societies possess institutions that, in the Hegelian sense, are predominantly non-

dialectical in nature. Non-dialectical institutions minimise factional conflict, intolerance and ideological inertia, and allow questionable truths to be openly scrutinised. It is for this reason that non-dialectical societies have a meritorious record of facilitating the appropriate revision of belief systems and allowing the ultimate end to be suitably updated. Dialectical processes are those involving systems with a contradiction implicit in their own development (Boulding, 1970a:40). The contradiction usually entails the negation of the present system and the eventual emergence of its opposite. Because this antithesis also possesses a contradiction in its development, a third system eventually emerges -the synthesis. Over time, a dialectical process leads to a cyclical pattern of thesis-antithesis-synthesis, where the synthesis is little if at all advanced from the original thesis (Boulding, 1970a:40).

Most countries in the developing world, especially those in sub-Saharan Africa, are dialectical societies, as they are daily experiencing coups and counter-coups, as well as incessant political and social instability, which do not augur well for growth and development. The present succession debate and wrangling within the ruling Africa National Congress (ANC) in South Africa between Jacob Zuma and Thabo Mbeki is an example of a dialectical process going on in the country that envelops both the citizens and investors with a certain amount of unease and nervousness. Unlike the smooth transition of power between Prime Minister Tony Blair and Gordon Brown in the United Kingdom (UK), this is a typical example of a non-dialectical process that is common in most developed countries of Western Europe and North America. These attributes are critical for genuine economic growth and development in any society.

The recall of the former president Thabo Mbeki just months before the end of his term and the current split between former allies within the ruling ANC are examples of a non-dialectical process that often causes anarchy and a sense of unease among citizens. Nobody is quite sure of the ramifications and full impact of the split in the ruling party, given the rise of vitriolic statements, and the display of a high level of intolerance towards different opinions by some elements in the ruling party could plunge South Africa into violence during the next elections.

A contradiction arises within the development of these systems because dialectical processes often involve the struggle for ideological, economic and/or political supremacy. Rarely do they involve an open dialogue between opposing forces, and

rarely is the overall objective the resolution of existing problems or disputes. Human-related non-dialectical processes are characterised by the emergence of a new microstate over and above a previously existing one - the new system does not emerge because of a conflict between two or more systems or, in the case of a social system, two or more elements within it. It arises because of a discontinuity in the evolutionary pathway of a once existing system caused by the co-evolution of its constituent elements, pushing its parameters beyond a bifurcation threshold (Boulding, 1956: 1970a).

2.6.5 Establishing a development-based rule of right action

It is important for any society and even individuals to rank intermediate ends in accordance with the ultimate end, and establishing a broadly based guiding principle is best achieved by searching for an objective conception of human needs (Hodgson, 1988:16). An ethical guiding principle is needed in society so that a development rule for rights action can be established. For a better understanding of an objective conception of human needs, one needs to pay close attention to Maslow's need hierarchy. Although the jury is still out over Maslow's choice of the individual categories of human needs and their precise order, it is still the most significant treatise on human needs and wants.

A better encapsulation of Maslow's need hierarchy (1954) is as follows. The hierarchy is classified in accordance with Maslow's ranking of lower- to higher-order needs. Beginning with the lowest form of human needs, they are ranked as follows:

- *Physiological needs* -such as food, clothing, shelter, etc.
- *Safety needs* -this includes the need for physical and mental security, including the requirement for stability, dependency and protection; the freedom from fear, anxiety and chaos; and the need for structure and order. It also includes the general requirement for a comprehensive "philosophy that organizes the universe and the men (sic) within` it into a sort of satisfactory coherent meaningful whole." Satisfying safety needs necessitates such things as:
 - a. A minimum level of income and an appropriate welfare safety net - overall, a

strict adherence to the principle of intergenerational equity and justice.

- b. A strong sense of “community”.
- c. The establishment of institutions based on the need for social coherence and stability.
- d. Ecological sustainability and the continuation of the evolutionary process to ensure that physiological needs are safely sustained into the foreseeable future.

- *The need for belonging and love* - this includes the need for affectionate relationships with people in general; the hunger for contact and need for intimacy; the desire for a sense of place in the group, family, society; and the urgent need to overcome or avoid the pangs of loneliness, ostracism, rejection, and homelessness. A true and fully encompassing sense of belonging and love also involves a sense of identity with posterity. Hence, satisfying the need for belonging and love also demands a corresponding adherence to the principle of intergenerational equity and justice.

- *The need for esteem* -this includes the need for a stable and high evaluation of oneself, self-respect or self-esteem, and the esteem of others. It essentially involves:

- a. The desire for strength, achievement, adequacy, mastery and competence, and for independence and freedom.
- b. The desire for recognition, attention, importance, dignity and appreciation.

The need for esteem is satisfied by ensuring that in terms of work, leisure and play, one has a sense of personal contribution to society in general.

- *Self-actualisation needs*- the need for self-actualisation concerns an individual’s ultimate desire for self-fulfillment - that is, the desire to become fully actualised in what he or she is capable of becoming. At the pinnacle of the hierarchy of human needs, Maslow considers self-actualisation needs to be the most “creative and rewarding phase of the individual human development process”. This is because, at the highest level of desire, there is, more than ever, a need for meaning and purpose in life.

By organising human needs into a hierarchy of relative pre-potency, Maslow's (1954) need hierarchy not only reflects the multidimensionality of the human existence, but also reveals the human personality as an integrated whole in which every part, level and dimension is interdependent. Most importantly, however, the needs hierarchy indicates that once basic physiological needs have been satisfied, intermediate ends originating from a higher level of human existence begin to emerge. As they do, one's behaviour is no longer dominated by the need for such things as food and shelter, but by the need to satisfy emerging psychological needs. Consequently, to maintain a healthy human existence, it becomes necessary for the emerging higher-order needs to be satisfied along with the basic physiological needs -what Weisskopf (1971) has referred to as a healthy *existential balance*.

Maslow's (1954) insights reveal three very important aspects concerning the human development process. Firstly, need satisfaction that continuously increases the supply of means along one level and neglects needs on a different level is likely to disturb the balance of human existence. Secondly, because development will require a balanced system of needs satisfaction, the process of man-made capital accumulation, which is aimed predominantly at meeting lower-order needs, must not occur at the expense of higher-order needs.

Finally, drawing inferences from the theories espoused by Maslow, it would seem, at the very least, that human development will demand a deep respect for the continuation of the evolutionary process, as well as widespread concern for posterity and intergenerational inequities and injustices. In particular, development will necessitate the alleviation of poverty. It is inconceivable that this need will have meaning and value for the poor people in developing countries, who are the mercy of the weather, thieves, rapists and dangerous animals in the many informal settlements in South Africa, when all they are asking from government is a place to sleep and food to eat. All needs will be useless if poverty is not eradicated or minimised.

2.7 THE MEANING OF SUSTAINABILITY

The adjective "sustainable" stems from the Latin verb "sustinere" which means to uphold. The English verb "to sustain" means to maintain, keep going, keep from falling, carry on (Little, cited in Zbigniew

and Kundzewicz, 1997:467). Currently, many people use the terms 'sustainability' and 'sustainable development' interchangeably, and this is also found in this study. However, a debate is emerging in the development literature concerning the way in which our language shapes what we do at a practical level (Whitehead, 2007:20), and we need to deal with this issue.

Redclift (1987:17-22) observes that many of the antecedents of sustainability as a concept can be discerned within the fields of wildlife and forest management. From the twentieth century onwards, biologists became increasingly aware of the processes of ecological succession which acted to secure plant population reproduction. Succession is basically the historical process through which the various biological species gradually colonise and transform an environment into a stable, interconnected and balanced ecosystem. Succession phases often take a long time to occur as nature gradually builds defences (normally expressed through species diversity) to sudden environmental changes (Bartelmus, 1986:44). The key to the sustainable management of woodlands and agricultural resources is the notion of a sustainable yield.

A sustainable yield is basically an amount or area of resources (like trees or cropland) that if removed at a particular point in time, should allow the host ecosystem to recover. In the case of forest management schemes, for example, the principle of a sustainable yield would only involve cutting down a certain number of trees, perhaps on a ten-yearly basis, rather than felling the whole forest and destroying the delicate ecosystem upon which it is based (Dasmann, 1985:12). Even within these early conceptualisations of sustainability, there are important geographical issues to be acknowledged (Bartelmus, 1986:44). Firstly, it is clear that within nascent scientific formulae for sustainability, space was a major consideration and basis for calculation. The spatial relations which constitute a successional community, for example, were major factors in determining whether or not a process is sustainable, while sustainable yields were in part measured on the basis of the spatial extent of a clearance process. Secondly, it is also crucial to note that the early sciences of resource and forest management were predominantly Western pursuits.

It is in this context that many locate the geographical origins of sustainability clearly within more economically developed countries. The suspicion that notions of

sustainability are infected with Western scientific values and ways of approaching the world continues to result in sustainability being resisted in many parts of the world, especially in developing societies of Sub-Saharan Africa (Pepper, 1996:31). In addition to its scientific/conservationist origins, it is clear that the notion of sustainability also has a legacy within the intellectual history and philosophical development associated with the green movement (Dobson, 1995; Pepper, 1996:36). From the inception of a distinctively anti-industrial set of green thinkers in the late eighteenth and early nineteenth centuries in the West, green ideologies and philosophies have continued to influence the emergent concept of sustainability. At the centre of green thinking and philosophy has been a continual desire to convey three key messages:

- That unfettered industrial development can do untold long-term damage to the environment (Carter, 2001:32; O’Riordan, 1989).
- That contrary to popular industrial ideologies, humanity is still deeply dependent on the environment for its well-being and survival (Naess, 1994).
- That society needs a new system of values that does not simply see the environment as an economic resource, but as something of more varied spiritual, aesthetic and cultural value (Palmer, 2001, cited in Whitehead, 2007:18).

Most deep-green thinkers, led by Naess (1994), have consistently emphasised the need for a kind of biophysical egalitarianism, within which the rights of the non-human world (including animals and the environment) are protected through an anti-development agenda of social lifestyle sacrifices, while eco-socialists and social ecologists have focused more on establishing new systems of socio-economic as well as environmental values - something which is more akin to sustainability. If adequate attention is paid to the writings of prominent eco-socialists and social ecologists, we can see many parallels with notions of sustainability. Inspired by the philosophies of anarchism, Marxism and ecology, scholars such as Bahro (1984, 1986), Schumacher (1973) and Bookchin (1986) all developed community-based visions of environmental reform in the post-war period, which have much in common with certain visions of the sustainable society. Bahro, Schumacher and Bookchin all argued for the creation of political and economic spaces, within which the needs of nature, society and the economy could all be met in a sustainable way.

The issue of sustainability in human existence arises because nature contains finite resources that will not last forever (Daly, 1973), so it is incumbent on us humans to be considerate and thoughtful in our usage of resources, as this may ultimately determine how long or short our existence on this planet may be. However, the presence of limited resources does not mean that ecological sustainability should be a desirable human goal. Human beings are at liberty to ignore biophysical constraints and opt for a profligate and short existence. Indeed, as Tisdell (1988) points out, there are some economists and development planners (Frank, 1987) who believe that the depletion, exhaustion and extinction of inorganic and living resources are justifiable on so-called economic grounds, and that economic growth will eventually trickle down to the poor and offset the environmental costs of development. The researcher believes that this is an illusion and a lie, because capitalism and unfettered globalisation have not provided the relief and succor promised to Africa, and indeed South Africa, by the ‘voodoo priests’ from Washington and Breton Woods institutions.

It is important to view sustainability as a desirable human goal and effort that is critical for the human race’s continued existence on Earth, because the human species lacks the institutional and intellectual capacity for equilibrium (O’Riordan, 1988) - this is why the concept of sustainability is indispensable to our modern way our life. It is important to answer the following question: Does sustainability matter? We need to look at the moral implications of living sustainably and the immediate impact of living unsustainably on human well-being and therefore human development. It is only after dealing with these puzzling concepts that we can look at the meaning of sustainability and what is required in order to achieve it.

2.7.1 Sustainability as a development prerequisite

Arguments in support of sustainability invariably rest on the future welfare effects of current actions. However, for two good reasons, the goal of sustainability can be considered a necessary condition to facilitate the development of those who already exist (Daly, 1977). In the first instance, it has been pointed out that the condition of the evolutionary process and the subsequent extension of kindred and communal spirit to posterity are required as part of mankind’s higher-order or psychological needs (e.g. safety needs, and the need for belonging and love). Furthermore, the following has also been identified by Boulding (1966:11):

There is a great deal of historical evidence to suggest that a society which loses its identity with posterity, and which loses its positive image of the future, loses also its capacity to deal with present problems and soon falls apart.

This evidence proves that any society which fails to extend the kindred spirit to future generations (Daly, 1980; Pearce, 1987), particularly by invoking the principle of intergenerational equity, is likely to rapidly disintegrate. Because human well-being cannot possibly be sustained within the confines of a self-destructing society, the goal of sustainability emerges as a necessary condition for achieving any form of human development.

In the second instance, it is often believed (Daly and Cobb, 1989) that the costs of unsustainable human activity are borne largely by future generations who, through improved knowledge, can effectively deal with them as they arise. This belief erroneously ignores the fact that unsustainable human activity has both an immediate and regressive impact upon the welfare of currently existing generations. When any society functions unsustainably in the present, considerable time, effort and energy needs to be expended to defend itself from the immediate and unavoidable welfare-diminishing consequences of both ecological and social decay (the latter being an important consideration, given Boulding's (1966) findings).

There is a global trend at present within governments for an ever-increasing proportion of GDP to be set aside for environmental as well as social defenses and rehabilitation purposes. Ironically, these expenditures, which one is made to believe reflect an increase in human welfare, are an indication of the growing costs of economic activity. Indeed, so much so that emerging evidence suggests that the marginal cost of the current scale of human activity is exceeding the marginal benefits it yields and, in so doing, is rendering many nations (for example, Nigeria and Angola) poorer rather than richer (Daly and Cobb, 1989; Lawn, 2001). It is a huge debate for people in the Niger-Delta region of Nigeria as to whether or not the discovery of oil in their community has resulted in any marginal improvement in their quality of life since the discovery of oil. The subsequent economic activities of oil companies have resulted in pollution and the desecration of family life, which characterise the present state of the community, in comparison with the pristine life which the community enjoyed before oil was found in the region in the late sixties.

It is the view of Daly and Cobb (1989) that in the final analysis, sustainability does matter, and it is vital to our continuing existence as human beings - it is thus a desirable human goal. Because universal moral principles must be followed permanently or not at all, sustainability is a categorical imperative emerging from an appeal to the higher-order moral principle of intergenerational equity. Secondly, sustainability is a development prerequisite because societies that lose their positive identity with posterity have a propensity to rapidly disintegrate. Moreover, unsustainable human activity imposes considerable and immediate welfare-diminishing costs that appear to be exceeding their welfare-increasing benefits. Living sustainably cannot be considered to be a luxury or an afterthought. Nor can it be considered to be an unnecessary imposition on the development needs of present generations, as observers such as Beckerman (1992) believe. It is instead an essential element of the human development process, thereby indicating the degree to which sustainability and development are inseparable.

2.7.2 Sustainability and the moral principle of intergenerational equity

When we talk about justice and intergenerational equity in sustainable development, we are not only talking about protecting the weak and vulnerable members of society from the effects of globalisation and market fundamentalism, but we are also advocating that provision is made for our children and future generations. It is in this context that sustainability becomes a powerful tool for applying restraint in our use of non-renewable resources such as water. This has huge relevance for developing countries such as South Africa, which will have a water shortage in 20 years' time (DWAF, 2001; World Bank, 2006).

Due to the fact that sustainability requires a suitable stock of assets to be kept intact (Boulding, 1991), living sustainably implies behaving in such a way as to invoke the principle of intergenerational equity. Consequently, whether a society favours a sustainable pathway or not will depend largely on its sense of identity with posterity. Sustainability is unlikely to emerge as a major concern if the sense of kinship and community living is not extended to future generations. To some observers, the fact that future generations do not exist yet means that they cannot be treated as moral subjects in the same manner as current generations (Pasek, 1992). Smart and Williams (1973:63) have argued against such a premise by suggesting the following;

Why should not future generations matter as much as present ones? To deny it is to be temporarily parochial. If it objected that future generations will only probably exist, I reply: would not the objector take into account a probably existing present population on a strange island before using it for bomb tests?

Barry (1970) implicitly supported Smart and Williams (1973:63) on the basis that the term 'generation' is an abstraction from a continuous process of population replacement. Hence, according to Barry (1970), conceptualising a generation is only possible if a generational cut-off point is arbitrarily instituted. Because this must leave some people living on either side of the cut-off point, one must ask how moral principles can apply and then not apply to the same person. The obvious answer is that they cannot. Clearly, in the absence of any meaningful cut-off point, moral principles applying to everyone presently alive must be followed all the time or not at all. Barry (1970) and Pearce (1987) both insisted that if the principle of intergenerational equity carries sufficient moral weight to be universally applied to everyone currently alive, then the principle of intergenerational equity must carry moral weight and be applied to posterity. Pearce (1987) concluded by insisting that the goal of sustainability should be viewed as a categorical imperative emerging from an appeal to the higher-order moral principle of intergenerational equity.

Lawn (2001:65) corroborated the view of Barry (1970) and Pearce (1987) that equity should have a dominant consideration in terms of issues pertaining to sustainability, but that the needs of the present generation should take precedence over those of future generations. Lawn (2001:66) was also adamant that we should not allow the conspicuous consumption and waste of the present generation to endanger the legitimate needs of generations yet unborn, as this will be a catastrophe for equity and sustainability. This idea is particularly relevant in developing societies such as South Africa, where teenage pregnancies are rampant. It is important for government and families to properly educate youth on the duties and responsibilities of parenting, so that they will change their current sexual behaviour, which is polluting the values of society and resulting in unwanted pregnancy.

2.8 LIMITATIONS AS A DEVELOPMENT-BASED RULE OF RIGHT ACTION

Lovins and Williams (1999:14) postulated that the developed world's quality of life represents success in the human struggle of a thousand years -the struggle for survival, health and longer life, safety from nature's unpredictable rages, comfort and happiness. Those who are members of the world's richer demographic groups can now expect their children to grow up healthy, to see their grandchildren do the same, and to watch all this from the vantage point of technology-based personal satisfaction. However, this amazing accomplishment has come at a price. It is physically impossible to spread such wonders throughout the world if we continue to do things the way we do them now. It is virtually impossible to even maintain a good quality of life, for those who already have it, without enormous changes in the way we use natural capital without limitation - there have to be some changes now if we are to secure our future survival on Earth.

Atkisson and Hatcher (2001) commented that people often speak of 'balancing' economic, social and environmental needs - as though performing a mere tight-rope act, a skillful stroll above the crowd and a safety-net was all that was required. There is no safety-net - to fail is to crash. The crowd cannot just watch - all must participate. And we need far more than balance - we need transformation and to adopt the principle of limitation in our current way of life. We need a wave of social, technological and economic innovation that will touch every person, community, company, institution and nation on earth.

The WCED (1987) remarked that the irony of all this is that adopting the principle of limitation and transformation is still viewed as an economic 'cost', when it is in fact an enormous economic opportunity - an opportunity that we are increasingly being forced to recognise. We need to consider the widening abyss between how we manage our economies and what nature's systems can tolerate. We also need to consider the rising level of international tension as gaps widen between the have-a-lots and the have-not-at-alls, the techno-rich and the food-and-water-poor. In addition, we need to consider that we are rapidly losing whole groups of people, whole species and whole ecosystems in our mindless pursuit of economic growth and development.

Because of the fact that Tawney's (1926) principle of limitation accords with Weisskopf's (1971) concept of human existential balance and Ruskin's differentiation

between wealth and illth, it will henceforth serve as a development-based rule of right action. It is also consistent with Daly's (1980) sufficiency principle. Indeed, so much so that Daly's (1980:354) revision of Bentham's maximum principle- "the sufficient per capita product for the greatest number over time" -shall become the guide to appropriate forms of limiting behaviour. In adopting the principle of limitation as a development – based rule of right action, what constitutes the optimal stock of man-made capital – in other words, what types and categories of man-made capital are there, and how much of each is optimal?

What this study wants to emphasise is the fact that unrestricted industrialisation is affecting the principle of sustainable development for the *wretched of the earth* (Fanon, 1966). Water is a non-substitutable commodity, and poverty will increase if it becomes scarce or is inadequate for the poor population in developing countries of the world, especially South Africa. Because the principle of limitation leaves one no closer to knowing exactly what is required to achieve human development, there will always be plenty of critics (Beckerman, 1992, 1994) eager to proclaim the principle as too vague to be of any significant value.

Certainly, it offers, as Daly points out, "no magic philosophers for making difficult choices easy" (Daly, 1980:359). However, if development is a condition rather than a specific or concrete target, not unlike the sustainable development concept itself, the choices a society is required to make to facilitate development are always inordinately difficult. Yet, it is by recognising the fact that human development is conditional upon the ranking of intermediate ends in reference to the ultimate end that the principle of limitation is far superior to its Benthamite counterpart.

Lawn (1998) added that this not only forces one to consider the question of *purpose*, which the Benthamite rule transparently avoids, but also implicitly recognises that a development concept devoid of an ultimate end is not meaningful at all. While it will be a difficult and complicated exercise to re-establish a shared sense of and dogmatic belief in objective value, it will be considerably more perilous, as Daly (1980:377) points out, to continue functioning according to the erroneous principle of "there is no such thing as enough".

In this instance, Daly (1980:340) is correct and is supported by Lovins and Williams

(1999:20) when he postulates that a society must have a limit in terms of acceptable levels of development and consumption of goods and services, which are reasonably sufficient to maintain a healthy lifestyle and attitude. At the present level of conspicuous consumption that pervades Europe and North America, it will be extremely difficult for most countries in Sub-Saharan Africa to reach the levels of developed countries without a limitation, if not adjustment, to the economic lifestyle of the wealthy nations of the world.

If the nations of Africa, especially South Africa, are ever to develop economically or reduce poverty considerably, how much water, compared to the rate of water wastage occurring in Western societies, would be needed to maintain the same levels of health and sanitation as the levels of countries in America and Europe, and also to drive economic growth and development? It is mind-boggling when one looks at how our environment could or would cope if the developing countries of the world, including most of China and India, were ever able to reach the levels of economic growth, development and consumerism that are prevalent in developed countries of the world.

Many significant changes in the world are now converging to help those whose hearts are guided by hope -hope that the principle of limitation and sustainability is the only way of survival for mankind on earth -brains by invention, which Edwin Land called ‘a sudden cessation of stupidity’(cited in Hargrove and Smith, 2005:35) and by the reality that our ecosystem cannot sustain our present levels of conscious consumption and materialism in view of the many imperfections that exist within the capitalist system. Such changes are not only within our grasp, but are emerging with such energy that one could say that we have reached a ‘tipping point, a moment in history when we have begun to understand’, as Albert Einstein said (cited in Hargrove and Smith, 2005:45), that ‘the world will not evolve past its current state of crisis by using the same thinking that created the situation’.

Daly’s (1980:350) principle of sufficiency and change in our behaviour and attitude towards nature’s precious resources becomes self-evident when one looks at the situation of water, because it is very central and critical to socio-economic development, health and the nutritional status of citizens, so much so that the South African government needs to adopt and inculcate Tawny’s (1926) and Lovins and Williams’ (1999:14) principle of limitation, Weisskopf’s (1971) concept of human

existential balance and Ruskin's (1849) differentiation between wealth and illth. This is also consistent with Daly's (1980) sufficiency principle, which will henceforth serve as a development-based rule of right action with regard to the way in which water is used in South Africa.

This is critical because a new paradigm is desperately needed by the year 2025, when water will become a scarce commodity not only in South Africa but also in most countries of sub-Saharan Africa (DWAF, 2001; World Bank, 2005). Thus, meaningful change, as advocated by Albert Einstein (cited in Hargrove and Smith, 2005:45) is needed to correct or avoid the looming catastrophe. The researcher agrees vehemently with Carson (1962:4), who stated that:

Of all our natural resources, water has become the most precious. In an age when man has forgotten his origins and is blind to his most essential needs for survival, water along with other resources has become the victim of his indifference.

2.9 DEVELOPMENT AND NATURAL CAPITAL

Classical economists (Smith, Malthus, Ricardo) all emphasised the effects of natural resources on economic growth, and several more recent economists, especially environmental and ecological economists, have recognised natural resources as an important form of capital that produces major contributions to human well-being (Scott, 1955; Daly, 1973, 1977; Page, 1977; Randall, 1987; Pearce and Turner, 1989). However, environmental economics has, until now, been a tiny sub-field far from the mainstream of neoclassical economics, and the role of natural resources within the mainstream has been de-emphasised, almost to the point of oblivion. But in view of the recent massive shift in the global appetite for, consumption and use of scarce resources such as water, especially the rise of China and India, it has become expedient for the link between resources and development to be well understood and the need for sustainability to be explored before the world reaches the point of disaster or extinction, like that of the Mayan civilization (See section 1.2.1 for details).

The researcher believes that if we are to achieve sustainability, the economy must be viewed in its proper perspective, as a subsystem of the larger ecological system of

which it is a part, and that environmental and ecological economics need to become much more pervasive in terms of their approaches to the problem (Constanza et al., 1991). Constanza et al (1991) were the ones who named natural capital as one of the basic concepts of ecological economics, and that this would be critical in understanding the relationship between the environment and development (Daly, 1991; Constanza et al., 1991; Constanza and Daly, 1992). According to Constanza et al. (1991), natural capital refers to the soil and atmospheric structure, planet and animal biomass etc. which, when combined, forms the basis of all ecosystems. This natural capital stock uses primary inputs (sunlight) to produce the range of ecosystem services and physical natural flow (Constanza et al., 1991). While Pearce (1990) had highlighted the accountant's view of nature and placed the emphasis on environmental assets, the latter definition relies on the ecosystem modeller's view of nature. In this sense, the use of the concept differed significantly from Pearce's initial idea. Instead of economic theories, the focus is on ecosystem processes and ecological knowledge.

Despite the increasing use of the concept of natural capital in the early nineties, it did not go undisputed. Several critics (Victor, 1991:23) within the field of ecological economics have drawn a distinction between its metaphoric and analytical dimensions: analytically weak, metaphorically strong (England, 1998:41) and they suggest that the analytical tools should be based on biophysical valuation instead of capital theory and monetary valuation. However, despite criticism, the concept of natural capital was still seen as heuristically powerful and its rhetoric use was not questioned (Akerman, 2005). England (1998:41) expressed this clearly when he said that:

In sum: let us continue to speak about the need to preserve natural capital but simultaneously develop a rigorous measure of sustainable economic welfare.

O'Connor and Matinez-Alier (1998) have claimed that the use of the concept of natural capital supports the capitalisation of nature. Despite this criticism, O'Connor applies "the ecosystem view of natural capital" (Noel and O'Connor, 1998; O'Connor, 2000) while arguing for the need for new environmental accounting and valuation tools. It is pertinent to say that what needs to be sustained (Lawn, 2001:72) is the optimal stock of man-made capital, and it is important to be aware of the source and sink functions of the ecosphere and their capacity to sustain the economic processes and man-made capital that is produced. However, as important as man-made capital is to human well-being,

of greater importance is the human habitability of the planet. Hence, to confine the instrumental role of natural capital to its source and sink functions is to adopt an inadequately narrow view of its full instrumental value. Clearly, natural capital has a further instrumental role -its *life-support* function.

The ability of natural capital to support existing life is only due to the fact that the ecosphere is the "fittest possible abode" for all presently living organisms (Henderon, 1913; Boulding, 1985). The ecosphere is currently fit for life because, as a far-far thermodynamic-equilibrium system characterised by a range of biogeochemical clocks and essential feedback mechanisms, it has developed the capacity to regulate the temperature and composition of the earth's surface and atmosphere. It strangely possesses this ability, despite lacking an inherent intelligence or purpose of its own (Wallace and Norton, 1992). Yet, it is the extraordinary self-regulating feature of the ecosphere that gives one the impression that the Earth is in some way "alive". Indeed, so much so that it led Lovelock (1979) to develop his *Gaia hypothesis* –a hypothesis based on planet Earth, or Gaia, as an immense quasi-organism (while the metaphor "Gaia" is used to represent the self-regulating nature of planet Earth, this should not be seen to imply that Earth is an organism in its own right, which it clearly is not) (Henderon, 1913; Wallace and Norton, 1992).

There has, unfortunately, been a growing tendency for human beings to take the conditions for life for granted. The culture of consumerism and rampant materialism that has gripped modern society has made human beings become detached from reality and the vagaries of the natural world and, lurking in the subconscious mind of modern man, is the unshakable belief in science and technology to solve all the ills of modern life (Meadows et al., 1992). This faith is unfounded. It is as a result of mankind's frivolous attitude towards the conditions for life that a number of falsely held beliefs have emerged. Two of them deserve to be mentioned. The first is a widely held belief that the ecosphere's current uniqueness for life was preordained - this is not so (Boulding, 1985). This is because, as Blum (1962) explains, had the Earth been a little smaller or a little hotter, or had any one of an infinite number of past events occurred only marginally differently, the evolution of living organisms might never have occurred.

Boulding (1989) explained further that what is more the path of evolution could easily

have excluded human beings' participation in it. Secondly, it is widely believed that organic evolution is confined to living organisms responding to exogenously determined ecospheric conditions. However, it is now clear that "fitness" is a reciprocal relationship between the ecosphere and its constituent species. Indeed, the ecosphere is as much uniquely suited to existing species as are they to the ambient characteristics of the ecosphere. Hence, according to Blum (1962, cited in Lawn, 2001:79), it is "impossible to treat the environment as a separable aspect of the problem of organic evolution; it becomes an integral part thereof". Clearly, just as current ecospheric conditions were not predestined, neither are the conditions of the future. They will always depend on the evolution of the ecosphere's constituent species and, in particular, the actions of a recalcitrant species such as man.

Finally, it is the researcher's view that the continuing stability and equilibrium of our ecosystem and environment is not preordained by God, but depends largely on the role and activities of the humans that live in it. The world will not become a just and better place as time goes on, but we have to consciously make positive efforts and contributions towards the improvement of our local communities and countries in general if we or our offspring are ever to enjoy the same quality of natural resources (such as water and air) that we presently take for granted.

2.10 DEVELOPMENT AND MORAL CAPITAL

Much of what we know about the critical need for moral capital or norms for the survival of the market economy or even for development to take place has come from the writings of eighteenth century philosophers such as Hume (1740) and Smith (1759). Hume (1740) actually believed that public good cannot be established unless individuals are driven not only by selfish passions but also by a 'moral sense' (a view inherited from Hutcheson). However, *moral behavior depends upon rational considerations* and, in an age of cultural and scientific progress, individuals cannot fail to see the need for private property, law and government. Far from contributing to corruption and degeneracy, the development of 'commercial society' can be expected to pave the way for morality, justice and good government, insofar as it goes hand in hand with moral and political progress (McNally, 1988:167-8). At this point, Hume's (1740) ideas, as contained in his *Treatise of Human Nature* (1740), deserve to be discussed in more detail.

In the Treatise, Hume (1740, cited in McNally, 1988:169) accepts that self-love is the origin of law and government. Nevertheless, since

'the self-love of one person is naturally contrary to that of another', competing and conflicting self-interested passions must adjust themselves after such a manner as to concur in some system of conduct and behavior'. Once individuals discover that unbridled selfishness incapacitates them for society, 'they are naturally induced to lay themselves under the restraint of such rules, as may render their commerce safer and commodious'.

As rules of social regulation are developed, they become customary and are passed on to future generations. Eventually, people come to cherish the rules which hold society together. They develop a sense of *sympathy* for those who observe social norms. Moreover, they come to model their behaviour in such a way as to be worthy of the sympathy and approval of others.

Through customs and education, then, individuals develop a love of praise and a fear of blame. According to Hume (1740), moral principles are not innate or providentially inspired. They are practical rules developed during the course of living in society - morality refers to the norms and conventions which prevail there. These norms and conventions can be said to enter into the commonsense view of the world most individuals acquire. Platteau (1994:790) postulates that these norms and conventions have to be learned first in families and then in schools in order for societies to properly inculcate them in the minds of children as values that are needed for survival in society. However, it becomes debatable as to how societies will obtain the required moral order for development when marriage and family units are under constant assault in South Africa from the twin evils of rugged individualism and the increased secularisation of society.

Platteau (1994:800) also postulated that sympathy is a learned behaviour and value system. Children in every society learn these attributes from their families, churches and schools during the process of socialisation. This begs the question as to where South Africa's children will receive this education. The dysfunctional educational system and the millions of child-headed and female-headed households are mostly incapable or ill-equipped for this critical function. So how do our children acquire good values in this secular society that is gripped by consumerism? Sympathy is an ability

derived from experience and modified as the customary rules of social life change. Sympathy has a rational dimension - it derives from the individual's understanding of the necessity for norms of conduct and behaviour. Thus, although 'self-interest is the original motive to the establishment of justice', as society develops it becomes the case that 'sympathy with public interest is the source of the moral approbation which attends that virtue'.

According to Hume (1740), property, law and government are therefore the outcome of the evolution of human society. Through the experience derived from their mutual interactions in the (nascent) market economy - and not through the mental representation of abstract principles of duty or the highest good (Da Fonseca, 1991:87-90) - individuals come to see the necessity of and to accept the constraints imposed by those institutions and conventions which preserve the social order. Men 'cannot change their natures. All they can do is to change their situation . . .' and 'lay themselves under the necessity of observing the laws of justice and equity, notwithstanding their violent propension to prefer contiguous (short-term) to remote (gains)'.

Platteau (1994:802) believes that public utilities such as schools, churches and families should become the basis of moral decisions and, as Hume (1740) put it in his *Enquiry Concerning the Principles of Morals*, 'everything which contributes to the happiness of society recommends itself directly to our approbation and good will' (quoted from McNally, 1988:169). It is very doubtful if the public utilities Hume (1740) wrote about in the Scotland of his time, which contributed to happiness, exist in South Africa today. Moral and equity considerations do not guide the business policies of state-owned operators such as Eskom and Telkom, as the boards are engaged in a rat race for profit and endless cash injections from the Treasury, while the poorest of the poor, whom they are supposed to serve, are last in their scale of preference. The main function of rules or norms is to serve as an assurance device: 'this experience assures us still more, that the sense of interest has become common to all our fellows, and gives us a confidence of the future regularity of their conduct: And 'tis only on the expectation of this, that our moderation and abstinence are founded' (Hume, 1740). It may be further noted that Hume's analysis allows for internalised norms in so far as he holds that social rules are passed on to successive generations through education and customs.

Burke (1790:115) held the opinion that 'the expansion of commerce depended itself on the *prior* existence of "manners" and "civilization" and on what he called "natural protecting principles" grounded in the "spirit of a gentleman" and "the spirit of religion"' (Hirschman, 1987:160, referring to Burke, 1790:115). If this view is followed, therefore, the market economy cannot be expected to gradually and unconsciously generate the social conditions upon which its viable existence rests. Existence of good manners (like trust and honesty in business) and good civilization are critical for the sustainable development of any society. Most governments in Sub-Saharan Africa do not honour their commitments in business transactions (not to even mention citizens) and the courts are very slow or even reluctant to mete out justice. The decision of the ZANU-Pf regime in Zimbabwe to ignore several court orders declaring the invasion of white farms to be illegal deserves a special mention here. Mugabe repeatedly ignored and flouted these court orders. Drawing inferences from the theories of Burke (1790: 115) and Hirschman (1987:160), it becomes easier for us to understand that part of the reason for the penury and poverty of most countries in Africa lies with the arrogance and lawlessness of our leaders and citizens.

Adam Smith (1759) had a more ambivalent attitude even though, on the whole, he was inclined to think along the lines of his friend David Hume (1790). In other words, he essentially shared the doctrine which can be traced back to Montesquieu and which Hirschman has dubbed 'the Deux-commerce thesis' (Hirschman, 1977, 1982). According to Smith (1759), the spread of commerce and industry enhances virtues such as industriousness, assiduity, frugality, punctuality and, more significantly, probity. Commerce brings about moral improvement by providing honest employment and eliminating feudal institutions of dependency (Rosenberg, 1964; Hirschman, 1982: 1465; Young, 1992:80). This is true of even South Africa, as lack of employment opportunities and the huge inequalities in the distribution of wealth are contributory factors to the crime epidemic in the country. Many young men will turn away from crime if they have job opportunities, although nothing will ever totally eliminate crime from human society.

As is well known, in his *Theory of Moral Sentiments* (1759), Smith laid much emphasis on the fact that all individuals have the capacity for sympathy with others – in other words, they are all able, by an act of imagination, to adopt the other's viewpoint and to

understand their reaction (see, in particular, Smith, 1759:111, ch.1; see also Hume, 1740, Book ii, sect.vii). This capacity for sympathetic identification, which enables actors to adopt the standpoint of an *impartial spectator* who observes human interactions dispassionately, is the basis of society: it supplies a system of cultural restraints in which moral checks upon the passion of self-love can be embedded (McNally, 1988:183; Brown, 1988:.61-67; Young, 1992:73-74).

According to Smith (1759), a natural sense of fellow-feeling is the thread that weaves the social fabric together. The opening words of Smith's *Theory of Moral Sentiments* (1759) are as follows:

How selfish so ever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others....

Human beings care and wonder about the feelings that fill the hearts of others. However, our access to that which another feels is not direct. We are not capable of seeing into the hearts of others. Smith (1759) writes that we can only conceive of what others feel "by conceiving what we ourselves should feel in the like situation.... [We are but a spectator of that other's life and it] is by the imagination only that we can form any conception of what are his sensations."

In this context, Durkheim's (1893) theory of social solidarity and the African concept of Ubuntu are the moral capital which South Africans need to consciously inculcate in families and schools in order for real sustainable development to take place in the country. People need to learn and know that community love and togetherness is to our advantage and not a loss to the country. Our imagination looks into the invisible recesses of another's heart through the window of that person's passions. Passions are the visible expression of another's sentiments, and sentiments are those "affection [s] of the heart, from which any action proceeds" (Smith, 1759). Our sentiments, residing in the heart of our being, process experience and generate our passions -and in turn our actions. The strength of a passion is determined by the measure of the sentiment that evokes that passion. For example, one who sees another suffering and whose heart holds a large measure of the sentiment of beneficence (sometimes referred to as benevolence) will passionately desire to help that other and will act with great kindness.

Drawing inferences from the works of these giants of the eighteenth century, we can deduce that the existence of moral capital or norms is critical for development to take place in a society. Although Burke (1790) believes that moral norms are sacrosanct in order for development to take place, Smith (1959) and Hume (1740) believe that for development to be sustainable in a society, it must be able to produce particular behaviours, norms and values for the sustainability of the economy and the safety and survival of all that live in the society. In this context, we can understand that South Africa will not be able to achieve sustainable development if the ruling African National Congress cannot eliminate the dissonance that exists between the continued development of the country and the uncontrollable crime wave, HIV/AIDS pandemic and massive rape and murder statistics gripping the nation. In this regard, the post-Polokwane vitriolic and unguarded statements of the ANC Youth League, led by Julius Malema (when he was threatening that the Youth League would kill opponents of Jacob Zuma), is inimical for the future growth and stability of the country. The country requires politicians and families that have a strong moral anchor if future growth and stability is to be guaranteed and even maintained.

South African development requires a minimum stock of what Hirsch (1976:141-3) has referred to as *moral capital*. Moral capital includes the social values of “truth, acceptance, restraint, and obligation,” all of which are critical to the very idea of maintaining mutual standards of honesty and trust and important co-operative relationships. Social virtues can be collectively considered to be a form of capital because they have a key role in the successful functioning of an individualistic, contractual-based market economy. The modern economy regards them to be necessary “agents” in the production, maintenance and subsequent provision of an optimal stock of man-made capital.

A good example of the critical nature and role of moral capital in the growth and development of an economy can be clearly illustrated by the role of the Protestant ethic in the growth of capitalism in Western Europe and the role of the Confucian culture of respect, loyalty and love in the economic growth and revival of Japan and South Korea after the Second World War. An acceptable moral capital is a *sine quo non* for proper and smooth transition of countries towards development.

In view of the fact that the ultimate end reflects the objective values pertaining to a society's general belief system, moral capital is further required for two additional reasons. Firstly, to ensure that the ultimate end is properly conceived and, where necessary, appropriately revised. Secondly, to prevent the erosion of objective assessment criteria necessary to distinguish between wealth and illth. It is for this last reason in particular that Hirsh (1976) believes moral capital may be the most crucial form of capital, suggesting that if and when moral capital is depleted, a society must engage itself in a process of "moral growth" to ensure that the stock of moral capital is kept at some necessary or minimum level.

An illustration of this point can be found when the African National Congress (ANC)-led government of Thabo Mbeki launched a moral regeneration scheme in South Africa to reclaim the moral ethos and values which were believed to have been lost to the youth of the country during the dark years of apartheid. It is also debatable within South Africa as a whole what results the scheme achieved or even intended to achieve in the long-term, because it was once chaired by a prominent and controversial African National Congress (ANC) politician and traditionalist, Jacob Zuma, in 2001.

Recently, a number of scholars have drawn attention to the fact that the social capital constituted by a society of trusting and trustworthy individuals can be gradually 'eaten up' (Buchanan, 1975:16; Hirsch, 1976; Bergsten, 1985; Mishan, 1986: Ch. 8; Vansberg, 1988:33; Bowles and Gintis, 1993). According to Hirsch (1976), for example, social virtues such as 'truth, trust, acceptance, restraint, obligation' that are needed for the proper functioning of the market economy tend to be undermined by 'the individualistic and rationalistic base' of that system (Hirsch, 1976). As for Bergsten (1985), he believed, contrary to Durkheim (1893) that a high degree of division of labour contributes 'to reduce the shared experiences from which mutual understanding and tolerance stem' (Bergsten, 1985). This may threaten the moral fabric of the market society by fragmenting the social space within which sympathetic interaction takes place.

Thus, with increasing division of labour and specialisation of knowledge, the family is more and more confined to the role of a consumption unit (Becker, 1981) and the

secondary socialisation that takes place under the auspices of specialised agencies tends to supersede the family with regard to this second phase of socialisation (Berger and Luckmann, 1967:166). Moreover, in so far as parents find themselves increasingly less able to devote enough time and energy to teaching moral values to their children - since both parents often work full-time outside their home or many children spend some portion of their childhood in single-parent homes - the intensity of the parent-child relationship is reduced, thereby making primary socialisation less effective (Frank, 1988).

In addition, grandparents tend to live in distant places - in the case of South Africa, in rural areas (Coleman, 1988:511) and, if this is not the case, their interactions with their grandchildren are much less intense than they were before. Loss of primary socialisation's effectiveness may also result (1) from reduced durability of family relationships (because members of the family are less indispensable to each other or are indispensable for a shorter period of time) and (2) from restricted family size (it is more difficult to teach other-regarding norms to single children than to children who continuously interact with brothers and sisters in what often turns out to be conflictual situations).

This erosion of values or moral capital is a vivid demonstration of the state of the family in modern South Africa, as 40 percent of South African families are female-headed households and a good majority of children are being brought up by their grandmothers, who live in rural areas of the country - this is common among black families in South Africa. In this situation, the role of the family as the primary agent of socialisation is severely compromised, and the schools are left with the onerous task of fulfilling both the primary and secondary roles of socialization, and these result in a state of anomie (Durkheim, 1893).

The researcher agrees completely with Platteau (1994:782) that the family remains the bedrock and foundation on which the core values of a society are formed and moulded. However, the core function of the family betrays the sordid situation in South Africa, where marriage as an institution is under siege from the forces of commercialisation, individualism and secularisation, which have gripped the nation. The concomitant effect of the gradual erosion of family values/moral capital can be seen in the escalating

criminality, rape and murder rates in the country, which are probably among the highest in the world and which have held the country to ransom.

To the extent that secondary socialisation depends on the depth of primary socialisation, it also tends to be affected (Berger and Luckmann, 1967:166; Bergsten, 1985:126). All these effects are likely to make the maintenance of moral norms more and more problematic. Given the high level of crime in South Africa, it is important for politicians and those in government to understand the relationship between violent crimes, continued foreign direct investment and development. We cannot be overly materialistic to the detriment of the values that make us human. Schumacher's (1973) classic diatribe against the erosion of values in society is very relevant, when he postulated that this dominant modern belief has an almost irresistible attraction, as it suggests that the faster you get one desirable thing, the more securely you can attain another. It is doubly attractive because it completely bypasses the whole question of ethics in society. It needs to be inculcated into the minds of the youth and all the citizens that development is based on a strong moral anchor.

Knowledge of these links will give them the overall perspective to understand the role of moral capital in reducing high levels of violent crimes and sustainable development of South Africa as a whole. South Africa needs strong values that should be taught in families, schools and all aspects of the nation's life in order for development to take root in the country - it is a *sine qua non* and non-negotiable for the long-term growth and stability of the country. It is true that secondary socialisation agencies (such as the school) might partly take over from the family the role of moral norm supplier. However, unless high-powered ideological messages are diffused through their channels on a sustained basis, norm transmission will be considerably less effective than before. Indeed, as Etzioni (1988:105) has observed:

Values that have lost their affective elements become empty shells, fragments of intellectual tracts or phrases to which people pay lip service but do not heed much in their choices.

There is another powerful reason for expecting a gradual erosion of moral norms in market societies. The idea that capitalism's emphasis on self-interest tends to gradually

erode the norms without which this system cannot function is part of an old doctrine (Hirschman, 1982) to which twentieth-century economists have been sometimes attracted (Schumpeter, 1942; Mishan, 1986: ch.8). This idea can be elaborated on as follows. A central feature of recent evolution in capitalist societies may be seen as the rise of individualism, a phenomenon directly associated with the development of a materialistic society based on mass consumption. This development has been accompanied and promoted by active marketing policies that have largely succeeded in conveying the deceptive message that happiness or removal of pain can be achieved through *individual* consumption of *things* such as goods and services (Platteau, 1994: 804).

Many intellectuals (Berkowitz, 1970:149; Hirsch, 1976:141-3) are critical of the deleterious effects of the media frenzy and culture on the psyche of youths in developing countries such as South Africa. The problem of death and human suffering has been essentially obliterated by creating the illusion of man's immortality or eternal youth. This is an especially significant evolution for the following reason: when the inescapability of death and suffering is erased from people's conscience through their constant immersion in a ceaseless stream of consumption (market's ingenuity has actually succeeded in supplying powerful means of calming or suppressing pain and even grief), the need for a symbolic universe that legitimises these painful experiments by explicit reference to an ever-living *community* of beings tends to disappear (Berger and Luckmann, 1967). It is the view of Berkowitz (1970:150) that the outcome of this evolution is the pervasive influence of what has been called a 'doctrine of self-preoccupation' - that is, a doctrine that urges 'the individual to search for self-actualization, i.e. to pursue his self interests with little regard for the wishes and opinions of other persons'.

To adopt norm-guided behaviour, an individual should first recognise the dependence of others on him by becoming aware that his (potential) action has consequences for them. He must then have knowledge of the relevant moral norms and, finally, he must ascribe some responsibility to himself for the action. At each of these steps, moral norms may be prevented from influencing his behaviour (Schwartz, 1970:132). Unfortunately, the effect of the abovementioned changes is precisely to make each of these three conditions increasingly hard to meet: individuals are less and less concerned

with what happens to their fellow citizens (or society at large) when they behave in a certain way - they are little interested in norms or standards of behaviour that set constraints on their 'freedom' (the ideology of the 'free' society has worked beyond expectation), and they tend to reject responsibilities of other potential actors, the system as a whole, chance factors and so on.

The foregoing discussion thus suggests a working hypothesis that is quite in line with the dialectic approach followed by Marx and Schumpeter (the Schumpeter of *Capitalism, Socialism, and Democracy*) in analysing the evolution of market societies. More specifically, capitalist development, being based on a high degree of division of labour and continuous processes of competitive innovation that call for ever-increasing consumption, tends to cause a gradual erosion of the moral norms on which the effective functioning of the market depends. As a result, one may fear that growing difficulties will stand in the way of further expansion of the market system, and perhaps even give rise to a major crisis (cited in Platteau, 1994:793).

It is becoming increasingly clear that values, ideas and the principles of equity and natural justice and reputation play a significant role in the socio-economic development of a country. This view is well supported by the phenomenal economic growth and development of most countries in Asia, especially Japanese and Taiwanese societies, after the Second World War, with a value system embedded in Confucian religion, values, perceptions and attitudes. This is in spite of the few or no natural resources - evidence of these becomes more glaring when one compares it to the underdevelopment and poverty of countries in sub-Saharan Africa that are rich in mineral resources, such as Nigeria and the Democratic Republic of Congo, with no values or ideas, a bad reputation and a lack of principles of social equity and justice. This goes a long way to explain both the power and the strength of a sound moral value system in attracting foreign direct investment and raising the productivity of citizens within a particular country.

These intangibles are now a greater component of a business and country's value than the physical assets and mineral resources available in a country. Peters (2004), in his book *Re-Imagine!* States that:

we are in the midst of redefining our basic ideas about what enterprise and

organization and even being human are - about how value is created and how careers are pursued. Welcome to a world where 'value' (damn near all value!) is based on intangibles - not lumpy objects, but weightless figments of the economic imagination. We are in 'a brawl with no rules'. What can we do? Relish the mess! Enjoy the Fray...We have entered an age of Talent (and values)'. People (their creativity, their intellectual capital, their entrepreneurial spirit, their values) is all there is. Enterprises that master the market for talent and values will do better than ever and those countries and enterprises without a moral capital will be doomed in the new world order.

Drucker (2001) stated that 'In the next society or century, the biggest challenge for the large companies and countries- may be its social legitimacy; its values, its missions, its visions'. This is in view of the fact that value systems will increasingly determine and influence a lot of things, including the investment habits of large firms, and determine the direction and future of large inflows of capital which are critical for the economic growth and development of countries. In most countries of sub-Saharan Africa, which are struggling with the evils of poverty and underdevelopment, those foreign investments that may come as a result of a good moral value system may make a critical difference in the lives of millions in the form of securing jobs and thereby giving meaning and a sense of direction to the lives of the long-suffering majority in developing societies of the world, especially Africa. In this respect, maintaining a moral capital becomes a fundamental requirement of the path to economic growth and development.

Moral capital is critical for development in South Africa, as we can learn from the seminal words of Alan Gresspan (2008), the former secretary for the United States Treasury, who was scapegoated for many of the excesses that precipitated the financial meltdown, and insisted that:

In a market system usually based on trust, reputation has a significant economic value. I am therefore distressed at how we have let our concerns for reputation slip in recent years.

We need to understand that a strong moral value system is needed for our own survival as a nation.

2.11 CONCLUSION

This chapter explored the factors that led to the rise of sustainable development globally. It also looked at the models of sustainable development, and explained the conditions that are critical for development to take place, as well as the relationship between development, natural capital and moral capital. The next chapter will take a holistic look at the relationship between sustainability and development.

CHAPTER THREE

THE LINK BETWEEN DEVELOPMENT AND SUSTAINABILITY

3.1 INTRODUCTION

This chapter is an attempt to establish a synergy between the concepts of sustainability and development. We have established the meaning of the terms ‘sustainability’ and ‘development’, the conditions that are necessary for it to help in the alleviation of poverty and in solving the huge problem of the water crisis facing sub-Saharan Africa and South Africa in particular. This chapter also examines the dimensions of sustainable development, and most importantly, tries to take into consideration some of the world-wide criticism levelled against sustainable development as a concept. It also looks at the concept of a developmental state.

3.2 Reconciling sustainability and development

It has been made abundantly clear in this study, as far as development is concerned, that a principle of limitation is the desirable rule of right action and needs to be vigorously adhered to. In relation to the concept of sustainability, the desirable rule of right action becomes the principle of stewardship (Carter, 2001). A thorough analysis and understanding of both the principles of sustainability and development (O’Riordan 1989; Palmer, 2001) will reveal that the two concepts duly recognise the existence of absolute limits and the need for their adherence - one to existential limits, the other to biophysical constraints. This interrelatedness reinforces the glue between sustainability and development, and abundantly demonstrates the extent to which one begets the other. It is impossible to expect improvement in the supply and availability of water resources in South Africa if activities of humans that harm and destroy the ecosystem and pollute the groundwater in the country are not halted or reversed. On the other hand, it is absolutely impossible to discuss how the principle of sustainability is to be wholly accepted and adopted when human well-being and the overall quality of life in South Africa is in a state of perpetual decline and stagnation.

In order to gain a proper understanding of the link between sustainability and development, it has to be noted that there is an optimal physical scale of human activity needed to increase human development. In essence, there is a limit to the earth's ability to absorb our actions, and whatever microeconomic activity we decide to undertake in order to improve our lives needs to be sustainable, whether we are talking about fishing or any other thing, because we cannot exhaust the fish resources in the ocean and then expect to still get fish. Our development needs to be in sync with what the earth can sustainably support.

Many intellectuals (Naess, 1989; Seymour, 1989) have vehemently advocated for restrictions on the growth of microeconomic activity. When one takes their argument into context, with the dire need for resources in Sub-Saharan Africa, one will understand that their views were partly influenced by the massive consumption of the world's resources going on in developed countries of the world. The crux of their argument is based on the fact that the costs of unsustainable use of resources such as water will be borne by future generations. Appropriate institutional and policy reforms are more likely if the current generation can be convinced of the present unsustainability of growth and unregulated globalisation taking place throughout the world.

Due to the fact that development needs to conform to a particular socio-cultural and political milieu for it to be relevant, the fundamental issue confronting most developing countries in sub-Saharan Africa and South Africa in particular is the availability and accessibility of water resources, which have a concomitant effect on improving agricultural production, which will in turn ensure food security and the subsequent economic development of the continent as a whole.

The time has come to define sustainable development and to list a detailed set of sustainable development-based parameters, guidelines and minimum positions. By combining the arguments in this study, one can easily arrive at the following conclusions: 'a society experiencing sustainable development is one characterised by the qualitative improvement in the human condition where, to facilitate human betterment, the spirit of kinship is extended beyond presently living people to include future generations. It is a society that, in the process of maintaining the human-made

capital required by it to develop, expands matter-energy at a rate that can be sustainably provided and assimilated by the source and sink functions of the accommodating ecosphere' (Ntsime, 2000:40).

We cannot in all honesty say that countries in Africa are experiencing sustainable development, because there has been no qualitative improvement in the human condition and the excruciating poverty, combined with poor water and sanitation. Access to these facilities is extremely inadequate in Africa and varies both geographically and socially, for example between urban areas and within both rural and urban areas according to social and economic status (UNDP, 1999).

Thus, in rural Africa, about 65 per cent of the population lacks access to adequate water supplies, and 73 per cent are without access to adequate sanitation (UNECA, 2001). In urban areas, the distribution is 25 per cent and 43 per cent respectively. As a result of these limitations, almost half of all Africans suffer from one of six main water-related diseases, e.g. cholera, infant diarrhea and Guinea worm. The worst statistics are for cholera and infant diarrhoea. Africa also leads in terms of schistosomiasis and Guinea worm cases. The poor access figures are likely to be compounded by the fact that population growth, at 3 per cent per annum, is the world's highest. This, accompanied by the rapid rate of urbanisation, at 5 per cent per annum (UNECA, 2001), is increasing the number of people vulnerable to these diseases, especially women and children, who also spend part of their precious economic and school time fetching water.

The unavailability of water, which invariably affects other sectors of the economy (which are critical for development) and is plaguing most of the continent, makes it sheer naivety for any rational person to talk about sustainable development in its real sense. It cannot be sustainable development or even any type of development for that matter when millions of people are living in abject poverty and penury. In fact, if development is not sustainable, then it is not development at all (Pearce, 1990). In addition, it is only sustainable development (Boulding, 1956; Pearce, 1990) when it seeks to ensure the survival of the biosphere and all its evolving processes, while also recognising, to some extent, the intrinsic value of sentient non-human beings. This model should be the real type of development that is critical for Africa's sustainable development.

At this juncture, it is important to list the conditions which the researcher believes is critical for the entrenchment of sustainable development in any society. These include:

- Recognition of the need for and subsequent establishment of an ordering or ethical guiding principle - an ultimate end - that best constitutes the end goal of life itself (Boulding, 1956).
- The weeding out of erroneous images from human belief systems and the incorporation of truer ones as they emerge. This ensures a continual revision of the ultimate end. The ultimate end needs to be constantly updated- and the hierarchy of intermediate ends rearranged - to ensure that the satisfaction of human needs and wants best facilitates the human development process. (Swaney, 1981; Horkheimer, 1947).
- The regeneration of moral capital, if and when it is depleted, in order to maintain the civilised standards of conduct necessary for a successful market-based economy (Hume, 1740; Smith, 1859; Platteau, 1994; Durkheim, 1893).
- Operating within the carrying capacity of the accommodating ecosphere by limiting the exaction and insertion of low and high entropy matter-energy to that which can be sustainably provided and absorbed by the ecosphere's source and sink functions (Vitousek et al., 1986; Gowdy and McDaniel, 1995).
- Maintaining, at least in the short term, a constant stock of natural capital by exploiting non-renewable resources at a rate equal to the creation of renewable resource substitutes (Boulding, 1985; Blum, 1962).
- Preserving and/or restoring biodiversity to both maintain the ecosphere's life-support function and to increase its resilience to potentially catastrophic stresses and shocks (Weiss Kopf, 1971; Daly, 1973).
- Confining human activities to areas already considered to be modified by human beings (Lovins and Williams, 1999; Atkisson and Hatcher, 2001).
- Conducting resource exploitation on the basis of regional and local geographical land and water resource units. This enables mankind to operate within the uniquely defined carrying capacities of the various ecosystems it exploits (Lovelock, 1988).

- Incorporating the limited rights of sentient non-human beings into an extended principle of justice by confining resource use practices to those that maximise their inhumane, undignified and cruel treatment (Goldsmith, 1992; Naess, 1989).

Despite the huge strides made in the world economy over the last fifty years, Africa is still dealt a severe blow in that poverty persists and is in fact exacerbated on the continent by diseases and disastrous political leadership. Colonialism is partly responsible, but the bulk of the blame for the underdevelopment of the continent lies with corruption, looting of public treasury, unfavourable terms of trade and paucity of skills and wherewithal within bureaucracies in African countries (Onimode, 1988; Muducumura, 2002). The inability of states in Africa to solve the problem of the endemic poverty of resources such as clean water on the continent has led to the popularity of the concept of the developmental state in South Africa. For more on the issue of the developmental state in Africa in general and South Africa in particular, see chapter three, section 5.7.

Most developing countries of the world, especially most of Sub-Saharan Africa, are struggling with the problems of wretchedness, unimaginable human suffering and poverty, which seem to go unabated. South Africa is one of the countries in sub-Saharan Africa which is affected by grave structural poverty and the HIV/AIDS pandemic, despite its relative growth and wealth compared to the rest of the continent. Since most of Sub-Saharan Africa is experiencing grave structural, political and economic problems, Africa's current issue of underdevelopment can be said to be a crisis of its institutions and their history, some inherited from colonialism, but the bulk of the problem caused by the failure of leadership in most of the regions in Sub-Saharan Africa (Mkandawire, 1997; Onimode, 1988; Fanon, 1966).

As stated by Carlson et al (Kifle, cited in Wohlgemuth et al, 1998:13):

...indeed, the poverty of institutional and organisational resources available to governments in Africa probably distinguishes the region from other parts of the developing world, albeit in the context of wide-intra-regional differences.

Johnston (cited in Wohlgemuth et al, 1998:48; Ake, 1996) further argues that these structural or institutional problems are deeply rooted in the damage inflicted by the structural adjustment programmes (SAPs) of the 1980s, which created a negative economic climate that then rendered the ability of most African countries to repay debts owed to the Bretton Woods Institutes ineffective and impossible. Johnston, Wohlgemuth, Gibbon and Olukoshi (cited in Wohlgemuth et al, 1998:50) went further by adding that as a result of these structural adjustment programmes, the capacity and legitimacy of most African governments to effectively make a positive difference to the lives of their citizens were blown away by the penury and evil deprivations which most people on the continent were forced to endure in their daily lives.

African leaders lack the capacity to analyse policies prescribed to them by the voodoo 'priests' from the Breton Woods Institutes (IMF and World Bank), despite the misgivings of some of them about the actual viability of some policies, such as the structural adjustment programmes. This ideological numbness (Fanon, 1967) of political parties and politicians in most countries on the continent inflicted even more damage than colonialism to the grave poverty that exists now in Africa. This is apparent when one realises that countries that went through the same historical process (colonialism) as Africa, such as Malaysia (under British rule) and South Korea (under Japanese rule), are now far ahead in the development queue of the rest of sub-Saharan Africa.

The Nigerian intellectual, Onimode (1988), talks of the ideological vacuum that he attributes to a petty bourgeoisie that is committed to their class interests (political party or ethnic origin) and fear of revolutionary pressures (or even loss of jobs or contracts from politicians), as well as the obscurantism of imperialist powers and mass illiteracy "which imposes a culture of silence and passivity and inhibits popular demand for ideological discourse". If one combines all these factors with pervasive, embedded, institutionalised corruption, one then gets a generic cocktail of why inhuman suffering, acute poverty and wretchedness pervade and envelop most citizens in sub-Saharan Africa.

It is the concept of human poverty that also contributes to the poverty of vital resources such as water in most of Africa. There is much talk of a water crisis, the most obvious

manifestation of which is that 1.2 billion people lack access to safe and affordable water for domestic use (WHO, 2004). A less well-documented fact is that a majority of the 900 million people living in rural areas who have an income below the 'one-dollar-per-day' poverty line lack access to water for their livelihoods, and this affects their overall well-being (UNDP, 2004). Lack of access to safe drinking water and sanitation, combined with poor personal hygiene, has massive health impacts, particularly through diarrhoeal diseases, estimated to cost the lives of 2.18 million people annually, of which three-quarters are children under the age of five, and an annual global burden of disease measured as 82 million disability-adjusted life years (UN, 2005). The poorest of the poor are most affected by the lack of access to water for productive purposes, resulting in a vicious cycle of malnutrition, poverty and ill health. Fresh water is critical to an array of global challenges from health to malnutrition, poverty and sustainable natural resources management. As such, water plays a critical role, directly and indirectly, in fulfilling most of the Millennium Development Goals (UN-WWAP, 2006).

African countries experienced severe losses, such as the exodus of skills, after gaining independence in the 1960s, because of the poor working conditions in Africa and the acute paucity of technological and scientific opportunities offered by the developed countries of Western Europe and North America. This created a skills vacuum and the endless migration of highly trained Africans to overseas countries. This situation can best be described as a chain reaction of events from the colonial era to post-independence Africa. Shepered (1998:92-93) drew comparisons between the impact of the colonial and post-colonial legacy on the development and underdevelopment of Third World countries, especially those in sub-Saharan Africa.

The loss of skills is relevant when looking at the number of water engineers and technicians that are lost daily by a developing country such as South Africa, and the effect of the ill-maintained water infrastructure on water availability and distribution in the country. Ostrom et al (1995:65) also traced the aftermath of independence and its concomitant decentralisation measures, and investigated how this situation gave rise to institutional changes, particularly in the former colonies of the Great British Empire. Brinkerhoof and Goldsmith (1990) hinted that many developing countries of Sub-Saharan Africa lack the governance ability and institutional capacity to carry out the

complex and exacting duties which are needed to tackle development issues of the 1990s (cited in Ntsime, 2002:44).

In general, the literature (Ndorukwigira, Andersson and Winai, cited in Wohlgemuth et al., 1998; Ntsime, 2002) reveals some missing links between the capacity of African governments to formulate policies and implement development programmes at local government level, which is exacerbated by the bantustisation of most of rural South Africa by the erstwhile apartheid authorities, and the level of skills needed to make sustainable development a reality, which is clearly absent. It is important to emphasize that this paucity of skills in South Africa has continued unabated in the post-apartheid era in South Africa, especially in terms of the critical shortage of water engineers and technicians in the municipalities.

In this respect, the nearest level of government available to the people, and in the most strategic location (local councils) for making an impact on the lives of the people is incapable of effecting any changes, as well as being moribund. Despite Africa's complex problems, current trends suggest that local governance provides opportunities for localised decision-making processes. Buttimer's study (cited in Gallopin and Raskin, 1998:12-15) further supports present research on how to make sustainability work at the local level, confirming the notion that one should "think globally but act locally".

The ability of any nation to follow the sustainable development path is therefore determined to a large extent by the capacity of its people, its local institutions and other prevailing conditions needed to make critical choices and implement policies (Sitartz, 1994:305). This shows that addressing sustainable development issues in the African context requires an overhaul of the entire system of governance and the establishment of appropriate institutional arrangements. The massive institutional corrections undertaken in the 1950s were unnecessary and over the top, and we need to acknowledge that a reversal of such policies will contribute significantly to the attainment of sustainable development through adequate and efficient institutions that have knowledge and direction.

In South Africa and much of Sub-Saharan Africa, the situation is dire and needs a massive injection of intellectual and technological know-how. Authors such as Deng (1998:66) call for:

A new framework which must address the issues of reconciling indigenous and transplanted institutions and value systems, sequencing of reform measures and policy mix and prioritization of actions....

It is clear from the above statement that as an African country, by drawing lessons from other countries of the world, especially those in the developing world of Malaysia etc, South Africans can learn from others by creating their own solutions for making access to water a social good (Narsiah, 2008; Baker, 2007) and not only an economic good (Palmer Development Group, 1994; WRC, 2005a) because this will ultimately determine the pace of socio-economic development of the country in decades to come. The developmental local governments of South Africa can and should show the required initiative, innovation and wherewithal needed to manage these complex problems.

South Africa can thus formulate its own meanings for sustainable human development. As argued by Hag (1995:19):.

It matters little whether the paradigm is label "sustainable human development" or "sustainable development" or simply "human development". What is important is to understand that the essence of the human development paradigm is that everyone should have equal access to development opportunities, now and in future.

Localised solutions for human development are essential, in that they can respond directly to issues of equity and social justice. Developing countries such as South Africa cannot and should not adopt paradigms and policies that worked in developed countries, as this will be counter-productive. The work of De Beer (1997) on the efficacy of taking local realities into consideration should be our guide. Chambers (1983:144) calls for an unconstrained dialogue:

The best approach in each situation may be an *unconstrained dialogue* with the poor, and in effect learn from them what their priorities are.

This concept of localised solutions for problems is especially critical in a divided and unequal country such as South Africa, where regional inequality in development policy was the sole preserve of the apartheid regime. What is needed now is the devolution of power and responsibility to people at the local level who have hitherto been marginalised and excluded from the decision-making process for centuries. In view of the fact that the post-apartheid government of the African National Congress has worn some, if not all, of the clothes of the erstwhile National Party it despised and later supplanted in the over-centralisation of power and relegation of rural areas in the scheme of things, South Africa and much of Africa, if sustainable development is to become a reality, should therefore adjust to popular approaches, thereby generating their own local solutions. Local conditions need to be treated within a local context so as to ensure maximum impact of any model or strategy to address unsustainable development. The following dimensions attempt to provide a framework within which sustainable development can be conceptualised and applied, especially by developed countries.

3.3 DIMENSIONS OF SUSTAINABLE DEVELOPMENT

The Rio Declaration of the United Nations Conference on the Environment and Development (1992), like its counterpart, the 1972 Stockholm Declaration, pledged a commitment towards international agreements which respect the interests of all and protect the integrity of the global environment and development system (Ginther et al., 1995:29). These pledges were concretised into 27 principles which address a wide range of aspects, such as the economic, environmental, social and technological. These principles are arguably the key dimensions of sustainable development. Several authors have written extensively about these dimensions (Rao, 2000:70; Van den Berg, 1994: 59, cited in Ntsime, 2002:46). These dimensions are discussed below.

3.3.1 Economic dimension of sustainable development

The economic dimension is covered by principle 8 (Rio declaration), which indicates that “To achieve sustainable development and a higher quality of life for all people, states should reduce and eliminate unsustainable patterns of production and consumption and promote demographic policies.” This dimension emphasises the

economics of supply and demand, the allocation of correct prices and the external effects of cost-benefit analysis. It is concerned about the future outlook of resource demands and the measures needed to protect or augment existing ones. In the case of water resources, it examines water demand projections and compares these with supplies from various sources by region or section, whether national or international, taking into account factors such as drought and its impact (European Commission, 1998).

Water tariffs are drawn from the outcome of such projections, which are economically justified. Reliable as they might be, the poor can often not afford high tariffs or prices (Bond, 2004a:7). On the one hand, this dimension presupposes the national product of growth (Y) as a precondition for the satisfaction of people's material basic needs (B), which comes at the cost of exploiting scarce natural resources. On the other hand, people offer their labour (L) for wealth and capital generation (R). This can be represented by the formula: $B (L + R)$.

The assumption is that the sum total of $L + R$ is B (products essential for meeting basic needs). The economic dimension is preoccupied with figures and complicated formulae. For more dimensions of sustainable development such as peace and security; see Ginther et al (1995). It is more concerned about the production of wealth and less about human development. Econometrists are more interested in the economic value brought about by production, by emphasising the sustainability of production, economic efficiencies and other competing interests such as over-exploitation of resources and high labour costs (cited in Ntsime, 2002:58).

Sometimes the economic dimension does incorporate a concern for the "brown issue". However, in general, it does not strive for a human balance sheet which recognises levels of skill, income distribution, levels of employment and unemployment, as well as cultural and other social factors (Haq, 1995:5). This is arguably what should be the thrust of sustainable development in that this dimension, like the human dimension, should be concerned about the reduction of the growing disparity in terms of income and access to health care and other services. Economic justice can best present "brown issues" if issues of access to basic services are addressed. As the economic dimension is currently structured, "brown issues" do not receive much attention. Different economic

specialists or professionals conduct analyses which seek to demonstrate or justify the correlation between economic issues and "brown issues". Rubenstein (cited in Shotter and Vorster, 1996), for example, mentions three perspectives, one of which presupposes equity of demand (economics) and societal distribution (people) as an integral building block of sustainable development.

It is the researcher's assumption that measuring development in a country with only economic growth and GDP as an index is ineffective and simplistic if one does not also look at the extent and level of poverty within a country. This assertion indicates that the economic growth model is critical for sustainable development, especially when applied in the context of developing countries, where there is a greater demand for social equity. Often, developing countries are in need of capital markets to promote and stimulate longer-term investment, more so than developed countries. This, according to Rada and Trisoglio (cited in Shotter and Vorster, 1996:182) is the most efficient and effective way for governments in developing countries to promote sustainable development. For more information on the weakness of GDP as a measure of human well-being, see chapter 2, section 2.6.1.

3.3.2 Environmental dimension of sustainable development

This dimension is covered by principles 4 and 6 of the United Nations Conference on Environment and Development (1992), which indicate that "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it (Principle 4)" and that "The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in field of environment and development should address the interests and needs of all countries" (Principle 6).

Environmental concerns in relation to sustainable development received greater attention in the past. As new theories regarding sustainability emerged, so did environmental justifications. As indicated before, this dimension is often referred to as addressing "green issues", because of its bias towards the promotion of the frugal use and protection of natural resources. Its major concern is the present generation and how

it uses the resources at its disposal, without compromising the same resources for future generations.

Environmental impact assessment has become a common principle for the environmental dimension (principle 17). Such assessments strive to maintain environmental integrity (Simonovic, 1996:225). The World Commission on Environment and Development's (1987) definition is built on the same understanding of maintaining a correct balance (intergenerational equity) and integrity towards resource exploitation. Environmental ecological integrity emphasises that conserving biodiversity will provide food, energy, raw materials, industrial chemicals and medicine, as well as important social and cultural benefits.

However, there has been an evolving value system which has influenced ethical behaviours for the anthropocentric objective of intergenerational justice (Van den Bergh, 1994:33; Rao, 2000:69-70). Intergenerational justice is about the trade-off between the environment and people. The World Commission on Environment and Development's definition that the present generation should preserve resources for other generations reveals that the environmental objectives of developed countries will differ considerably from those of developing countries, especially those in sub-Saharan Africa.

Developing countries and their environmental movements are adopting alternative development agendas, which link the problem of environmental destruction to issues of basic needs provision, distributional equity and social justice, local self-reliance and popular empowerment (Brohman, 1996:391). Most of these countries use various instruments to monitor, protect and manage their environmental resources. This shows us that environmental concerns cannot simply be brushed aside.

As argued by Haq (1995:79), "Environmental concerns are not science fiction- they are real. The facts of environmental degradation are far more than the exaggerations of excited minds. And they are shocking". Perhaps what remains a challenge is the integration of environmental and human development concerns. As the situation stands today, the former still occupies a high status because it is supported by countries and organisations which have sufficient resources and power.

3.3.3 Technological dimension of sustainable development

Like the economic dimension, the technological dimension is seen as a panacea for human problems. Since the 1980s, technology has further assumed a high status in terms of scientific advances, which were branded a great success in terms of development issues. This led to the notion of appropriate technology, which was subsequently linked to principle 14 of the United Nations Conference on Environment and Development (1992). This dimension calls for enough political will and technological wherewithal to combat environmental degradation or irreversible damage to the ecosystem. However, it is difficult to imagine how developing countries of Africa, which often do not have the competence to deal with dysfunctional companies in their countries, will be able to implement and properly regulate sustainable practices.

The above principle seems to emphasise a technocratic solution to technical problems. It also emphasises the use of appropriate or cleaner technology, and the limiting of the global effects on the atmosphere. According to Haimés (1992:189), this dimension promotes a creative application of technology which encompasses the responsibility to plan, design and construct those systems that will not only solve the immediate problems, but which are sensitive to the long-term interactions of such technologies with the environment and which will inevitably affect the sustainability of the solution.

Application is derived from available knowledge and skills. It is only when a country has the right knowledge, expertise and appropriate technological know-how (skilled human resources) that technological advancements can be achieved. Countries which rely on high technology (which is capital-intensive) require a sophisticated and diverse profile of technical expertise and technological advancement, which have become the major building blocks of capitalist economies. It has to be pointed out that the benefits of technology are usually not achieved in Africa, as the skills are not usually available, and when they are available, tribalism and ethnicity make it difficult to hire the right people in most of Africa, and even racism, employment equity and racial nationalism deprive South Africa of the best skilled people in the country.

3.3.4 Human dimension of sustainable development

Like the environmental dimension, the human dimension is also covered by a number of principles, such as principle 5 of the United Nations Conference on Environment and Development (1992), which indicates that “All states and all people shall co-operate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world”.

The human dimension is about the quality of life. As previously indicated, it is about ‘brown issues’. The human dimension recognises the social benefits which accrue from environmental efforts by the public and private sector. This dimension sees people not only as beneficiaries of change in the community, but also as agents of change. The dimension subscribes to the notion of citizen involvement, and is further complemented by principle 10, which emphasises extensive public participation in decision making and the success of information and legal remedies with regard to the environment (Ginther et al, 1995:33).

The human dimension therefore recognises significant links between environmental, technological and economic dimensions. It also recognises a need for the creation of an enabling environment for the optimal utilisation of human resources. It is concerned about empowerment and capacity building. As mentioned by Haq (1995), empowerment occurs through decentralised community participation in national development plans. In such instances, governments have shown a political will and commitment towards improving the quality of people's lives.

According to the World Resources Institute (2000), beyond meeting basic needs, sustainable development involves improving social well-being, protecting cultural diversity and investing in human capital. This dimension also recognises the need to consider the broader social imperatives within which poverty and underdevelopment are embedded. By addressing poverty and empowering people, this has to involve empowerment in the radical sense, which is political empowerment, whereby people have the power to make and alter decisions that directly affect them, including access to opportunities and resources such as water.

The human dimension recognises that people will ultimately become sustainers of development, and could thus sustain their own development. Empowerment is motivated by the fact that the poor people in many developing countries have not received a fair chance of development. Some of the reasons for this unfairness stem from political, ideological and economic factors. As spelt out by Fitzgerald et al (1997: 278-289), the central challenge is one of human resource capacity building and institutional strengthening for the management of sustainable development.

Agenda 21 and the World Summit on Sustainable Development (Copenhagen Declaration), and their pursuit of poverty alleviation strategies, are convincing proof of the seriousness of the world with regard to sustainable human development. The following priority actions drawn from the declarations substantiate such a commitment from most countries:

- Improvement of access to sustainable livelihoods, entrepreneurial opportunities and productive resources.
- Empowerment of people living in poverty, and of their organisations.
- Addressing the disproportionate impact of poverty on women and children globally, and in sub-Saharan Africa in particular (Ginther et al., 1995; Fitzgerald et al, 1997:278-289; Haq, 1995:5).

The human dimension, as compared to other dimensions, promotes a progressive stance against poverty. However, this study advocates a pragmatic approach and a review of the concept of sustainability. Although this study addresses the issue of the water crisis in South Africa as a whole, it is also an honest attempt, if possible, to look at alternative means of making water resources accessible to the millions of South Africans, especially blacks, who were marginalised for decades by colonialism and apartheid, but most importantly today by the rampant privatisation of water use. The colonial and apartheid past and privatisation are the critical issues that this study will consider while attempting to address the issue of water availability and accessibility in post-apartheid South Africa.

3.4 SUSTAINABLE DEVELOPMENT: A CRITIQUE

There is abundant evidence in the literature (Beckerman, 1992) that, over the last few decades, the fashionable concept in environmental discourse has been ‘sustainable development’, which has become a bandwagon. It has spawned a vast amount of literature and has strengthened the arm of empire builders in many research institutions, universities, national and international bureaucracies and statistical offices. In this regard, one can support the validity of Ruttan’s theory of establishment appropriation (1994), as almost all the oil companies in the Niger-delta region of Nigeria, who build ‘huts’ in the name of schools and bribe locals chiefs in the village, insist that they are involved in the sustainable development of the community, while irreparable damage is done to their fragile ecosystem and the local water supply is polluted by the drilling of oil. Environmental pressure groups present the concept of sustainable development as an important new contribution to the environmental debate and as an alternative school of thought to combat the growing globalisation of trade and investment, which is impoverishing most developing countries.

Sustainable development brings new insights into the ways in which concern for the environment and the interest of future generations should be taken into account in policy analysis and implementation. It is precisely the insights it provides, both to those who are genuinely interested in protecting the environment, and those who are destroying the environment, that leads to the concept of sustainable development attracting so much criticism in the field of development studies. It is a double-edged sword that swings both ways, and development practitioners are sceptical whenever businesses or governments mention the term ‘sustainable development’, because they believe that it has been appropriated and abused by many people. Two distinguished authorities in this field are very vocal in their opposition - Dasputa and Maler (1990), who pointed out that:

Most writings on sustainable development start and some proceed to get things hopelessly wrong. It would be difficult to find another field of research in the social sciences that has displayed such intellectual regress.

The publication entitled *Caring for the Earth: A strategy for Sustainable Living* appeared in 1991(Willers, 1994:1146). It defined sustainable development as

“improving the quality of human life while living within the carrying capacity of supporting ecosystems.” The ideas that it contained generated a lot of debate (Robinson, 1993a, 1993b). Robinson (1993a) criticised the document in particular for its “purely utilitarian perspective”, and the fact that it presents development and conservation as parts of a single process.

In responding to Robinson, Holdgate and Munro (cited in Willers, 1994:1147) defended the fundamental issues of its policy, saying that the documents have “a political purpose [that seeks to] relate the primary objective that it espouses to the aspirations of the widest possible audience”. The audience, they admitted (by quoting directly from the publication), is intended to be those who shape policy and make decisions that affect the course of development and the condition of the environment. They also made clear their view that many years of debate will be required to fully clarify and widely disseminate the concept of sustainable development, and that every positive contribution to that process would be welcome.

Willers (1994:1150) believes that sustainable development is a code for perpetual growth, and he elucidates this point further by quoting a passage taken from *Our Common Future*: ‘the international economy must speed up world growth, while respecting environment constraints’. A five to tenfold increase in manufacturing output will be needed, and efforts to save particular species will be possible for only a relative few of the more spectacular and important ones. His views are buttressed in the 1991 report by the Trilateral Commission entitled *Beyond Interdependence* (McNeill et al., 1991:56). In a chapter entitled *The growth imperative and sustainable development*, these authors (McNeill et al., 1991:57) wrote that:

The needs of 5 billion people with 5 billion more to come in the next five decades requires large appropriations of natural resources and the most basic aspirations for material consumption, livelihood, and health require even more. The maxim of sustainable development is not ‘limits to growth’, it is the ‘growth of limits’.

Willers (1994:1148) was of the view that the concept of sustainable development has been force-fed to the international community by the global corporate-political-media

network, which is paving the way for the new world order. It comes to us in every form of print and electronic media. It comes to us on a daily basis, packaged in such a sugar coating that to refute it is to seem unpatriotic, especially when continued growth and development are presented as being compatible with respecting environmental constraints. Although a critical analysis of the concept of sustainable development reveals the fact that proponents of this concept ignore the fact that the developed world has long since lived beyond sustainability, emphasising the fact that it is wrong for developing countries, especially South Africa, to emulate the overconsumption of industrialised society, and this is a great disservice to humanity.

Mills (1985) supports the position of Willers (1994:1150) by insisting that sustainable development, according to the model existing in developed societies, guarantees the continued deterioration of ecosystems and loss of biodiversity, as well as condoning the unrestricted economic growth that independent scientists warned against in the middle of the century.

Potter (1988) is of the view that the human species is to planet Earth what cancer is to the human body. Constanza and Daly (1992) have a different understanding of sustainable development: "We differentiate the concepts of growth (material increase in size) and development (improvement in organization without size change)". Their opinion, however, had little influence on the wider use, understanding and direction of the concept, despite the fact that their view should be the dominant one as far as the use, understanding and direction of the concept of sustainable development is concerned, especially in developing countries such as South Africa. What the poor in South Africa need are really the basics of life, such as good homes with adequate sanitation and health, and not the bogus statistics being paraded by the World Bank.

It is the view of Willers (1994:1150) that sustainable development is one of the most insidious and manipulative ideas to appear in decades, and because the multifaceted, global offensive to sell it is essentially unopposed, it is perceived as something of an axiom by the public. This perception must be reversed because growth, which has grossly exceeded the bounds of reasonableness, and which is the precursor to hosts of environmental and social ills, became the enemy of the natural world long ago. There should also be a concerted effort to address the societal ills of generational and

intergenerational equity and justice in the distribution and access to resources, especially water.

In an unequal and divided society such as South Africa, it should be noted that considerations of equity and justice should be taken into cognisance in making policies for private investment in water utilities and supplies to the poor. The problem is not necessarily the absence of growth, but the lack of equity in the resources available to societies. If this simple fact fails to sink into the global mind (Willers, 1994:1155), then hopes of restoring ecosystems, countering the tide of extinctions and dealing effectively with a vast array of environmental problems will all have to be recognised, in the end, as having been nothing more than a pipe dream.

Beckerman (1992) was also vociferous in postulating that:

Sustainable development has been defined in such a way as to be either morally repugnant or logically redundant. It is true that in the past economic policy has tended to ignore environmental issues, particularly those having very long run consequences. It is right, therefore that they should now be given proper place in the conduct of policy. But this can be done without elevating sustainability to the status of some over-riding criterion or policy.

In 1992, at Rio de Janeiro, the United Nations held a conference on Environment and Development (UNCED), in which almost all the countries in the world participated and adopted a major document known as “Agenda 21”, which set out, amongst other things, the agreed intentions of the countries to take account of environmental objectives in their domestic policies, to monitor their own development from the point of view of their “sustainability”, taking full account of environmental changes, and to submit regular reports on these developments to a newly established “Commission on Sustainable Development”. Agenda 21 is full of references to “sustainable development” (Beckerman, 1992). For example, Chapter 8 states that “Governments, in cooperation, where appropriate with international organisations, should adopt a national strategy for sustainable development”. It goes on to say that countries should draw up sustainable development strategies, the goals of which “.....should be to ensure socially responsible economic development while protecting the resources base and the environment for the benefit of future generations”.

Beckerman (1992) was livid, insisting “but what are socially responsible goals in this area, how far should we protect the resource base, whatever that means, and what are the legitimate interests of future generations’? Beckerman (1992) was asking: “what exactly does sustainable development mean, and what is good about it? Many of his fellow bands of critics believe that there is a danger that sustainable development is treated as “*motherhood and apple pie*” (Pearce et al., 1989; Solow, 1991; Pezzey, 1992a).

However, as Brooks (1992), Dasgupta and Maler (1990) put it, “for the concept of sustainability on the process of development to be operationally useful it must be more than just an expression of social values or political preferences disguised in scientific language. Ideally it should be defined so that one could specify a set of measurable criteria such that individuals and groups with widely differing values, political preferences, or assumptions about human nature could agree whether the criteria are being met in a concrete development programme”.

In Beckerman’s view (1992, 1994),

It may well be that we are asking too much of the concept of sustainable development and that it can be of use without being operational. But, as it stands, the concept is basically flawed. This is because it mixes up together the technical characteristics of a particular development path with a moral injunction to pursue it. And a definition of whether any development path is technically sustainable does not, by itself, carry any special moral force.

The definition of a straight line does not imply that there is any particular moral virtue in always walking in a straight line. However, most definitions of sustainable development tend to incorporate some ethical injunction without apparently any recognition of the need to demonstrate why that particular ethical injunction is better than many others that one could think of.

The result of the combination of technical characteristics with moral injunctions is that the distinction between positive propositions about the threat to the continuation of any development path and normative propositions concerning the optimality of any

particular pattern of development is hopelessly blurred (Dasgupta and Maler, 1990). Instead, a sustainable development path should be defined simply as one that can be sustained over some specified time period, and whether or not it ought to be followed is another matter. It should be treated, in other words, as a purely technical concept - not that this necessarily makes it easy to define operationally.

As Little and Mirreless (1990) stated in the context of project analysis, “sustainability has come to be used in recent years in connection with projects....it has no merit, whether a project is sustainable (forever? - or just a long time) or not, has nothing to do with whether it is desirable. If unsustainability were really regarded as a reason for rejecting a project, ‘there would be no mining, and no industry the world would be a very primitive place’ (Little and Mirrless, 1990). It is the view of Beckerman (1992) that as soon as one draws a distinction between sustainability, defined as a purely technical concept, and optimisation, which is a normative concept, it becomes obvious that many economic activities that may be unsustainable may be perfectly optimal, and many that are sustainable may not even be desirable.

Little and Mirreless’ (1990) criticism of sustainability on the basis of the ability of projects such as mining to solve the problems of poverty and unemployment pervading Sub-Saharan Africa is very preposterous and naive. The reality is that many of the mining projects in Africa, like South Africa, Zambia, etc, were actually meant to solve the problem of poverty, but the reverse became the case as many governments in Africa, in cohort with mining companies from the developed world, siphoned billions of dollars of wealth belonging to the local communities, without any positive difference in the decades of the mining and extraction of mineral resources. The lives of the Ogoni people in the Niger-Delta region of Nigeria has not changed for the better, despite four decades of oil exploration in their community, coupled with the attendant ecological devastation visited on their fragile ecosystem by the British oil giant, Shell.

In this instance, Little and Mirreless’ (1990) theory is deceptive, parochial and Eurocentric, as in most cases in Africa, projects have not fulfilled the intended motives behind their conception, hence the continued poverty of our people, while helping to line the pockets of Western corporations. Abandoned former mining towns that became ghost towns as soon as the diamonds and gold ran out are found in many places in

Africa, such as Kitwe in Zambia, Liberia, Democratic Republic of Congo, Sierra Leone etc. This penchant for neglect and abandonment have led to rebellion and anarchy in many local communities in Africa, whose land and communities have been duped, economically raped, used and abandoned.

The struggle of the Niger-Delta people in Eastern Nigeria is a typical example of wealth not trickling down to the local community, as preached every day and year by the 'missionaries' from Washington and Westminster, through their domineering and neo-colonial institutions or 'parishes' such as the World Bank and International Monetary Fund (IMF). This is economic exploitation and marginalisation of local resources without recourse to local realities and the squalour in which most people live in Africa. The brazen plundering and looting going on between the federal authorities in Nigeria and the Western-backed oil companies operating in the Niger-Delta region of Nigeria, which has led to the rebellion of local communities in the Niger-Delta area, needs to be mentioned. In most cases in Africa, multi-national companies are in bed with local politicians to strip the local resources and economy bare.

In essence, sustainable development is sacrosanct for developing countries of the world, because if applied correctly, it is embedded in the principle of the people-centred development model, which takes the wishes and aspirations of local people into consideration. In this respect, sustainable development is still relevant and critical, and the researcher totally disagrees with the view of Little and Mirreless (1990), because Africa has enormous natural resources and the gains from these resources have not diminished the poverty issue for decades. This is as a result of the fact that due diligence and the principle of generational and intergenerational equity were not taken into consideration at the infancy stage of all these projects. Consequently, local communities in Africa were left worse off, with damaged environments, no schools, no hospitals etc. Sustainable development should be incorporated into the decision-making process of all developing countries, so that the wealth of the communities will have a positive impact on the lives of all the citizens.

The active involvement of all development stakeholders can foster creative thinking while generating ownership and the motivation of the people to honour the cultural and spiritual traditions of all network members. This citizen participation has not been

present in the so-called 'important' projects which are necessary to solve the problem of poverty about which Beckerman is talking in his criticism, and the empowerment of network members may constitute a development strategy that is necessary for the generation and use of local/traditional knowledge. As Brooks (1992) remarked, a great deal of untapped, traditional knowledge and experience is available in respect of the development of effective organisations to manage comprehensive development programmes. In this regard, Chambers' (1983:150) theory of *unconstrained dialogue* with the poor may be the only way to achieve sustainable development of the continent.

In fact, most development analysts (Haque, 1999a) now maintain that developmental wisdom is lodged, not in government bureaucracies or multinational companies, but in local communities and institutions. Because of their complexity, sustainable development issues require the knowledge, commitment and action of multiple stakeholders, in particular the rural and poor people who bring valid perspectives to decision-making but are most times ignored in the development discourse. The sustainability of development has to be the ways and means of unlocking the vast knowledge and wisdom reservoirs embedded in local communities and wherever else they may be, instead of the top-down and liberal approach to development favoured by Washington and its allies.

Beckerman (1992), according to Daly and Cobb (1994), also criticised the Brundtland's Report's injunction to conserve plant and animal species. He asked the following questions: "how far should one go in the preservation of animal species and plants? Is one supposed to preserve all of them? And at what price is one required to mount a large operation at huge astronomical costs, to ensure the survival of every known and unknown species on the grounds that it might give pleasure to future generations, or that it might turn out, in 100 years time, to have medicinal properties? About 98 percent of all species that have ever existed are believed to have become extinct, but most people do not suffer any great loss as a result. How many people lose sleep because it is no longer possible to see a live dinosaur?" He believed that such an absolutist concept of sustainable development is morally repugnant, given the acute poverty existing in developing countries of the world, which means that trying to preserve animal and plant species is unreasonable because billions will need to be taken out of poverty through the unregulated use of natural resources.

Daly and Cobb (1994) believed that the bulk of the criticism levelled against sustainable development has centred on the fact that, unless it can be demonstrated that sustainable development is sufficiently meaningful and operational, it will prove inordinately difficult to suggest ways and means to achieve sustainable development itself. In order to show that the sustainable development concept has normative value, attention will be focused on the criticisms put forward by Beckerman (1992), because in many ways they represent the broad range of criticisms that exist. Beckerman (1994) insisted that:

Because there is no blueprint to achieve sustainable development, the sustainable development concept is devoid of operational value. Because an adherence to policies prescribed by sustainable development advocates involves unnecessary sacrifices on the part of presently living people, in particular the impoverished, the concept of sustainable development is morally indefensible.

Daly and Cobb (1989) and Brooks (1992) have torn into Beckerman's (1992) criticism of sustainable development, postulating that his argument stems from a particular interpretation of sustainable development, namely that sustainable development involves a "requirement to leave future generations a stock of assets that provides them with some predetermined level of potential welfare, such as the existing today".

From this perspective, Daly and Cobb (1994) insisted that Beckerman believed, though erroneously, that achieving sustainable development boils down to knowing what substitution possibilities permit the current level of welfare to be obtained from different combinations of assets. For example, if there are fewer insects in the future, should there be more trees? If there are fewer fish, should there be more machines? Moreover, if the answer to both questions is yes, how many trees and machines are required? It is because these sorts of questions have no precise answers that Beckerman believes that the sustainable development concept is devoid of any operational value.

Daly and Cobb (1994) further explained that as correct as Beckerman was with regard to the lack of precise answers, his criticisms fall apart on three counts. In the first place, Beckerman fails to understand that trees are not very good substitutes for insects, while machines are no substitutes for fish at all. Secondly, while inexact knowledge of what can be substituted for what is a perennial problem, it is exact knowledge of what cannot

substitute for what that makes sustainable development both a meaningful and operational concept. It is, for example, the knowledge that man-made capital cannot be substituted for natural capital that makes natural capital intactness a meaningful policy directive. Finally, why should an inability to know what is precisely required to achieve sustainable development render the concept operationless? Does the achievement of any condition not suffer the same fate? Consider the conditions previously listed for achieving sustainable development. They themselves do not specifically indicate how to achieve sustainable development. Nor does continuous economic growth, the very thing that Beckerman believes is the key to achieving sustainable development.

In the final analysis, Daly and Cobb (1994) concluded by saying that as for Beckerman's (1994) second argument that sustainable development is morally indefensible, Beckerman fails to recognise that the call for sustainable development only questions growth as it relates to nations already possessing a sufficient stock of man-made capital. Except for population control, it does not argue for an end to growth in impoverished nations of the world. While it is true that poverty persists in nations with adequate quantities of man-made capital, to assert that a halt to growth is morally indefensible because it leaves the poor impoverished is to suggest that only growth can alleviate poverty.

Daly (1990) was unequivocal when he claimed that the economic growth paradigm has enriched the few, impoverished the many, and endangered the planet. Dasman (1985) also argued that growth destroys jobs because its process depends on the introduction of labour-saving technology. Erroneously assuming that what works in developed countries should also work in developing countries and underestimating people's culture are some of the main reasons for the ineffectiveness of the economic growth paradigm in less developed countries. Indeed, for the following reasons, it would appear that growth, not sustainable development, is morally indefensible.

According to the final report of the World Commission on the Social Dimension of Globalization, released in February 2004, the income gap between the richest and poorest countries is widening significantly, increasing from US\$212 and US\$11,417 respectively in 1960-1962 to US\$267 and US\$32,339 in 2000-2002. Significantly, most of the countries in the world that were poorer in 2000 than in 1990 are in sub-Saharan

Africa, according to the United Nations Development Programme's Human Development Report of 2003.

Ultimately, these statistics revealed that global economic growth had hardly filtered down, and optimism that so-called modern development would have floated a rising tide of people onto an upward spiral of wealth and prosperity was misplaced (Pezzoli, 1997). Despite five decades of international development efforts, the hard fact remains that one in five people living on this planet - or over 1 billion people- lives in conditions of "absolute poverty" and is thus unable to feed, clothe and house himself or herself in a manner that can sustain health and human dignity (World Bank, 2005b).

It is easy to attribute the current poverty in Sub-Saharan Africa and especially South Africa to the ills of colonialism and apartheid. However, the question that needs to be asked concerns the fact that in post-apartheid South Africa, the ANC was elected to govern with a majority of more than 60% in 1994, and increased its apparent share of the vote in two subsequent elections (1999 and 2004) to some 70% (McKinley, 2004: 12). What has the party done with its mandate from the electorate? Of course, a lot has been achieved over the years, but millions still live in a state of acute poverty.

The disempowered, pauperised and unemployed majority of South Africans who elected the ANC into government did not do so for the single reason of having black members of parliament, but in order to improve their lives. Some of the ANC election propaganda has recognised this, promising (from 1994 onwards) 'a better life for all' and (in 2004) to 'create jobs and fight poverty'. But does the ANC have a policy and programme which is adequate to the task of poverty eradication? This lack of service delivery on the part of the ANC, corruption, cronyism and poverty of original ideas is a vivid example of what exists in most of sub-Saharan Africa, and the real reason why poverty persists on our continent.

The ANC already has a significant role to play in the economy, as the government is in control of Telkom, South African Airways, and Eskom, not to mention most epileptic government departments. It is in recognition of the belief within the ANC that greater state involvement or a developmental state (whatever it means for the ruling party) will help to accelerate service delivery, especially with regard to the use of water, that we

need to get a contextual and proper understanding of the concept of the developmental state, and determine whether or not it is relevant to South Africa's continued growth and sustainable development.

3.5 DEVELOPMENTAL STATE

3.5.1 Introduction

The former Minister of Public Enterprises, Alex Erwin (2008), emphasised one of the major policy thrusts of the African National Congress as involving the management of new enterprises that would be the 'vanguard of the developmental state'. He believed that state intervention would be required to develop new capacities, products, technologies and infrastructure, which would not arise from the normal workings of markets. This highlights the view of the ruling party with regard to the issue of the developmental state, and this is why it is critical that this study takes a close look at what the concept means, as it has been used in different parts of the world by countries in transition in order to leverage resources and opportunities.

It is the view of Castells (1992) and Johnson (1982) that two decades after the recognition of good governance as one of the keys to development and poverty reduction, the developmental state is back at the centre of international policy debate. Policy thinking shows an increasing willingness to abandon value-laden prescriptions about governance and to adopt approaches rooted in comparative history and evidenced-based analytical theory. The concept of the developmental state serves as a marker of this trend. The idea of how states in the modern era have been able to transform themselves, especially now that the first flood of literature from the studies of East Asian industrialisation has emerged, has brought the continuing underdevelopment and poverty of sub-Saharan Africa into sharp focus and for the scrutiny of the international community, especially with regard to how some states manage to overcome underdevelopment and some remain in this state for decades.

The attention of policy makers, academics and donor organisations in the West has been on how states can become more capable and supportive of development and human security. The emphasis has shifted from determining the 'right' role for the state - a

vital question in the 1990s (World Bank, 1996) - to clear questions about commitment and capacity. The immediate sources of these shifts are clear enough. As the Commission on Africa acknowledged in 2003 (cited in UN0-ECA, 2003 report), the way in which states function is increasingly seen as one of the most important factors affecting development in the poorest countries. At the same time, collapsed and fragile states endanger international peace and security, posing enormous challenges to current models of development co-operation.

These questions concerning the capacity and commitment of state apparatus to manage growth and development are as a result of the rich academic literature on the role of the state in the development of countries of East and South-East Asia, the neo patrimonial or patronage-based states that prevail in much of the developing world, especially Africa, and failed and fragile states (Zimbabwe, Somalia and Sudan). , their relevance to today's policy concerns has never been entirely clear. Relatively few attempts have been made to use them as building blocks for policy reflection, or to spell out how they might better inform current policies for developing countries.

Evans (1995) believed that a central debate in developmental states is how prevailing governance systems need to change in the direction of so-called modern state forms, in order to be effective in delivering economic development and security. There is a growing consensus in the international and donor community, in view of the rapid economic revolutions and transformations going on in India and China, that better and more effective states are needed if development is to succeed in the world's poorest countries, especially those in sub-Saharan Africa.

It becomes imperative that, if we are going to have a holistic view of the current role of the ANC-led government in South Africa and its reluctance to privatise key government parastatals, despite its woeful performance in a monopoly economy, then we will need to know the ideology underlying the decisions of the government. It then becomes incumbent upon us to examine the concept of the developmental state, as it presently dominates discussions and debates on international economics, politics and South Africa in particular. This is in view of the longest and most significant economic growth and transformation the world has ever seen, led by the countries of India and China, where the states are playing important roles in the economy and life of the people.

We need to examine and explore the role of the state (South Africa) in solving or exacerbating the water crisis, and looking at its influence on the sustainable development of the country. It is imperative to look at the meaning of the concept of the developmental state, as it is one of the building blocks of the African National Congress as it pursues its dream of a national democratic revolution, and this means that the government of South Africa will play a critical role in shaping the economic landscape of the country with regard to the management and provision of basic infrastructures which are necessary for solid economic development to take place in the country. In order to understand the role of the government, specifically in relation to water management and policy, it becomes imperative to explain the concept of the developmental state, because it dominates and influences ideologies and policies relating to the problem of water use in the country.

Laubscher (2007) believed that it is becoming fashionable for members of the ruling party to refer to South Africa as a developmental state. As this concept came into being as a result of the developmental model that Asian countries adopted in the past, it gave the impression that South Africa wants to follow their example or aspects of their model in the formulation of its own economic policy, in contrast with the policy prescriptions of the Washington Consensus, with its mantra of "stabilize, privatize, liberalize". In essence, it is about the role of the state in the economy -whereas the Washington Consensus or neoliberalism awards the state a minimum role, in Asian development practice, the state plays a key role, although still within the context of a market economy.

3.6 MEANING OF THE DEVELOPMENTAL STATE

In view of the fact that the government of South Africa, led by the African National Congress, has not been able to provide adequate water facilities for most of the people in the rural areas of the country and townships, it becomes imperative to look at the alternatives available to both the party and the people of South Africa. The ANC wants to use the tool of the developmental state, which has been used to address the issues of social and economic exclusion in other parts of the world, to create a more inclusive and coherent society founded on the principle of sustainable development. Access to

water is a fundamental human rights issue, and the capacity of a government to make it affordable to its citizens is a clear indication of how far the country has gone to create a more humane, just and equitable society. The absence of water in a society, whether as a result of government ineptitude or the inability of the people to pay for services, is a good indicator for measuring the presence of sustainable development in society (UNDP, 2006).

In this scenario, it becomes critical for us to have a basic idea of the meaning of the developmental state and, possibly, ways in which it can be used to hasten the practice of sustainable development in the country, taking into due consideration its adaptability to the South African socio-economic and political context. In the literature (Castells, 1992), the developmental state has two components: one ideological, and the other structural. It is the ideology-structure nexus that distinguishes developmental states from other forms of states. In terms of ideology, such a state is essentially one whose ideological basis is "developmentalist", in that it conceives its "mission" as that of ensuring economic development, usually interpreted to mean high rates of accumulation and industrialisation. Such a state, according to Castells (1992):

establishes as its principle of legitimacy, its ability to promote sustained development, understanding by development, the steady high rates of economic growth and structural change in the productive system, both domestically and in its relationship to the international economy.

Drawing on the works of Johnson (1982), Deyo (1987) and Evans (1995), among others, we understand a developmental state to exist when the state possesses the vision, leadership and capacity to bring about a positive transformation of society within a condensed period of time. To be judged to be developmental, a state does not need to be in control of everything and successful in all spheres. A transformation that is positive overall may be accompanied by a range of negative consequences, such as major environmental damage or greater social tension, which may become a problem that the society and the state have to address in a subsequent phase of development.

The main experts on developmental states (Johnson, 1982; Deyo, 1987; Evans, 1995) believed that this transformation can also take various forms. In the classic East Asian examples, it was aimed at speeding up growth, while at the same time enhancing

opportunities to participate in the modern economy - most commonly through the expansion of public services such as education, health care and agricultural extension. The developmental state was associated with rapid processes of industrialisation and/or the adoption of new technologies -that is, moving into higher value-added activities relative to the starting point. Typically, there was a shift from subsistence agriculture to more commercial, export-oriented farming or to textile processing, tourism, or a combination of these.

Clearly, not all social transformations are actively promoted by developmental states. There are many instances of private-sector-led growth in which the state's role has been quite limited. In addition, not all attempts at state-led transformations succeed. In fact, in developing countries, ambitious attempts at state-led transformations have commonly met with failure, often with far-reaching negative consequences (Leftwich, 1993; Huntington, 1968). Moreover, the developmental orientation of a state is not a permanent condition, but rather a dynamic feature with a limited time horizon. Germany and Japan, for example, had developmental states at critical junctures in their history, which triggered considerable economic and social transformations, while also storing up unresolved issues for the future (Moore, 1995). Today, the challenges are different and these countries cannot be considered to be developmental states. Nor need the developmental condition be even across the entire state: a state may be characterised by the co-existence of sectors or institutional areas that have a clear developmental orientation, with areas where significant anti-developmental factors are in play.

The celebrated Malawian intellectual, Mkandawire (1997), believed that such a state was in contrast to what Myrdal (1968) referred to as the *soft state*, which had neither the administrative capacity nor the political wherewithal to complete its development projects. In the final analysis, the state must have some social anchoring that prevents it from using autonomy in a predatory manner, and enables it to gain the authority of key social actors. The political purposes and institutional structures of developmental states have been developmentally-driven, while their developmental objectives have been politically-driven. In short, fundamentally *political* factors have always shaped the thrust and pace of their development strategies through the structures of the state. These factors have normally included nationalism, regional competition or external threat, ideology and a wish to 'catch up' with the West.

Leftwich (1994) and Mkandawire (1997) both believed that developmental states may be defined as states whose politics have concentrated sufficient power, autonomy and capacity at the centre to shape, pursue and encourage the achievement of explicit development objectives, whether by establishing and promoting the conditions and direction of economic growth, or by organising it directly, or a varying combination of both. The implicit idea of a developmental state can be traced far back and finds expression in the work of theorists of diverse persuasions.

List (1885) argued that:

Less advanced nations' needed to use the state to catch up with the advanced nations in order to ' . . . accomplish the economical development of the nation and to prepare it for admission into the universal society of the future.

List (1885) also claimed that:

A perfectly developed manufacturing industry, an important mercantile marine and foreign trade on a really large scale, can only be attained by means of the interposition of the power of the state (cited in Leftwich, 1994:40).

Karl Marx (1852) made allusions to the developmental state when he referred to the 'completely autonomous position of the state' in France under Louis Bonaparte. Leftwich (1993b) also wrote that most developmental states arose out of class compromise between the ruling elite and the capitalist elite, and this is why its overriding concern and goal is still the furthering of capitalist agendas and ambitions, but with special consideration for the masses of the country, in order to keep them 'on their side'. Most modern commentators on the developmental state, such as Elster (1985), believed that the idea of this autonomous capitalist state was 'the cornerstone' of Marx's theory after 1850, and the concept of the developmental state was common amongst European states from the sixteenth century onwards, pursuing its own interests by harnessing those of others to its purposes.

The American political scientist, Huntington (1968), also stressed the critical developmental importance of concentrating power in a 'bureaucratic polity'. To be successful, such a state would also need to undertake the political destruction of those

existing ' . . . social forces, interests, customs and institutions ...' which have held back development, and which continue to oppose modernisation. It is critical to understand that Huntington (1968) was advocating the destruction of social forces and interests that are impeding development in society.

When one realises that the principle of affirmative action, given the paucity of skills and lack of service delivery within government departments and epileptic water services in the municipalities, combined with a jaundiced immigration policy, when South Africa evidently does not have the skills it needs (thanks to the bantustisation of education) for socio-economic development, one gets a proper perspective on why the developmental state may remain a dream in South Africa, as there are 'social forces' and 'interests' in the alliance movement that the African National Congress may not be able to destroy or even want to destroy, as a result of shared goals during the liberation struggle. It becomes a matter of conjecture as to what the ANC really wants to do - eliminate acute poverty of the black majority in the country or pursue goals that are in the interest of the Congress of South African Trade Unions (COSATU) and South African Communist Party (SACP) elites. If the ANC is serious about the concept of a developmental state, it needs to act in the national interest and take the needs of the whole country into consideration, instead of listening only to the voices of the tiny elite of the labour federation (COSATU) and SACP, which are not representative of the concerns of unemployed and non-unionised South Africans.

Drawing inferences within these postulations, Myrdal (1968) drew the elementary distinction between 'soft' and 'hard' states in the Third World (developing countries), and others have built on this since then, offering accounts of 'bureaucratic authoritarian' and 'strong' states (O'Donnell, 1973; Migdal, 1988; Leftwich, 1993b). With the unprecedented rise of the Asian tigers and the meteoric rise of China and India, many people are now examining the crucial role of the state in economic growth and development (Huntington, 1968). Johnson (1982) sought to explain how autonomous and developmentally progressive bureaucratic states emerged in the Third World. Focusing on Japan, Turkey, Egypt and Peru, he argued that a bureaucratic state apparatus achieved relative autonomy when, firstly, those holding high civil and military office were not drawn from dominant landed, commercial or industrial classes,

and, secondly, when they did not *immediately* form close relations with these classes after achieving power.

Despite the rhetoric's from 'Luthuli House' about the African National Congress using the developmental state to leverage centuries of inequality, a careful study of Tilly's treatise (1975) on the conditions for a smooth take-off of the developmental state leaves one with a sense of trepidation regarding the viability of the developmental state in South Africa. The ANC policy of cadre deployment, irrespective of skills, competence and know-how, to government departments, will not help the country at all or even allow the concept of the development state to take off. In Tilly's (1975) view, in a developmental state, the best qualified citizens should get the most sensitive jobs, since ultimately the national interest is the overall development of the country, which would benefit everybody. This argument flies in the face of the rabid Black Nationalism of the ANC, even when there is conclusive evidence that black South Africans bear the brunt of the lack of service delivery in the municipalities, especially in rural South Africa.

It was only with the publication of Johnson's (1982) seminal work on East Asian developmental states, and Japan in particular, that the phrase 'developmental state' made its formal debut, and that a serious attempt was made to conceptualise it. Johnson (1982) distinguished the 'developmental orientation' of such a 'plan rational' state from both the 'plan ideological' state in the Soviet-type command economies and from the 'regulatory orientation' of typical liberal-democratic or even social-democratic states. A crucial feature of the developmental state was the intimacy of its relationship with the private sector and the intensity of its involvement in the market. Leftwich (1994) insisted that the Japanese developmental state was pre-eminent in ' . . . setting . . . substantive social and economic goals' for the private sector to meet, whereas the regulatory state merely established the framework for components of this sector to set their own goals.

The Japanese formula for this has been 'a plan-oriented market economy'. Just as Gregor (1979) had claimed for Italy, Johnson (1982) argued that a further feature of the Japanese developmental state was the power and autonomy of its elite bureaucracy, centred in key ministries such as the Ministry of Finance and the Ministry of Internal Trade and Industry (MITI). The developmental state in Japan was also characterised by

agreed policy goals, determined mainly by the bureaucratic elite, rather than the politico-legislative elite (Leftwich, 1993). As Johnson (1982) put it, referring to Taiwan, 'the politicians reign and the state bureaucrats rule'. Finally, he stressed that the Japanese developmental state must first and foremost be understood *politically*, for its provenance lay in the essentially political and nationalist objectives of the late developer, concerned to protect and promote itself in a hostile world: 'It arises from a desire to assume full human status by taking part in an industrial civilization, participation in which *alone* enables a nation or an individual to compel others to treat it as an equal'.

It is open to debate as to how the ruling African National Congress and its alliance partners will allow the bureaucracy in South Africa to be dominated by the best educated South Africans, irrespective of race, sex and even political affiliation. The ANC's policy of cadre deployment has done more harm than good to the civil service. Putting square pegs in a round hole just because they are blacks will not help the country reduce the incidence of poverty in the country, and the 'wise men' from 'Luthuli House' need to see the illogicality of reverse racism, as the country is suffering from a lack of qualified manpower in almost all sectors.

However, the dominant focus of studies on developmental states has been on East Asia, with a few minor concessions to Southeast Asia (Burmeister, 1986). Some even argue that the developmental state is *sui generis* to East Asia, a product of ' . . . its unique historical circumstances' (Onis, 1991). The researcher will attempt to explore the possibility of the developmental state being relevant to addressing South Africa's historic inequality and uneven development along racial lines, but since Botswana, a close neighbour to South Africa has been able to implement this model, it now has a huge resonance for the developmental needs of the country.

3.7 AFRICA AND THE CONCEPT OF THE DEVELOPMENTAL STATE

The economic crisis of the 1970's, the demise of the theoretical armour for state intervention, the ideological hegemony of neo-conservatism in key funding institutions and donor countries, the palpable failure of development planning in many countries, stagnation and the crisis of accumulation in Eastern Europe, and its changing "mood"

towards developing or emerging markets (Afro pessimism, anti- Third Worldism, etc), the pessimism or cynicism of the development establishment with regard to its counterparts in recipient countries - all this pointed to "government failure" as being more insidious than the market failure that state policies had purportedly been designed to correct (Ake,1996; Onimode, 1988).

However, although some of the arguments against state intervention in the management of market programmes and policies in Africa are based on an idealised dogmatic view of markets, there is now widespread acceptance of the existence of "market failure" on the grounds of economies of scale, imperfect information, etc. Consequently, the most important case against the viability or possibility of a developmental state succeeding in Africa is not faith in flawless markets (Muducumura, 2002), but rather that whatever the degree and extent of "market failure", African governments cannot correct them in ways that will not make things worse. What dominates development economics and thought in much of Western Europe and America is that what has obviously worked for other late industrialisers is simply a non-starter for Africa.

It is self-evident and acknowledged by economies in both the East and West that the state played and is still playing a central role in the development of Asian countries. It is also suggested that replication of the Asian experience is somehow impossible for Africa (Midgal, 1988; Huntington, 1968). The reasons given by scholars (Mkandawire, 1997; Ake, 1996; Fanon, 1967) for the lack of real development in post-colonial Africa include the dependency of African economies, lack of ideology, "softness" of the African state and its proneness to "capture" by special interest groups, lack of technical and analytical capacity, and the changed international environment that has not permitted the protection of industrial policies.

A policy that at least initially relies on import substitution and protection against foreign competition (which is critical for a development state to take off) is not possible in the current international trading environment under the auspices of the World Trade Organization. The free movement of capital across national borders also restricts the discretion of national policy makers, especially in Africa. According to Mkandawire (1997), the prevailing orthodoxy of economies has become liberalisation, and national

leaders anxious to achieve success today must be wary of assuming that they can emulate the experience of Asian success stories too directly.

Ake (1996), in discussing the replicability of the Asian model of a developmental state in Africa says that “while some aspects of this model (for instance, greater political insulation of economic policy makers) could reasonably be archived in African countries, the extensive coordinated economic interventions of the East Asian state are well beyond the administrative faculties of most African governments”. Similar sentiments are expressed by Callaghy (1993), who argues that African states lack the capacity to pursue the statist model of Asia, since Africa is hemmed in as it tries "to navigate between weak states and weak markets, and to do so with open political structures".

One argument often advanced by African intellectuals and civil society (Fanon, 1966; Onimode, 1988; Ake, 1996) relates to the lack of an ideology of development anchored in some form of nationalist project. This is a recurring theme in political discourse in Africa. Fanon’s (1966, 1967) tirades against the ideological numbness of the emergent ruling classes in Africa remains valid and has huge resonance presently in Africa, despite the fact that the statement was made in the early years of post-colonial Africa (1960’s). This view of Fanon is particularly relevant in a country such as South Africa, where the emerging black middle class lacks the political zeal and enthusiasm of the youths of 1976, which triggered the rebellion against apartheid in Soweto. The new generations of youths not only in South Africa, but in other parts of Africa such as Nigeria, are particularly fixated on material acquisitions, bereft of the values and ideology needed to place political parties and policy makers under scrutiny. This is the bane of development in Africa, as we lack an active civil society and engaging middle class.

The Nigerian intellectual, Onimode (1988), talks of the ideological vacuum that he attributes to a petty bourgeoisie that is committed to their class interests (political party or ethnic origin) and their fear of revolutionary pressures, the obscurantism of imperialist powers and mass illiteracy "which imposes a culture of silence and passivity and inhibits popular demand for ideological discourse". Ake (1996) agrees with him, postulating that: "The ideology of development was exploited as a means of

reproducing political hegemony; it got limited attention and served hardly any purpose as frame work for economic transformation”. For some, lack of ideology is inherent to personal rule, under which loyalty is not to some overriding societal goals, but to individuals often holding highly idiosyncratic ideologies that they themselves flout with impunity and with no moral qualms (Jackson and Roseberg, 1982). Consequently, such leaders are said to have no moral basis on which they could demand enthusiastic and internalised compliance to whatever national project they launch. Finally, although there was a strong argument for the strong state in post-independence Africa, it has not been able to solve the problems of poverty and underdevelopment pervading the continent, except perhaps in Botswana.

3.8 SOUTH AFRICA AND THE CONCEPT OF THE DEVELOPMENTAL STATE

It is the view of Laubscher (2007) that evidence abounds in the literature that certain elements of a developmental state are present in South Africa, for example the development programme for the motor industry, the pursuit of mineral enrichment, the pressure of the financial sector to extend financial services to low-income groups, and the current comprehensive industrial policy. But are all these examples sufficient to label South Africa a developmental state? The answer is no. South Africa does not have an elite meritocratic bureaucracy that attracts the best talents and skills in the country.

The African National Congress’ policy of deployment of party chieftains into the bureaucracy (irrespective of skill and competence) is detrimental to the concept of the developmental state. It will not help in the alleviation of poverty, as the qualified Whites will be denied job opportunities on the grounds of employment equity, and Blacks who are not loyal enough to the ‘Polokwane sentiments’ (Ramphela, 2007) of the party will also be denied jobs. In these scenarios, it is unfathomable how the policy of the developmental state, which flourished in Asia with merit and competence as its watchwords, will ever take root in South Africa, since the new ideology of the country is loyalty to the party at the detriment of loyalty to the nation.

In the view of Bernstein and Johnson (2007), South Africa's apartheid legacy of discrimination and exclusion has left its pool of skilled human capital disproportionately located in the white population. This has two negative effects. South Africa's skills pool is vulnerable to erosion by emigration and ageing. The best educated and skilled South Africans (white and, increasingly, black) are well-equipped linguistically (even if English is not their first language) and culturally to live in the main Anglophone developed countries (Australia, New Zealand and Canada), and many hold British or other European passports. Besides the ageing characteristics of an affluent population, it is also experiencing considerable emigration of young people.

Bernstein and Johnson (2007) held that in the longer term, the wider and more inclusive development of skills should more than compensate for these losses. However, the underdevelopment of South Africa's educational system -which has the biggest effect on poor African children - means that the reliance on vulnerable White skills will continue for a significant period, and the unintended consequences of transformation policies and the racial nationalism of the African National Congress has increased pressure on the already limited pool of skills produced by the flawed education and training systems. This waste of skills is not confined to the Whites, who are excluded by policies of racial preference, but includes increasing instances of skilled black people who are -in the words of Mamphela Ramphele (2007) -'denied job opportunities because they are outside party political networks that have captured civil service jobs for patronage'.

The South African government, in its own idea of a developmental state, sees the state as the active promoter of economic growth and development. This entails using new institutions (such as *infracos*), state organs and state domination for the provision of health, education, housing and welfare, among other services. This strategy, in a developmental state, requires people with established technical skills to participate directly in infrastructure projects and service delivery, as well as skilled, experienced managers to organise all aspects of policy implementation. Without the necessary experienced and skilled people, the South African idea of a developmental state is only an illusion.

Many experts (Laubscher, 2007; Bernstein and Johnson, 2007) in the concept of the developmental state believe that South Africa is not a developmental state, because the political dispensation leaves little room for bureaucracy to play a pioneering role - the government's intervention in market processes occurs more through regulating than direct participation, and there is no leading organisation that is given direction (least of all the Trade and Industry Department, the South African equivalent of the Japanese MITI). The opposition to the centralisation of decision making in the presidency under Thabo Mbeki also indicates that South Africans are not comfortable with such a set up, and there is no symbiotic relationship between the bureaucracy and the private sector. South Africans' proven predilection for spending rather than saving indicates a mindset of gratification rather than sacrifice. This mindset was in fact encouraged by government policy in recent years (generous tax reductive and a sharp reduction in nominal interest rates), and it is inconceivable that the South African government will enforce the high savings rate that was an important feature of Asian developmental states.

Above all, South African society cannot be typified as a developmental regime, because there is no national consensus or hegemonic project on which all sectors of society are focused, and for which everyone is willing to make sacrifices. At best, the 6% growth target, Asgi-SA, is a step in the right direction. It cannot be said that South Africa is focusing exclusive on the pursuit of a high level of economic growth. There is an equal focus on the redistribution of wealth as a result of decades of the apartheid policy of discrimination, exclusion and marginalisation of black Africans in the country.

Indeed, Asgi-Sa refers to accelerated and shared growth. In Bernstein and Johnson's view (2007), a developmental state is firstly a regulatory state, a welfare state, and an equality state. In his analysis of the role of government in economic development, Bond (2002) classified South Africa as a " class-compromise non developmental democratic state". In fact, it is doubtful whether the South African government itself regards South Africa as a developmental state in the classic Asian sense. This sentiment was also shared by Brown (2007), when she reported that at a lecture organised by the Wits Business School, the African National Congress policy czar, Netshitenzhe (2007), characterised the South African state as developmental, and said that it would not be captive to the interests of one class. The ANC's intended end state was a national

democratic society of multiple classes with ownership shared by the state and private sector (Netshitenzhe, 2007).

However, Netshitenzhe (2007) did add an important qualification, saying that there could be "tactical detours" in the detail, "zigzags when we need to address issues of the moment". The key question, of course, is how these "tactical detours" and "zigzags" often detract from the ANC's policy positions, resulting in strategic ruptures and shifts, as we have seen with the economic policy. A classic case of a detour is no doubt the out-of-vogue GEAR policy, which morphed into government's new growth plan, Asgi-SA. Not forgetting the fact that GEAR's predecessor, the Reconstruction and Development Programme (RDP), was unceremoniously dumped when issues of the moment - "read pressures of globalization"- had to be addressed (Brown, 2007).

When the South African government refers to South Africa as a developmental state, it should be viewed in the context of a government that wants to appropriate for itself an active leadership role in the development of the South African economy. In essence, it is a counter-reaction and repudiation of the Washington consensus, with its emphasis on privatisation, deregulation and the sovereignty of the market, and a minor role for the state. Some intellectuals, such as Bond (2002), believe that the Washington consensus is obsolete in any case: "The question is not whether the Washington consensus is dead or alive; it is what will replace it". Bond's view (2002) is corroborated by scholars such as Laubscher (2007), who agree wholeheartedly that South Africa's political system has far more in common with a typical European social democracy than with an Asian authoritarian state. For example, as part of the Asian developmental state, the rights of workers were consciously suppressed, which is inconceivable in South Africa. Rather, South Africa finds itself in the company of countries pursuing a so-called "third way"- that is the search for an alternative to an uncontrolled free market economy and a fully socialistic system.

In fact, the rise of Jacob Zuma to the highest political position in South Africa (as president of the ANC and South Africa), propelled by the unwavering support of the Congress of South African Trade Unions (COSATU) and South African Communist Party (SACP), signifies that a major shift in economic policy is on the cards. It has to be emphasised that developmental states are not necessarily socialist, and the role of trade

unions are traditionally diluted in order to encourage the export of goods and services and economic growth. In the new ANC of Jacob Zuma, the vociferous rise of elements sympathetic to the cause of COSATU may hinder economic growth and development, as the country may become more protectionist and defensive in its economic and labour policies. In the current period of global economic melt-downs, recessions and investments worldwide, it is indeed time for a sober reflection on the future and sustainability of the South African economy.

South Africa is a middle-income country whose primary economic issue is not purely economic development in the classic sense, but the challenge to effect greater inclusiveness by giving all its citizens equal access to opportunities such as water resources within the formal modern economy, and thereby reducing the large-scale inequality in the distribution of income and wealth. This is the problem with which other middle-income countries are also grappling, but South Africa's unique racial history and problems give it a special dimension.

The South African government has to find a balance in terms of the advanced skills required to manage the huge water infrastructure in the municipalities, and make sure that the technical and intellectual wherewithal needed to overcome the disparity in the accessibility and affordability of water resources for most of the rural areas of South Africa and the townships does not become a mirage. Thus, the critical question for the party and government becomes how to attract the types of skills needed for those positions, as the legacy of Bantu education has resulted in scarce skills in South Africa being difficult to retain.

In addition, the present racial nationalism of the African National Congress is not helping matters. The skills backlog that the country is facing at all levels, especially in the water sector, needs to be put in perspective between the need to balance employment equity and sustain economic growth and development, which the country desperately needs in order to lift its people out of poverty and wretchedness. For one black, inefficient technician or plumber hired in the name of employment equity, there are thousands of black households that may stay without electricity. Modern and democratic South Africa was founded on the ideals of the Freedom Charter (which the ANC worshipped throughout the liberation struggle), and the Charter calls for a non-

sexist and non-racial society. The present employment equity and Black Nationalism of the African National Congress bears a striking resemblance to the Afrikaner Nationalism of the National Party and one has to ask oneself: what has changed? Or is it a case of old 'theologies' being preached by new priests? It is indeed time for a sober reflection.

The government has or could put a 'sunset clause' on employment equity, as it is abundantly evident that the level of skills and competence available to the black population as a result of the Bantu educational policy cannot sustain the economy in this period of massive globalisation and industrialisation. It is the researcher's honest belief that modern and democratic South Africa was founded on the ideals of the Freedom Charter, which calls for a non-sexist, non-racial, democratic and opportunity-driven society, irrespective of colour, gender, religion or even level of education. The ANC policy of affirmative action is not only betraying the ideals of the Charter on which the country is founded, but also denying South Africa the opportunity of being a more inclusive and prosperous country. The government can even simultaneously pursue the twin goals of transformation, while also creating a more inclusive society in which every South African will have a sense of belonging. It can do this, but only through patriotism and devotion to the original ideals of the Freedom Charter.

The apartheid government imported (although mostly whites) vast amounts of human capital from European countries, when the White population could not afford to fulfill the skills requirements of the era or maintain the existing industries in the country (Jones and Muller, 1992; Natrass, 1996). The African National Congress government needs more creativity and originality in its immigration policy, while local knowledge and wherewithal also needs to be encouraged and developed. The country cannot afford to neglect the skills of White workers and foreigners, as the global hunt for skills worldwide is becoming a rat race, as China and India become economic superpowers and many destinations are becoming more competitive than South Africa.

3.9 DEFENDING THE POLICY OF THE DEVELOPMENTAL STATE IN SOUTH AFRICA

The policy makers in the government have come out with guns blazing in defending the policy of both the ruling party and the government with regard to the issue of adopting the concept of the developmental state in order to help the government to leverage the huge backlogs in delivery of resources, especially water, to historically disadvantaged individuals, especially in the rural areas of South Africa. It is also critical to determine whether or not the concept will also look into the issue of the inclusion of a large number of people in water use, as the present neoliberalism and rampant privatisation of the water market is also denying access to water to a large number of South Africans, who cannot pay for the services offered by their municipalities because of their socio-economic background, necessitated by centuries of economic marginalisation and exclusion through apartheid and segregation.

Saloojee (2007), a special adviser in the Presidency, believes that it would be ahistorical and prescriptive to look at developmental states in Asia, for example, draw out their key characteristics and use them to assess whether or not the South African state is developmental. He maintains that the developmental state in South Africa does not and cannot seek to evaluate developmental states in other parts of the world. They may share some characteristics in common but, like states in developed societies, their specificities and degrees of autonomy will of necessity vary.

It is the view of Saloojee (2007) that developmental states in any socio-economic, historical or political context are not easily transportable to other contexts. In free and democratic South Africa, the developmental state is characterised by its democratic content, the role of the state in socio-economic transformation, and its role in dealing with conflict over the use and distribution of valued goods and resources in society. The principal challenges facing South Africa include dealing with poverty and inequality, unemployment and underdevelopment, and the vision of the developmental state is the creation of a non-racial, non-sexist, democratic and prosperous country.

Saloojee (2007) believes that there was a general recognition in 1994 that success in dealing simultaneously with the legacy of the apartheid and transforming South Africa

could not be accomplished by a neoliberal, minimalist state, characterised by anorectic organisation, privatisation, deregulation, downsizing, decentralisation and devolution of responsibility. South Africa therefore eschewed the neoliberal state in favour of the developmental state, with its responsibility of realising the mandate, given South Africa's first democratically elected government - transformation and the progressive realisation of social justice for all.

The developmental state in South Africa promotes public-private partnerships, utilises its institutions and marshals both its administrative capacity and its human resources in a strategic fight to eradicate poverty, unemployment and underdevelopment. This is very different from the welfare states of Europe and the Asian Tigers. In the case of South Africa, there is a need to continue to articulate and affirm a clear role for the state which, operating in an environment of democracy and political stability, has a formidable number of things to deal with, including: redressing market-related and market-induced inequalities, promoting partnerships, providing equality of opportunity, investing in people and infrastructure, promoting peace and stability regionally and globally, promoting sustainable growth and development, and ensuring ecological sustainability (Saloojee, 2007).

The historical project is dealing with the legacy of apartheid, which left an economy in shambles, a society that was racially polarised, and the immense material deprivation of the majority of black people. In this massive task of cementing social cohesion, the state is far more than a government, and issues of cohesion and consent point to a much broader conception of the state. In this conception, the state has become the locus of consensus building, which is very different from the post-second World War European welfare states, which were very much historical compromises between labour and capital. The dominant party in South Africa, the African National Congress, has non-successive elections with ever-increasing majorities, and has made fighting poverty and unemployment through an economic growth strategy involving partnerships a critical part of its electoral platform.

The democratic developmental state in South Africa is hegemonic(Saloojee,2007), in that it galvanises the consent of the oppressed classes, effectively utilises administrative, institutional, fiscal and human resources in partnership with other sectors of society in

the fight against poverty, inequality, unemployment, underdevelopment and the negative effects of globalisation, and uses the entire state machinery to mediate the class conflict in order to protect and advance the gains of democracy and improve the well-being of all its citizens. The hegemony of the developmental state derives further from the reality that there is a national consensus, as expressed in the will of the people, with regard to the critical national development imperatives.

In the final analysis, when it comes to developmental states, there is no single model for states to follow or be judged by. The state in South Africa is developmental, precisely because in a market-based economy, it promotes growth, public-private partnerships and investment by state-owned enterprises, engages in redistribution and transformation, and promotes equality of opportunity. A developmental state needs to be measured by the developmental goals it has set for itself, and not an archetype created out of a totally different socio-political, economic, cultural, historical and global context.

Such states are dominated by strongly nationalist development elites and combine varying degrees of repression and legitimacy in contexts where civil society has been weak or weakened. These states concentrate considerable power, authority, autonomy and competence in the central political and bureaucratic institutions of the state, notably their economic bureaucracies, and generate pervasive infrastructural capacity (Elster, 1985). They have established and maintained close co-coordinating links with key economic interests in the private sector (Johnson, 1982). State-determined incentives have ensured that such domestic and foreign interests have been harnessed, both to pursue their own advantages and serve national developmental goals.

Few societies in the modern world will make speedy transitions from poverty without states which approximate this model of a developmental state (ideally, but not necessarily, the democratic kind). Without such states, transitions may be slow but the human cost immense. In short, contrary to the current orthodoxy, development requires not less state but better state action (Sandbrook, 1990), and this comes most likely from developmental states. Thus, calls for good governance (World Bank, 1992b) or democratic governance, which focus on administrative, judicial or electoral good

practice, entirely miss the point that such virtues can only be instituted and sustained by politics (Leftwich, 1993a).

This means that despite all the neo-liberal policies of Thabo Mbeki, real changes will only be made in South Africa when the state can intervene decisively in policies and ideas. More creative and just ways for the redistribution of wealth are needed, especially in an unjust and divided society such as South Africa, where millions of people have been marginalised, exploited and dispossessed for centuries. In this instance, in order for sustainable development to take place in South Africa with regard to the accessibility of resources or amenities such as water and adequate sanitation, the role of the market needs to be guided by government, in order for it to produce a meaningful and more inclusive society.

3.10 CONCLUSION

This chapter explained the relationship between sustainability and development, and it also provided the summary definition of sustainable development based on the different theories available in this study. It also explained the different dimensions of sustainable development, which included its technological, economic, human and environmental dimensions. This chapter also presented a critique of the concept of sustainable development by various authors and social scientists as an illusionary and elusive concept that is difficult to achieve. This chapter also dealt with the concept of the developmental state, as it has been a key development policy in the government's fight for the alleviation of poverty and entrenchment of sustainable development in South Africa since the demise of White minority rule in the country.

Finally, the variant of the developmental state being practised in South Africa (if any at all) is at odds with the style known worldwide, which is the model practised in South East Asia, and which was very effective in lifting millions out of poverty. The next chapter will look at South Africa's socio-political history and the factors that have contributed to the presence or absence of sustainable development in the country.

CHAPTER FOUR

SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA

4.1 INTRODUCTION

This chapter will look into the past historical, economic, cultural and political environments in South Africa that contributed to the successful or unsuccessful implementation of sustainable development practices and paradigms in the country, and offers the means of understanding its past in order to chart a better future. It is important to remember the words of Jacques Depelchin (1996:86-90): ‘a radical transformation in South Africa will depend more on how the past is remembered than on how the future is plotted’. Lord Acton was also eloquent and unequivocal when he insisted (at his inaugural lecture, Cambridge, June 1895) that ‘If the Past has been an obstacle and a burden, knowledge of the past is the safest emancipation’. The second part of the chapter deals with the alternatives available to the new democratic South Africa in view of the glaring inequalities of the past. It looks at the global move towards liberalism and how it has permeated all the sectors of the South African economy, including the water sector.

4.2 THE INFLUENCE OF THE COLONIAL AND APARTHEID PAST ON SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA

Context is about circumstances related to facts. This study addresses sustainable development as a factual and critical issue which dominates the development literature today. Before any model of sustainable development is introduced, in any country or environment such as South Africa, a thorough understanding of the context and local situation is imperative (Ntsime, 2002). It is widely accepted that one’s vision of the future is shaped by an interpretation of the present and past, and therefore any discussion of the conditions of post-apartheid South Africa requires a thorough understanding of apartheid (Lingle,1989) and a view of the almost 350 years of colonialism, segregation and apartheid (Terreblanche, 2002:239). Any discussion about the allocation and distribution of resources in South Africa, and subsequent sustainable

development policies, has to determine how unequal power structures played a central role during South Africa's lengthy colonial period (1652 to 1910).

This trend continued during the period of segregation and apartheid (from 1910 to 1994), when power was entirely monopolised by whites - with devastating consequences for blacks. Unfortunately, unequal power relations and socio-economic outcomes have remained defining characteristics of the post-apartheid period. Despite South Africa's transition to an inclusive democracy, old forms of inequality have been perpetuated, and some entrenched more deeply than ever before (Terreblanche, 2002:248). In this context, it is imperative for us to understand how access to resources and economic opportunities in South Africa has been distributed for decades, as this will give us a better perspective on the skewness apparent in the distribution of and access to water and sanitation in South Africa, which is noticeably better in White and urban areas relative to the rural areas and mainly black townships of South Africa. This is the main rationale for this chapter on sustainable development in South Africa.

It has to be noted that the intellectual muscle for the outbreak of imperialism and the decline of liberalism in South Africa and much of Africa were closely associated with the rise of social Darwinism. The British sociologist, Herbert Spencer, reinterpreted (and vulgarised) Charles Darwin's work (*The Origin of the Species*, cited in Terreblanche, 2002:320) on the survival of the animal world, and applied Darwinism to the economic and social life of humans. Spencer coined the phrase "struggle for life and survival of the fittest", and argued that the fittest must be 'selected' in order to enhance their 'generation'. His theory quickly gained cultural and racial connotations. In Britain and America, his ideas were regarded as divine revelations, and used by the rich to justify their wealth in the face of the excruciating poverty of the indigenous population (see Galbraith, 1977:44-50).

Galbraith (1977:50, cited in Terreblanche, 2002) wrote that the 'individualistic' nature of Spencer's social Darwinism - in which strong individuals survived, and weak individuals fell by the wayside - was quickly broadened into a struggle between strong (i.e. rich) and weak (i.e. poor) groups. This was subsequently broadened into a struggle between strong (e.g. Britain) and weak nations, and ultimately to the struggle between the alleged natural superiority of white races. In this way, social Darwinism became the

ideological justification for some of the worst forms of racism in recent history, for example Nazism and apartheid. It is important to note that in the late 19th and early 20th centuries, Britain and large parts of the English-speaking world were the pioneers of ideas of alleged racial superiority based on divine destiny. During the last quarter of the 19th century, the attitudes and actions of the British elite were characterised by Victorian self-righteousness and the acceptance of British superiority as a self-evident truth. Both these characteristics played a dominant role in the aggressive and ruthless expansion of British imperialism, colonialism and capitalism in South Africa, and this was subsequently adopted and refined by the National Party with the birth of apartheid in 1948.

Wolfe (1999) is entirely correct in saying that “settler societies were exploitative, and colonialism was premised on the elimination of native societies”, which, by occupying land of their ancestors, had got in the way. Their labour was useful for a time, and in so doing, facilitated the uninhibited view of native people as weaker individuals and communities that should be controlled. In 1840 in Oxford, Merivale (1928), then a professor of political economy and later a permanent undersecretary at the Colonial Office had concluded as much. He thought that the interests of settlers and native people were fundamentally opposed, and that if left to their own devices, settlers would launch wars of extermination. He knew what had been going on in some of the colonies - “wretched details of ferocity and treachery” - and considered what he called the amalgamation (essentially, assimilation through acculturation and miscegenation) of native people into settler society to be the only possible solution.

Merivale’s (1928) motives could be construed as altruistic, yet assimilation as colonial practice was another means of eliminating “natives” as a social category, as well as any land rights attached to it - as everywhere settler colonialism would tend to do. This was precisely the situation in South Africa, as Dutch and British colonialism sought to dispossess the native Africans of their land and subjugate them as labourers (Harris, 2004). This was the ideological lenses through which European settler societies viewed native African societies, as people who needed to be guided on the rift path to prosperity, and at the same time dispossessed of their land and converted into labourers in their ancestral homes as instruments for the accumulation of surpluses by European settler societies.

This marginalisation, exploitation and dispossession of native Africans of their lands were the local example of Harvey's (1989) point that the pace of time-space compressions after 1850 accelerated capital's "massive, long-term investment in the conquest of space" and its commodifications of nature. The very soil, Marx (1967) said in another context, was becoming "part and parcel of capital". As Marx (1967), and, subsequently, others (Harvey, 1989; Thomas, 1994; Terreblanche, 2002) have noted, the spatial energy of capitalism works to deterritorialise people (that is, to detach them from prior bonds between people and places) and to reterritorialize them in relation to the requirements of capital (that is, to land conceived of as a resource and freed from the constraints of custom, and to labour detached from land).

A perfect illustration of Harvey and Marx's theory in South Africa can be found in the colonial and apartheid dislocation and displacement of black South Africans to the Bantustans, forcing them through legal means to come to urban areas to work as peasants for White capitalists and companies. This led to the acute proletarianisation of the black majority for centuries.

According to Marx (1967), the "wholesale expropriation of the agricultural population from the soil . . . created for the town industries the necessary supply of a 'free' and outlawed proletariat". For Deleuze and Guattari (1977) - drawing on insights from psychoanalysis - capitalism may be thought of as a desiring machine, a sort of territorial writing machine that functions to inscribe "the flows of desire upon the surface or body of the earth" (Thomas, 1994). In Lefebvre's terms (1991), it produces space in the image of its own relations of production (Smith, 1990). According to Harvey (1982), it entails the "restless formation and reformation of geographical landscapes," and postpones the effects of its inherent contradictions by the conquest of space—capitalism's "spatial fix". This was the situation when native Africans were dispossessed of their lands and made to work as low-skilled workers on the farms and mines of European settlers, and in the process helped the Europeans in their quest for the accumulation of surplus capital in the metropolises. In this scenario, sustainable development was an alien concept. Skewness in the distribution of water use in the country during the periods of colonialism and apartheid had racial undertones, as every resource was shared through those prisms in that epoch of South Africa's history.

As a developing country, South Africa is faced with a development history muddied by racial discrimination and the unequal distribution of resources. A consideration of South Africa's context is important for two reasons. Firstly, concerns about the unique historical context and unequal distribution of resources are the point of departure in understanding racism and its underpinning actions against sustainable development. Secondly, approaches associated with a culture of basic human rights are enshrined in South Africa's 1996 constitution, which is critical for public participation. The latter is further supported by a charter of the United Nations and the Declaration of the Rights of Development mentioned by Slinn (cited in Ginther et al., 1995), and the nature of South Africa's Constitution and Bill of Rights creates better prospects for sustainable development than in the past. However, as pointed out by Mahlangu (cited in Theron et al., 2000):

It would be wise of us to take stock of what we have and then chart a way forward on how to utilize what we have to entrench democracy and meet basic needs of the poorest of the poor.

The above considerations indicate a need to revisit the negative impact which apartheid development practices have had on human development in South Africa. Likewise, sustainable development cannot be understood outside the human development context. This context is critical for sustainability, because the concept of sustainability is first and foremost the improvement of the living conditions of people and their capacity and willingness to take part in development efforts (see De Beer, 1997 and Chambers, 1983).

If sustainable development is ever going to be meaningful and relevant in the new South Africa, the present government, led by the African National Congress (ANC), has to reverse centuries of neglect and discrimination meted out to the majority of the black African population, in order to have a more inclusive and modern society. Anything short of this will be a veritable recipe for disaster, because it is inconceivable that any society will ever survive and prosper with the kind of inequality evident in South African society, a glaring and evident product of centuries of systematic exploitation, exclusion and pauperisation of the black population by colonial and apartheid regimes.

It can therefore be argued that real and meaningful development involves community awareness, involvement and participation in development programmes. People need to become self-reliant, and a government should make concrete efforts to create an enabling, legislative and policy environment. Understanding South Africa's unique history of 350 years of colonialism, segregation and apartheid and how development policies were conceived in the past gives us a better insight into and perspective on how to appreciate the developmental needs and goals of post-apartheid South Africa. The history of apartheid means that South Africans can begin to appreciate the damage inflicted by apartheid on the psyches of the people, both white and black.

Terreblanche (2002:424) postulated that in order to understand how development can become sustainable in South Africa, it is critical for all South Africans, especially whites (irrespective of their political orientation), to take stock - hopefully with as open a mind as possible - of the false trails on which they travelled for so long, and the phantoms they pursued with such conviction and enthusiasm. Of course, it has not been easy for white South Africans (or most of them at least) to acknowledge the evils of colonialism, segregation and apartheid, and the fallaciousness of the arguments used to legitimize those forms of oppression. However, if whites do not critically re-evaluate their past, they cannot expect the victims of colonialism, segregation and apartheid to accept them as trustworthy companions for building a common future.

It is also time for a sober reflection by the ruling African National Congress (ANC), in order for it to realise that unhealthy adherence to the policy of racial nationalism and strict employment quotas, to the detriment of merit and competence, given South Africa's historical skill shortage within the black population as a result of apartheid and the bantu education policy, is counter-productive, parochial, naïve and will only take South Africa backwards. Thus, in order for sustainable development to take a meaningful foothold in the country, there are lessons to be learned by both sides of the political spectrum, both black and white, for the good of the country.

4.3 THE NEED FOR A NEW PARADIGM IN THE SHARING OF RESOURCES IN SOUTH AFRICA

There is a need for a debate amongst South Africans about what sustainable development means to them. As mentioned by Munslow et al (1997:4), sustainable development should (or could) represent a truth commission of some sort, and people need to confront and debate the issue of racial discrimination and the implications of such discrimination on those who did not receive adequate shelter, food and clean water in the old dispensation. In fact, sustainable development in South Africa should take a holistic view of the living conditions of millions of South Africans who were marginalised and excluded from society during apartheid along racial lines, and think of better ways of forging a more inclusive society and country. There has to be an understanding or debate about how resources, especially water (which is very critical for any sanitation and poverty alleviation), have been denied to the majority of South Africans, and how best to improve accessibility and affordability.

When one talks about exclusion, one has to bear in mind that there are economic and social exclusions (Sen, 1999) in the apartheid political establishment and these injustices need to be addressed before any meaningful talk of sustainable development in South Africa can take place. This self-introspection requires South Africans to think about the effects of the changes which have occurred over the years, such as the tremendous social policy changes which were motivated by growing social changes in South Africa (Lund, cited in Alcock and Craig, 2001). Sustainable development will therefore require a major effort to transform, reconstruct and correct the perceptions and values embedded in white and black South Africans. The political transition of 1994 has not only liberated black South Africans from the chains of extended colonialism and apartheid, stretching from 1652 to 1994, but has also liberated white South Africans from outdated, sectional and even adulatory interpretations of this country's tempestuous history.

As Lord Acton (1895, cited in Terreblanche, 2002:306) reiterated in the opening paragraph of this chapter, it is the knowledge of South Africa's burdensome past that can emancipate us from this burden, and it is only then that sustainable development can take root and germinate in the country. The apartheid policy was based on racial

development practices, ethics and morals. Its overall value system was unjustly developed and operationalised in order to undermine the human rights of the majority of South Africans. As a result, it compromised the development of a large percentage of South Africans, thereby leaving behind the legacy of an under-developed and impoverished society.

Kirsten (2000:2) defines development as a process which is people-centered, and associates it with a road travelled by people to reach a certain destination. Authors such as Van Wyk (2000:8) have defined sustainable human development as a process. This is particularly important to note, because South Africa was rooted in a particular content and context, which can be analysed together to arrive at some assumptions about what lines to draw in defining sustainable development. As seen in South Africa's colonial and apartheid history, the road travelled by members of the past generation, blacks and whites, was certainly neither one which led to a common destination nor one of people-centered development. It was rather characterised by unfair, brutal and sometimes cruel competition over land, water and other resources (Mckendrick, 1990:11-15). However, qualitatively and quantitatively speaking, there are good reasons to argue that the past practices, while they did not benefit blacks materially or psychologically, had a positive impact on South Africa's overall infrastructural development, which still serves a vital purpose in present day South Africa.

In the views of Briassoulis (1999:227) and Hediger (1999:482), South Africa's situation can best be understood within the colonial-apartheid context. This context is important in that it raises questions about social injustice and social equity. As seen from the myriad of definitions referred to in chapter two of this study, sustainable development is about the distribution of social costs and benefits of development between and within generations. This distribution should be based on the ethical and moral values of a society which cares about the social welfare of its people. Often, a fair distribution is associated with poverty alleviation, equal opportunities and public participation. South African history suggests an ideological history which fits what Moore (cited in Moore and Schmitz, 1995) calls "a history of development discourse in which the dominant class and race organise its material, social and political base".

South Africans history over the past 350 years is an unsavoury tale of intergroup conflict, violence, warfare and plunder. Each of the different ethnic, racial and/or language groups tried to enrich itself by plundering, raping and marginalising their resources. If one considers the multitude of group conflicts and wars in South Africa during the past 350 years, one can distinguish certain patterns in the seeming muddle. One of the clearest patterns is that during the long period of European colonialism and imperialism, the colonial masters were mostly the victors in group conflicts, and the indigenous population groups mostly the losers. A second pattern - closely linked to the first - is that during the post-colonial period, local whites (the descendants of the settlers from erstwhile colonial Europe and in these situations, mostly Afrikaners) were again usually the conquerors, and therefore in a position to enrich themselves, usually at the cost of the indigenous people, who are the black population (Terreblanche, 2002).

As argued by Adelzadeh et al (1998:8), significant backlogs in social investment in human resources and services have contributed to the existing widespread unsuitability of livelihoods since they have led, among others, to the under-skilling, lack of access to basic services and lack of access to critical economic assets by the majority of the black population.

Gilomee (cited in Price and Roseberg, 1980:11-15) believes that the political context of sustainable development in South Africa has values which became deeply entrenched as early as 1910, when South Africa became a union. The South African state that came into being in 1910 was based on an alliance between an Afrikaner farming elite and British/English business elite, and legitimised in terms of the segregationist ideology that was generally accepted in at least the British and American world. At the time of the Union of South Africa in 1910, there were two most pressing problems in the country, the first being how to accommodate the Afrikaners and African proletariats, given the conflicting demands of capital accumulation and state legitimisation (O'Meara, 1996). The second problem was how to solve the serious labour shortages experienced by the mining industry and maize farmers. This big problem was solved when the Land Act was promulgated in 1913, and thousands of Africans were proletarianised and forced into wage labour after being uprooted and dispossessed of their lands. The act also prescribed a formula for distributing African labour between

gold mines and maize farmers, to the satisfaction of the Afrikaner farmers and mining industry.

It has to be noted that in the economic and political history of South Africa, no mention has been made of the sustainable development of the country or centering development goals on the principles of fair play, equity and justice. Almost all of the development initiatives in South Africa have been racially motivated, sectional, draconian, exclusive, unjust and discriminatory in nature and practice, always to the detriment of the majority of the black population.

It can therefore be postulated that sustainable development is both a political and a social construct, and depending largely on the context, it could assist in creating operational mechanisms for policy review, policy formulation and its implementation. It can also be manipulated as a mechanism for the rich and powerful to keep the status quo that is favourable to their economic interests. From South Africa's history of racial discrimination, there is a further indication that application of sustainable development should form part of a conscious effort to promote social change and transformation (Baker et al., 1997). The African National Congress-led government has to find more creative ways and means of alleviating poverty and improving access to water and sanitation for the vast majority of the black population, which was marginalised and neglected during the centuries of colonialism, segregation and apartheid. This is the miracle that the party needs to realise.

O'Meara (1996) believes that an understanding of sustainable development in the context of the colonial and apartheid past is important for various reasons. Firstly, the analysis of any history forms the basis for understanding the different dynamics and processes which have influenced such a history. Secondly, in this case, racial history influences people's perceptions and creates stereotypes between and amongst people. The context of South Africa's history is therefore important (Lundahl and Moritz, 1996) because it is located within diverse features, such as race, ethnicity, cultural and linguistic differences. Relationships between people in the new South Africa is still dominated and characterised by differences in race, income and culture.

There is no doubt that the above situation has had a significant impact on shaping the discourse of sustainable development in South Africa. In particular, knowledge production and a racial value system had a marked effect on the educational system of the past. As argued by Seepe (2001:27):

Knowledge production under apartheid perpetuated the values of apartheid system and thus served as a tool not only to justify but also to maintain and protect grossly unequal economic and social relations.

Outside South Africa, the colonial legacy is often blamed for today's political and social problems in Africa. Rightly so, as argued by Picard and Garrity (cited in Fitzgerald et al., 1997:63), this legacy has resulted in an over-planned, centrist state characterised by an unplanned patronage-based civil service, whose function is not to facilitate development alternatives, but to ensure political quiescence.

Similarly, Leftwich (cited in Fitzgerald et al., 1997:62-3) also maintains that the architects of post-colonial Africa did not create viable institutions of governance and policy implementation. Instead, as argued by Mbeki (1998), they created an authoritarian system of governance whereby Africans were not given a say in their socio-political and economic life. Similarly, in the South African context, the colonial-apartheid era has also created skewed settlement patterns of local government, dividing people according to race and ethnic groups.

These conclusions and statements are supported by many academics and authors (see Suzman, 1960:400, Tordoff, 1984; Kirsten, 2000:1; Ntsime, 2002:88), who provide useful and valid information regarding the origins of race in South Africa, as well as the pre-colonial history of Africa. It is important to bear in mind that colonial experiences have varied from continent to continent (Tordoff, 1994:33). However, what has emerged as a striking similarity in all these analyses, especially of race relations in South Africa, has been the lack of a consistent definition and the presence of anomalies in race classification systems which were introduced by the Afrikaners after the establishment of the Union of South Africa (Suzman, 1960:339). This shows that race classification might not have been the colonisers' main goal, but it was to protect their own selfish interests.

Any form of discrimination will and can ultimately minimise and wipe out the potential gains of social and human development. Previous discriminatory practices have proved to be inefficient and ineffective because they have resulted in a major development gap. The following periods outline significant historical events which demonstrate the root causes of the existing inequalities in South Africa.

4.4 ENTRENCHMENT OF BRITISH COLONIAL POWER IN SOUTH AFRICA

What can be understood from this context is that the discrimination and unevenness in the distribution of resources such as water in old South Africa were carried out through the prisms of race, as this was the building block on which the former rulers of the country formulated most of their policies. In this context, South Africa's new leaders should do more to address the inequalities of the past in the water sector, with a view to preparing adequately for the decades ahead, when South Africa will witness water scarcity. Current estimates by the Department of Water Affairs and Forestry (DWAF, 2001) are envisaging that South Africa may experience water scarcity by the year 2025. This means that an adequate policy should be in place to extend services to the rural areas of South Africa or the townships, which were neglected during the old dispensation.

Influenced by Foucault's (1972) analysis of the relationship between power and knowledge, and Said's (1979) examination of Orientalism, by textual theory harnessed to colonial discourse analysis, and by many studies on the values and ideologies associated with particular colonial encounters, most post-colonial scholars now identify culture and the associated procedure of knowledge generation as the dominant power relations involved in colonialism (Harris, 2007). It is important to examine the meaning of colonialism and how it operates in order to get a proper perspective on how colonialism impeded the growth and practice of sustainable development in South Africa. A central goal, therefore, of any discussion on colonialism is to identify the basic assumptions and representations inherent in colonial culture - in the binary of civilization/savagery, and the erasure of indigenous African cultures and religion in the quest for land and accumulation of capital in South Africa.

Fanon (1963) emphasised the role of violence –the power of the gun in propagating colonial power- and Marx (1967) was very eloquent with regard to the aggressive reach of capital and labour as essential underpinnings of colonialism. The experienced materiality of colonialism worldwide and in South Africa in particular is grounded on dispossession and repossession of indigenous and native African lands by the British imperial and colonial powers. Said (1979) described the essence of colonialism in this way:

Underlying social spaces are territories, land, geographical domains, the actual geographical underpinnings of the imperial, and also the cultural contest, to think about distant places, to colonize them, to populate or depopulate them: all of this occurs on, about, or because of land. The actual geographical possession of land is what empire in the final analysis is all about.

Fanon (1963) held that colonialism created a world “divided into compartments”, a “narrow world strewn with prohibitions”, a “world without spaciousness.” He maintained that a close examination of “this system of compartments” would “reveal the lines of force it implies.

Harris (2002) insisted that some of the early settlers in South Africa, like most in the new world, were biologically racist to the core and regarded native Africans as being lazy, degenerate and irredeemable. This attitude of Europeans that native Africans need to be uprooted from their ancestral lands and ‘civilized’ by Europeans were predominant in the 15th century, as abundant evidence in the literature can prove (Seed, 1995; Hulme and Jordanova, 1990; Arneil, 1996). Most of these ideas are as old as the European conquest of colonial societies, even before the Europeans came to South Africa, and this even surfaced in the first European theorising about the rights of Europeans in Latin America (Buckle, 1991) by the Spanish theologian, Francisco de Vitoria, in the 1530s, or by the Dutch legal theorist, Hugo Grotius, a century later.

These values of taking over native land and labour were powerfully and influentially elaborated on by Locke (1947) in his labour theory of property. Locke (1947) held that God’s gift of land to Adam and his posterity acquired value only as labour was expanded on it, and that labour justified individual property rights. Those who did not labour on the land wandered over what Locke (1947) called unassisted natures - land

that yielded little and laid in common. It is against this intellectual background that one can gain a better insight and perspective into the actions and activities of Europeans in South Africa. It has been estimated (Jaffe, 1994) that at least 1 000 Portuguese, 600 Dutch and 400 English and French ships landed on the South African coast between 1500 and 1650. One consequence of these pre-settlement contacts by Europeans was the large-scale plundering of resources and people.

Elphick and Malherbe (1989:18) held that despite the fact that the Khoisan had lived in South Africa for almost 8 000 years before the arrival of the Europeans, it did not stop the Europeans from the colonial process of land deprivation and exploitation, which continued for more than 250 years and sparked many violent conflicts. This process culminated in the Land Act of 1913, which set aside only 8 percent of South Africa's total land area as 'native reserves'. Although some of these land wars - especially those against the Xhosa and Zulu in the 19th century - were very bloody, the fact that the colonists introduced modern guns, horses and the commando system changed the dynamics and fate of the country and its people (black South Africans) for centuries. In due time, the well-disciplined British army made the task of depriving the indigenous inhabitants of land and surface water relatively easy (Elphick, 1985).

Headrick (1981) wrote that the underlying philosophy between Europeans and others was music to the ears of European society at that time. The contrasts seemed obvious: machine power versus animal or human power, progress versus stagnation, science versus superstition. European weaponry and military discipline had made conquest relatively easy. The whole material paraphernalia of European modernity was a tangible yardstick of superiority, and the idea of progress, conceived in these material terms, was in the air as never before all over the world, as the attitude of plundering and pillaging the human and labour resources of South Africans abundantly demonstrated. As the historian Francis (1998) has shown, if civilization and progress came to be equated with technology and material wealth, then a measurable standard had been invented that native people could not achieve. The heyday of colonisation was a period characterised by grandiose attempts at territorial conquests, and colonisers had the capacity, amongst other things, to assimilate the inventions of others, as well as a hunger and desire for wealth and opulence (South Africa, 1997).

Ntsime (2002:69) wrote that, historically speaking, territorial conquests and assimilation of others appear to have contributed towards the ranking of people according to their status in society. The colonial discourse is arguably a world-wide phenomenon, which permeated and stratified many societies in order to preserve and legitimise White and European supremacy and ideology. As an element of such stratification, segregation was thus concealed in order to become an instrument for exerting power and control over others. Class, in particular, was used to create various artificial, but effective, separations of people according to certain values and norms. History shows patterns of class relations emerging from the Western Cape during the colonial era. This occurred as slaves were brought into the Cape, and also when the Khoi people were given a low status, as they provided cheap labour.

The African traditional value system began to be regarded as backward, since it did not conform to conventional Western values and norms. What can be deduced from this era is a practice which culminated in schismatic and often opposing worldviews between different classes and racial groups. Such values and norms were carried into the discourse of the powerful and powerless, which led to the creation of different worldviews and interests for blacks and whites. This is arguably one of the difficulties in present-day South Africa, in that perceptions held by both whites and blacks regarding, for example, sustainable development, are often contradictory (Elphick, 1985).

Khan (1990:23) draws on the example of conservation ideology, and therefore argues that:

The conservation ideology as it has been practiced in South Africa incorporated the Euro-centric focus of colonial society in its tendency to idealise the natural environment with its concentrated desire to preserve it. White privilege, power and possession as extension of the colonial paradigm, formed foundations of the conservation ideology, while the perception of blacks as environmentally destructive, accurately reflected prevailing racial attributes. Similarly, the incorporation of White privilege and power into conservation ideology was a manifestation of the subordinate status of blacks within society.

Khan (1990:28) was of the view that conservation ideology is the brainchild of the sustained colonial and apartheid legacy in South Africa, and remains a cause for

concern. Therefore, South Africa must develop its own framework, which strategically places context as a point of departure in addressing the colonial and apartheid past and its effects, because past experiences have influenced the way in which people perceive the extent to which social and human development issues must be tackled. Furthermore, issues of cultural and ethnic pluralism, which emerged as a result of the legacies of past practices, require urgent attention. As argued by Leys and Mamdani (1997:18-11), colonial powers sought to reproduce two distinct identities through the legal and institutional apparatus: a racial identity amongst citizens and ethnic particularism amongst nations, and race was the factor that separated people.

Such institutionalised systems have successfully reinforced different racial stereotypes between blacks and whites, and ethnic prejudices/xenophobia amongst blacks. To support this argument, Khan (1990:29) provides an interesting analogy of the South African colonial past and how White South Africans, for example, have inherited and influenced the environmental ideologies of the past, which are also part and parcel of Western rationality. This is the crux of what became commonly known as apartheid, the aftermath of the colonisation period.

4.4.1 The enforcement of colonial power and the advent of territorialism in South Africa

Hazlett (1988) was of the opinion that, during the 19th century, a new ethnic conflict emerged - British colonialism versus Boer independence. The Dutch colonists had, in important respects, grown isolated from European society and increasingly viewed themselves as an indigenous people resisting a despised, alien, but militarily superior imperial power. The ancestors of this "Afrikaner nationalism" - as it became known by the late 1800s - resented both British culture and British domination. In a gifted bit of political logic, which did not fully emerge until the 'Afrikaner socialism' ideology developed a century later, the Voortrekkers created a powerful ethos in which their right to self-determination included the freedom to abuse and even enslave Africans. This emigration of a large part of the Afrikaner population from the Cape became known as the Great Trek.

This was an act of resistance and rebellion against British colonialism and, in particular, against new British definitions of the way in which land and labour were to be “owned” and used (Terreblanche, 2002). The Boers were charged with cruelty to their servants and accused of provoking wars with Africans in order to gain cattle and land (Hexham, 1981). As these reports filtered back to Parliament, Britain pressed its Cape authorities to enforce the rule of law without regard to race. This (Hazlet, 1988), in turn, angered the Boers, who further offended the British. The legislative conclusion was to abolish slavery in South Africa during 1834-1838, which prompted the Boers to leave British-controlled territory.

Since Africans were the natives - for example, the Khoisans made up the majority of the population of the country at that time (Elphick, 1985) - no political or economic power was available to them to safely negotiate policies in order to improve their living conditions, as they were left to the vagaries of the greed and avarice of the European powers and settlers in their midst. In this scenario, it is inconceivable to talk about sustainable development in a country engulfed by strife and wanton looting and plunder. The relationship between colonialism, capitalism and dispossession of land was well illustrated by the two European wars, which neglected the plight of ordinary Africans, as settlers were locked in a fight for the accumulation of excess capital.

This development was a local instance of Harvey’s (1989) general point that the pace of time-space compressions in South Africa from 1834 up till the Union of South Africa in 1910 accelerated capital’s “massive, long-term investment in the conquest of space” (Harvey, 1989), and its commodification of nature. The Afrikaners needed land and labour that they could own and control, and they set out on a journey to decimate more than 3 000 Zulus (Harris, 1997).

According to Terreblanche (2002:219), the Great Trek can be regarded as a deliberate attempt by the Boers to recreate, in their new states, the labour patterns, property relations and patriarchal feudal order that had prevailed in the Cape before the arrival of the British. In reality, the Boers wanted a continuation of African exploitation and marginalisation, in order to reinforce their notion of superiority over black Africans. The British (Frederickson, 1981) invited the Boers to remain and even participate in the governmental structure of Natal, on the condition that the Boers agreed that:

There shall not be in the eye of the law any distinction of colour, origin, race, or creed; but that protection of the law, in letter and substance, shall be extended impartially to all alike.

Predictably (Sowell, 1982), the Boers rejected this offer and moved on - beyond the arm of English law - to found their “openly racist states... based on the principle that there could be no equality between blacks and whites, not even equality before the law”.

Harris (1997) postulated that the “division of spoils” geographically separating the British from the Boers, and hence lessening conflict between the two, ended abruptly when diamonds were discovered along the Orange River during 1866-1870. In 1871, the British noted strategically that the boundary between their territory and the Orange Free State -as the Orange River colony had become known - was mistakenly on Boer maps, and that the diamond region was in fact 12 miles inside British borders. Such ignominies at the hands of English military power, and increasing friction caused by vast gold discoveries during the 1880s, exacerbated by the efforts of the ardent imperialist and socialist, Lord Milner, Governor of British South Africa, to dominate the Boers completely, finally led to the Anglo-Boer War of 1898-1902. During an ugly conflict that took the lives of 3 000 Boer troops and placed between 1,800 and 2,600 women and children in British concentration camps, the Afrikaners launched and lost a bloody guerrilla war in order to challenge the British Empire.

The Boers (Van Rensburg et al., 2000; Evans, 1992) were almost vanquished and obliterated from the economic and political landscape of South Africa as a result of the scorched earth policy of the British, led by Lord Roberts, which saw large-scale ransacking of farms, and the first recorded use of concentration camps for women, children and other non-combatants on the African continent. Within three years after the Boer wars (Hazlett, 1988), the British government decided that stabilisation was critical if maximum profits were to be made from the mines, and hence forged an alliance with the Afrikaners to unite the four British colonies into a Union of South Africa.

Terreblanche (2002:247) wrote that the Act of Westminster of 1909 enabled White settlers - both Afrikaners and English speakers - to take over the unified state. An Act of British parliament was therefore the bridgehead that enabled Whites in South Africa to

perpetuate, for 84 years, the power relations of European colonialism, segregation and apartheid. The Africans' limited franchise rights were abolished by Hertzog and Smuts in 1936, and the coloureds' limited franchise rights by the National Party in 1956. The Act of Westminster therefore institutionalised - for all practical purposes- a system of white political domination, and effectively disenfranchised blacks in South Africa.

O'Meara (1996:150) believes that, at the formation of the Union of South Africa in 1909, the African and Afrikaner proletariat were the dominant problems in the country, but the white British government promulgated the Mine and Works Act of 1911 in order to reserve specific jobs for white Afrikaners and other white workers from different parts of Europe, who had been pauperised as a result of the Anglo-Boer wars and the diminishing returns from farms. This job reservation Act, coupled with the Land Act of 1913, uprooted Africans from their farms, and laid the foundation for the mineral and industrial growth of South Africa and the subsequent proletarianisation of the black population, as they became an endless supplier of cheap labour for whites and industries for decades to come.

All the racial laws proletarianised black South Africans for 350 years, and if we can recall the real meaning and definition of sustainable development from chapter three, section 3.2, we will understand that racial conflict and domination were undeniable parts of South African history. Discrimination and racism of the highest order flourished in the country for centuries (Hazlett, 1988). In this respect, we will begin to understand that sustainable development (as defined in section 3.2 of Chapter 3), which involves human-centered development and involvement in development efforts and practices, were totally absent in South Africa, as the vast majority of the Black population was marginalised and excluded from the scheme of things, and their needs and aspirations were parallel to those of the minority white population (O'Meara, 1996: 210).

In this situation, the core principles of sustainable development, which call for respect for generational and intergenerational equity and justice, were betrayed in South Africa due to the development efforts of the colonial era. The seminal words of Muducumura (2002) that sustainable development should provide fairness and opportunity for the entire world's people, not just the privileged few, without further destroying the world's

finite natural resources and carrying capacity (WCED, 1987; Adams, 1996) were a hollow exhortation to the former leaders of South Africa, a country which was consumed by racial nationalism, segregation and apartheid. Most policies of the old regimes in South Africa vividly illustrate that the differences in quality of water, like all resources in South Africa at that time, occurred along racial lines. This helps us to have a better understanding of the colonial and apartheid roots, and the roads that must be travelled in modern South Africa to ensure that the concept of sustainability is adhered to in the provision of water resources in the country.

The economist, Hunt (1964), was adamant that the main issue and problem in South Africa was economic competition on a black and white playing field. He described the crux of apartheid as a special, if grotesque, case of the general dilemma of political economy:

The chief source of colour discrimination is ...to be found in the natural determination to defend economic privilege (the preservation of “customary economic relationship between the races”), non-whites simply happening to be essentially underprivileged groups in South Africa. Certainly colour custom and prejudice have been persistently exploited in efforts to win electoral support for measures which seek to curb the tendency of the profit system to admit the poorer races to better opportunities; but such a casuistic exploitation of custom and prejudice does not make it the prime motive for the exclusion of the competition from the despised or feared colored’s, Asiatic or Africans.

Robinson (1990:5-6) further discusses the three issues of power, politics and ideology. These three variables provided a fertile ground for the government to sustain White domination and supremacy, and were thus instrumental in defining what he calls “territorial expression of the state” and in suppressing any form of opposition from black liberation groups. Blacks were subjected to their own “development” under the guise of the Bantu administration boards, whose main function was to develop the infrastructure of townships and to monitor a resettlement programme. Services and infrastructural provision were compromised severely, although the renewed entrenchment of the “colour bar” in 1926 contributed to the significant disinvestment of foreign shareholders in the gold mines from 1924 to 1932 (see Lipton, 1986:114). As a

result of these racially induced changes in the economy of the country, the earning gap between white and black wages declined from 15:1 to 11.3:1 in 1931 (see Yudelman, 1983:75).

Separate development was thus justified in many different forms and was legalised on the basis of such justifications. It was meant to safeguard white interests, as well as the cultural and racial identity within and amongst whites. The rationale for this separatism was built on the premise that it would accord each racial group opportunities to exercise plural democracies, and therefore arrive at democratic solutions which were purely white or black. Another form of justification was based on promises of economic opportunities and a combination of other integrated developmental actions (South Africa, 1978). However, we know that this was just a ruse by the National Party to subject the black majority to economic and social exploitation and exclusion in the country.

In full support of the notion of a separate racial and cultural existence, General Smuts reiterated that practically this would imply “Blacks being governed by blacks and whites being governed by whites, applying different systems” (South Africa, 1978: 212 and Mckendrick, 1990:21). This decision to separate blacks from whites formed the basis for creating two nations: the one developed and the other underdeveloped. There is clear evidence that no consideration was given to alleviating poverty - income and employment, infrastructure and housing remained the same. In order to bolster the well-being of the whites, the government increased its coverage of state-sponsored social welfare and social assistance programmes. Separate development therefore meant a poor quality of services and infrastructures for blacks (Parnell et al, 2000:108, 114).

When no attention has been paid by the government to the alleviation of poverty, especially amongst the majority of the South African black population, it becomes apparent that sustainable development, either as a concept or in principle, was alien to the former policy makers and the *ancien regime* of the country, as everything in the country, ranging from education to health and employment, was skewed along racial lines, and in this situation, the principle of sustainable development was severely compromised, if not totally neglected, in the scheme of things.

In particular, resources such as clean and healthy water for black Africans were not prioritised during the colonial and apartheid era, as these decisions were collectively dictated and influenced by the politically and ideologically dominant positions of the leaders of the country, which were white supremacy and dominance. This was the ideology underlying the reason why mainly black homelands were deprived of the same kind of facilities enjoyed by their white counterparts in the suburbs.

Territorialism emerged and was geared towards the concept of self-governability. It gave rise to different settlement patterns according to which, after the introduction of the Administrative Boards, South Africa was thus divided into pockets of administrative components, and townships were sub-divided into different zones. In other words, different racial groups were compelled to conform to their own local affairs, governments and destinies. However, they still had to take part in economic activity through the migrant labour system and the provision of cheap labour. Although the concept of local government today is deeply rooted in connotations of participatory democracy, local governance was then based on a desire to exert power and control over others. Territorialism was driven by white Afrikaners' fear of losing power, which was further enhanced and concretised into a legitimate dogma and the very powerful system of apartheid (cited in Ntsime, 2002:156).

4.5 THE RISE AND CONSOLIDATION OF APARTHEID IN SOUTH AFRICA

Certain external factors such as pests, droughts and especially the Anglo-Boer War helped to impoverish predominantly rural Afrikaners, and during the mobilisation of Afrikaner ethnic power in the 1930s and 1940s, the prior conflicts within Afrikaner society and their role in impoverishing a section of Afrikaners were deliberately obfuscated by Afrikaner propagandists, by overemphasising the alleged injustices done to Afrikaners by British imperialism and foreign capitalism, and exaggerating the dangers of *swart oorstroming* ('black swamping'), according to Lowenberg (1989) and Terreblanche (2002).

O'Meara (1996:2) wrote that Afrikaner ideologies succeeded in creating a 'syndrome of victimisation' - i.e. the idea that the existence and interests of the Afrikaner volk were engendered by other population groups. In this way, the National Party succeeded in

mobilising Afrikaner ethnic power by portraying Afrikaners as the wrongful victims of a double onslaught: the first was their exploitation “from above” by British and foreign capitalism, and the second “from below” of Afrikaner culture being swamped by an uncivilised African majority.

In Lowenberg’s (1989) view, growing African urbanisation in the 1940’s fuelled fears of *oorstroming* - it became expedient for Afrikaner ideologies to emphasise the ethnic ‘purity’ of Afrikaners and the imperative of protecting this purity against miscegenation with ostensibly inferior indigenous races. Consequently, as the reverse side of the coin of aggressive Afrikaner nationalism, the National Party ideologies formulated an explicit and insulting version of racism, which crystallised into the policy of apartheid. The National Party regarded the different African ethnic groups as heathen nations to be Christianised and civilised by Afrikaners. White English speakers were portrayed as people with dubious moral standards, permeated by materialistic and egotistic values of capitalism.

It is commonly accepted by many commentators in South African politics (O’Meara, 1996:3; Terreblanche, 2002; Lowenberg, 1989) that each of the six prime ministers (and later state presidents) of the National Party, from 1948 until 1994, misled his supporters with misguided ideologies about Afrikaner victimisation, placing the prospect of unattainable ‘promised lands’ before them, and instilling a comprehensive false consciousness in their minds. A rather peculiar characteristic of many of the National Party’s ideologies was the inclination to evade hard reality and to blame problems and/or deficiencies in the ranks of its supporters (mainly Afrikaners) on some scapegoat -i.e. on evil forces outside the Afrikaner *volk* or society.

Terreblanche (2002:209) believes that the inclination of Afrikaners not to face harsh realities but to ‘escape’ to a make-believe world of self-delusion was not only extremely damaging to them, but to all the people of South Africa. In actual fact, the grand practice of apartheid (Lowenberg, 1989; Hazlett,1988) had enormous costs for South Africa, and the country is still bleeding from the cancerous effects of the evil regime, not only in terms of the immediate costs of maintaining the system, but also in terms of the foregone alternatives, missed opportunities and growth in trade that the sustainable

development of the whole country would have brought to all the races, as opposed to the racial nationalism and purity of the National Party.

This shows that unlike their colonial masters, the Afrikaners went a step further by building a system of racial hierarchy. In so doing, they perfected discrimination and racial domination (Hazlett, 1988). As mentioned by Robinson (1990:112), the essential reason for the establishment of the Union of South Africa with a strong centrist approach was to consolidate white support and policy, which would secure the segregation and political control of black people. Foundations for the local government system were laid through the creation of a union and a constitution which enshrined a unitary state with three tiers of government, namely at the local, provincial and national levels (DEBSA, 2000:9). This era saw the emergence of White Afrikaner power, which was wielded to steer the direction of the country away from the previous, slightly more liberal English colonial domination. It was the culmination of the ideology of separatism which ultimately gave birth to apartheid.

As argued by Tordoff (1984:33), such a move was essential in order to determine development strategies, particularly for the government. In a way, by distancing blacks, Afrikaners were trying to deal with their subordination by the British and, as described by Deborey (1990), it was a sense of desperation and deep psychological fear and resentment which they experienced (Gilliomme, cited in Price and Roseberg, 1980: 11-15). This is further confirmed in a speech by Herzog (cited in Deborey, 1990:574), who said: “We have never been fair to the Native, not on purpose, but because we were forced to”.

However, even Herzog and the leaders of the National Party knew that their policies were merely to exclude, marginalise and pauperise the black population, and in the process, economically empower the mainly white races of South Africa. It has nothing to do with former injustices or suffering in the hands of the British, as the African population suffered more injustices as a result of colonialism and segregation in the hands of the British imperial powers (See Hunt, 1964). In order to enforce separate development, the apartheid policy was adopted as law, and governed South Africa from 1948 until it was dismantled in 1991, when most discriminatory laws were repealed or

scrapped. The classification of people on the basis of racial groups was used to regulate and control people's lives (Hazlett, 1988).

Blacks found themselves at the receiving end of these draconian and inhuman legislations. Allocation of resources and opportunities was fundamentally determined by racial classification, which should therefore remain the primary explanatory variable for patterns of poverty and inequality in South Africa (Lund, cited in Alcock and Craig, 2001:222). Statutory racial discrimination further legitimised the territorial separation of blacks and whites. Territorial separation was thus a comprehensive policy programme designed to create different breeds of a human race, the one black and the other white.

As argued by Robinson (1990:116), placing blacks in the so-called "locations" was a strategy to provide surveillance and territorial administrative control. The introduction of the homeland system was also a justification for the complete independence of various ethnic groups. The apartheid state was thus a continuation of the colonial history of exclusion and marginalisation. The above apartheid-induced practices were also driven by the religious roots of the Afrikaner church (Moodie and Mazrui, cited in Turaki, 1991), which reinforced separatism by the manner in which the government managed social services such as health, welfare and the provision of basic water services. Compulsory segregation in 26 urban areas and 64 black residential areas was proclaimed in terms of the Native Urban Areas Act of 1927. This policy led to the proletarianisation of the black majority in the country for decades, as most had to rely on subsistence agriculture or become migrant labourers in order to survive under these harsh conditions.

Blacks were concentrated in the townships, in order to be closer to their place of work, and those who preferred to go along with "homeland independence" relied on subsistence agricultural farming to support their families. However, this exacerbated the problem of urbanisation and migration between homelands and cities. As a result, laws such as the Group Areas Act of 1996 were enforced in order to hinder such mobility. The effects of such policies were quite diverse and severe. These came to show how the apartheid policy was sustained through racially motivated spending criteria applied to different social groups. Some commentators in South Africa cautioned against this

practice (Savage, 1986:3), as such an indulgence in ideological spending could have a negative impact on the overall economy and its sustainability in the future. The Group Areas Act enriched corporate South Africa and led to massive poverty in the African population, as well as unsustainable development.

This view is corroborated by Dwight (1992:102), who argues that if there is one policy which has been successfully administered by the South African government; it is the policy of apartheid, which represented the grand development and upliftment programme for the white population. Dwight (1992:92) also maintains that:

Even though apartheid and separate development proved ultimately unworkable in terms of “total separation”, the policies through their discriminatory effects succeeded in empowering a majority of Afrikaners in the modern, industrial society.

The deleterious effects of apartheid highlight the magnitude of past problems and the need to adopt a pragmatic approach towards sustainable human development in South Africa, which will address the imperfections of past practices. The exclusive policies of past governments in South Africa emphasises how critical it is for the National Democratic Revolution, led by the African National Congress, to formulate and initiate policies, especially in the areas of accessibility and affordability of water, health and sanitation for the people of South Africa, which will be more inclusive and involve citizen participation, issues that had been neglected during the era of the *ancien regime* in South Africa.

4.5.1 The cost of apartheid for sustainable development in South Africa

The concept of sustainable development, according to Daly (1990), holds that social, economic and environmental factors within human communities must be viewed interactively and systematically for a clear understanding of the extent of sustainability or lack of it in a society or country. In this respect, it is critical for us to look at the corrosive effects of apartheid on the country, as evidence abounds in the literature (Jones and Muller, 1992; Lipton, 1985; Lundahl, 1992; Kantor, 1993) with regard to the impact of apartheid on the sustainable development of a country, especially with regard to the issue of the accessibility and affordability of water resources for domestic use and

in poverty alleviation, as the apartheid government allocated resources historically solely on racial grounds. In this regard, apartheid laid the foundation for unsustainable use of water in the country.

O'Meara's (1996) brilliant treatise on apartheid held that South Africa's apartheid system was enormously costly and ultimately collapsed because the inefficiencies created by apartheid policies escalated as the country's structure changed. Labour market regulation and the industrial decentralisation policy inhibited efficient resource utilization, especially as the manufacturing sector became more dominant. Apartheid educational policies generated skill shortages. A mercantilistic development strategy distorted trade patterns, exacerbated dependence on foreign capital inflows, and created chronic balance of payments difficulties. The apartheid era undermined the human and material potential of the majority of South Africans (Africans) to make a meaningful impact and contribute to and participate in the resources available in the country of their birth, and it made it difficult for the issue of sustainable development, which is founded on the principle of a much more inclusive and caring society, to take place in South Africa.

Lingle (1989) was of the view that the administrative and defence costs of implementing apartheid were onerous and on the increase. These internal weaknesses enhanced South Africa's vulnerability to capital flight, changes in world prices and business cycle conditions, and political changes abroad, collapse of the Soviet Union and pressure from Washington and London – ultimately, apartheid was abandoned because its costs came to exceed its benefits to white South Africans.

From the onset, it has been known by informed South Africans that the practical implementation of apartheid was very sensitive to the costs and benefits of apartheid to white South Africans (Lipton, 1989; Williams, 1989) and the *ancien regime* of apartheid were very mindful of the catastrophe that apartheid was leading to before they decided to retrench the racially based system in 1991, when most of the racially based laws were repealed.

4.5.2 Influx control and sustainable development in South Africa

The core principle of apartheid comprised restrictions on the rights of blacks to own or occupy property in designated 'white' areas, as well as regulations preventing direct labour market competition between blacks and whites (Lowenberg, 1989). From the onset, white labour and farming interests, brought together in the Pact government of 1924, sought influx control and job reservation policies. This alliance of Afrikaner nationalists and white Labourites formed the political basis for subsequent segregationist and apartheid governments, as they drastically improved on earlier racist policies to result in the grand theory that was apartheid (Lundahl, 1992).

Many commentators (Jones and Muller, 1992; O'Meara, 1996) held that White farmers benefited from legislations restricting the geographical and occupational mobility of black labour, because these restrictions increased the supply of rural workers, thus lowering agricultural wages. White workers also benefited from the reduced flow of black workers to the industrial sector, because most of the white workers at that time were unskilled or semi-skilled, and competed directly with blacks for jobs. Although clearly advantageous to white labour and agriculture, influx control and job reservation laws were against the sustainable growth and development of the South African economy, as this hindered the allocation of scarce resources to the highest valued users. This is precisely due to the fact that economic realities undermined job reservation policies from their inception (Jones and Muller, 1992), as it was apparent to the manufacturing sector of the economy that these policies were retrogressive and impeded economic growth and sustainable development.

Evidence abounds in the literature (Lowenberg, 1989; Jones and Muller, 1992; O'Meara, 1996) that manufacturing employers opposed the migrant labour system created by influx control legislation, because it retarded the acquisition of skills by increasing the costs of training and turnover of black workers. It has to be noted that their opposition was not based on the principles of social justice or equality of the races, but they nevertheless opposed the principle, because it impeded the economic growth of the country and subsequently, its sustainable growth. Influx control also resulted in a wastage of skills by obstructing the movement of trained labour from one urban area to another.

The brilliant anti-apartheid activist, William Hunt (1964), was unequivocal in his belief that apartheid was against economic growth, and inherently inhibited the natural growth of the South African economy, which would have developed exceedingly well in a liberalised labour economy without the racial restrictions of the apartheid policy and laws. What he was saying (Hunt, 1964) is that apartheid deprived companies in South Africa of the opportunity to retain trained workers and restricted them in the labour market, as they were forced to hire expensive white employees (which they might not be able to afford sometimes) instead of cheap black workers, and retaining the workers was also a big problem, as the influx control made it impossible for firms to retain black workers. This process made economic growth, which is a prerequisite for sustainable development, very difficult for the country. This lack of generational equity, especially with regard to making an honest living from their labour, affected the black workers and negated the concept of sustainable development.

It is very critical for us to understand that despite the ambiguities in the concept of sustainable development; almost all definitions are based on the central notion of equilibrium and maintaining social cohesion and stability. They are fundamental aspects of sustainable development, as these virtues were totally absent during the period of influx control in apartheid South Africa, and were hence detrimental to the issue of sustainable development. Sustainable development involved maintaining stability among the forces liable to led to degradation in society, and the apartheid government did not achieve social cohesion, security or stability, as the townships were always in a state of turmoil.

4.5.3 Bantu education and sustainable development in South Africa

Lipton (1989) held that the apartheid policy required separate educational systems for black and whites. Black education and training was deliberately designed to be inferior to that of whites, with the intention of securing future job preferences for whites in apartheid South Africa. However, this policy inevitably created skill bottlenecks. Lipton (1989) is supported by Lowenberg (1989), who held that until the late 1960s, tendencies towards rising costs of skilled labour could be overcome by government training programmes for unskilled whites, and by “floating” the job colour bar within the

periodic reclassification of traditionally white jobs, this allowed blacks to perform the less skilled aspects of these jobs while whites moved upwards.

Some analysts (Lundahl, 1992; Lipton, 1985) also held that by the beginning of the 1970s, the methods were no longer adequate due to the growing demand for skilled labour in manufacturing, combined with the virtually full employment of whites in white-collar and service sector jobs. Even after the abolition of the formal job colour bar in 1981, the scale and costs of training required to permit the movement of blacks into skilled jobs was enormous, leading employers to pressure the government to provide improved national education for blacks.

The ramifications and effects of Bantu educational policies on the crippling skills shortage that South Africa is facing today are enormous, and its full effects in constituting itself as a cog in South Africa's march towards sustainable development will be difficult to quantify in generations to come. Pressures for improved education for blacks and in the area of budgets were reinforced by the Soweto riots of 1976 (which started as a protest against 'Bantu education', and because of the revolt, state expenditure on black education rose sharply thereafter) (Lipton, 1989).

The apartheid Bantu educational policy did not only cost black South Africans dearly, but also the whole country, which suffered immensely because the massive latent human resources that would have been available to the South African economy were left dormant and unutilised in the black population, and the country is presently still suffering the catastrophic effects of the Bantu educational system. It was principally designed to produce low-skilled and docile African labour. Even when the economy expanded and almost full job security was afforded the white race, the economy still remained in a limbo, and the government was pressured by the manufacturing industries to invest in the education of Africans in the 1980s (Lowenberg, 1989).

Bantu education deprived black South Africans of the opportunity of improving their lives, which invariably would have given millions of black families better accessibility and affordability in the efficient use of water from municipal councils, which would have gone a long way in helping to solve the ravaging poverty that affected the majority of the black population during apartheid. In essence, education would have helped in

the sustainable development of the human population of the country, as improved access to water services would have resulted in a healthier lifestyle and subsequent improvements in sanitation and the sustainable development of the country.

Education plays a critical role in shaping lifestyle aspirations and expectations, and providing individuals with skills, knowledge and values related to the modern requirements of society and industries (Ansell, cited in Redclift and Benton, 1994), and this critical role of education was denied to the majority of the population of South Africa during the apartheid regime. For more information on the relationship between the human development and sustainable development of a country, see Chapter 3, section 3:2.

4.5.4 The industrial decentralisation policy and sustainable development in South Africa

It was the view of many (O'Meara, 1996; Jones and Muller, 1992; Lundahl, 1992) that a natural by-product of the contradiction embedded in the apartheid ideology lies in the huge costs incurred by apartheid authorities in their policy of decentralisation and its effects on the sustainable development of the country. In order to stem the integration of blacks into white urban society, a process that the increasing capital- and skill-intensity of manufacturing threatened to escalate, the government adopted a policy of decentralising the manufacturing industry to selected "growth points" on the borders of the black reserves or homelands. In many instances, decentralisation was achieved coercively by prescribing maximum ratios of black to white employers for firms choosing to remain in white urban areas (Lipton, 1985).

The costs of decentralisation were, however, significant. Lack of infrastructure in the black rural areas was compounded by uncertainty regarding the political stability of the homelands. Decentralising firms had considerable difficulty persuading urban workers, both white and black, to relocate to undeveloped areas. Moreover, the policy was undermined by the fact that one of the incentives offered to decentralising industries was cheap labour, which encouraged capital-intensive technologies and reduced the demand for the unskilled black labour that was plentiful in the homelands (Lipton, 1989). The decentralisation policy was blamed for preventing the creation of "tens of

thousands” of jobs for blacks in the metropolitan areas (Jones and Muller, 1992; Lundahl, 1992).

Skewed educational policies and lack of infrastructure, especially in the homelands, caused not only black South Africans to lose in terms of employment and improved standards of housing, water and sanitation, but the firms that managed the South African economy would also have expanded beyond their wildest dreams if everyone in the country was involved in its socio-economic development. Because the homelands were deficient in terms of infrastructures and lacked skilled personnel to manage the companies, it was a foregone opportunity which would have helped in the economic growth and sustainable development of the country. The decentralisation policy was a disaster, despite the tax incentives of the apartheid government, as it proved that one cannot fight against the natural law of the free market and individual tastes and preferences (Lundahl, 1992).

4.5.5 Defence costs of apartheid and its impact on sustainable development in South Africa

There is a consensus amongst many experts on apartheid (O’Meara, 1996; Lowenberg, 1989; Lipton, 1989; Jones and Muller, 1992) that the internal contradictions contributed immensely towards the demise of apartheid in South Africa. The internal dynamics of apartheid were largely responsible for the eventual demise of apartheid, although the popular opinion in the literature suggests the impact of global sanctions. Ultimately, the point remains that apartheid would have eventually crumbled on its own with or without sanctions, but sanctions accelerated the demise of apartheid (Lowenberg, 1989).

One of the contradictions inherent in the apartheid policy was that the rising costs of defending apartheid were outweighing the benefits to white South Africans, and this was very critical in the decision taken by the leaders of the National Party in the late 1990s to scrap apartheid. Maintaining the apartheid system required an enormous administrative infrastructure. Apartheid necessitated separate bureaucracies to regulate economic and social activities in White, African, Indian and Coloured communities, which resulted in a considerable duplication of functions and wastage of resources. For

example, no fewer than 19 separate education departments existed under the apartheid regime (*Economist*, September 9, 1995).

A sizeable proportion of state spending went on security and defence. By 1983, the defence bill had reached 14% of the national government's budget or about 4% of the GNP (Lipton, 1985). The administrative and security requirements of apartheid exacerbated the scarcity of capital by ensuring that the state sector absorbed a large percentage of investment. The state's share of the gross fixed investment rose from 35% in 1950 to 53% in 1979 (Lipton, 1989). Another example of the ineptitude and waste that characterised apartheid was the Group Areas Act of 1950. Implementing and policing this segregationist law not only required considerable resources, but necessitated government subsidies of an inefficiently routed bus system to get black workers to factories located in designated white areas.

Kendall and Louw (1987) held that in order to fund apartheid institutions, while at the same time increasing social spending on blacks in the hope of forestalling urban unrest, the South African government implemented steeply progressive taxes, falling mostly on the white population. In 1987, the South African personal income tax and corporate tax systems were only slightly less progressive than those of Sweden, with whites paying 90% of income tax and an even higher percentage of corporate tax. Overall, 75% of national tax revenue was paid by whites.

Lipton (1985) insisted that the White parliament thoroughly scrutinised the activities and expenditures of state bureaucracies, and much pressure was brought to bear on the government to substitute cheaper blacks for more expensive white labour in state employment, train more blacks, and stabilise the black labour force in urban areas. Although these measures were largely cost-saving devices, they served to undermine the very basis of apartheid within the state sector, itself a bastion of racial discrimination.

Many scholars (Jones and Muller, 1992; Lipton, 1985; Lundahl, 1992) are of the view that declining levels of black employment during the mid-1970s recession produced labour unrest, which together with South Africa's increased vulnerability to African nationalism after the 1974 withdrawal of Portugal from Angola and Mozambique, laid

the foundations for the Soweto riots of 1976. The independence of the former Portuguese colonies and the Soweto riots made the South African security establishments become brutal and more repressive, and they consequently invested more in defence and security, and unnerved foreign and domestic investors about the durability and sustainability of the system in the long-run .

In September 1984, the black townships erupted again, partly precipitated by macroeconomic conditions. According to a survey by Grundy (1991), unemployment increased from 30.6% to 37% of the economically active population between 1980 and 1985 (Grundy, 1991). This time, the government had great difficulty containing the unrest and resorted to a state of emergency, which was declared in July 1985 and renewed in 1986. The country lost international credibility because mindless sums of money, which would have been used to improve the living conditions of the black population and thereby quell their anger and frustration, were spent by the apartheid government on arms and ammunition, in order to enable them to control the unrest and rebellion in black townships.

The key to understanding the impact of the administrative, policing and defence costs of apartheid on sustainable development in South Africa is to remember the argument of Hag (1995), who said that:

It matters little whether the paradigm is label "sustainable human development" or "sustainable development" or simply "human development.

What is important is to understand that the essence of the human development paradigm is that everyone should have equal access to development opportunities, now and in the future. Unfortunately, in the frenzy to defend apartheid at all costs, most of the black population did not have the opportunity for real involvement in the socio-economic life of the country. The changed perceptions of South Africa in the West, due in part to the difficulty encountered by the South African government in coping with civil unrest and riots, despite their superior firepower and military intelligence, led to an intensification of anti-apartheid sanctions and disinvestment in the mid-1980s (O'Meara, 1996).

What can be deduced from this context, especially as it relates to the sustainable development of South Africa, is that the apartheid government spent a lot of resources

on countering the threats, both domestic and international, to apartheid, so much so that inadequate attention was paid to evolving a just and equitable society with equal access and opportunity for its citizens, and the absence of sustainable development in the country, as evidenced by the scorching poverty within the black population, was the root cause of the unrest and riots in the townships and its concomitant effects. When due attention is paid to the influence of social cohesion and stability on maintaining sustainable development in a country, it becomes abundantly clear to us that societies in transition and in which most institutions are in a state of flux, such as the apartheid state of South Africa, will find it difficult to make meaningful progress towards sustainable development.

4.5.6 The cumulative impact of apartheid on sustainable development in South Africa

Sen made it abundantly clear that individual freedom (defined as the capacity to direct one's own life) is both an end and a means to development. "Greater freedom", writes Sen (1999), "enhances the ability of people to help themselves and also to influence the world, and these matters are central to the process of development." Individuals are "agents", and an agent is "someone who acts in terms of her own values and objectives, whether or not we assess them in terms of some external criteria as well."

Implicit in Sen's (1999) views is the fact that since the period of colonialism, segregation and apartheid, the African people have not been afforded economic, social, cultural and political freedom in the country, and this is actually the principal reason why it is unfathomable to talk about real human development in South Africa, let alone referring to the issue of sustainable development, because it did not exist and was never in the minds, ideas and policies of the leaders of the apartheid regime in South Africa. There can be no freedom where people are dispossessed and uprooted from their ancestral lands, marginalised in terms of their life choices, and excluded from the political, economic, military and material resources of their nation. This can never be freedom or even development. It is man's inhumanity towards man.

Sustainable development was not present in apartheid South Africa, because if one takes a closer look at Ch 2, Sect 2.13, one realises the validity of Maslow's (1954)

argument concerning individuals being able to exercise the right to develop themselves to the best of their ability in order for sustainable development to be relevant. Since the majority of South Africans were denied access to resources in apartheid South Africa, the racial policies of apartheid invariably influenced the housing of blacks in overcrowded townships and rural areas, where access to and affordability of decent water for health and sanitation purposes were not possible at that time. In this situation, apartheid closed down the individual space and freedom for human development and growth, thereby inhibiting the concept of sustainable development in the country.

Although the apartheid regime did develop the Afrikaner race and involved them in the material benefits of the country, all their good policies were to the detriment of the majority of the African population, as the apartheid policy was crude, unfair and against the principal of natural justice, equity and fair play. The white South African government abdicated political power because of a recognition that apartheid policies were becoming too costly to maintain. The intrinsic weaknesses of the South African economy and society, which ultimately made apartheid unaffordable, were, to borrow Lipton's (1985) term, 'self-inflicted wounds'. The main costs associated with apartheid were self-imposed as a consequence of misguided development strategies on the part of the National Party government. Although external events (Lundahl, 1992) such as sanctions contributed to the slow growth of the South African economy, "even more significant was the fact that the economy had undergone changes which had turned the apartheid system, once an economic 'asset' for the white population, into a liability".

Kendall and Louw (1987) argued that the inefficient apartheid system, particularly the import substitution strategy, ensured that South Africa's productivity and growth performance during the apartheid era matched more closely those of Latin America than the Asian "newly industrialising countries" that South Africa otherwise might have been in a position to emulate. Moll (1991) finds that South Africa's GDP growth in the post-World War II period was consistently mediocre compared to a sample of 20 middle-income developing countries. He also insisted that even the boom years of the 1960s produced growth rates well below those of the fastest growing developing countries.

The transformation of South Africa into a capital-exporting country, which resulted from the drastic decline in long-term private capital inflows since 1979, often forced the authorities to implement contractionary monetary and fiscal policies (Jones and Muler, 1992). Recessionary conditions, whether induced by domestic stabilisation policies or by global downturns, inevitably produced urban unrest in South Africa's volatile black townships. Political instability led to further capital flight and declining levels of foreign investment, which were particularly damaging given the low level of domestic savings and the perennial need to finance current deficits. South Africa was caught in a vicious cycle in which political instability contributed to net capital outflows and shortages of foreign exchange, necessitating contractionary macroeconomic policies, which caused more political instability.

Kantor (1993) insisted that by the 1970s, apartheid had begun to impose substantial costs in terms of forfeited opportunities for economic growth and creation of new wealth, and the bearers of these costs came to comprise a majority of the white electorate. Certainly, the National Party government could have clung to power indefinitely, given the superior military and police technology of the White state, relative to its opponents. However, the costs of doing so would have been ever-eroding White living standards. The government essentially initiated political reform to relieve the economic burden of political instability.

It has to be noted that, based on the courage, vision and foresight of former President FW de Klerk and the overwhelming white population that voted in a referendum to support political pluralism and bring an end to minority rule, South Africa was saved from self-annihilation, as the ANC may not have won a civil war against the state. It is the researcher's conviction that insufficient credit in post-apartheid South African politics has been given to this act of patriotism and hope. The apartheid regime realised the unsustainability of its actions in the distribution of resources such as water and abandoned it, and the present ANC government also needs to realise the unsustainability of rabid Black Nationalism in a multi-cultural, multi-religious and multi-racial society such as South Africa.

Resendorff (1996) argues that the cost to the White regime of continuing to protect the apartheid system from attack came to exceed the costs of redistribution that would

inevitably have followed a hand-over of power to a black government. Part of the reason for this change was a decline in White income relative to black income, which had occurred between 1970 and 1990, and which meant that Whites simply had less to lose from redistribution under majority rule. Rosendorff (1966) notes that South Africa's democratic transition occurred at exactly the point in history when the ratio of white to black per capita and the Gini coefficient had fallen to unprecedented low levels.

It is abundantly clear that during the period of colonialism, segregation and apartheid, South Africa was always caught in a vicious cycle. The apartheid imbroglio made it difficult to make sufficient arrangements for the sustainable development of the country, as irreplaceable resources such as water in the black homelands were not considered to be priorities by the apartheid government, and the results are evidenced in the current level of disparities in the distribution of amenities in South Africa. The huge disparity in the quality and quantity of water available to both rural and urban South Africa is a legacy of the racial policies of the government of that time.

4.6 SUSTAINABLE DEVELOPMENT IN POST-APARTHEID SOUTH AFRICA

Africa's political independence has not led to economic independence (Mbeki, 1998; Hadland and Rantao, 1999; Corrigan, 1999; Mulemfo, 2000), and within this dissonance lies Mbeki's vision of an African renaissance that seeks its roots in pre-colonial African societies that were characterised by a collective spirit and a willingness to engage in mutual help. This same scenario replicates itself in modern South Africa, where economic apartheid persists, despite the demise of political apartheid. Hunt and Lascaris (1998) have espoused the fact that the social, economic and political injustices of the lengthy apartheid regime have left lasting impressions on the people, and everyone dreams of a better life - each and everyone in his or her own way. Lundahl and Petersson (2004) are of the view that the South African dream is far from being one and the same. The various groups, social classes and cultures in the rainbow nation have their own dreams. Notwithstanding, almost everyone shares the vision of a society founded on democratic principles with equal opportunities for everyone, and in which these groups can live in harmony.

Lipton and Simkins (1993) believed that since the demise of political apartheid in the 1990's, neoliberal South African economists have been addressing the concepts of redistribution and affirmative action with increasing urgency. They stress efficiency, stability and incentives, which they argue are necessary for economic growth. Throughout the liberal literature in South Africa is the call for more investment and measures to restore investor confidence through the stabilisation of property rights, enforcement of contracts and removal of uncertainties. The ANC's acceleration of neoliberal economic restructuring after 1994 has become an instrument –conceptualised as predatory liberalism - for empowering (ANC) party elites' hold on state power, and for simultaneously marginalising and disempowering opposition to this neoliberal model from within the alliance and society in general. It is the view of Andreasson (2003) that 'predatory liberalism' comprises a 'more generic cocktail of market capitalism, state authority and oligarch power that will constitute a new defining element of the global order, and South Africa bought these illusions hook, line and sinker'.

It is clear that in post-apartheid South Africa, sustainable development has not taken place, despite the demise of political apartheid in the country, as economic apartheid still persists in South Africa and haunts black people more, and the problem is exacerbated by the neo-liberal policy of the ANC-led government. A typical example of the effects of this kind of policy with regard to water projects is the fact that the World Bank has advocated the provision of these services only to those who can afford to pay, without regard for the positive effect of improved water standards upon public health, labour productivity, employment, and racial and class integration in a country such as South Africa, with a conflicting and divided history.

Since poor people often cannot pay - at free market rates - the World Bank's solution was to deny people access to water-borne sanitation and give them pit-latrines instead (Bond, 1999). This was in blatant disregard for the socio-economic reasons such as centuries of social and economic exclusion and marginalization, which are the root causes of acute poverty of the majority of the black population in South Africa. It is indeed this acute poverty that makes the poorest of the poor in South Africa unable to get access to a critical resource such as water, which is important to maintaining a healthy lifestyle. Despite the promises of neoliberal economists, the Growth, Employment and Redistribution Programme (GEAR) and other neoliberal policies have

done little to improve the performance of the South African economy, especially as far as blacks are concerned.

In fact, the poorest 40 percent of black households experienced a decline in income of 20 percent during this period, and inequality is increasing in South Africa (Barrell, 2000). In 2000, the average disposable income per black person was only 14.9 percent of that of whites (Van Wyk, 2001). Similarly, in 2006, the official black unemployment rate was 46 percent, but the real figure is around 60 percent, depending on who is doing the counting (UNDP, 2006). In general, the neoliberal policies promoted by the World Bank and adopted by the ANC-led government of Thabo Mbeki have helped black elites who have political ties and connections to the ruling party, but have done little for the black majority, while largely preserving the status quo (of economic apartheid). As Bond (2000) observed,

Aside perhaps from ...Democratic Alliance Party, there was probably no more effective advocates for the interests of rich white South Africans in post-apartheid South Africa than the quiet, smooth bureaucrats of the World Bank.

Many commentators on the South African economy (Lundahl and Petersson, 2004; Hunt and Lascaris, 1998) believe that the blame for the pervasive nature of poverty and unemployment in post-apartheid South Africa should be placed on the ANC, which (1) stuck firmly with GEAR despite its failure to meet almost all of its targets (most notably the growth of GDP, investment, exports, and the protection of the value of the Rand), (2) engaged in draconian fiscal conservatism and cut social programmes, thereby hurting the poor, while bending over backwards to repay apartheid-era debts, (3) maintained a regressive value added tax on basic goods, while giving tax breaks to the rich, (4) facilitated capital flight and exchange rate instability through financial market liberalisation, (5) allowed the Reserve Bank to keep interest rates high in order to safeguard financial markets, without regard for the effects on employment, and (6) reduced tariffs rapidly, resulting in massive de-industrialisation and job losses,(7) allowed a massive lack of service delivery to occur, exacerbated by severe cronyism and affirmative action, which has resulted in South Africa not putting its best foot forward.

A whole set of groups (trade unions, academics, unallied workers, opposition parties), including the alliance partners of the ANC during the liberation struggle and millions of

unemployed black South Africans, are exasperated, and are now openly critical of the pace of redistribution and reform in the new and modern South Africa. The repercussions of widespread disaffection within the black population were even felt by the former President Thabo Mbeki (2002), when he insisted that:

Our movement and its policies are also under sustained attack from domestic and foreign left sectarian factions that claim to be representatives of the workers and the poor of our country, they accuse our movement of having abandoned the working people, saying that we have adopted and are implementing neo-liberal policies...They are therefore contemptuous of the goals that our national liberation movement has pursued since its foundation.

Madisha (2005) was adamant that “South Africa exhibits that most bitter of social outcomes: destitution amid plenty’ (Bond, 2002; Lundahl and Petersson, 2004). It is evident that even in the new South Africa, sustainable development is still an illusion, because only a few South Africans are able to enjoy the resources of the country in terms of job and educational opportunities, and even provision of clean and healthy water facilities is still a work in progress. Destitution amidst plenty (Madisha, 2005) is an apt description of the economic conditions apparent in post-apartheid South Africa, and the concept of sustainable development is still a dream. The ANC-led government is either reluctant or incapable of reining in on apartheid era capitalists, who are still controlling the economy and undermining all efforts to forge a more inclusive country and integrated society.

It is the view of Andreasson (2006) that while neo-liberal reforms may be intended to enhance the overall capacity of government, as the ANC government was duped into believing in the early 1990’s, they in fact produce rather different outcomes in divided societies such as South Africa, characterised by generations of uneven development, segregation and exclusion - what emerges is the ‘generic cocktail’ of market capitalism, state authority and oligarchic power, as mentioned earlier in this study. There was an insufficient understanding of the level of poverty and paucity of skills existing in the black population when the economy opened up so quickly. The ANC did not have a sustainable economic policy to provide employment and alleviate poverty, outside of the welfare grant. Instead of improving the institutional, regulative and macro-economic environment to comprehensively strengthen government capacity, neo-liberal reforms

strengthened key decision-making elites within the government, while at the same time weakening and marginalising other actors who might be critical of government policies.

This sort of neo-liberal statecraft is ‘predatory’ on democratic governance and poor people, as argued vehemently by Andreasson (2003), because it marginalises the political opposition and pluralism that characterises a consolidating and developing country such as South Africa. Ultimately, neo-liberal statecraft is also predatory on the people who are already and desperately poor, because it constitutes a continuation of what the German revolutionary leader Rosa Luxemburg (cited in Andreasson, 2006: 45) and contemporary scholars such as Harvey (2003) have described as ‘accumulation by dispossession’. This is a historical process in the capitalist mode of production, whereby extending market imperatives locally and then globally produces an increasing concentration of wealth for the relatively few, with increasing marginalisation for the majority who are unable to take part in the great wealth creation of which capitalism has always been capable (Andreasson, 2003, 2006).

Many South African economists (Michie and Padayachee, 1998; Weeks, 1999; Natrass, 1996; Pillay, 2000) believe that an example of the effects of neo-liberal policies on the already poor in South Africa is the Growth, Employment and Redistribution Programme (GEAR). When it was unveiled in June 1996, its key targets were the creation of 409,000 jobs annually and an inflation rate of below 10 percent; an average annual non-gold export growth of 8.4 percent; a rise in gross domestic savings from 18 percent to nearly 22 percent of the Gross Domestic Product (GDP); an increased gross domestic investment from 20 percent to nearly 26 percent of the GDP in 2000, with an average annual real private investment growth rate of 11.7 percent; an inflow of foreign investment equivalent to almost 4 percent of the GDP; and a reduction of the budget deficit to 3 percent of the GDP. There was a fervent belief within the government that such economic growth and job creation would help South Africa transcend its legacy of uneven development and divisions.

A host of academics (Michie and Padayachee, 1998; Weeks, 1999; Natrass, 1996) believe that it is unfathomable why the ANC did not apply reverse gears when it became self-evident by the early 2000s that GEAR had failed to deliver on its projections in all areas except lowered inflation, budget deficit reduction and export

targets. With regard to its 'success' in terms of inflation policies, it is not clear whether or not pursuing low inflation at the cost of increasing social hardship is a productive long-term strategy in a developing country such as South Africa.

Critics of interest rate cuts, such as Bond (2004a), were adamant that the consistent interest rate hikes of the Reserve Bank will and have made it extremely difficult for small-scale industries to make ends meet, as they are always battling to repay loans borrowed from banks at exorbitant rates. Thus, the critical goal of stimulating the economy through small businesses will be lost to the South African economy as a result of the tight monetary squeeze of the Reserve Bank, which in the researcher's view is counter-productive, narrow-minded and naïve on the part of the government, as it robs millions of South Africans of the opportunity of making a living from small businesses. The government has been unable to invest extensively in housing and developmental projects that would perhaps correct the current imbalance between the urban residences of black and whites, as well as the vast differences in the supply and use of water and sanitation within residential areas in South Africa.

Critics of the GEAR policy (Michie and Padayachee, 1998; Weeks, 1999; Natrass, 1996; Bond, 2004a) insist that the deleterious effects of GEAR can be seen in the fact that official unemployment increased from 16 to 30.5 per cent between 1995 and 2002 and is still on the rise. GEAR has failed to attract vital investments in productive assets, and policies supposed to create hundreds of thousands of new jobs have instead resulted in the official shedding of many jobs. More than 500,000 jobs have been lost since 1996.

The above discussion lends credence to the predatory liberalism doctrine of the German intellectual Luxemburg (cited in Andreasson, 2006), when he spoke of the tendency of globalisation and unregulated capitalism to render people poorer than they are already, as a result of the increasing effects of globalisation and rampant liberalisation of markets and resources on the lives of the poor. The government's persistence with its predatory liberalism, despite the fact that it has not resulted in more jobs and a reduction in inequality is mind-boggling. In essence, sustainable development has not evolved in the new South Africa.

We are now witnessing huge disparities within the black population (current inequalities are no longer based on race alone, but also on class) - some blacks are contributing to the economy, and more than half of the country is still suffering as a result of poverty, crime or dependence on government grants and welfare. This is indeed a veritable recipe for societal implosion if left unattended to. The benefits of globalisation cannot be overemphasised, but it is very debatable as to whether or not the effects of the massive globalisation of trade and investments have helped the poorest of the poor in South Africa.

Despite the huge economic strides which the ANC government, led by Thabo Mbeki, has made by leading South Africa through its longest periods of uninterrupted economic growth and development in its modern history, and even increasing the number of people on welfare from around 3 million in 1995 to 12 million in 2004, many people (Bond, 2000; Terreblanche, 2002) still doubt the sustainability of the present government's ultra-liberal economic policy and confidence in the use of welfare grant to alleviate poverty.

Terreblanche (2002) was worried that there is a strong tendency and sentiment that permeates both the government of South Africa, business circles and the media at large that economic growth results in improved social welfare and well-being. It often happens that when GDP grows by, say, 3 per cent, the claim is made that 'welfare has increased by 3 per cent'. Rubner's (1970) warning is also applicable to South Africa, when he says that:

Those inclined to equate economic growth and social welfare is guilty of 'growthmanship', ie, the tendency to regard economic growth as the highest purpose of economic activity.

The researcher agrees with Terreblanche (2002), because economic growth can occur without the equitable distribution of resources. Even world poverty could be reduced if there is any justice or equity in the distribution of resources in the world. It is the penury that exists with opulence that made Madisha (2005) lament that the picture of post-apartheid South Africa is 'destitution amidst plenty'.

Elliot (1999) warns against this fetish as follows:

By making the rate of growth of income per head a fetish or a talisman, we are in danger of making it also the ultimate criterion by which everything else is judged...To evaluate every part of society by its contribution to increasing the rate of growth of real income per head is to confuse means with ends. One may ask oneself whether economic growth and economic development are not becoming a new golden calf. The hysterical fascination that the rate of growth of income per head exerts...is infectious...There is a danger that economic growth...is becoming increasingly regarded as the end of economic activity (cited in Munby, 1966).

Streeten (1966) claims that the emphasis usually placed on economic growth is not justified 'without sufficiently looking at the *content* of growth, its *quality* and *composition*, the kind of things we should do with the growing production, the conditions in which growth occurs, and its non-economic costs' (cited in Henderson, 1996).

The contradictions inherent in the present economic system in South Africa, where many are suffering in the midst of 'growth', can be seen in the following illustration: South Africa's GDP per capita was \$3 160 in 1999, making it one of the wealthiest countries in Africa. While South Africa's population comprises only 6 per cent of that of sub-Saharan Africa, its GDP is 42 per cent of that of sub-Saharan Africa (UNDP, 2000) .These averages mean little when we take into account the scope of inequality in the distribution of income in both South Africa and sub-Saharan Africa (Thurow, 1996).

The United Nations Development Programme (UNDP, 1999) has created a Human Development Index by adding a certain number of socio-demographic indicators (including life expectancy, percentage of children in full-time education, and literacy) to income indicators. In 1999, 'white' South Africa was ranked in 19th position (out of 173 countries), close to Germany, Italy and Denmark. By contrast, 'black' South Africa was ranked much lower and South Africa as a whole was in 110th position (see Cling, 2001).

In 2002, South Africa was ranked in 107th position (out of 173 countries) - 19 positions lower than in 1990 (out of 135 countries), and 15 positions lower than in 1975 (out of

100 countries) (UNDP, 2002). There were differences in the provision of water resources, especially between the rural and urban areas of the country. The inability of the government, through the municipalities, to eradicate this inequality means that sustainable development in the new and modern South Africa is not being achieved, as the government seems incapable or unwilling to adopt a more proactive policy in order to address this huge imbalance.

As the government becomes more liberal in its economic policies, and partially privatises key sectors of the economy such as water, it becomes imperative to look at the effect of these policies on the mainly black population, which does not have the wherewithal to afford the costs of clean water in the country. Even without the privatisation of water utilities, the local municipalities in most of the rural townships of South Africa seem to be overwhelmed and unable to deliver such crucial resources to the people in order for sustainable development to take a meaningful foothold in the country, and this is why it is imperative to look at an alternative mode of evolving a more humane and inclusive society, where most of the citizens will make a meaningful contribution and participate in the resources available in the country.

4.7 NEOLIBERALISM, WATER AND SUSTAINABLE DEVELOPMENT IN POST-APARTHEID SOUTH AFRICA

The privatisation of water services in most of urban South Africa is not privatisation in the real sense of a change of ownership (Narsiah, 2008; Dean, 2003). It involves the introduction of 'modern techniques' such as marginal cost accounting. This system does not provide for sustainable development in the use of water in urban South Africa, and even the rural areas that were not privatised lack the requisite skills and know-how to manage the water infrastructures in the municipalities (due to employment equity).

It was the view of Beckwith (1955:10) that marginal cost pricing is a product of neoclassical economics. It is a reaction to classical price theory, which claims that prices equal average cost and socially necessary labour time. Prominent economists (Rickwood and Piper, 1980) believe that marginal costing shifts the focus to the micro scale – to individual prices. This means pricing a product so that the price covers the cost of producing one extra unit. Marginal costing informs prices in two main ways.

Firstly, prices may be set so that the marginal cost equals the price, i.e. the marginal costs of production would determine the price and, secondly, they may be set so as equate to marginal revenue. The second approach is used by profit seekers.

Zilberman and Schoengold (2005) postulated that in the calculation of costs, there are two general types of marginal costing: short-term and long-term. Short-term marginal costing means calculating costs, taking into account fixed and variable costs, whereas long-term means taking into account future expenditure, such as investment in fixed capital. Beckwith (1955:14) suggested that long-term marginal costing is 'always arbitrary and indemonstrable' and the 'lumpy' nature of fixed investments makes it extremely unreliable. Moreover, the costing of water presents added difficulties, for example, the 'quantification of the true value and costs of water, including the environmental value'. The researcher personally opposes the premise of quantifying irreplaceable resources such as water, as the whole generation and generations yet unborn bear the cost of a depleted resource such as water, whether they have used it or not.

Many intellectuals and civil society (Narsiah, 2008; Michie and Padayachee, 1998) have long criticised the rampant ideology of liberalism and privatisation that has gripped the water services sector in post-apartheid South Africa, without regard for the unique racial and equity issues that have plagued the country for centuries. The costs for water can only be viewed as approximations. Full cost recovery in the water sector is based on insecure foundations, and may be linked to rent-seeking. Managers in this sector have, in effect, complete control over prices and may manipulate them to satisfy certain performance indicators.

Making sustainable development work in South Africa will involve finding a way to include a large number of South Africans who, because of past injustices, are unable to afford basic resources such as water, and not leaving them at the mercy of the free market, which we know is never free or lenient towards the poorest and weakest amongst us (Rubner, 1970; Terreblanche, 2002; Henderson, 1996; Elliot, in Munby, 1966). Narsiah's (2008) treatise on the absence of sustainable development in the use of water in post-apartheid South Africa is very illuminating. He believes that providing services on the basis of full-cost recovery means that all the costs of production are

recovered from the consumer. However, the critical question remains: how do we talk about full-cost recovery in a country such as South Africa, with its divided and conflicting history, where most of the black people cannot afford the 'cost of water' because of the systematic exploitation and marginalisation as a result of decades of apartheid and segregation.

The apparent shortcomings of marginal cost accounting violates measures of economic efficiency in terms of productive efficiency (there being no objective basis for determining costs since long-term costing is unreliable) and allocative efficiency (the cost of providing a service more or less equalling the cost involved in producing it). Consumers usually have to pay for future costs, which may be subject to any number of externalities related to the nature of the investment environment. There has been no regard for equity, justice and fair play. The renowned Catholic theologian, St. Augustine, warned that it is justice that distinguishes a civilised society from a band of robbers. Justice entails making provision for the sick, weak and elderly amongst us, so that they get resources such as water, which is a non-renewable resource. The World Bank and the International Monetary Fund (IMF), aided surreptitiously by politicians and technocrats in Washington and Westminster, have been at the forefront in promoting this neo-liberal approach among municipalities in the developing world, and especially in South Africa (Narsiah, 2008).

The privatisation of basic services became a serious option during the 1990s, as restructuring at the local government level left municipalities in a tenuous situation when it came to financially sustainable delivery. These conditions, coupled with the influence of private sector consultants, created a space for the development of a peculiar sub-discourse on the local level. Thus, the water service delivery experience in South Africa is not privatization (Dean, 2003; Narsiah, 2008) in the sense of a change in ownership, but rather a form of governance whereby new techniques (marginal cost accounting in particular) are implemented that mimic the private sector. Indeed, with this model, according to Barchiesi (1997), the poor now subsidise the rich in society.

While some may argue, especially the so-called experts from Washington, the World Bank and the International Monetary Fund (IMF) and their intellectual proselytes in the Mbeki administration such as Erwin, Manuel and Mboweni, that these techniques were

put in place to ensure that high-income and high-consumption households and industries did not enjoy public subsidies, the prevalence of pre-paid technology (as one outcome of the process) suggests that the poor are now paying more than the rich for services (because in addition to their water usage, they have to pay for the pre-paid metering technology).

This situation does not provide for sustainable development in the use of water in the country, as millions of South Africans are being forced to live without a basic requirement which is guaranteed in the Constitution as a right, but these 'experts' are interpreting it as an economic commodity which must be paid for, irrespective of one's income and well-being. It is almost unfathomable to think of how people will survive and manage in a free and democratic South Africa when water becomes a commodity that can only be accessed by those with the economic wherewithal and means. Who would have thought that in modern and democratic South Africa, with centuries of inequalities which the ANC has vowed to abolish, citizens will mutate into consumers and water will become a commodity for the millions of people already poor from centuries of colonialism, segregation and apartheid. It is a sad but grim reality of life in the new South Africa that 'winner takes all'.

The ANC-led government has made significant changes in the way that municipalities are managed in South Africa since 1996. Central government has exercised strict fiscal control, especially with regard to transfers to municipalities. This was the same government that used 'better life for all' as its election manifesto. The Finance and Fiscal Commission (South Africa, 1998) reported that intergovernmental transfers to municipalities were cut by 85 per cent between 1991 and 1997. The seriousness of this cutback in funding cannot be overstated: municipalities rely on the central government for up to 95 per cent of their funding (Finance and Fiscal Commission, 1998, cited in South Africa, 1998). Thus, the only alternative left to municipal administrations was to adopt stringent fiscal and credit control measures to ensure solvency. This created room for privatisation and this cut-back in funding to the councils affected mostly the black population in the urban and rural areas of South Africa.

The ANC government under Mbeki did not even try to figure out how the majority of the black population would cope, and what quality of resources such as water would be

provided for them in the rural areas of the country. The municipalities could not survive with privatisation, and the resultant effect was to face bankruptcy or to try to survive. Even when they may want to do the jobs themselves, they are constrained by employment equity, which demands that they find enough black water engineers to be representative of the population, and we know who suffers most in this situation - the poor.

The Municipal Systems Act (2000, cited in South Africa, 2000), the Municipal Structures Act (1998, cited in South Africa, 1998) and a host of other documents relating to public-private partnerships created the opportunity for the private sector to play an increasingly significant role in the provision of public services. For example, the Municipal Systems Act (2000) stated that a municipality may provide services through any business unit established by the municipality, provided that it operates within the municipality's administrative area and is under the control of the council, in accordance with operational and performance criteria determined by the council, or any other institution, entity or person legally competent to operate a business activity (South Africa, 2000:76ii; Narsiah, 2008).

Following this development (McDonald and Ruiters, 2005), a host of municipalities in South Africa, since 1997, have decided to outsource most of their services to consultants and service providers. We need to understand that when market forces are allowed to intervene in a critical resource such as water in the rural areas, the poor will suffer. Indeed, one can understand why it is sometimes important for the government to intervene in order to correct an imperfect market, either through legislation or tax incentives, and to invest in the poor communities of the country, since private water companies will deliberately avoid poor communities in the name of not making a sufficient economic profit.

In this context, it is imperative for the government to insist on private-public partnerships and employ competent South Africans, regardless of their race, sex and party affiliations, in order to rescue municipalities. This is the only way that poor and impoverished communities will not be deprived of water facilities in the country. Privatisation has occurred throughout South Africa. Water and sanitation concessions have been made in Nelspruit, in the Mpumalanga Province, in Queenstown, in the

Eastern Cape Province, and on the Dolphin Coast in the KwaZulu-Natal Province. In Johannesburg, the water and electricity utilities have been corporatised.

The French multinational company, Lyonnais des Eaux, has been perhaps the key private sector player as a provider of water, not only to the Eastern Cape towns of Queenstown, Sutterheim and Fort Beaufort, but also to the corporatised Johannesburg Water (Ruiters, 2002). The multinational company, Vivendi, took over water services on the Dolphin Coast, while the British company, Biwater, won a concession contract in Nelspruit. The cornerstone of the neoliberal approach to service delivery is cost recovery, and a failure to pay for services leads to their disconnection. Ruiters (2002) demonstrated how the entry of the private sector into service delivery has led to disconnection on a massive scale, as well as large-scale debt.

All this was as a result of the all-pervading liberalisation policy of the government of Thabo Mbeki, and in this instance there was no recourse for sustainable development in the use of water, as millions of black South Africans, who are unable for whatever reason to access water from the councils are left in the 'cold' without water for sanitation and health purposes. It is the view of Narsiah (2008) that the purveyors of privatisation in the water sector in South Africa are being championed by 'experts' such as the Water Research Commission and the Palmer Development Group.

The Water Research Commission takes its mandate from the government, but at the same time influences policy through focused research. For example, issues such as water for all, quality of life and a sustainable environment are an essential part of the country's national priorities and require considerable attention (Narsiah, 2008). In addition, implementation of the National Water Act of 1998 and the related National Water Strategy places a considerable demand on water management and calls for research support. The role of South Africa in the SADC (Southern Africa Development Community) and NEPAD (New Partnership for Africa's Development), especially with regard to water resource and water supply and sanitation issues, poses new challenges and requires new initiatives which are within the mandate of the Water Research Commission (Water Research Commission, 2004a:1).

A number of commentators (Pillay, 2000; Bond, 2000; Narsiah, 2008) have lambasted the duplicity, hypocrisy and ambivalence of some of views of the Water Research Commission. For example, while the Water Research Commission (2005a:114) views water ostensibly as a human right and basic need, a tip of the hat to the principles enshrined in the Constitution of the Republic of South Africa, it envisages '[finding] unique solutions to problems arising from the application of our trail-blazing Water Act, which provides several opportunities to become world leaders in specialized niches within the economic domain'. Within the 'economic domain', in this context, means privatisation and nothing like equity and justice for those impoverished by the injustices of the past or even the unemployed, as South Africa has many of them.

The Water Research Commission (WRC, 2005a), in its 'infinite wisdom', advised the government on the 'economic benefits' of seeing water as an 'economic good'. In the final analysis, it recognises water as 'an economic good'. Moreover, it conceptualises water as a commodity: essentially it strips away the human rights and basic needs aspects of water and reconceptualises it as an economic good governed by economic principles. Thus, water is subject to marginal cost pricing, i.e. conventional neoclassical economics: 'It is important to know the absolute and relative price (or a surrogate thereof) that users are willing to pay for water in order to assist decision-makers regarding the allocation and development of water resources'. Critics of the water policy of the ANC-led government (Narsiah, 2008; Bond, 2004) insisted that full cost recovery was accepted as a legitimate premise with 'innovative cost recovery methods required sustaining and funding free basic water services delivery'. It was stated in their report that:

'Effective credit control policies and procedures must be developed in order to deal with the problem of poor cost recovery and financial sustainability of municipalities' (WRC, 2005).

The Water Research Commission (2005b) considered the cutting off of the water supply because of non-payment to be acceptable as a credit control measure, and advocated the 'development of innovative cost recovery mechanisms and credit control procedures including best approaches for managing water supply cut-offs'. The idea that water cut-offs might be a violation of human rights does not feature in the research strategy

document. The fact that water is an economic good and ought therefore to be managed according to economic principles effectively closes off alternatives. The rationale behind the ANC government accepting this as an official government policy in the water sector is mind-boggling, with all the rhetoric coming out of Luthuli House about the benefits of a developmental state that will 'right' the 'wrongs' of the past. Discerning observers will realise that for sustainable development to take place in the water sector in South Africa, there are many 'wrongs' to 'right' at present.

The Palmer Development Group is the second most powerful expert group (Narsiah, 2008) that provides the policy and intellectual backbone for the Mbeki administration with regard to water, and this group was founded and is managed by Ian Palmer and Rolf Eberhard, although most of their funding and policies borrow heavily from America and Western Europe. This becomes self-evident when one listens to the African proverb which says: 'He who pays the piper dictates the tune of the music'. One then comes to the conclusion that the Palmer Development Group is the 'Trojan horse of modern imperialism', as it comes to countries in Africa pretending to help people determine the best way of conducting their business and government practices, while they are actually promoting the business interests of their sponsors from Westminster and Washington. These so-called 'experts' pervade the entire political and economic landscape of Africa, not only South Africa. It is only on rare occasions that they come with noble intentions and advice.

Evidence from studies conducted by a number of South African experts on water (Bond, 2000; Pillay, 2004; Narsiah, 2008) reveals the fact that the Palmer Group has been instrumental in developing a uniform framework for water policy and its application in both urban and rural contexts. In 1995, a Development Bank of Southern Africa modelling exercise in service delivery, in which Palmer Development Group personnel were also involved, promoted a World Bank approach to service provision, whereby levels of service were linked to affordability (Palmer Development Group, 1994).

Bond (2000) was of the view that the Durban Municipality has adopted this approach. The report argued against the provision of a universal full service provision. A key factor militating against this provision was macroeconomic constraints. Thus, basic

needs were defined in economic terms. Affordability levels relate to people occupying certain areas – thus, areas in which there are poor people unable to pay for a full service would be entitled to a lower service level. Nobody has even bothered about what people will use in the absence of water to bath and cook. How would people survive without proper sanitation, as the health implications of such a lifestyle may in fact overburden the already struggling public hospitals? It is taken for granted that people will always pay for the services, whether poor or rich, while the government may unconsciously be sowing the seeds of citizen riots.

Roux and Eberhard (1995) believe that even areas that have a preponderance of poor households are not only liable to pay for the costs of the full service, because service is now an ‘economic good’ - they will also get an inferior quality of water compared to a more affluent area. Water experts (Narsiah, 2008; Gleick, 2003) insist that in this context, economics and basic needs are linked, producing a spatial discourse focused on the class aspect and racial in character - ‘white’ areas having a full service and ‘non-white’ areas consigned to the differentiated lower service levels. One can deduce from this analysis that while apartheid has inhibited the practice of sustainable development in South Africa based on racial factors, privatisation and commodification of a basic and irreplaceable resource such as water by the government is also an impediment to sustainable development in terms of water use. This is because needs are not central to these models - financial viability is the determining factor in each instance. Therefore, the provision of low levels of service is linked to the costing of the service and financial viability, rather than the meeting of needs. And, in a divided and unequal society such as South Africa, one gets the understanding that most of those who suffered under the ‘apartheid regime’ are still suffering under this ‘market regime’.

Another evidence of the lack of sustainable development in the use of water in modern South Africa is the fact that the government has accepted the recommendation of the Palmer Development Group (PDG, 1994) for the provision of free basic water to the poor and made it a government policy. The Palmer Development Group recommended that the first six kilolitres of water should be free for households. Thereafter, the full cost recovery kicks in – once more than six kilolitres have been used, the consumer must pay for those first six through the fixed charge mechanism.

Many experts (Gleick, 2003; Narsiah, 2008) believe that this rising block tariff approach is problematic. Such tariffs may in fact be regressive (Beckwith, 1955), in that the poor, because of bigger households and thus higher consumption, may in fact be subsidising smaller, richer households. Seasonal variations are difficult to capture using a rising block tariff. In the summer months, water consumption will increase, thus moving poor households into the higher consumption blocks and making them pay more. The rising block tariff approach is popular because of its purported equity benefits, which arise from the cross-subsidy schema. However, cross-subsidies reflect notions of fairness, not equity, precisely because and, particularly in South Africa, where racial inequities dominate, the derivation of the tariff blocks has no objective basis.

Thus, it is highly questionable whether or not the rising block tariffs address the concerns of equity and justice, mindful of the fact that many unemployed South Africans depend on working relatives to survive, and it creates a further burden for poor black households, which are usually in the majority. Furthermore, Boland and Whittington (2000) assert that, assuming that poor households consume within the first block, they will lose part of the subsidy unless they consume the entire six kilolitres. The hidden costs of this rising block tariff, which is prevalent in most municipalities in South Africa, do not promote sustainable development, as it neglects the issues of equity, justice and fairness which are sacrosanct in a divided and unequal society such as South Africa.

It has been established that since the demise of political apartheid in South Africa, economic apartheid still exists in the new and democratic South Africa. The glaring inequalities in terms of basic resources such as water signify the absence of sustainable development in the country, and this is very inimical to the overall growth and development of the country, as the people-centered paradigm of development needs to be supported and nurtured by the ruling African National Congress. Anything short of this may put the country on the road to 'Golgotha' in the future.

South Africa and its political leaders should take seriously the warning of two American economists, Stein and Denilson (cited in Phelps, 1969), who said that:

The importance of more rapid (economic) growth depends critically upon how we allocate our output among our needs... If our national product is wisely used, the contribution of a higher rate of growth would be the satisfaction of less critical needs, not of the most critical... If (we) do not allocate (our) output to the most important uses, (we) cannot be sure that any specified rate of (economic) growth or level of output will satisfy (our) critical needs... If we are not wise in the use of our resources we cannot expect the abundance of our resources always to compensate.

This statement was made in respect to America, which is a rich country, but it has huge resonance and meaning for a developing country such as South Africa that is struggling with the legacies of colonialism, segregation and apartheid. The researcher totally agrees with Terreblanche (2002) that:

When a society is as multicultural and multi-ethnic as ours, when the different groups and socio-economic classes 'share' a divided and conflicting history, and when society is divided between such a variety of groups-some rich and others disparately poor, some powerful and others hopelessly powerless, some highly developed and educated, others undeveloped and uneducated, some employed and many unemployed, (underemployed and wallowing in poverty and penury),some law-abiding, and many inclined towards criminality and violence-then the decision about what is and what is not in society's interest is extremely difficult and profit should not be the sole criteria when decisions about precious and irreplaceable resources like water are made.

In such situations, decisions on what is growth and development cannot be left to the allies in Washington and the corporate sector and the media to interpret for us, and can certainly not be left to the alleged 'wisdom' of the market. Black South Africans do not have the wherewithal to participate in a free and liberal market, because they lack the necessary skills, competences and education as a result of the Bantu educational policy of the apartheid era, unlike their white counterparts, who were educated in the best universities worldwide and in South Africa, and subsequently acquired the skills needed to make a living in a liberal and free market economy. In addition, the market is never free - this is why the government has to intervene in certain ways to curb the excesses

and greed of the ‘fat cat capitalists’ in our midst, who are hell bent on depriving the majority of their existence.

This illustrates that even in the new era, which is devoid of apartheid and its racial connotations and bottle-necks, there are still severe limitations for the vast majority of South Africans in terms of enjoying the dividends of political and economic freedom, as millions are still excluded from the economic life of the country. As long as the government of Thabo Mbeki remains an ideological proselyte of the corporate sector and the West, the situation will remain the same. This study is not arguing against economic growth per se, but that much more needs to be done in order for real sustainable growth and development of the country to take place in the new era.

It was in recognition of the inability of the market to address historic injustices and inequalities in the distribution of resources and amenities in the new South Africa that both the government and the ruling African National Congress talked about the concept of a developmental state before and after the ANC’s National Congress in Polokwane in December 2007, in order to help the government intervene in the society and economy in order to ‘right’ the ‘wrongs’ of colonialism, segregation, apartheid, globalisation and rampant capitalism, which have gripped the new South Africa. It is questionable, however, to what extent this policy has helped in the equitable distribution and use of water in the country.

4.8 CONCLUSION

This chapter demonstrated that in apartheid South Africa, sustainable development was absent in the political and economic development of the country as a result of the racial nationalism of the ruling National Party and its uncompromising devotion to mitigate only the issues involving the white race in South Africa, which led to the impoverishment of the majority of the black African population. Nevertheless, sustainable development is also absent in the new South Africa - although significant improvements in the lives of the black population have been recorded, a huge majority still suffer in situations of abject poverty and unemployment because of the market fundamentalism of the ruling party.

CHAPTER FIVE

SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA'S WATER SECTOR

5.1 INTRODUCTION

Chapter four dealt with the issue of sustainable development in South Africa, and this chapter will discuss the issue of sustainable development in the South African water sector. It takes a holistic look at the state of water use in sub-Saharan Africa, and then examines the sustainability of water use and laws in South Africa. An overview of apartheid and post-apartheid water laws in South Africa and their contribution (or lack of) towards sustainable development in the country is also provided. The concluding part of the chapter looks at the relationship between water and development, water use, sanitation and sustainable development, and also the relationship between water use, poverty alleviation and sustainable development.

5.2 STATE OF WATER GLOBALLY

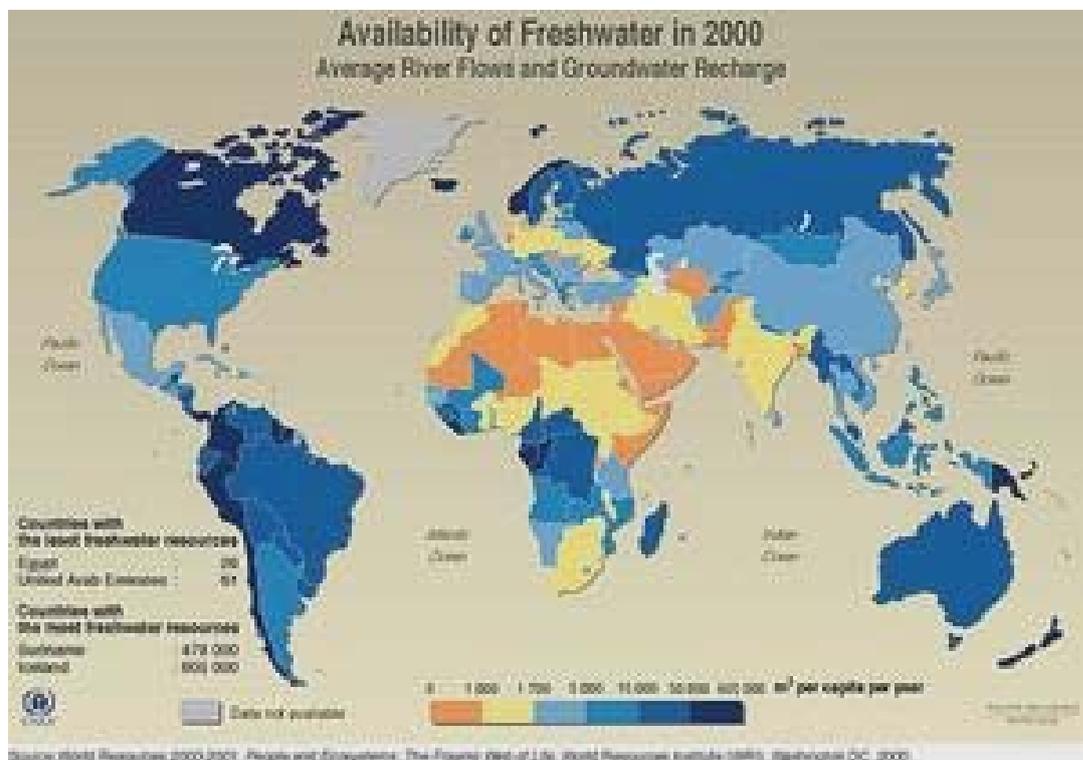
Water is life. All living organisms are made predominantly of water: human beings about 60 %, fish about 80 %, and plants between 80 % and 90 %. Water is necessary for all chemical reactions that occur in living cells, and is also the medium through which information is exchanged between cells. The sustainability of human development depends on the hydrological cycle, since water is essential for food production and all living ecosystems. Seventy percent of the earth's surface is covered by water. Ninety-seven percent of this water is contained in oceans, and is therefore salty and unsuitable for drinking or irrigation. Of the remaining 3 % of freshwater, only 0, 3 % is found in rivers and lakes, the rest being frozen. Water is a renewable resource, made continuously available through solar energy, which enables it to evaporate from oceans and land and be thus redistributed around the world. This water runs off in rivers and refills our aquifers. On an annual basis, rainfall exceeds evaporation on continents by 44 000 km³. This amount of water returns to the oceans as river and groundwater runoff. This is known as the Water Cycle (Shiklomanov, 1999; Postel, 2001).

5.2.1 Global freshwater

If this runoff were evenly distributed in space and time, freshwater resources would be sufficient to provide water for all. A quick calculation shows that water available for human consumption represents 15 000 litres per person per day. However, this figure does not reflect the reality, because freshwater resources are not evenly distributed. Rainfall and runoff are apportioned in both space and time in an irregular manner. Some regions receive enormous quantities of water, while others receive almost none. Many regions get nearly 100% of their precipitation during a brief rainy season. Therefore, renewable water potentially available for human consumption is evaluated at 10 000 to 12 000 km³ per year. Out of this quantity, only 30 % was withdrawn in 2000, or around 4 000 km³, and 15 %, or around 2 000 km³, was consumed (i.e. evaporated). At the global level, the water situation is not so alarming, but due to uneven distribution, some countries face water scarcity (Shiklomanov, 1999; Postel, 1998).

Figure 5.1 Global Fresh Water (2000)

Source: Shiklomanov (1999)



5.2.2 Uses of freshwater

Traditionally, three main sectors of freshwater use are distinguished. The domestic sector includes household and municipal uses and water used for commercial establishments and public services. Industrial use includes water withdrawn for industry, an increasing part of it being used to cool power plants. The agricultural sector includes water for irrigation and livestock.

A distinction must be made between water availability, water withdrawals and water consumption. "**Available water**" is the quantity of renewable water resources available for human use. "**Water withdrawals**" refers to water diverted from streams or rivers and pumped from groundwater aquifers for human use, but not necessarily consumed. Part of the withdrawn water is returned after use and is subsequently reused or restored to the environment. The quantity that is not reused or left in nature represents "**consumed water**", namely water that is evaporated or incorporated into products and organisms, so that it becomes temporarily unavailable to other users. The situation with regard to the use of water in South Africa also mirrors the overall global condition and system, in which mechanised agriculture takes a huge portion of the available water resources in the world.

5.1 Table of Global Water Use

Sector	Water Withdrawals	Water Consumption
Agriculture	66 %	93 %
Industry	20 %	4 %
Domestic use	10 %	3 %
Evaporation from reservoirs	4 %	

Source: Shiklomanov (1999)

5.3 STATE OF WATER IN AFRICA

Africa is characterised by a high population growth rate, the rapid spread of HIV/AIDS and high debt levels. The population of Africa in 2005 was estimated at about 905 million, and is expected to grow to 1,936 million by 2050. Currently, 39.7% of the population is urban, and this is expected to rise to 53% in the next 25 years. In 2003, the African economy grew by 3.7% and aid to African countries has been increasing in the last few years. The New Partnership for Africa's Development (NEPAD), the Monterrey Concession on Financing for Development in 2002, and the implementation of the Heavily Indebted Poor Countries (HIPC) Initiative have all played an important role in making Africa the focus of development aid. However, despite all these efforts, 46.4% of the population (313 million people) lived on less than US\$ 1 per day in 2001, and the total number of malnourished people in Africa has increased substantially from around 88 million in 1970 to over 200 million in 1999–2001. Consequently, most African countries are slipping back or lagging behind in their attempts to achieve the MDGs (Postel, 2001; ADB, 2004).

Africa's annual renewable water resources are estimated at about 5,400 billion m³ per year, of which roughly 15% is groundwater. Africa has an average annual rainfall of 673.1 mm, which varies at the sub-regional level from 1,700 mm per year in the island countries to 71.4 mm in North African countries. The region also experiences rainfall fluctuations of varying frequencies and magnitudes, resulting in droughts and floods. The region has 24 major surface water basins and 38 major transboundary groundwater aquifers. However, unlike rivers, little is known about these freshwater resources, which are distributed unevenly across Africa and are characterised by extreme temporal and spatial variations (UNDP, 2006).

Africa has developed only three percent of its technically feasible hydropower potential, and only six percent of its cultivated land is irrigated. In total, only 3.8% of water resources are developed for water supply, irrigation and hydropower purposes. This calls for an enormous amount of investment in irrigated agriculture, water supply and sanitation, and the decentralisation of water supply and sanitation services to appropriate administrative levels. Transparent, open, accountable, gender-responsive, communicative and effective water governance at all levels of water management is

also needed (UNDP, 2002). This can happen if appropriate policy changes are implemented at the regional and national levels to facilitate good governance, promote good water resource management practices, attract investment in agriculture and negotiate better access to markets.

Many African countries face water stress (Gleick, 2000), but this is most pronounced in North Africa. The inter-basin transfer of water resources and desalination are two possible solutions. Awareness of desalination technology in the region is minimal, but some countries have started to use it recently. There is a need to promote its use for large-scale supply systems and at household and community levels, as the unit cost of technology continues to decline. The development of transboundary water basins could also involve the inter-basin transfer of water resources. The region has so far undertaken two successful inter-basin transfers, and the potential for further similar projects has been identified. However, such projects are complex and should be preceded by in-depth studies, which requires confidence-building and mutually beneficial mechanisms.

Currently, about 300 million people in Africa do not have access to safe water, about 313 million have no access to sanitation, and over 88 million people are malnourished (UN, 2005). This takes a heavy toll on the social and economic progress of African countries. An annual investment outlay of US\$ 4.7 billion is required to achieve food security in Africa. The financial investment required to meet the 2025 African Water Vision (AWV) has been estimated at about US\$ 20 billion per year. The volume of financial and technical support pledged so far falls far short of what is required, and most of it is still in the form of pledges yet to be honoured. A high priority should be given to designing appropriate instruments to attract investment from bilateral international partners and the private sector, in order to meet urgent and critical needs in water resource development.

To date, African countries have not achieved water security because they have engaged in small projects to address short-term needs, and have not invested sufficiently in water infrastructure and institutions. They should make water a high priority in their Poverty Reduction Strategy Papers (PRSPs) and, in their policies, strategies and programmes, include commitments to invest in water infrastructure. This is vital to achieving water

security and sustainable growth. The scarce investment made in the water sector is limited to infrastructure. However, for investment in water infrastructure to yield the expected returns, it is important to invest in water institutions and the capacity required for running them. Perhaps even more important is the need to develop social capacity through education, information and the strengthening of local knowledge in communities and community-based organisations.

Growth is also more likely to occur when a vibrant private sector is heavily involved in the development of the water sector. A level playing field with optimal sector and micro-economic policies are essential prerequisites. Certain local actions have shown that even modest efforts to involve the local small business sector have made a difference in the provision of public utilities (World Bank, 2006). However, private sector involvement should be accompanied by appropriate regulatory frameworks and institutions.

To move forward, African countries need to streamline their efforts to promote good water governance, secure the promised financing for development, and invest in water infrastructure, human resources and institutions for proper management of the continent's resources. Most importantly, countries should support water infrastructure projects to exploit the potential and mitigate the adverse effects of water resources. Projects with sub-regional or regional dimensions, such as hydropower developments, should also be emphasised as a way of enhancing regional integration.

In the mean time, international donors should recognise the efforts being made by African countries and increase their assistance in developing water infrastructures and institutions. Such assistance should support regional initiatives and programmes such as the NEPAD Short-Term Action Plan for Infrastructure (NEPAD-STAP), the Comprehensive African Agricultural Development Programme (CAADP), the Rural Water Supply and Sanitation Initiative (RWSSI), the African Water Forum (AWF), and Water for African Cities, among others (UN, 2005).

5.3.1 Rainfall variability in Africa

Africa is a large continent comprising 53 countries, with a wide range of hydrological characteristics. The region represents 22.4% of the world's land area and 13 percent of the world's population, but has only nine percent of its fresh water (UN, 2001). Most of Africa is composed of hard Precambrian rocks forming a platform with some mountainous areas, mainly on the fringes of the continent and where the rift valley crosses East Africa. Its climate is much more varied than its physical relief. The continent has the hottest of deserts and the most humid of jungles - and the amount and distribution of precipitation is the key factor. Annual totals vary from 20 mm a year over much of the vast Sahara region to 5,000 mm near the mouth of the Niger. With large amounts of solar radiation and high temperatures, African evaporation rates are high. The deserts that cover about one third of the continent in the north and south have little surface water, but large volumes of groundwater (ADB, 2004).

The average annual rainfall is about 20,211 cubic kilometres per year or 673.1 mm per year. However, distribution is varied at the sub-regional level. The highest rainfall occurs in the island countries (1,700 mm per year), Central African countries (1,430 mm), and in the Gulf of Guinea (1,407 mm). By contrast, the lowest rainfall occurs in the northern countries, where the annual average rainfall is only 71.4 mm (UNEP, 2002; World Bank, 2004). The continent has a long history of rainfall fluctuations of varying frequencies and intensities, leading to drought and floods. The variability of rainfall is very pronounced in the drier parts of the region.

According to the International Panel on Climate Change (2001), the African continent is the most vulnerable to climate change. Runoff and water availability are expected to decline in the northern and southern regions of the continent, while the frequency of floods and droughts will increase. This fact, combined with population growth and higher demands, means that 25 African countries are expected to experience water scarcity and/or water stress over the next 20–30 years. These situations demand increased awareness regarding the utilisation and management of fragile water resources, and the creation of storage capacities to overcome fluctuations in water availability (World Bank, 2006).

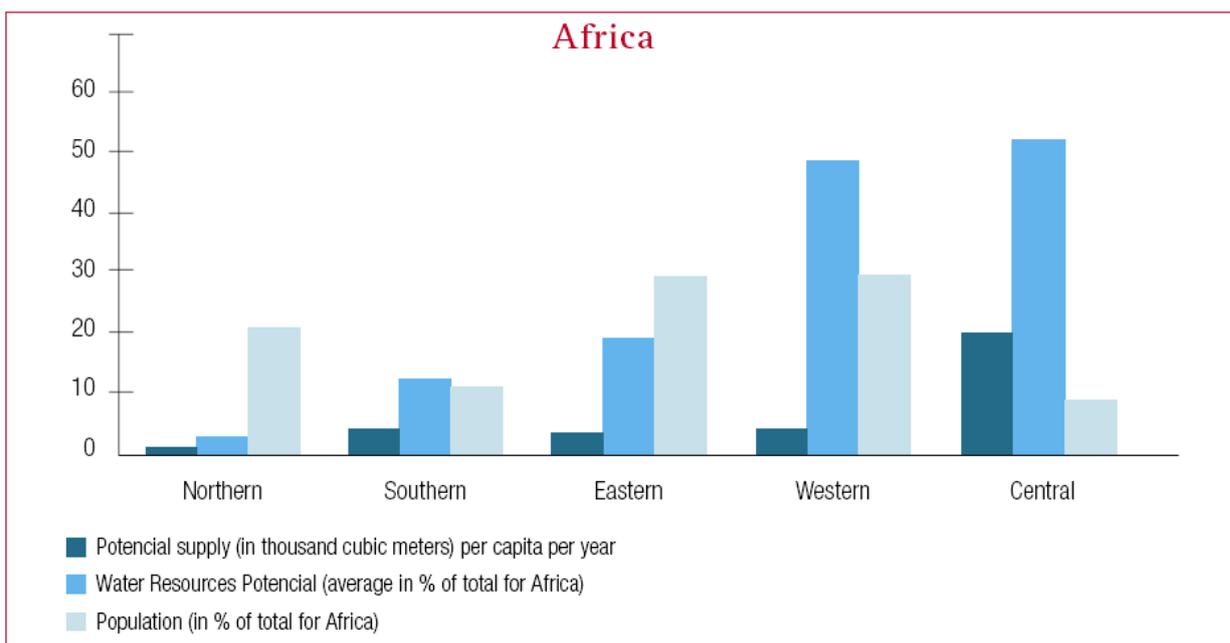
5.3.2 Groundwater resources in Africa

Groundwater resources account for about 15% of Africa's renewable water resources, amounting to about 810 billion m³ per year. These resources are crucial for many African countries and peoples, particularly during the dry season and in the major arid zones. Because of the low level of rainfall in some countries, large numbers of people are dependent on groundwater as their primary source of freshwater. Groundwater accounts for 60% of water use in Algeria, 80% in Botswana, 40% in Namibia and 95% in Libya (UNEP, 2002).

For water scarce regions, Southern Africa and South Africa in particular have to find ways and means of putting the necessary mechanisms in place so that the storage of water will be up to date with the rising levels of population growth and socio-economic development occurring in the Southern African region. South Africa has to invest substantially in increasing the availability and storage of water as the economic powerhouse of Africa, as the unavailability of water has the tendency to derail the significant economic potential of the country.

Figure 5.2 Per capita water availability in African regions

Source: UNESCO (2003)



5.3.3 Growing water scarcity in Africa

While Africa uses only about 4% of its renewable freshwater resources (World Bank, 2004), water is becoming one of the most critical natural resource issues. Availability of water in Africa is highly variable. Only the humid tropical zones in Central and West Africa have abundant water. Many others are approaching or already facing water stress (1,700 m³ or less per person annually) or scarcity (1,000 m³ or less per person annually). Currently, fourteen countries in Africa are subject to water stress or water scarcity, with those in Northern Africa facing the worst prospects. Figure 5.2 above indicates the water availability in the region.

This situation is worsening as a result of rapid population growth, expanding urbanisation, and increased economic development. A report by the Global Environment Outlook (cited in UNDP, 2006) predicts that by 2025, “25 African countries will be subject to water scarcity or water stress” and points out that Northern Africa will be facing the worst case scenario. The North African annual average per capita water availability dropped from 2,285 m³ in 1955 to 958 m³ in 1990, and is expected to reach 602 m³ by the year 2025 (Alghariani, 2003). To meet its present and future water demands, the sub-region’s options are limited to either long distance water transfers from the southern aquifers to the coastal areas, or large-scale seawater desalination projects. Figure 5.3 below shows that based on current estimates of the UNEP (2002), South Africa will suffer acute water scarcity by 2025, and it then goes on to explain the importance of relevant and sustainable water laws and policies by policy makers and the Department of Water Affairs in South Africa, in order to find useful and meaningful ways of ameliorating the deleterious impact of water stress on the country’s sustainable development.

Figure 5.3 State of water scarcity in Africa (2000)

Source: UNEP (2002)

I. Water Availability in Africa



5.3.4 Climate variability in Africa

The extreme spatial and temporal variability of climate and rainfall in Africa is one of the significant features of the continent’s water resources, with far-reaching consequences for water resource management. Africa’s climate is indirectly governed by monsoon circulations that extend across large parts of the Atlantic and Indian Oceans. In addition, extra-tropical influences are felt from both hemispheres. Year-to-year fluctuations in rainfall over Africa are determined by circulation regimes that alter the preferred location of tropical convection and the Inter-tropical Convergence Zone (ITCZ) (UNEP, 2002).

The apparent disappearance of Lake Chad in West Africa illustrates the influence of climate change in Africa. The lake has shrunk in area by over 95% - from 25,000 km² to 1,200 km² - in the last three decades. The white cap of Kilimanjaro varies in size depending on the season of the year, and may grow and shrink at intervals, depending

on solar influx, precipitation and other factors. However, since 1912, there is clear evidence that the glaciers have shrunk consistently and dramatically. Satellite images confirm the findings measured on the ground (Climate Graphics Africa, UNEP, 2002).

One example of the temporal variability of climate is the fluctuation in the water levels of Lake Malawi. Water levels in Lake Malawi have shown considerable variations since regular records were first kept in 1896. From 1915 to 1935, the lake was so low that outflow ceased in 1915, due to low rainfall in the catchment basin in preceding years. The droughts of 1949 and 1992 have had similar effects on lake levels, with rises during the rainy season of only 0.08 and 0.32 metres respectively. However, from 1935 to 1937, and from 1979 to 1984, high lake levels were observed. During the wet season of 1978-79, a rise of 1.83 m was registered (World Bank, 2005b).

Temporal and spatial variability, compounded by unpredictability and climate change, are at the heart of resource insecurity, resulting in vulnerability and a strong impact on economic growth. The baseline document for Water for Growth and Development for the 4th Forum (cited in UN-ECA, 2003) states that:

The economic cost of hydrological variability in Ethiopia is estimated at over one-third of the nation's average annual growth potential. Economy-wide models that incorporate hydrological variability in Ethiopia show that projections of average annual GDP growth rates drop by as much as 38 percent as a consequence of this variability. Mozambique offers another example of the impact of variability: as a result of the flood in 2000, the projected annual GDP growth rate dropped by 23% after the flood and projected inflation increased by 44%.

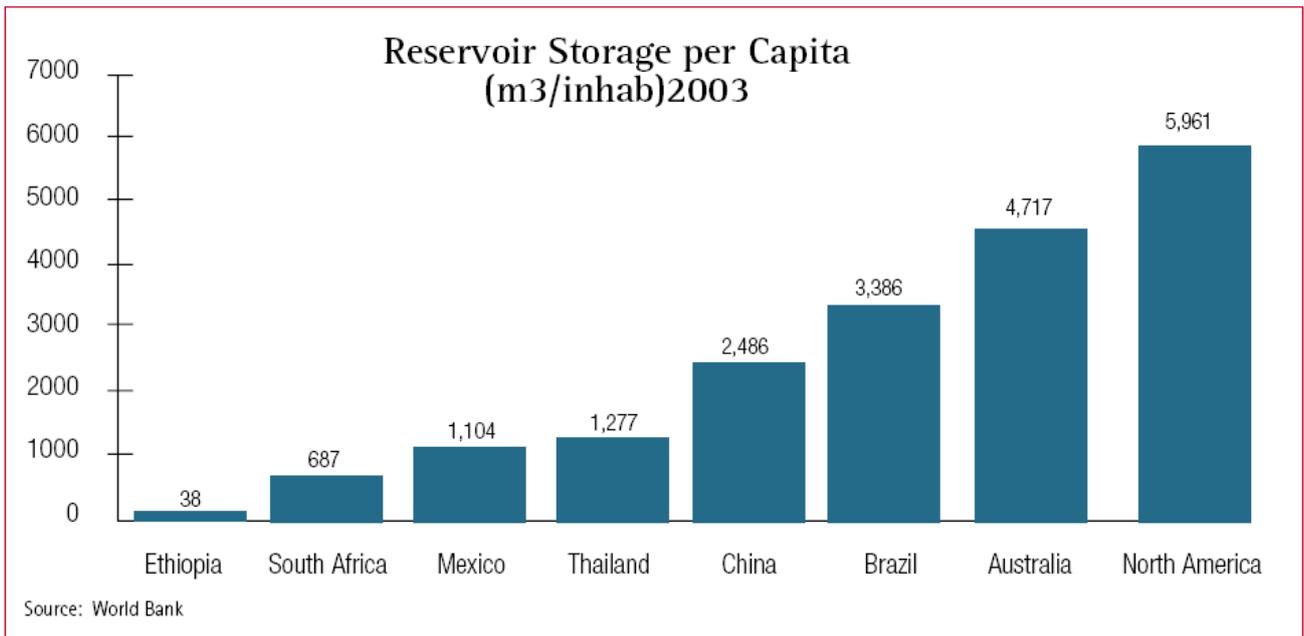
To mitigate the temporal and spatial variability of the African climate, the challenge is to create an environment that attracts investment in water infrastructure to contain floods, create water storage capacity for flow regulation and make water available for productive use. The impacts of climate variability also reveal whether or not countries are prepared to mitigate this phenomenon. The figure below compares the volume per capita of stored water in both developed and developing countries. This also indirectly shows the relationship between development levels and vulnerability to climate

variability. Recycling water is one method of optimising the use of available water resources and averting water stress (World Bank, 2006).

However, recycled water is currently only being reused in specific areas in Southern, Western and Northern African countries. Concentrically used water is being wasted, but as more African countries face water scarcity, the importance of reusing recycled water will increase. Figure 5.4 below illustrates that South Africa, being a country that will face water scarcity in a couple of decades, needs to improve on the technology and wherewithal needed for reservoir storage of water in order to be more efficient economically in the decades ahead, when the issue of the water crisis will be the next great challenge after the huge brouhaha surrounding the incompetence and short-sightedness evident in the energy sector of the country.

Figure 5.4 Reservoir storage per capita in selected countries

Source: World Bank (2004)



5.3.5 Natural risks to water in Africa

The most common natural disasters in Africa are drought, flooding, cyclones, food shortages and pest infestations. Droughts are endemic to both Southern Africa and the Sahelian region of Western and Northern Africa. Drought is the most deadly natural disaster, accounting for over three-quarters of those affected, and 98% of mortality. During the past ten years, three-quarters of the droughts in the world have occurred in Africa. Drought is a condition of life for many residents of Africa, especially those of the Greater Horn region. The African countries most affected by drought are Ethiopia, Chad, Botswana, Burkina Faso, Kenya, Mozambique and Mauritania (UNEP, 2002).

Much of Africa is vulnerable to flooding (Gleick, 2002). Flooding is the most prevalent disaster in Northern Africa, the second most common in Eastern, Southern and Central Africa, and the third most common in Western Africa. Flooding accounted for 26% of all disaster incidents in Africa from 1971 to 2001 (Gleick, 2002; Postel, 1999). Early warning systems are useful in determining the likelihood and duration of the occurrence of floods, as well as the extent and location of damage. Public awareness also has to be raised regarding disaster preparedness and the benefits of floods. Sub-regional systems for early flood warnings exist in the SADC and Sahel sub-regions and are being developed in other regions. However, water resource variability, river flow and hydrological models to enable the development of comprehensive flood early warning systems are at various stages of development at national and sub-regional levels throughout Africa (World Bank, 2005b).

The most obvious way of managing flood and water scarcity is to develop physical infrastructures to increase water storage capacity in the region. However, due to the high level of investment required, the development of these structures has been grossly inadequate. Per capita water storage capacity in North America is about 6,150 m³, while in Africa it ranges from 746 m³ in South Africa to 34 m³ in Ethiopia (UNDP, 2006). It is obvious that if Africa wants to manage natural risks, eradicate poverty and achieve sustainable growth, it must invest adequately in a water infrastructure.

One important impact of climate variability is desertification. Desertification affects about 46% of Africa. Only about 11% of the land mass is humid and, by definition, is

excluded from desertification processes. About 14% of Africa is at low risk, 16 % at moderate risk and 11% at high risk, particularly in regions bordering on deserts (AFDB, 2005). The Sahara is said to have been moving at the rate of one kilometre per year for the past 300 years (Gleick, 1998; World Bank, 2005a). Climate, humans and livestock are the main causes of spreading deserts in Africa. Prolonged drought, in particular, leaves land dry and infertile, resulting in the destruction of forest, farmland and rangeland, and ultimately to economic decline (Reich et al., 2001).

5.4 THE DEVELOPMENT ENVIRONMENT IN AFRICA

5.4.1 Overarching issues

The main objective of water resource development is to achieve economic development and attain the goal of poverty reduction in the region. The non-availability of basic services is a primary measure of poverty, while poverty is the primary obstacle to the provision of basic services. Poverty is the single most influential factor related to the sustainable provision of basic water and sanitation services and food and energy security. Of the 173 countries included in the Human Poverty Index published by the UNDP in 2002, there were 48 African countries among the lowest-ranked 73, and the last 28 countries were all in Africa. South Africa will definitely make a difference in terms of chronic poverty, health and sanitation standards, if there is a genuine commitment for a thorough and systematic debate on the appropriate role for the private sector in the area of water service provision and management in the country (UNDP, 2002).

The region's progress towards achieving the MDG for the eradication of extreme poverty and hunger is not promising. Of 53 African countries, eight are slightly behind, eight are far behind, 16 are slipping back and six have reported no data (UNDP, 2006). Poverty affects basic water supply and sanitation in a number of ways, and if pervasive, it can challenge the application of even the very best practices incorporating all the lessons learned. Poverty is not confined to individuals and families alone, but extends to the institutions responsible for ensuring that services are provided at all levels. At the same time, the provision of services forms part of the poverty reduction agenda. An

example of institutional poverty is the chronic shortage and breakdown of state power and authority in countries such as Nigeria and the Democratic Republic of Congo, as well as most of Africa, where governments are unable to provide basic amenities despite the abundant natural resources available to the country in question as a whole.

The foremost challenge here is to eradicate extreme poverty and chronic hunger. The millennium development goal (MDG) target is to “halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day”. Meeting the targeted increase in income will greatly increase the likelihood that people will have the resources to meet other basic needs that are encompassed in the MDGs and the availability and affordability of water is the link between increased health and productivity and reduction of poverty in most African countries. Thus, policies to improve economic development must involve ways of improving access to water for poor people (AFDB, 2005).

5.4.2 Opportunities for water development

Access to and utilisation of water resources in Africa is generally very low - only about three percent of the total amount is used. The region’s large areas of irrigable land, its huge, untapped hydropower potential, and its unmet demands for water supply, sanitation and energy make this an attractive sector for investment. The key challenge for the region is to create an enabling environment for both the public and private sectors to invest in water infrastructures that will make use of this potential. As with most issues in Africa, either the government is incapable of providing these basic services, such as in Nigeria and Liberia, or they have abdicated some of their responsibilities to the private sector, as in the case of South Africa.

5.5 WATER SECURITY IN AFRICA

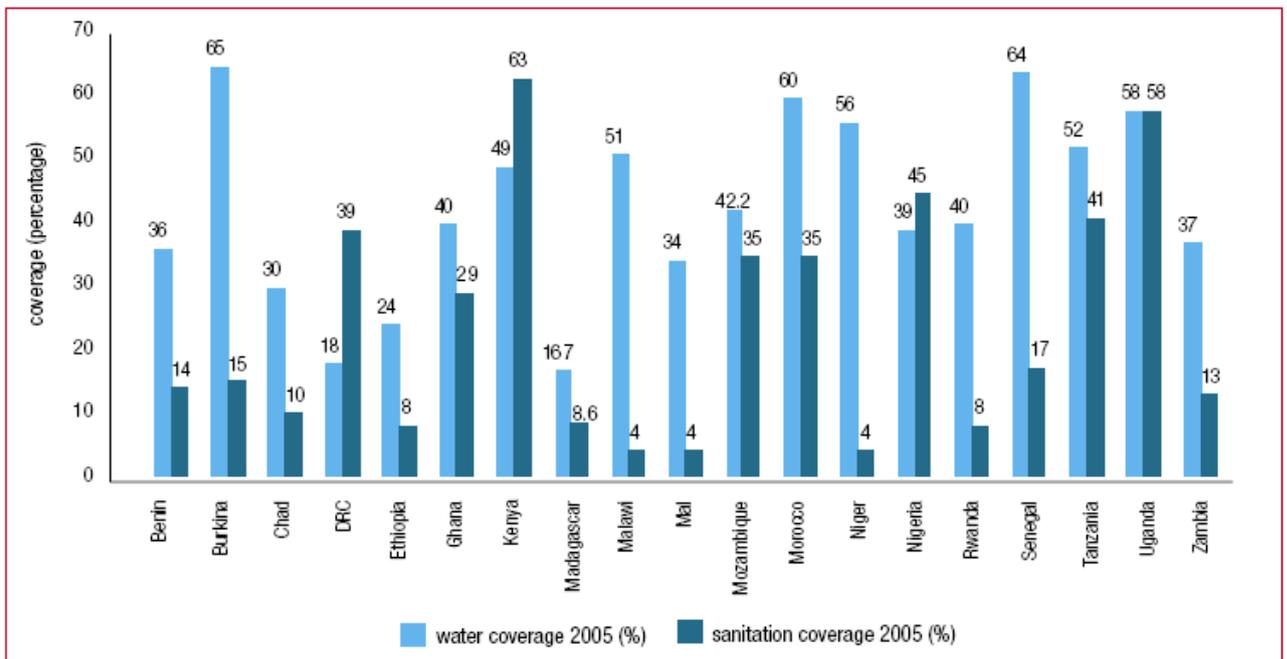
5.5.1 Meeting basic water and sanitation needs

Africa has the lowest total water supply coverage of any region in the world. About 300 million people in Africa lack access to a safe water supply and about 313 million people

lack access to adequate sanitation (AFDB, 2005). Figure 5.5 below compares water supply and sanitation coverage in some African countries.

Figure 5.5 Water supply and coverage in sub-Saharan Africa (2005)

Source: AFDB, September 2005



While some countries in Africa, such as South Africa, have already achieved the MDGs, most are lagging behind. Limited access to a safe water supply and adequate sanitation is the root cause of many diseases that affect Africa, and these contribute to the high infant and maternal mortality rates in many countries. The World Health Organization (2003) has reported that approximately 50 percent of all Africans suffer from one of six major water-related diseases. HIV/AIDS is often linked to a lack of access to water supply and sanitation provisions. The diarrhoea epidemic in the Kwazulu-Natal province of South Africa in 2000 attests to the possibility of a disease outbreak among people living in rural areas without adequate water and sanitation. Women and children are particularly vulnerable to such a disease when they fetch water and take care of HIV/AIDS patients. People living in rural areas, not only in South Africa but in much of the developing world, are struggling with the deleterious effects of taking care of sick family members in the midst of poor sanitation and the

unavailability of sufficient clean water. Hence, a gender-sensitive water supply and sanitation programme could help them cope better with the effects of HIV/AIDS. In order to meet these targets, the region will have to devise innovative and efficient approaches to accelerate the delivery of services and ensure their reliability. This will be best achieved if there are adequate incentives for investment and if cost recovery is feasible (WHO, 2003).

5.6 DEVELOPMENT OF WATER FOR FOOD SECURITY IN AFRICA

During the past three decades, agricultural production in the region has increased by no more than two percent per year, while population has risen by about three percent. Agricultural productivity per capita in sub-Saharan Africa has not kept pace with population increase, and the region is now in a worse position in terms of nutrition than it was 30 years ago. In much of West Africa, the average food supply (2,430 kcal per day per person) is below what is regarded as the optimum level (2,700 kcal per day per person) (Postel, 2001).

In Eastern and Southern Africa, the number of people lacking food security almost doubled from 22 million in the early 1980s to 39 million in the early 1990s. Cereal imports are expected to rise from the current ten million metric tons per year to 30 million metric tons 25 years from now. It has been estimated that a 3.3% increase in annual agricultural output is needed to achieve the continent's food security objectives (UN-ECA, 2003). In the past, additional food in Africa came from increases in the amount of land cultivated, but as good land becomes less available, the region will be forced to increase yields per hectare. Both rain-fed and irrigated agriculture will need to be intensified. While rain-fed agriculture would benefit from technological inputs in moisture management, it is irrigated agriculture that has a higher potential for intensification. Currently, about 12.6 million hectares (FAO, 2003) is under managed water and land development, equivalent to only about eight percent of total arable land. Only seven percent of arable land is now irrigated. Ten countries control more than 80% of the irrigated areas, while 28 countries, covering more than 30% of Africa, share a mere five percent of the irrigated areas (UN-ECA,2003). Over the last 30 years, on average, irrigation in Africa has increased at a rate of 1.2% per year. However, this rate began to fall in the mid-1980s and is now below one percent per year, though varying

widely from country to country. These numbers demonstrate that there is a wide scope for the expansion of irrigated areas in the region by increasing the proportion of cultivated land under irrigation (World Bank, 2004).

In line with this, a recent FAO projection assumes that in sub-Saharan Africa, 73% of the growth expected by 2030 will come from the intensification of cultivated land (FAO, 2003). New research from the International Food Policy Research Institute (IFPRI) shows that policy choices and investments made now could either substantially improve or else further worsen the prospects for food security in Africa. In what IFPRI calls a vision scenario, in which national governments and international donors increase investments in education, HIV/AIDS prevention and treatment, water harvesting technology, female schooling and clean water access, the available kcals/person would increase markedly in Africa by 2015, while the number of malnourished children in sub-Saharan Africa would decrease by 23.3 million, from 32.7 million in 1997 to 9.4 million in 2025 (Reich et al., 2001).

South Africa has a highly mechanised agricultural system with huge farming and water subsidies, and the critical focus should be on how to improve production in the farming sector during times of water scarcity. The government and farmers have to find the ways of still meeting the food demands of a growing population without this being compromised by the threat of water scarcity and crisis - the time to develop these policies and programmes is now.

5.7 WATER POLICY IN SOUTH AFRICA

Access to sufficient, safe and affordable water is vital for human development. At present, globally, more than 1.2 billion people lack access to an adequate supply of water and more than 2.4 billion lack access to adequate sanitation. More than 2.4 million people die annually from water-related diseases due to the absence of a qualitatively safe water supply - most of these are children (World Bank, 2005). The term 'human rights' refers to those rights that have been recognised by the global community in the Universal Declaration of Human Rights, adopted by the United Nations (UN) member states in 1948, and in subsequent international legal instruments

that are binding on states. The human rights approach is used in particular to challenge economic and social injustices.

The consensus on human rights reflects a global moral conscience (IUCN, 1991). The intent of the adoption and operationalisation of the notion of the human rights approach to water is to put people's needs first regarding water use, and to promote human-centred water resource development based on a coherent framework of binding legal norms and accountability. It is in recognition of the human rights approach to water that South Africa's constitutions specifically guaranteed access to water to all citizens, and the country was among the very first in the world with such a constitutional framework.

About two-thirds of South Africa is arid or semi-arid. The country's rivers are relatively small in comparison with major rivers on the African continent, and are largely shared internationally - about 65 per cent of the land area of South Africa falls within internationally shared river basins (Schulze, 1997). Annual rainfall across the country averages around 450 mm per annum, which is barely half of the global average (Schulze, 1989; DWAF, 2001). The magnitude and distribution of rainfall subject large parts of the country to extremes of periodic droughts and floods, emphasising the crucial need for efficient management of water resources as a national priority. This is reflected in the National Water Act (NWA), which was ratified in 1998. The NWA converted the long-standing riparian water rights in South Africa into a new management system, in which the state becomes the custodian of all water resources in the country. Existing individual and group rights to water for productive and consumptive uses were preliminarily recognised, subject to registration, subsequent review and licensing by competent authorities – Catchment Management Agencies (CMAs) – in the country's 19 water management areas.

The NWA pledges that the process of water management should create new windows of opportunity for previously disadvantaged individuals and groups to improve their socio-economic situation, while contributing to national economic development. It sets out ways in which this could be achieved through a legally binding framework, within which water resources in the country will be protected, used, developed, conserved, managed and controlled for the benefit of all (South Africa, 1998). A National Water

Resource Strategy (NWRS) that seeks to define the framework and priorities that should guide the implementation of the Act are being developed (DWAF, 2001).

Of these priorities, the provision of relevant information to all tiers of water users and the general public, and the identification of ways in which the available water resources could support social and economic development, are emphasised. Seeking to strike a balance between efficient water utilisation - i.e. allocation to high-value uses in the context of growing water scarcity -- and achieving equitable access for all, including smallholder agricultural producers and domestic users, is a formidable challenge. Hence, the NWA specifically calls for pro-poor strategies that emphasise the principle of 'some for all' rather than 'all for some'.

According to the NWA, meeting the ecological reserve for each water management area is given the highest priority, immediately followed by basic water needs for human consumption. The Act sets these basic consumption needs at 25 litres per person per day, which is about half of the requirements mentioned in the Dublin Principles of 1992. However, there was a government decision in 2000 to provide the first 6 000 litres of water per month free of charge to all households in order to cover basic human needs (Schulze, 1997).

After the reserve and basic human needs, the next priority in each water management area is water for basic subsistence uses, the so-called Schedule 1, which sets aside certain water uses that are permissible under any circumstance. This includes water for reasonable domestic use, such as smallholder livestock and small-scale gardening, but not for commercial purposes (DWAF, 2000). After these basic needs and Schedule 1 uses, compulsory licensing may be introduced where and when needed, which will cancel and replace all existing licenses on the basis of a new allocation schedule.

Even though the Department of Water Affairs and Forestry (DWAF) is chiefly responsible for implementation, strong vertical and horizontal cooperative governance between government departments is envisaged for crystallising the process that will eventually be taken over by the CMAs, which are in the process of being established. The work of Naidoo and Constantinides (2000) is instrumental to our understanding of

the different ways of navigating the difficult task of ensuring universal access to water in a water-scarce country.

(1) Prioritisation of water for commercial agriculture: Agriculture currently uses approximately 54% of available water, primarily servicing white-owned farms. This constitutes more than 83% of arable land. In many instances, the question of the most beneficial use of water arises.

(2) The location of a major industry far away from the major river water systems and the expansion of these industrial developments beyond the capacity of the existing water supply: This has meant that large, expensive inter-basin transfer schemes have become popular water solutions in the South African environment.

(3) The third key characteristic is probably the most visible consequence of the social engineering that was apartheid: the differential domestic servicing within the paradigm of South Africa's unique class system based on race. The net result is that we have reasonable reticulation efficiency in the white suburbs and quite the opposite in black townships, where minimum night flows of greater than 60% are not at all uncommon. In addition, it is estimated that out of the population of approximately 40 million people, 9-12 million of those people do not have reasonable access to potable water.

The previous paragraph aptly describes the environment within which the South African water industry operates, and some of the key factors that have advised the development of the new water legislative framework for the new, democratic South Africa. The cornerstones of this legislative framework are two recently promulgated acts: the Water Services Act (108 of 1997), which informs all decision-making regarding treated water, and the National Water Act (36 of 1998). Some key features of these acts are:

(1) The naming of the Minister as the custodian of all waters and water resources in South Africa on behalf of the South African people. This implies that the concepts of water ownership and water rights fall away, and rights of access to water and the resource itself have to be secured through a mechanism of fixed-period conditional licenses for water use.

(2) A new governance regime for water based on the catchment model has been introduced in a manner that allows maximum participation within the subsidiarity concept.

(3) The embracing of water conservation and demand management as key drivers toward efficient water use (Naidoo and Constantinides, 2000).

The provision of a portable water supply and adequate sanitation has permeated the development programmes of many developing countries. This situation is partly influenced by international quests and pledges such as those adopted by the 1992 Agenda 21 Rio Earth Summit in Rio de Janeiro and subsequent proclamations of the Drinking Water Decades (Abrams, 1996:2). As a developing country, South Africa finds itself in the midst of formulating sustainable programmes for water management. However, in this case, South Africa has moved faster than other democratically elected governments in closing the gap between the old and new water policy. The old water policy was conceived during the apartheid era, when the government had priorities other than domestic water supply and sanitation. The new water policy was formulated in 1994 in order to counteract the old policy of the apartheid government.

Nevertheless, there are still huge discrepancies between the ideal and lofty dream of South Africa's water law and the reality on the ground, just like most things in the new and democratic South Africa. The gap between the policy formulation of government and its implementation are contemporary problems confronting the new government, led by the African National Congress, as there is still a huge paralysis and ineptitude that is rampant in public service delivery in the country. In terms of water delivery, there are still discrepancies between the rural areas and most townships of South Africa and the urban and affluent parts of the country in terms of the provision and accessibility of water, and these affects sanitation and health standards in communities (South Africa, 1998).

During the same period (1994), it was estimated that more than 12 million South Africans lacked access to potable water and that 21 million were without sanitation facilities. The introduction of the 1994 White Paper on Water Supply and Sanitation was indicative of the commitment by government to guarantee certain individual rights.

This demonstrates that, in South Africa, it took a constitutional decision to enforce access to a potable water supply and hygienic sanitation. The overwhelming majority of Black South Africans live in rural areas and do not have access to basic water supplies and sanitation. This is despite South Africa's world-class water infrastructure, which historically leveraged the economic sector, the mining industry in particular, in large cities such as Johannesburg (South Africa, 1994).

As noted by Hamann and O'Riordan (2000:1) and argued vehemently by Ntsime (2002), sustainability is a process and not an objective. The key objective which can encourage sustainability to occur is thus participatory democracy. South Africa's democratic transition has created a viable pathway to sustainability in South Africa. However, it should be noted that in South Africa, promoting social justice implies that the dignity and self-esteem of the majority of people who were denied their basic rights will have to be addressed. The liberalisation and privatisation of the water sector in South Africa has to find a way to attract the investments critically needed by the water sector in order to leverage the injustices of lack of water services in the rural areas of South Africa, without neglecting the majority of the black population who were historically excluded and marginalised in the distribution of resources, especially water, in the *ancien regime* of South Africa (apartheid).

Participatory methods of restorative justice will have to be embraced as the government's overall development philosophy in laying the foundation for sustainable development. As the situation appears today, South Africa still lacks mechanisms for ensuring that the process of sustainability and the ultimate objective of democracy are realised. In this instance, restoring procedural and generational equity in the provision and use of water in the country should be the concern of the new government, instead of leaving the wretched of the earth (Fanon, 1966) in the country to suffer under the unfavourable conditions of the free market and the imperfect system of global capitalism. The difficulty of locating sustainability within the water sector is that this sector has for so long been driven solely by racial, environmental and ecological concerns. As argued by Hamann and O'Riordan (2000:1) and explained by Ntsime (2002), the bio-physical functions of sustainability in the water sector are overshadowed by popular norms and standards which dominate the definition of sustainable development. The past status quo regarding water was modelled around apartheid

policies. The rationale points out that this policy was biased towards water resource management issues.

Therefore, South Africa's water policies were focused mainly on sustaining water resources. The current challenge for South Africa is to create a balance between the sustainability of water resources and water services. After the 1994 elections, the introduction of the National Water Act (No 117 of 1998) and the Water Services Act (No 108 of 1997) in South Africa is a clear indication that the government regards water as a national resource which must be shared and used equitably, economically, efficiently and sustainably (South Africa, 1998; South Africa, 1997).

The distinction between the water sector and water services sector is therefore critical. Firstly, as indicated in the above discussion, the water sector embraces the entire chain of water, from raw water, storage, abstraction, purification, distribution to consumption (see Figure 5.1). Secondly, the water services sector represents part of the water sector, in that it is concerned about distribution, reticulation, maintenance and consumption. However, indications are that for the purpose of sustainability, both the resources (raw water) and the supply chain (water services) complement each other. The water services sectors complement each other. The water services sector consist of key role players such as water services institutions (water boards, municipalities, water committees and water user associations).

5.7.1 The apartheid era policy on water use and its impact on sustainable development in South Africa

The Department of Water Affairs and Forestry is the government department responsible for water infrastructure management, water resources management, community forestry and water services provision. Historically, the policy and functions of the Department of Water Affairs and Forestry were limited mainly to water resource management. It included large infrastructural development, the management of large catchments and dams, and the administration of government water schemes (Abrams, 1996:2). Furthermore, the scope of its work was biased towards technical and engineering functions. It is interesting to note that the department was characterised by significant name changes. Table 5.2 below outlines this.

TABLE 5.2 METAMORPHOSIS OF THE DEPARTMENT OF WATER AFFAIRS

Source: compiled from various DWA annual reports

	YEAR	NAME	LEGISLATION
1.	1875	Public Works Department	Unknown
2.	1912	Union Irrigation Department	Irrigation and Water Conversation Act (Act 8 of 1912)
3.	1956	Department of Water Affairs	Water Act (Act 54 of 1956)
4.	1980	Department of Water Affairs, Forestry and Environmental Conservation	Water Act (Act 54 of 1956)
5.	1984	Department of Water Affairs	Water Act (Act 54 of 1956)
6.	1994	Department of Water Affairs	Water Services Act (Act 108 of 1997)

Source: compiled from various DWA annual reports.

Table 5.2 above indicates that in its formative years, between 1875 and 1912, the department was more responsible for provision of public services and the irrigation of schemes. Almost 96% of water supplies were developed for agricultural purposes (DWA Annual Report, 1988/89:366). However, between 1960 and the 1990s, the function of the department changed significantly, from the building of large water schemes and dams to urban water development. After the new government was voted into power in 1994, the focus became community water supply and sanitation.

Table 5.2 also shows that the department's core business has historically mirrored the political changes in South Africa. In other words, in 1912, as an irrigation department, the department's core business was to address the needs of the farmers, who were predominantly White. It is quite clear that government policy was then not geared towards domestic water supply and sanitation. It is also important to note that prior to

1994, the water sector operated in the form of a “flexible national water management strategy in which the effective management supply, demand and quality are key elements” (DWAF, 1986:260). The Department of Water Affairs was thus viewed as a custodian of water resources, and therefore had a legislative responsibility to ensure access and equitable provision of adequate quantities and quality of water to the public. However, the beneficiaries of these services were Whites, who resided in cities and urban areas. Thus, this access was not extended to people in townships such as Mamelodi, hence the poor quality of water available to some of the households in these townships (DWAF, 1999).

In pursuance of its mandate under the Water Act of 1956, the Department of Water Affairs implemented large infrastructure projects for the provision of bulk regional water supply schemes (South Africa, 1956). Delivery was therefore planned in such a way that it could be done on a regional rather than a national or local level. This was done in the light of promoting economies of scale, and also to attain competitive advantage through large coverage of the domestic, industrial, commercial and agricultural sectors. Waterworks, mainly to promote irrigation, were constructed as welfare projects. These projects were politically motivated to address unemployment amongst the White population during the economic recession. This became the turning point of an attempt by the government to use a public sector institution such as the Department of Water Affairs, in order to play an important role in forging a balance between sustained water resource management and job creation through the efficient and effective provision and management of water services.

As indicated above, the government’s direct responsibility demonstrated a supply-driven approach. However, this approach changed when the government drew attention to the growing scarcity of water as a result of the drought in the 1970s. This led to a demand-driven market approach, which emphasised riparian principles. Riparian rights were exercised under the legislative control of the Water Act of 1956 (South Africa, 1956). This Act made it possible for the government to proclaim key regulations and rules, which guided the water industry in South Africa. However, in 1994, in line with the huge political transformation taking place in the country, the department reverted to a supply-driven approach, which saw a large water infrastructure being developed for domestic water supply. This change of policy in the water sector in South Africa was

specifically designed to be more inclusive of the majority of the South African population, who were denied access to water during the old regime when racial considerations were paramount in the distribution of water resources (Hukko and Katkho, 2003:170).

Implicit in this argument is the fact that in 1875, when the Department of Water Affairs (previously Department of Public Works) was established, water was the most important service, used predominantly for irrigation purposes, hence the enactment of the Water Act No 18 of 1912 under the new Union Irrigation Department (DWAf, 1975:31- 32). The basic principles inherent in the old and the new legislation, which were introduced after the arrival of the Dutch in the Cape Colony, were based on the system of *dominus fluminis* or state control. Subsequent to the British occupation in 1806, principles of riparian rights in South Africa have always remained the same, up to the present day. However, historically speaking, riparian rights were aligned with riparian land. Riparian land referred to land held under an original grant or deed of transfer of such grant or under a certificate of title, whether surveyed in one lot or more than one lot, or along any portion of any boundary where a public stream existed, and any sub-division of such land.

Although the Water Affairs Acts did not contain any racially discriminatory statements, they were covertly biased along racial lines, as argued vehemently by some scholars of water in South Africa, such as Ntsime (2002). The majority of Blacks had neither riparian rights nor riparian land. One can assume that the history of water in South Africa was geared more towards the needs of White farmers, White land-owners, White-dominated industries and commercial sectors, and White-dominated urban areas. A riparian owner was thus the owner of land, and the owners of land came from the White population. During the period under review, water resource management and provision were divided along geographical boundaries (urban areas versus former homelands). It has to be noted that most of the people in rural south Africa, both White and Black, had little or no help from the central government of the day, as they were left to take care of their own individual water needs. People in the homelands, especially blacks, had no access to potable water and some relied mainly on contaminated sources such as rivers, streams and rain harvesting.

Robinson (1990:13) insisted that the former homelands could not cope with providing a sustained supply because in most cases their systems were unreliable. It is within this context that one gets a thorough understanding of the differences in the quality and accessibility of water between rural areas and townships of South Africa, such as Mamelodi, and urban areas such as Pretoria. In the old dispensation, water resources and distribution neglected the principles of equity and social justice, and hence sustainable development, in the distribution and provision of water services, as a significant part of the black population was denied access to clean and affordable water supply, or even totally excluded in the scheme of things.

A consequence of the Land Act of 1910 was based on its riparian principles and regulations, such as the Water Act of 1956 (South Africa, 1956), clearly defined parameters for use of private water and provisions which were not applicable - for example: 'To any owner of land situated in the area of any municipal institution, contemplated under in Section 84 (1) (F) of the Provincial Government Act, 1961 or a local authority established under Section 2 of the Black Local Authorities.' Implicit in this Water Act of 1956 and the legal results of the riparian rights is that apartheid era policies systematically marginalised and excluded people and impeded the concept of sustainable development in terms of the availability and distribution of water resources in South Africa.

Based on racist and colonial laws of the country, which allocated only 13% of lands in the country to the black population, one can infer that most black South Africans did not have riparian rights in 1956 and also no rights to water. This policy, like most policies of that era, did not contribute to sustainable development in South Africa, because it becomes self-evident that in apartheid South Africa, access to water and good sanitation was racially determined, and the colour of one's skin determined the quantity of water available.

Unlike the Water Act of 1956, the Water Service Act of 1997 outlines a different, positive approach towards community water supply and sanitation. It would appear that contrary to the Water Services Act of 1997, the Water Service Act of 1956 allowed government to abdicate its institutional responsibilities to provide community water services. Abundant evidence from these realities proves that the apartheid policies and

programmes contributed to the lack of access to water in the mainly black areas of the country. The policy of riparian rights was inextricably interwoven with the rights to water, since the majority of the black population did not have access to land as a result of the Land Act of 1910, and were also denied access to water. These apartheid laws restricted the ability of black South Africans to access clean and affordable water facilities, and this was bad for the sustainable development of the whole country, as the lack of inclusiveness denied opportunities to millions of people (Ntsime, 2002).

Water legislation in the old South Africa was severely fragmented, like most government departments of that era. Naturally, where there is fragmentation, there is a high probability of resource wastage and gross inefficiencies. Some of the critical points raised by Monod (cited in Farrel and Hart, 1998) regarding patterns of fragmented water supply in the past reveal that:

- a) The services were fragmented and therefore resulted in a stark contrast between urban and rural areas
- b) The services rendered overlooked persistent poverty and inequality
- c) The services rendered manifested extreme inequalities between the White cities and Black townships. These inequalities resulted in the water services' current backlog.

Implicit in the above discussion is the fact that political and ideological principles influenced water planning and management in the country, which did not provide for sustainable development. Fragmentation and duplication of water services were not a reflection of inefficiencies on the part of Department of Water Affairs alone, but were mainly due to government apartheid policies. Planning and development within this sector was mainly characterised by technical and engineering principles, and less by social and human development. As mentioned by Swilling and Boya (cited in Munslow et al, 1997:169), the water cycle and waste systems were structured in a way which suited the pockets of White consumers. The Department of Water Affairs arguably ran an efficient water programme using technocratic solutions to achieve the government goal of maintaining a good quality of life for the White population.

A careful study of South Africa's water sector will reveal a sector which was non-participatory, top-down, technocratic and even racially influenced by the political ideologies of that time. In this context, sustainable development was not achieved and

there is a need for a paradigm shift in the mindset of policy makers in modern and democratic South Africa. The emphasis should not only be on provision of water, but considerations of equity and justice should also be taken into account in the privatisation of water by municipalities in the country, so that the poorest of the poor are not denied irreplaceable resources such as water. The critical question in the new dispensation should be whether or not the current policies of the African National Congress-led government with regard to water promote sustainable development. See Chapter 4, section 4.10 for a full understanding of the effect of liberalism in the water sector and its impact on sustainable development in South Africa.

5.7.2 Post-apartheid era policy on water use and its impact on sustainable development in South Africa

The introduction of new legislative measures gave further impetus to South Africa's water sector policy. Both the National Water Act (No 36 of 1998) and the Water Services Act (No 108 of 1997) outline a number of institutional arrangements which have a bearing on how water resources and water services should be handled. The key to the Water Services Act is the institutional framework comprising water services institutions. The National Water Act is mainly concerned with water management institutions. The Water Services Act clarifies the complex institutional arrangements in the water services sector. It makes provision for five key types of water services institutions, namely a water services authority, water service provider, water board, water services intermediary and statutory water services committee.

(a) A water services authority refers to any municipality that ensures provision of and access to basic water services, including sanitation. None other than a municipality can become a water services authority (South Africa, 1998; South Africa, 2000).

(b) A water service provider is an institution which provides actual water services (retail water distribution) to consumers. To do so, a water service provider requires a contract which sets out various conditions of services. This function can be provided by a water board, non-governmental organisation (NGO), community-based organisation (CBO), private company or municipality itself.

(c) A water board is an institution which has traditionally performed the role of a bulk water supplier on a regional basis. This institution is established by the Minister of Water Affairs and Forestry. Its key function is to deliver services (bulk and/or retail) to other water services institutions.

This study agrees with Ntsime (2002:240) that the water industry and its system are thus very complex, because South Africa still reflects a contrast between the urban (cities and towns such as Pretoria) and rural and peri-urban areas (formal and informal settlements such as Mamelodi). Therefore, structurally and institutionally, the government has a responsibility to close this divide. More resources should go to areas which were previously unserved and public-private sector partnerships seem to be the most viable options for meeting the growing demands. As mentioned in the South African Water Bulletin (2000:12), the role of water boards (public) and water service providers (private) in general is changing from what was primarily the function of supplying large urban centres with bulk water and running complex and expensive systems for financially strong municipalities, towards more community-based retail management systems and ensuring that issues of justice, equity and fairness, because of the peculiar history of economic exclusion and marginalisation in the country, are involved in decisions that concern the distribution of water in South Africa.

In the final analysis, the post-apartheid water policy, although it has increased the coverage and accessibility of water for the majority of South African citizens, has not promoted sustainable development. The water sector is still haunted by the paucity of skills at the local government level, as the government's obsession with racial nationalism and a restrictive, weak and defensive migration policy is depriving the councils of badly needed water engineers (who are mostly white), who are critical for the maintenance and efficiency of water infrastructures. Coupled with an ill-conceived and lopsided liberalisation of the water sector, one begins to realise that determining the difference between the apartheid and post-apartheid era policy on water with regard to sustainable development is like looking for the difference between six and half a dozen. The picture is grim and sad, but it is the reality.

During the apartheid era, the quality of water provided to the non-white population was compromised and thus did not promote sustainable development in the use of water,

while in modern and democratic South Africa, the bulk of water needed by the population may be available, but the bulk of the non-white population may not be able to afford it because of the block tariff regime of water service providers allowed to operate in the country by the government in order to introduce 'market efficiency' in the municipalities, which also do not promote sustainable development.

5.8 THE OPERATION OF THE NEW WATER POLICY

The above discussion points out that, historically, water and the overall technology behind its management was an occupation for technocrats only. As noted from South Africa's colonial history, water management was located within environmental and ecological concerns. It only became evident in the 1980s that concerns for human beings had become critical (Abrams, 1996:4). This implies that South Africa has a huge human development gap to fill. At this point, it is evident that South Africa has a myriad of factors which have militated against sustainable development in the water services sector. Historically, water in South Africa was an unknown phenomenon until 1994, when its importance gained the public's interest.

Access to potable basic water is a constitutional imperative in South Africa's water industry. Water is therefore seen as a basic right and not as a commodity, like other services such as electricity and telecommunications. In developing countries, water has health and hygiene dimensions and contributes towards living a healthy and productive life. The absence of it in the lives of poor people will pose serious health risks to the whole population in terms of water-borne disease. Unhygienic water supply and sanitation facilities lie at the root of some 80% of the diseases in the world. In South Africa, incidents of cholera in KwaZulu-Natal bear testimony to this problem (Hukka and Katko, 2003:161).

5.8.1 A water services authority

As noted previously, a water services authority is a municipality whose responsibility ensures sustainable water services at the community level. The Water Service Act clearly outlines key functions of water services authorities, which are governance and the provision of water services. Democratic governance is a function which must be

carried out to ensure access to basic services, drafting and adoption of regulations, by-laws and the Water Services Development Plan (WSDP). Since the advent of the new legislation, such as the Water Services Act of 1997, every water services authority has the right to either undertake the provision function itself or choose to outsource it. Although the provision function complements the governance function, for the purpose of this study, the focus is on the governance function. The latter involves far greater constitutional responsibilities, in that municipalities cannot outsource it in any way or form.

5.8.2 Ensuring access to basic water services

Water services authorities have the legislative responsibility of ensuring the provision of sustainable water services. In this case, this also implies free basic water services. This is probably the one important legislative clause which guarantees all South Africans a constitutional right to potable water. Unlike the previous water legislation, the Water Act of 1956, the Water Services Act of 1997 (South Africa, 1994) makes certain commitments which are geared towards access to water services. This is evident from many sections of the Act, which repeatedly use the word “must” instead of “may” or “should”. Both “may” and “should” provide a relatively non-obligatory legislative stance, which could lead to non-compliance by other interested parties. “Must” is an appropriate situation in which the government wants to exert its authority and carry out its belief in ensuring the right of access to basic services.

Linked to access to basic water services is the emphasis on the sustainability and viability of water services. Certainly, this is a critical area for water services authorities, because most of them are not yet ready to guarantee the right to access, let alone to ensure the sustainability of water services. The implication is that central government, while it is entitled to enforce rules and regulations, also has to commit resources to create viable and sustainable water services authorities. Some of the basic actions that water services authorities need to take in order to conduct their governance and/or provision functions are:

- a) Water conservation and demand management.
- b) The development and enforcement of regulations and by-laws.
- c) Billing and collection.

e) Ensuring a sustained culture of payment for services.

5.8.3 Water sector regulatory framework

In South Africa, water service delivery has historically been the responsibility of municipalities (including district or regional councils) in terms of retail distribution, and of water boards in terms of bulk provision. South Africa has typical examples of private sector management, such as the Johannesburg and Nelspruit contracts. South Africa has also experimented with a type of public-private partnership called Build, Operate, Train and Transfer. This means that private water companies were required to build and manage water infrastructures and operate them for a fixed period of time before transferring them to local governments in the rural areas. This arrangement was introduced as part of the government's effort to accelerate the delivery of water services, especially in the rural areas. Several evaluations were conducted during the life of the Build, Operate, Train and Transfer programme, and these revealed mixed findings (Narsiah, 2008). On the one hand, it was found that the programme succeeded in facilitating rural water infrastructure development, but on the other hand, it proved to be a costly option.

It was costly in that due diligence was not conducted by both the local government and the consultants on those who are incapable of paying, not because they do not want to pay, but because they are unable to pay as a result of the social engineering that was apartheid, which deprived millions of people of the opportunity to access resources such as water (Hukka and Katkho, 1997:25). The majority of poor people who rely on government grants and subsidies are unable to pay the exorbitant price of water fees charged by private companies.

Despite the shortcomings arising from the above findings, what is important is that there is sufficient evidence to prove that private sector involvement can leverage government's inability to provide water facilities to the whole country and peri-urban water projects, and contribute towards sustainable water services provision. Private sector participation is still a contentious issue between labour and the government, and

the extent and level of their involvement is still being negotiated between the allies of the African National Congress, South African Communist Party (SACP) and Congress of South African Trade Unions (COSATU). However, this study argues that if the right quantities and qualities of capacity are provided to municipalities, they will be in a position to make informed decisions whenever they are confronted with the choice of suitable water services provider, be it a public-private or public-public partnership.

What is lacking at this stage in South Africa's water industry is the development of a viable regulatory system which will enforce norms and standards, which are a necessity in terms of good customer care, water quality, tariff setting and efficiency, amongst other things. Good customer care is essential for customer satisfaction, which in turn is essential for sustainable service delivery. The latter, as argued in this study, lays a good foundation for sustainable development. However, what is more important is that a water services authority must sign a contract with an appropriate water service provider in order to operate in its area of jurisdiction.

Legislation gives a water services authority sufficient power to enforce regulations, which, after all, are meant to protect the interests of consumers. South Africa has never had an independent water sector regulator. Historically, the sector was ruled by decree and all powers were vested in the Minister of Water Affairs. Even under the control of the new government, there has been no decision as to whether or not an independent regulator will be established. The regulatory and policy framework in South Africa is undergoing an incremental and developmental process. However, the Minister does have regulatory powers. Various water services institutions perform different roles in water service provision. The government has also passed different legislation and regulations in order to address the gaps of the past. However, there is still a strong need for clarity regarding South Africa's water sector regulatory arrangements (South Africa, 1998).

Although critics (Stewart, 1999) could argue that the Department of Water Affairs and Forestry is currently playing many conflicting roles, this does not suggest that no credibility exists in the sector. However, best practice elsewhere could expedite this process, and even make it more cost-effective. This study argues that for the purpose of sustainable development in the service sector, the sector requires a strong regulatory

regime to normalise the situation, and also to ensure that the government's mission is realised. It is important therefore to ensure that regulatory objectives yield the desired outcomes and that potential benefits exceed their potential costs. In this case, the outcome for the South African government, as stated above, is to ensure access to water services for all South Africans.

The most practical action, therefore, is not to duplicate what has been experienced in other parts of the world. Best practice adapted to the South African situation, should be followed. This action will minimise developing the framework, drafting regulations and policies and establishing the body. Since South Africa already has experience with establishing other regulators such as the South African Telecommunications Regulatory Authority (SATRA) and several others, there should be existing benchmarks for the regulatory functions. Other best practices can be sought outside South Africa. According to the DWAF (2000), the mission of the water services function is to meet:

The social, economic and environment objectives of the country, and to see that the government must ensure that all South Africans have equitable access to effective, efficient, affordable, economical and sustainable water services.

Stewart (1999) was of the view that the regulatory reform process is therefore meant to create an enabling environment for the government to exercise control in terms of key delivery and governance functions. Regulatory control strengthens the likelihood of water services providers performing optimally and complying with regulations. However, the tendency is that often governments lack the capacity and systems to monitor the impact of regulators. Governments focus more on the perceived regulatory benefits and less on the systematic evaluation of the cost-effectiveness of their regulations.

The implications for the establishment of a water sector regulator are that there are key processes which should be undertaken prior to establishment. Firstly, there is a need to ensure that the sector as a whole, including consumers, knows exactly what the implications of establishing a regulatory institution are. Education and the raising of awareness are critical. The Department of Water Affairs and Forestry could undertake an extensive consultative process, which

will assist in defining the purpose, outline benefits, roles and responsibilities, the possible form and structure, and the powers and functions of the regulators. It is important to note that some of these processes are currently being implemented. Certainly, local government support becomes more critical because in terms of capacity, the majority of South Africa's municipalities are not yet ready to develop by-laws in line with regulations.

5.9 THE RELATIONSHIP BETWEEN WATER AND ECONOMIC DEVELOPMENT

It is important to unpack the relationship between water and an organised and mechanised agricultural system (which depends solely on uninterrupted water supply), which has a huge influence on food production and security, especially in a developing country such as South Africa. It is important to look at the role of water in food security, economic growth and sustainable development in general, by taking a look across the Limpopo River in order to understand the disaster that the Mugabe regime has made of the once prosperous food basket of the region, which is Zimbabwean agriculture. The disastrous land distribution policy resulted in a large chunk of the country's fertile lands being appropriated by ZANU-Pf elites and war veterans allied to Mugabe, who lacked both the skills, acumen and even machinery to run a well-irrigated farming system.

This example is topical, because South Africa shares the same historical legacy (colonialism) with its northern neighbour, and it is important that South Africa realises the intricate relationship between water, land, food production, economic growth and sustainable development in general. At this time, when leftist elements and ideologies are on the rise in the ruling party, it is important for politicians and policy makers in South Africa to be aware of policies that failed in Zimbabwe, even in the developing world, and also those that are viable.

The Zimbabwean economy has shrunk to the size of Soweto because of the brouhaha caused by Mugabe's land grab for his cronies. It is important for us to illuminate this salient role of water in improved agricultural production, economic growth and sustainable development. The impact of climate change on water availability could have

deleterious effects on large segments of human society. The IPCC Third Assessment, Working Group II, summarises recent work on climate change and the consequences for water resources (IPCC, 2001). Studies of the causes of disparity in the level of economic development between the wealthiest countries and the poorest have overlooked a fundamental difference between these sets of countries: the availability of water. The amount of rainfall, and in particular its temporal variability, presents challenges to food production, trade and infrastructure development.

In his monumental book entitled *The End of Poverty*, Sachs (2005:56-66) was able to weave a very empirical and powerful argument that one of the reasons for the systematic poverty bedeviling much of Africa lies in the reliance of most countries in Africa on rain-fed agriculture. Sachs (2005:66-67) believes that if a well developed irrigation system and mechanised agriculture is not introduced, it may be difficult to extricate the continent from the downward spiral of poverty. One can now deduce that the 'Holy Grail' of agriculture is efficient water supply, since food production is critical for the alleviation of poverty. We now have a better understanding of the relationship between water and economic development. Based on this perspective, we can now confidently say that issues of economic development and sustainable development in most of Africa must incorporate the provision of water for agricultural production.

Many authors (Rodrik et al., 2004; Easterly and Levine, 2003; Masters and McMillan, 2001) who have written extensively on the factors that are critical for economic development have not properly considered the effect of rainfall on the economic development of a country, and it was only Sachs (2001) who was able to illuminate the salient aspects of the relationship between the critical role of rainfall/water and economic development. He has argued for more nuanced measures of the tropical effect, and vividly captured the climatic causes of underdevelopment, especially in sub-Saharan Africa.

Rodrik et al. (2004), in a very comprehensive study, also agreed with Sachs (2001) that rainfall variability is one of the critical factors in economic development. What this study also proved is that agriculture and food production have to be protected at all costs by political leaders who are serious about the economic development of their country. In this context, the argument of land invasion, blaming colonial authorities for

lack of restitution, by the Mugabe government is directly and indirectly exposing the country to dire food shortages and poverty, because the war veterans do not have the wherewithal to manage a mechanised agricultural system, which is critical for sustainable development of the country.

The colour, creed, gender and religion of farmers should be debated in courts in a democratic country, and not left to hooligans to take laws into their own hands. South Africa has a wonderful lesson to learn from Zimbabwe in terms of how a mismanaged agricultural system can bring a country to ruin. The link between water and development is glaring - water is critical for agricultural production, and a well-run agricultural system is a one-way ticket to the successful economic development (reduction of poverty) and sustainable development of most nations.

More recent studies conducted by a host of reputable organisations (World Bank, 2004) and many academics in the area of development (Grey and Sadoff, 2006) strengthen the interrelationship between rainfall variability/agriculture and economic development, and a particular study conducted in Ethiopia, using an economy-wide model that included hydrologic variability effects, found that the occurrence of droughts and floods reduced economic growth by more than one third. The World Bank (2004) study also found that losses in Kenya due to flooding associated with El Niño in 1997–1998 and the La Niña drought in 1998–2000 caused annual damage ranging from 10–16% of the GDP during this period. Interestingly, the most damage was not incurred by agriculture. Transport losses represented 88% of flood losses, and foregone hydropower and industrial production totalled 84% of drought losses.

Water scarcity and drought is a serious threat to the commercial and industrial development of any country. In South Africa, the local research of Hukka and Katko (1997:162) on the economic impact of the 1991-92 drought was modelled, and the results indicated a reduction in real disposable income of about 1.8 percent, an increase in consumption expenditure of 0.5 percent due to lower disposable income and higher food prices, a reduction in gross domestic savings of 5 percent and an incremental rise in the rate of inflation of 0.8 percent. Overall, drought was estimated to have a net negative effect of at least R1,200 million on the current account of balance of payments. It also resulted in the loss of 49,000 agricultural jobs and 20,000 formal sector jobs in

non-agricultural sectors. The effects of droughts go far beyond agricultural production alone, impacting on a wide range of economic activities.

It is very clear from this scenario that for a developing economy such as South Africa to suffer a prolonged water scarcity, either as a result of drought or wastage of the available water resources in the country, it will have a negative impact on efforts to combat poverty and improve the living conditions of citizens. The availability of water is very critical to the sustainable development of the country. The country needs to improve the storage capacity of water to avert the possible deleterious effects of water scarcity in 2025. See Figure 5.1 for details on the water storage capacity of South Africa.

Although most of the research by Sachs (2003) on the relationship between rainfall and development was conducted during his extensive experience in Latin America and China, it is still valid, relevant and has huge resonance for developing societies that may not have sufficient rainfall to use improved technology (irrigation) to improve their agricultural production and development, such as South Africa. In paying particular attention to the socio-cultural context in Southern Africa, with Zimbabwe as a case study, South Africa also needs to pay particular attention to the issue of mechanised agriculture, which facilitates irrigation and helps overall food production and sustainable development. Since the country will be a water scarce one by 2025 (DWAF, 2001), it is important for it to be aware of the link between irrigated agriculture, which has to be managed by competent farmers, and overall food security and sustainable development.

Because food production and irrigated agriculture are related to land, and the fact that most farmers in the country are whites, while this study is all for land redistribution and equity and justice in the land question, it is important for the government to carefully navigate the link between justice (making land accessible to black farmers) and jeopardising the food security of the country. It is critical for the government to find a way to retain the skills of the white farmers who are still interested and competent in irrigated agriculture, who can then mentor black farmers who want to be involved in agriculture. This puzzle needs to be solved if South Africa is to have steady and improved food production, economic growth and sustainable development.

5.10 THE RELATIONSHIP BETWEEN WATER AND POVERTY ALLEVIATION

Evidence abounds in the literature (Sonou, 2002; Sachs, 2001) on the critical role of water availability in increasing food production and subsequently reducing poverty on our continent. Many believe (Webb and Iskandarani, 1998; Rosegrant and Ringler, 1999) that in Africa, particularly sub-Saharan Africa, high population growth and inadequate agricultural production may combine with increasing water scarcity to pose serious constraints to future economic development. While the impact of rapid population growth on food security has received considerable attention over the past decades, recent studies (Sonou, 2002) have also made headway in establishing links between water scarcity and food insecurity. The task of ensuring water security for poor households is therefore as important as ensuring food security (Rosegrant, 1997; Seckler et al., 1998).

In view of the spiralling costs of fuel and its concomitant effect on all sectors of the economy, global food insecurity and food insecurity in sub-Saharan Africa is expected to continue or even worsen in the years to come (FAO, 2003). The reasons for this are numerous, but largely relate to low physical productivity in the agricultural sector (both irrigated and non-irrigated), with irrigated yields assessed to be lower than many other regions of the world (Rosegrant and Perez, 1995). There is therefore an acute need to increase food production on the continent by stimulating domestic production, intensification, and scaling-up of affordable and effective small-scale technologies that are sustainable and suitable for local conditions, with a potential to reduce the risks of smallholder production (Ahmed, 2003). The rational and effective utilisation of available water resources holds the key to augmenting and stabilising agricultural yields, as well as for meeting the water needs of the region's growing population. However, it was not clear for a long time whether the main problem was due to physical water scarcity or inadequate human, financial and technical capacities for water resource development and management.

In their assessment of global water scarcity and food security, Seckler et al (1998) projected that all countries in sub-Saharan Africa would suffer from some form of water

scarcity by 2025. Faced with this potential threat, South Africa has to embark on far-reaching reforms and restructuring of its water sector to serve as a stimulus for redressing inequity, alleviating poverty and promoting economic development. This has also given rise to the need for developing and applying appropriate research and planning tools in support of policy and decision making.

Ahmed (2000) believes that the causes and processes of poverty are often mutually reinforcing. Focusing on the water sector, the impact of water shortages from sources (river flows, stored water and rain) within a lower riparian on its economy, society and ecology may be compounded by a lack of equitable flows of waters received through transboundary rivers from the upper riparians. The impact of this water scarcity on, for example, smallholder farmers, may be further compounded by policy biases and unequal social/muscle power in favour of larger farmers, enabling them to appropriate available water to the exclusion, by and large, of the former. Furthermore, poor farmers may not be in a position to meet the costs of accessing water. Their already precarious economic condition may thus be dealt a new blow in a given season, rendering them even weaker to face the future. The pauperisation process involving smallholder farmers thus continues, with the various causes and processes combining to push them down that path.

Other poverty groups, apart from smallholder farmers in rural areas, also often suffer from water scarcities in terms of quantity or quality or both. The situation is particularly severe in certain parts of the world. The poor also suffer the most as a consequence of such natural hazards as floods, riverbank erosion, storm surges and salinity intrusion. Moreover, there are further complications arising from seasonal and spatial differences and imperatives relating to water availability and its quality. These water sector vulnerabilities of affected people and their economic and social vulnerabilities feed on one another, as these people cannot address one vulnerability (lack of water) while they are afflicted with another (lack of money), and because they cannot address the former, they will have even less of the latter - thus, their poverty trap becomes more endemic and intractable (Hukka and Katkho, 2003).

Manifestations of the water-poverty interface would include the following: lack of access to clean water for drinking purposes and for other domestic uses can jeopardise

the lives and living of the poor; drinking and domestic use of polluted water can cause health hazards for them - arsenic contamination of groundwater in KwaZulu-Natal in the early 2000s caused an epidemic of cholera in the province, and this underscores the critical role of water in improving the health status of the population, and also in contributing towards sustainable development.

The effect of the lack of water or inability of people to afford the water provided by private companies will expose many poor people of this country to health hazards and risks, which will not augur well for the country. Affecting the source of drinking water for millions of poor South Africans is a case in point - lack of water for overall agricultural use or at critical times of crop growth and for other economic activities that generate employment opportunities adversely impacts on the livelihoods of the poor people, and the urban poor, who often live in urban slums, suffer from a lack of access to clean water for drinking and household purposes - in fact, they often have no alternative to drinking and using for other purposes contaminated water, which negatively affects their health and increases their economic vulnerability.

It is the view of Grey and Sadoff (2006) that water also causes such hazards as floods and riverbank erosion, thus worsening the economic conditions of the affected people, and the needed transfer of resources from developmental projects to providing relief to and rehabilitating people affected by such a hazard and for the rehabilitation/reconstruction of the destroyed/damaged infrastructures causes future developmental prospects to shrink, often directly hitting the poor. The poor are thus doubly affected, once as a consequence of the hazard itself and then due to longer-term adverse implications of budgetary reallocation. Those who live on lands such as offshore islands, coastal areas and river banks live in constant fear of water-related hazards, which visit them often, destroying or damaging their crops, assets and infrastructures, destabilising their livelihoods and restricting their future prospects.

Sonou (2002) has written extensively on the relationship between poverty alleviation and water. Proper availability of water has a critical role to play in helping poor people improve their conditions by being more productive, cooking meals etc. Hence, water is the most important requirement for any initiative in eradicating poverty and improving development in the rural areas and townships of South Africa, if the concept of

sustainable development is ever going to become a reality. Most of the views and research of Ahmed (2003) were conducted in his native country of Bangladesh, and most of the issues relating to poverty also hold for much of the developing world and most of Africa. He concludes that any meaningful effort towards the eradication of poverty for most people in rural communities should focus squarely on the provision of clean and affordable water resources, as its linkages with increased food production, health, sanitation, education and improved productivity are too numerous to be mentioned.

5.11 THE RELATIONSHIP BETWEEN WATER, GOOD SANITATION AND HEALTH

Water is the key to adequate health care, because both the quality and quantity of water have a direct bearing on health. A disease such as diarrhea is usually transmitted through interpersonal contact, such as when an infant's food is contaminated by the mother's unwashed hands. It is therefore important that for sustainable development to occur, the quantity and accessibility of clean water is critical, especially in rural areas, as it has a major impact on reducing the incidence of this and other diseases. According to the US Agency for International Development, it is reasonable to assume that if more water is available, people will probably use it more frequently, which will obviously influence the spread of infections that are transmitted in this way (Harvard Institute for International Development 1981:183).

Much of the primary research elucidating the intricate relationship between water, sanitation and sustainable development in South Africa was conducted by Duse et al (2003) in their study of the effect of adequate water on the health standard in the country's hospitals. It cannot be overemphasised that water is sacrosanct to the maintenance of a healthy lifestyle, not only in hospitals but also at home. The present outbreak of cholera in most provinces of Zimbabwe due to the inability of water engineers to treat the public water system is an indication of how important water is to our overall survival and existence as a nation.

Research by Van Rensburg et al. (2000) on the critical role of water in public health in South Africa has established that good health is dependent on the availability and use of

appropriate sanitation facilities, and the availability and use of sufficient safe water (at least 25 litres per person per day). The vast majority of municipal hospitals and clinics in South Africa (467%) have access to municipal water, but water shortages do impact on primary healthcare facilities. This can be shown, for example, by the fact that for the period 1999-2000, 12.5% of satellite clinics throughout the country were dependent on receiving water by tanker delivery, which is both expensive and difficult to achieve. Another 5% of satellite clinics rely on river and dam projects for water, while 12.4% of satellite clinics actually rely on rainwater.

The research by Duse et al (2003) has helped us to understand the unreliability of even municipal water supply systems, as they are epileptic. This was illustrated and supported by Van Rensburg et al (2000) with regard to the situation in the Mpumalanga province, where the water needs to be rendered safe or purified in 33% of satellite facilities before it can be used in most of the public hospitals. It adds further costs to the expenditure of the provincial department of health, and this helps to explain the interrelatedness of water, health and sustainable development.

In the Limpopo Province, Van Rensburg et al (2000) also found that water needs to be purified in 18% of fixed clinics, 14.3% of satellite clinics and 15.4% of mobile clinics. Scarceness of water is also problematic when there are major water supply interruptions, such as those that occur frequently, sometimes for several days at a time, in the Free State, Northern Cape and North West Provinces. Thus, water is not only scarce as a resource - it is scarce in terms of quality and sometimes in terms of its supply. The health implications of water scarcity for our public hospitals and the health of the country is unimaginable, as there is no point exaggerating the possible brouhaha and epidemic it may trigger within the population.

Bosch et al. (2000) espoused the health implications of inadequate water supply in writing about the relationship between poverty, education and access to water in developing countries, with particular emphasis on Madagascar. In their work, they underlined the fundamental role of water in maintaining basic health standards. When water is difficult to obtain or is expensive, the poor often cut back on hygiene uses, and this is the same situation in most households in South Africa, as the costs of paying for water for many poor families are high, in view of the massive privatisation of water and

the rising costs of food and other basic necessities. In this situation, when use of water is cut back, health and sanitation standards also drop.

Duse (2003) also believes that in the healthcare sector, water is important for a number of reasons. Water is consumed by both healthcare workers and patients, and is required for intravenous solutions and reconstituting infant feeds. Hand washing, which obviously requires clean water, is extremely important in reducing the risk of transfer of pathogenic material. However, when work is carried out in cholera-infested areas in South Africa and hands are washed with water heavily contaminated with organisms, serious risks to both the healthcare worker and patient are present. To prevent potential infection, innovative methods have to be sought, using limited resources, to try and make available water as safe as possible for hand washing. It is often forgotten that water is critical for cleaning, disinfection and the rinsing of medical instruments. There is a limited inventory of these instruments, thus clean water is required on a continual basis for instrument re-usage.

In May 1995, the Public Health Laboratory Service Communicable Disease Surveillance Centre in London was notified of the occurrence of Shigellosis in members of a tour party returning from a game lodge in South Africa. The outbreak coincided with water supply problems at the lodge, hence the lack of routine hygiene practice, and it was considered that the outbreak had occurred from contamination of the hands of staff, who were squeezing oranges to make juice (Thurston et al., 1998). Water availability in the community and in clinics is problematic. Although numerous healthcare facilities have access to water (67%), there is still a large proportion of the population that does not (Van Rensburg et al., 2000). To date, there are about 7 million South Africans who do not have access to safe or clean water, all of whom have to source water from rivers that are often highly contaminated, and transport it to their homes using vessels and containers (Thurston et al., 1998).

A clean, plentiful supply of water is important to adequately maintain hand washing routines. In 1998, eight children acquired necrotising enter colitis nosocomially, all of whom died within 2 weeks. The infection source was eventually traced and shown to have been transmitted by the lack of a hand washing facility and the contamination of an amino acid solution, which was introduced into patients' drips (Van Nierop et al.,

1998). With respect to community infections, the hospital is one area where there is a major problem. Cholera, for example, was historically mainly an Asiatic problem, but in the last two decades, Africa has been reported to the World Health Organization as the biggest cholera burden. It was thought that cholera was under control in South Africa until a major outbreak occurred on August 15, 2000 (Duse et al., 2003).

During the epidemic period from August 15, 2000 to July 31, 2001, there were 106,389 reported cases (Personal communication: Johann van der Heever, Technical Advisor-Public Health Programmes, Gauteng Health Department, Republic of South Africa). Fortunately, the cholera fatality rate was low (0.22%). Cholera deaths are an indication of a poor public health system and poor sanitation, and an indictment in a sense on the lack of infrastructure that was left by the previous government in under-resourced areas of South Africa. Recent data show that in fixed clinics, 100% have at least one flush toilet in the Free State, Gauteng, Mpumalanga, Northern Cape and Western Cape, while 30% of fixed clinics in the Eastern Cape, 18.7% in the North West and 12.9% in the Northern Province are without flush toilets (Van Rensburg et al., 2000).

An estimated 18 million South Africans do not have access to basic sanitation, 75.8% of these residing in rural communities (White Paper on Basic Household Sanitation, 2001). Nearly half of all schools use ordinary pit latrines and these are often insufficient in number, over-used, unclean and unsafe. Another 11.7% have no sanitary facilities at all (White Paper on Basic Household Sanitation, 2001). According to Duse et al (2003), improved availability and accessibility of water to hospitals and in the homes are critical in maintaining a minimum health standard - without it the health implications and subsequent sustainable development of the country will be hampered, because it is only the healthy and strong who can afford to work and be productive. In a nutshell, the critical health of the nation's hospitals and the population of South Africa depend on daily and consistent availability of clean and affordable water, both for industries and institutions and homes.

Finally, South Africa cannot afford to wait for an epidemic before we understand the link between water use, sanitation and sustainable development in South Africa, because South Africans who cannot afford to pay for water will become sick, and the nation's already struggling health institutions will be under severe strain. Abundant

evidence suggests that many cases of food poisoning may be associated with the home environment (Griffith et al., 1994), but the existing legislation in the country does not apply to the home, unless it is being used as a food business. If the savage capitalism being advocated by the Water Research Commission and the Palmer Development Group continues in terms of the use of water in South Africa, we may be heading for a disaster. It is critical for the poorest people of the country to have access to water by the time South Africa is due to face a water crisis in 2025 (DWAF, 2001). How will people work and feed themselves if water is not available to them? A healthy nation is a wealthy nation.

5.12 CONCLUSION

This chapter detailed the state of water in Africa, in particular the looming water crisis facing South Africa. It calls for proactive action to ameliorate the adverse effects of the water crisis in the country, which may be exacerbated by South Africa's peculiar environment and climate which is prone to drought, as well as the massive industrialisation taking place in the country. Finally, the chapter explored the issue of sustainable development with regard to water policy and programmes, and also the relationship between water, sanitation, economic growth and alleviation of poverty in the country.

CHAPTER SIX

SUMMARY AND CONCLUSIONS

6.1 INTRODUCTION

The primary objective of this study was to look at the concept of sustainable development in terms of water resource allocation in South Africa. It also entailed elucidating South Africa's political, economic and socio-cultural context to examine how circumstances have contributed to the existence or lack of sustainable development in the water sector. The study also specifically looked at the changing face of water resource allocation and use in South Africa, as the lowest common denominator in the allocation and use of water in the old South Africa was skewed and based on racial considerations. There is still a lack of sustainable development in the use of water in the new South Africa, as new impediments such as costs, neoliberalism and paucity of required skills to maintain the water infrastructure are also hampering the effective use of water in the country.

6.2 REASONS FOR THE RISE OF SUSTAINABLE DEVELOPMENT

The concept of sustainable development arose out of the need and urgent concern to address the growing poverty and inequality in developing countries of the world, especially in Sub-Saharan Africa, in order for them to benefit from the increased globalisation of trade and investments. It was evident (in view of the spiralling poverty in Africa) that the '*rising tide*' (Pezzoli, 1997) is not lifting all ships, as many, mostly in Africa, are almost sinking into the ocean. This resulted in the popularity of the concept of sustainable development. A model is needed that will be inclusive and take into due consideration the internalisation of the costs of production and extraction of our mineral resources, in view of the enormous mineral resources in African countries, and the problems of poverty and penury that have gripped most of Africa.

The perception of dramatic and unsolvable problems in the developing countries of the world, especially in sub-Saharan Africa, is common to politicians, aid agencies, academic analysts and the media. Indeed, such perceptions have long made crisis the

common place motif of development writing and discourse (Brandt, 1983; Frank, 1981; Frobel et al, 1985). This is a more common discussion and debate in Sub-Saharan Africa (Timberlake, 1985; Morgan and Solarz, 1994). In this respect, the goal of sustainable development, as long as this study is concerned with South Africa - here understood as development that does not undermine its resource base - cannot be achieved by tunnel vision (Falkenmark, 1997). We have to find a way to proceed from the additive approach to a truly integrated approach to human interaction with the life support system. What is needed is the building up of human ability in South Africa to cope with the environmental preconditions, while satisfying existing and predictable societal demands in the country.

The crisis of development, or the lack of it, embraces the problems of the debt crisis in most of Sub-Saharan Africa, falling per capita food production, growing poverty and socio-economic differentials, both within countries of sub-Saharan Africa and other regions of the world (UNDP, 2003). International communities in the past tended to favour 'fire-fighting' (Adams, 2001) approaches, as exemplified by the Structural Adjustment Programme (SAP), instead of an examination of the deeper ills and treatment of symptoms, not causes. This unnecessary urgency leaves little time for lateral thinking about ways and means of making development feasible in sub-Saharan Africa. Based on the fact that most of the development models and prescriptions given to developing countries of the world (e.g. SAP) have not worked, this led to the popularisation of the concept of sustainable development. See chapter two, section 2.1 for details regarding the reason for the rise of the sustainable development concept.

These are the contradictions facing African countries, especially South Africa, with regard to the issue of whether present economic growth and development contributes towards sustainable development of the country. This study is an attempt to explain whether the present model of development, as propagated by the prophets in Washington and the Breton Woods institutes, is inimical or critical to the alleviation of continental poverty. This is because an unfettered, free market for social goods and resources such as water is an illusion, as it is not appropriate to expect the millions of wretched Africans who have suffered from centuries of colonialism and apartheid, in the case of South Africa, to have the wherewithal to compete in a free market and buy water at 'market rate'. This is because the skills needed to survive in a modern and

globalised world are good education and talent. In the case of South Africa, where millions have been historically uneducated and lack skills, it makes no sense for them to be expected to pay for privatised utilities in a liberalised, deregulated and privatised economy, without the help of the government for the poorest of the poor. See chapter four, section 4.7.2 for a detailed analysis of the impact of apartheid's Bantu education on sustainable development in South Africa.

According to De Beer (1997), development has to involve the community, if it is ever going to be meaningful and sustainable, and this is why the concept of sustainable development has to be rooted in the needs of the poor, and not in the prophetic utterances of the 'voodoo priests' from Washington. Chambers (1983:144) says that:

The best approach (towards any development) in each situation may be an *unconstrained dialogue* with the poor, and an effort to learn from them what their priorities are.

Chambers (1983:112) believes that if we are serious about eliminating poverty on the continent, we need to end what he calls the "voicelessness" and "powerlessness" of the poor. The poor have been passive spectators of their own development and development projects undertaken on their behalf. There has to be a paradigm shift, whereby municipalities and citizens in rural areas are allowed to talk and be involved in efforts to end something such as the lack of clean water in their community. We cannot in all honesty expect 'experts' in water sitting in New York to know what people in Polokwane need without asking the communities how they feel and think. Chambers (1983:104) once again reiterated that:

Poor people are rarely met; when they are met, they often do not speak; when they speak, they are often cautious and deferential; and what they say is often either not listened to, or brushed aside, or interpreted in a bad light.

Several scholars have labelled such knowledge and ideas of development, as prescribed by the international community, led by the World Bank and donor communities, as practically irrelevant, conceptually Eurocentric, theoretically impoverished, ideologically prejudiced, paradigmatically bankrupt, philosophically parochial, and narrowly focused - lacking multidisciplinary perspectives (Braun, 1990; Edwards, 1989; Goulet, 1983). See chapter two, section 2 for a full discussion on the need for

development policies, especially in a developing country such as South Africa, to be based on the alleviation of poverty and provision of basic amenities such as water to the people.

The most popular definition of sustainable development can be taken from the words of the Brundtland Commission, when it concluded that sustainable development is "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). For a full range of the various arguments relating to the definitions of sustainable development and their resonance for the developing countries of Africa, especially South Africa, see chapter two, section 2.5.

It is important to investigate whether or not the needs of the poor in South Africa with regard to the issue of the availability of water are being met in South Africa. The answer is no, because when one looks at the history of South Africa in the context of colonialism, segregation and apartheid, many people were marginalized, especially black South Africans, with regard to the distribution of water resources in the country, and were excluded and exploited. Under these circumstances, sustainable development did not take place in the country. For a more detailed argument on the reasons for a lack of sustainable development in South Africa and the effect of apartheid on sustainable development, see chapter four, section 4.7.

A whole generation of the black population was denied access to water as a result of homeland policies and other restrictive policies of the apartheid regime, such as water rights being linked to the Lands Act of 1912. Presently, in the new and democratic South Africa, although coverage has extended to the vast majority of the black population, the neoliberalisation and privatisation policies of the ANC-led government are ensuring that the principle of sustainable development is not entrenched, as the government is placing an undue and flawed emphasis on market forces to redress historical injustices. The *apartheid regime* impeded sustainable development through their racist and flawed policies, while the ANC government is also impeding sustainable development through its *market regime*, employment equity and by cutting funding to municipalities. See chapter four, section 4.9 for a full discussion on sustainable development in a new and democratic South Africa.

In modern South Africa, most poor black South Africans are being denied water services because of their inability to pay the costs of water provided by the local councils, coupled with the racial nationalism of the African National Congress with its employment quotas and defensive immigration policies, which all contribute to an absence of sustainable development in the water sector. There is a wide pool of skills and resources available outside the black population, even in parts of Africa, which South Africa could use to ameliorate the paucity of qualified water engineers and technicians, which would ultimately contribute towards sustainable development in the country.

South Africa's skills shortages are legendary, and water engineers and technicians available to maintain the water infrastructures in the councils are unevenly concentrated in the hands of whites (See chapter four, section 4.7.2 for a detailed analysis of apartheid educational policies and their impact on sustainable development), and they are not encouraged to fill vacant positions in the councils in order to improve the quality of water. This contributes to a lack of sustainable development in the water sector. This lack of skills has made some of the councils outsource their water utilities to private companies that end up introducing market prices, without adequate consultation and recourse to principles of fair play, equity and justice for the millions who cannot afford to pay for water because of historical injustices and deprivation. See chapter four, section 4.10 for a detailed discussion on neoliberalism and its impact on water and sustainable development in South Africa.

It has been evidently established that sustainable development has not existed in South African history, either during the colonial or apartheid era, because of racial considerations and policies, and it has also not existed in the new and modern South Africa, as a result of the rampant free market economy in the country. We need to look at the issues that need to be present in order for sustainable development to take place in South Africa. Sustainable development is a concept which involves "...satisfying the multiple criteria of sustainable growth, poverty alleviation, and sound environmental management" (World Bank, 2004:10). To make these concepts possible in South Africa, certain principles need to be followed. For a full and detailed discussion on the principles that are vital for sustainable development in South Africa, see chapter three, section 3.2.

The debate on the impact of neoliberalism is particularly acute in the water sector. The increasing involvement of private, for-profit multinational water corporations in running networked water supply systems around the world has inspired fierce international debate (Finger and Allouche, 2002; Laurie and Marvin, 1999; Swyngedouw, 2005).

Proponents of market environmentalism in the water sector argue that water is an increasingly scarce resource, which must be priced at full economic and environmental cost if it is to be allocated to its highest-value users. This was the view held by former president Thabo Mbeki, Trevor Manuel and Alec Erwin in the previous administration, who believed that market forces would eventually assuage the citizen's quest for better living conditions, while neglecting the deleterious effects of apartheid and the grinding poverty of the black population. This ideology and belief contributed to the lack of sustainability in the water sector in present day South Africa. For a detailed view on neoliberalism and its impact on water and sustainable development in South Africa, see chapter four, section 1.10.

The complete privatization of water in South Africa is a serious negation of the constitutional provisions of the country, and will not promote sustainable development unless existing privatisations are coupled (as in England) with a universality requirement (laws prohibiting disconnection of residential consumers), and with a strong regulatory framework for price controls and quality standards (ECOSOC, 2002: article 24). Many citizens of capitalist democracies, including a host of South Africans who are aware of how inequalities and poverty have been encoded in the old laws of the country in order to deny blacks access to water and hence lead to a lack of sustainable development, will accept and acknowledge the fact that commodification in the use of water is not consistent with human rights. It is critical that some sort of public, collective "safety net" must exist if these rights are to be met for *all* citizens. See chapter five, section 5.13.1 for a detailed analysis of apartheid water laws and their impact on sustainable development in South Africa.

The situation with regard to drinking water is more complicated, because drinking water is a non-renewable resource that is essential for life, and a networked water supply is a natural monopoly subject to significant environmental externalities (Baker, 2007;

Narsiah, 2008). In this case, strong market failures provide an overwhelming justification for public regulation and, in many cases, ownership of assets. Opponents of market environmentalism (Gleick, 2003) argue that water is a non-renewable resource that is vital for life, and call for water supply to be recognised as a human right, which (they argue) both places an onus upon states to provide water to all, and precludes private sector involvement (Bond, 2002; Goldman, 2005; Johnston et al., 2006; Laxer and Soron, 2006; Morgan, 2004b).

According to their opponents, led by McDonald and Ruiters (2005), the involvement of private companies invariably introduces the pernicious logic of the market into water management, which is incompatible with guaranteeing a citizen's basic right to water. Private companies - answerable to shareholders and with the overriding goal of profit - will manage water supply less sustainably than their public sector counterparts. Opponents of privatisation point to the successful example of public water systems and research findings that indicate that private sector alternatives are not necessarily more efficient, and are often much more expensive for users, than well-managed public sector systems (see Estache and Rossi, 2002).

This view has been strongly criticised by water experts and commentators globally and in South Africa (Narsiah, 2008), who argue that neoliberalisation entails an act of dispossession with negative distributive consequences that are emblematic of "globalization from above" (Assies, 2003; Barlow and Clarke, 2003; Petrella, 2001; Shiva, 2002). This is particularly relevant in a country such as South Africa, which experienced the exclusion and exploitation of the black population. It therefore becomes logical for a new paradigm that will take into due cognisance the plight of the suffering majority in the allocation of resources such as water. Justice, equity and fair play should form part of the policy making process, and not only market fundamentalism. See chapter four, section 4.3 on the need for a new paradigm for the sharing and distribution of resources such as water in South Africa.

Those who oppose water supply privatisation in South Africa (COSATU, SACP, Bond, 2004; Hukka and Katkho, 2003) and globally (Gleick, 1998; Postel, 2001) invoke a human rights approach to water in order to support their claims. The argument for creating a human rights approach to water generally rests on two justifications: the non-

renewability of drinking water (“essential for life”), and the fact that many other human rights which are explicitly recognised in the UN Conventions are predicated upon an (assumed) availability of water (e.g. the right to food). The claim to a human right to water rests on shaky legal ground - no explicit right to water is expressed in the most relevant international treaties (Morgan, 2004b), although the UN Committee on Economic, Social and Cultural Rights issued a statement in 2002 asserting that every person has a right to “sufficient, safe, acceptable, physically accessible, and affordable water” (ECOSOC, 2002; Hammer, 2004).

It has to be said that although a human right to water is a noble goal, it is difficult to implement in developing countries such as South Africa with a weak bureaucracy and paucity of skills needed to manage water infrastructures, notwithstanding the budgetary constraints facing most developing countries, including South Africa. There are difficulties in implementing a “right to water”: lack of clear responsibility and capacity for implementation; the possibility of causing conflict over transboundary waters; and potential abuse of the concept, as governments could over-allocate water to privileged groups at the expense of both people and the environment.

It has to be noted that a right to water may or could affect little practical change - the right to water enshrined in South Africa’s post-apartheid constitution (Act 108 of 1996, section 7(2)), for example, has not prevented large-scale disconnections and persistent inequities in water distribution (Bond, 2002; McDonald and Ruiters, 2005). It is imperative that sustainable development is entrenched in South Africa’s water sector, because of the fact that South Africa is a water scarce country that receives less rainfall than other regions of the continent (See Figure 5.2).

This means that water should not become only an economic good in the country, but also a social good. In this respect, water authorities in South Africa must find a way to balance the economic and social good of water in the distribution and delivery of water resources, while paying attention to the peculiar needs of the poor and unemployment, since South Africa has a high level of unemployment. It is important for policy makers in the country to be cognisant of the United Nations Environmental Report’s (UNDP, 2002) assessment that South Africa will become a water scarce country by 2025. This means that the government and people of South Africa need to find a way to

commodify water, and should also not declare water to be a human right, which will necessitate waste and become a disincentive for private investments. This is because private funds and investments need to be attracted to the sector in order to avert a looming crisis. See Figure 5.3 for more information on the state of water scarcity in Africa.

At this juncture, it is critical to differentiate between the concept of water as a social good, as advocated by the alliance partners of the ANC, and water as a social good, which the researcher advocates in this study. The concept of water as a social good is that it consists of private sector-led (because government alone cannot afford the massive investments required) water utilities, which are well regulated by the government in order to protect the poor and marginalised members from the imperfections of the market and the unintended effects of capitalism.

In view of the looming water crisis in South Africa (South Africa, 2002), it becomes imperative for the South African government to invest adequately in the storage capacity of the country's water reservoir, in order to be better prepared by the time of the water shortage. Mindful of the fact that South Africa is a developing country with huge budget constraints for dealing with the issues of the electricity crisis, acute unemployment, welfare grants and other socio-economic problems, the government may be unable to obtain the required investments needed to keep the water sector alive for its citizens. This will invariably mean that private investments remains critical for the future survival and performance of the sector, and concerted efforts should be made to attract service providers that have the necessary competence and wherewithal. See Figure 5.4 for details regarding the storage per capita of selected countries.

At the risk of over-simplification, the commodity view (as propagated by the Water Research Foundation and the Palmer Development Group and supported by the *sanctum sanctorum* (inner and powerful) members of former president Thabo Mbeki's government, such as Alec Erwin and Tito Mboweni) asserts that private ownership and management of water supply systems (as distinct from water itself) is possible and indeed preferable. From this perspective, water is no different to other essential goods and utility services. Private companies, which will be responsive to customers and shareholders, can efficiently run and profitably manage water supply systems.

Commercialisation views water as an economic good, rather than a public good, and redefines users as individual customers, rather than as a collective of citizens (Bakker, 2004). Water conservation can thus be incentivised through pricing - users will cease wasteful behaviour as water prices rise with increasing scarcity. Proponents of the “commodity” view assert that water must be treated as an economic good, as specified in the Dublin Principles and in the Hague Declaration 13, similar to any other economic good - such as food- that is essential for life. See chapter four, section 4.10 for a better perspective on the impact of the Palmer Group and Water Research Foundation on water use and sustainable development in South Africa.

In contrast, the commons view of water, led by water experts and commentators in South Africa such as Ntsime (2002), Narsiah (2008), McDonald and Ruiters (2005) and Bakker (2005) emphasises the unique qualities of water and the difficulty of implementing such a free market policy in a poor and developing country such as South Africa - water is a flow resource that is essential for life and ecosystem health, non-renewable and tightly bound to communities and ecosystems through the hydrological cycle (Shiva, 2002; TNI, 2005).

From this perspective, collective management by communities is not only preferable but also necessary, for three reasons (Bakker, 2005). Firstly, water supply is subject to multiple market *and* state failures - without community involvement, we will not manage water wisely. Secondly, water has important cultural and spiritual dimensions that are closely articulated with place-based practices-as such, its provision cannot be left up to private companies or the state. Thirdly, water is a local flow resource whose use and health are most deeply impacted at a community level - protection of ecological and public health will only occur if communities are mobilised and enabled to govern their own resources. See chapter four, section 4.3 on the need for a new paradigm in the sharing, delivery and distribution of resources such as water in South Africa.

In particular, those who advance the “commons” view assert that conservation is more effectively incentivised through an environmental, collectivist ethic of solidarity, which will encourage users to refrain from wasteful behaviour. The real “water crisis” arises from socially produced scarcity, in which a short-term logic of economic growth, twinned with the rise of corporate power (and in particular water multi-nationals) has

“converted abundance into scarcity” (Shiva, 2002). In response to the Dublin Principles, for example, the P7 Declaration (2000) outlined principles of “water democracy”, of decentralised, community-based, democratic water management, in which water conservation is politically, socio-economically and culturally inspired, rather than economically motivated (Baker, 2007).

Despite their divergent political commitments, opponents (such as the author, alliance partners of the ruling African National Congress such as the South African Communist Party and Congress of South African Trade Unions (COSATU), and a host of water experts in the country (Bond, 2002) and proponents of the neoliberalisation of water supply) share some common conceptual commitments, including an understanding (lacking in many “neoliberalizing nature” analyses) that commodification is fraught with difficulty (Baker, 2004). Since commodification entails the creation of an economic good through the application of mechanisms to appropriate and standardise a class of goods or services, enabling them to be sold at a price determined through market exchange, it becomes disingenuous to talk of market exchange in an unequal society with centuries of poverty, exclusion and marginalisation (Terreblanche, 2002). The overriding concern should be restoring social justice and equity to the suffering majority or risk social implosion by the disempowered and dispossessed.

Economic history and economic anthropology have taught us that markets are embedded in social relations that may be unequal and molded by existing power relations (Polanyi, 1957). Thus, markets *per se* are often unable to guarantee equality and affordability of access, especially due to the focus on the collective benefits of ‘efficiency’ which can have high social costs (Donnelly, 1999; Social Watch, 2003). This is noticeable in sectors such as the water sector, which are characterised by high levels of natural monopoly. As Rees (cited in Sachs and Santariurs, 2007:90) argues;

There is no reason why private monopolies should be any more efficient or responsive to customer demands than public ones [considering that] evidence suggests that the performance of privatized industries is critically affected by the level of competition they face.

The performance of privatised state companies such as South African Airways, Eskom and Telkom in post-apartheid South Africa has been rather depressing, despite the

billions of rands of taxpayers' money pumped into them. The argument of Rees (cited in Sachs and Santarius, 2007:90) is valid, that if allowed to operate as monopolies, both private and public water utilities will ultimately lead societies to 'perdition'.

In the language of regulatory economists and political scientists, water is conventionally considered to be an imperfect public good (non-excludable but rival in consumption) which is highly localised in nature, and which is often managed as a common-pool resource, for which relatively robust, community-controlled cooperation and management mechanisms exist in many parts of the world (Mehta, 2003; Ostrom, 1990).

It is the combination of public good characteristics, market failures and common property rights which makes water such an "uncooperative" commodity, and so resistant to neoliberal reforms, as neoclassical economists recognise when referring to the multiple "market failures" that characterise resources such as water supply. According to Berkes (1989), the classic definition of a market failure is a case in which a market fails to efficiently allocate goods and services, due to the "failure" to meet assumptions of standard neoclassical economic models. For example, market failures occur when property rights are not clearly defined or are unenforceable, when goods are non-excludable and non-rivalrous ("public goods"), when prices do not incorporate full costs or benefits ("externalities"), when information is incomplete, or in a situation of monopoly.

Berkes (1989) postulated that in order to rephrase this analysis in political ecological terms, water is a flow resource over which it is difficult to establish private property rights, is characterised by a high degree of public health and environmental externalities -the costs of which are difficult to calculate and reflect in water prices, and is a partially non-renewable resource essential for life with important aesthetic, symbolic, spiritual, and ecological functions which render some form of collective, public oversight inevitable. Private property rights can be established for water resources or water supply infrastructure, but full commodification does not necessarily, and in fact rarely, follow.

At this juncture, it is important to conclude that, despite the weaknesses of privatisation of the water sector and the costs of free water supply both to the environment and the

state, which is grappling with issues such as poverty, inequality and underdevelopment, it becomes a self-evident truth that the state alone cannot attract and retain the critical skills needed to keep the tap running. The researcher sincerely believes that it is impossible for the market to leverage centuries of inequality and poverty existing in South Africa, especially in the use of water, by the block tariff regime of water service providers.

Most citizens will not be able to pay for market rates of water, and they should not be deprived of a basic necessity such as water, but the paradox remains how to maintain the principles of equity, justice and fairness in a divided and unequal society, and also entrench the principle of sustainable development in the use of water in South Africa, while still attracting the necessary funds and skills needed to keep water infrastructures from falling into a state of decay and disuse. While the private management of water systems can, in principle, reduce the water prices paid by consumers (Gleick, 2002: 30), price increases that place formal water supplies outside the reach of poor people usually appear to be a frequent outcome of water privatisation. Prices are often raised beyond agreed levels within a few years of privatisation and people who cannot pay are cut off (Pretrella, 2001).

Finally, following the rise of leftist ideology and values within the ruling African National Congress with the election of Jacob Zuma as president of the party, backed by his allies in the labour unions and communist party (COSATU and SACP), this development has made the concept of the developmental state acquire more relevance and prominence in the policy debates of the ruling party. (See chapter three, section 3.5 for a view on the concept of the developmental state). With the global financial meltdown calling into question the validity and reliability of 'laissez-faire thinking' (Krugman, 1992), allowing market forces to run amok is a chilling possibility. Although South Africa was spared from the financial meltdown, greater state intervention to alleviate poverty and inequality predates the global financial meltdown. It has to be emphasised that despite the researcher's personal misgivings about the strength and reach of market forces to leverage water resources, especially in developing societies such as South Africa, he is more worried about the state claiming a bigger stake than the markets.

In these circumstances, the warning of Winston Churchill becomes more pertinent:

The inherent vice of capitalism is the unequal sharing of blessings; the inherent vice of socialism is the equal sharing of miseries. Some regard private enterprises as if it were a predatory tiger to be shot; others look upon it as a cow that they can only milk. Only a handful sees it for what it really is – the strong horse that pulls the whole cart.

The problem with the labour unions and their ideological allies that are dominant in the ruling party is that they only look at the vices of market forces, without finding a way to look at procedures by which the state can harness its virtues (without impeding the economic growth of society), so that it can become the force that drives out poverty and inequality, especially with regard to the issue of access to water and proper sanitation in South Africa.

In the researcher's personal view, South Africa cannot solve the problem of poverty caused by inadequate water by government intervention alone, as the government is presently incapacitated, and the loss of global liquidity and other developmental problems will make it impossible for government to meet all budgetary requirements. This study advocates a middle way between government's better regulation of and lack of intervention in the economy, so that private enterprises can become the horse that will pull the 'cart' of poverty and inequity in terms of the distribution of resources such as water in the country.

The trade unions and their allies in the ruling party should not use the present hiccups in capitalism globally to call for a socialist state in South Africa. Commentators should not blame the capitalist system, but rather blame the greed and maths of the pseudo-Keynesian neo-classic deficit economists and their cult of experts. The present global economic problem arose, not as a result of imperfections in the capitalist system, but as a result of the greed of managers and lack of proper regulation to correct an imperfect market (Butler, 2008). The leftist allies of the ruling party should realise that proper and sane regulation, not intervention, is the only way to solve the problem of poverty in the country and improve accessibility to water. This is the only way in which sustainable development can be entrenched in the country - by adopting a holistic interpretation of problems and not doing a selective analysis.

6.3 SOUTH AFRICA: FROM SEPARATE DEVELOPMENT TO SUSTAINABLE DEVELOPMENT

It is very important for South Africa to move from separate development to sustainable development in the use of water in the country, and to do this, we need to unlearn some of the lessons we have learned. The 'ideology of apartheid' which provided better water quality along racial lines is being replaced by the 'ideology of the market' (Schneider, 2003), and neither policy has contributed to sustainable development in the use of water in South Africa. Trotsky's (1934) theory of permanent revolutions should guide us if we are to get a better perspective on the reasons why *laissez-faire thinking* (Krugman, 1992) should be discounted and issues of justice and equity should be given priority in the distribution of water resources in the country.

In his theory of permanent revolution, Trotsky (1934) asserts that late developing capitalist societies are subject to combined and uneven economic development, and that all the inequalities and problems of the past cannot be solved by capitalism alone, and are in fact worsened by it. The validity of Trotsky's (1934) treatise on why neo-liberalism and capitalism cannot solve problems of inequality in water resources in a divided and unequal society like South Africa can be seen in the privatisation of water in Kwazulu-Natal in 2000. Water supply cuts to people who were too poor to pay their accounts resulted in the deaths of 32 people by 25 October 2000. The number of cholera cases reported in the area was 3711. Water was available free of charge in Mpendle in Kwazulu-Natal from the early 1980's after tap water supplies were laid on by the apartheid government following a severe drought. The free water supply was, however, terminated as a result of cost recovery systems implemented by the local water board in the area in accordance with African National Congress led government's GEAR strategy (Cheru, 2003:510).

This lack of sustainable development lends credence to Trotsky's (1934) theory of permanent revolution and this *laissez-faire thinking* (Krugman, 1992) is the main reason why separate development in the use of water persists in post-apartheid South Africa. The problem of inadequate water supply to poor black Africans has been worsened by the neo-liberalism of the government, validating the views of the German revolutionary

leader Luxemburg (cited in Andreasson, 2006:309) and supported by contemporary scholars like David Harvey(2003), who calls it ‘accumulation by dispossession’ .

For most of this study, the researcher has used the unavailability of water resources with the presence of poverty in a community to a great extent, as if poverty and water are one and the same. This has not been done without reasons, because a careful look at section 5.9, 5.10 and 5.11 highlights the critical role of adequate water supply in economic development, poverty alleviation and good sanitation and health standards. Water is critical for the food security (Sonou, 2002) and economic development of the continent (Sachs and Santariurs, 2007), and is also critical if we are going to abolish the incidence of diseases such as diarrhea (Harvard Institute for International Development, 1981), which we know do not affect the rich and those with sufficient access to water.

In view of this, coupled with the commodification of water by the Palmer Development Group, Water Research Foundation and the neo-liberal policies of the new ANC government, it leaves ones with no choice but to deduce that lack of access to water affects mostly the poor, and efforts to improve water resources in South Africa will have a concomitant effect on poverty alleviation, as the two are inextricably linked, interrelated and interwoven. In the final analysis, efforts towards poverty eradication and sustainable development in South Africa should also incorporate policies for water availability, as clean water accessibility is the ‘Holy Grail’ of economic development, improved food security, good sanitation and better health for the population.

In order for South Africa to move away from the practice of separate development that has characterised its history and existence for centuries to one of sustainable development, certain radical transformations have to take place in the country, both inside the ruling party, government and entire citizenry. While economic growth and development, as we have witnessed since the demise of political apartheid in 1994, holds the potential to help meet the basic needs of the population, this is by no means inevitable, as the rising levels of poverty and inequality threaten to wipe out all the gains made in the last decade (Munslow et al., 1994). The trickle-down effects of economic growth are notoriously slow in having an impact, in which case, some of the fundamental assumptions underlying the ideology of growth at all costs (Dean, 2003) must be debated, and a more sophisticated strategy developed that will help meet

people's basic needs, such as water, and therefore fulfill the heightened expectations of the benefits that the new democratic dispensation will bring to a highly mobilised, vocal and angry black population.

'What happens to a dream deferred?' Mbeki had asked this question in parliament, paraphrasing Langston Hughes (1974), in order to introduce a debate on reconciliation and nation-building, in 1998: 'It explodes' (Mbeki, 1998). Mbeki turned a question into a prophecy in order to shock his complacent countrymen into action and reflection in satisfying the dreams of black South Africans. Mbeki made the point in 1998 that 'we (he and members of the ruling ANC) are faced with the danger of a mounting rage to which we must respond seriously'.

Mbeki (1998) has said repeatedly, in one way or the other, that he was haunted by the nightmare of a seething majority that would boil over into rebellion, because its dream of liberation had been deferred rather than redeemed. The crisis of expectation facing the average black South African is better encapsulated in the brilliant poem of Hughes (1974), underlying the danger of pent-up anger and frustration of a population who cannot contribute their quota, disempowered by exclusion from state resources such as affordable water and by the untrammelled 'market regime' in the water sector:

What happens to a dream deferred?

Does it dry up?

Like a raisin in the sun

Or fester like a sore-

And then run?

Does it stink like a rotten meat?

Or crust and sugar over-

Like a syrupy sweet

Maybe it just sags

Like a heavy load

Or does it explode?

Hughes' (1974) concern, when he wrote the poem, was the plight of fellow black Americans whose dreams of emancipation had sagged, rotted and festered into inner-city ghettos like Harlem. Thabo Mbeki's concern, when he paraphrased Hughes, was the crisis of expectation of black South Africans awaiting (economic liberation from economic apartheid) liberation, and who now found themselves often with less even than they had before, and thus on the brink of dangerous explosion (Gevisser, 2007). A significant number of black South Africans are exasperated that economic liberation has not followed political liberation, as economic apartheid is still alive and well in the country, given the demonic inequality and poverty that still exist fourteen years after the demise of political apartheid.

The old racial hegemony that was apartheid played a part in the present inequality in the distribution of water in the new and democratic South Africa, and it is also important to understand that insipid government policies of the ANC such as employment equity are endangering efforts towards the total transformation of the traditions of separate development in the water sector that were inherited from the old apartheid order. Sustainable development was absent in the old South Africa as a result of the *apartheid regime*, and in the new and democratic South Africa, sustainable development in the water sector is being inhibited by the *market regime* (Schneider, 2003) of the ANC government.

Nobody with an informed opinion about South Africa's cruel and unjust history will downplay the importance of proper representations in the public and private sectors to reflect the diversity that exists in the country. However, when some of the policies are doing more harm to the poor and vulnerable members of the population than good, it then calls for an act of patriotism to achieve a change of direction. The ANC has worn some - though not all of the clothes - of the National Party, which it despised and later supplanted, in its insistence on employment equity in the municipalities, when there is abundant evidence that South Africa does not have enough water engineers and technicians to treat and manage the water infrastructure in South Africa. The African National Congress-led government in South Africa is at the *horns of a dilemma* (O'Meara, 1996), if it seriously wants to improve sustainable development in the water sector of the country.

This is the big elephant confronting the ruling African National Congress and South Africa, that the country has to move from separate development, which is still taking place in the new and modern South Africa in the guise of the privatisation of resources like water, to sustainable development, which respects the huge inequality and inequity that exists in the distribution of resources. Nobody knows whether Mbeki's conversion of a question into a prophecy will become just Mbeki at his polemical best, or a real dream deferred forever. The country and policy makers need to wake up before the South African dream turns into a nightmare. The researcher agrees totally with De Beer (1997) and Chambers (1983) that development is meaningless unless it involves people and begins with them. This is the only way that sustainable development can take place in South Africa by being a people-centered phenomenon, striving to meet the basic needs (water) and aspirations of the people.

Perroux (1953) also postulated along these lines. For him, development means 'the combination of mental and social changes of a people which enables them to increase, cumulatively and permanently, their total real production'. Going even further, he says: 'Development is achieved fully in the measure that, by reciprocity of services, it prepares the way for reciprocity of consciousness'.

This humanistic approach to development is critical because of South Africa's history of centuries of economic and political apartheid in a cocktail of economic exclusion, marginalisation and poverty. Inspiration for this perspective can be found in the early writings of Marx (1844):

That man will be defined not by what he has but by what he is...The positive transcendence of private property... should not be conceived merely in the sense of immediate, one-sided gratification-merely in the sense of possession, of having. Man appropriates his total essence in a total, manner, that is to say, as a whole man (Marx, 1844; Garaudy and Lefebvre, 1964).

The celebrated Chilean theologian Gutierrez (1968) writes about the dehumanisation and demeaning effects of poverty on human beings in many countries of Latin America. Inferences can be drawn from his theories about the evil of poverty in South Africa. This explains the fact that the high levels of poverty and unemployment that are ravaging the people of South Africa are robbing them of their self-worth and dignity as

human beings, that poverty not only pauperises the people, but also dehumanises and demeans a whole generation of people, and it is inconceivable and an injustice to talk about development when the huge majority of people are living in abject poverty and squalid conditions, and cannot afford basic necessities such as water and proper sanitation (Sachs, 2005).

It is important for the protected and privileged members of this country (mostly whites but an increasing number of black middle and upper class) to realise that equity and justice in the distribution of resources (water) is sacrosanct to a peaceful and prosperous society. The brilliant Catholic theologian St. Augustine insisted that:

It is justice that distinguishes a civilized society from a band of robbers and a pathway away from barbarism and savagery to civilization.

The matter of justice has to be seen in the context of protecting the weak and vulnerable, in particular against exploitation, arbitrariness and even poverty: it is a social obligation, of rights that someone else has a duty to respect (Sachs and Santariurs, 2007). This social obligation of social justice distinguishes justice from generosity or charity, which people can only hope for or request.' We do not regard the recognition of justice in the distribution of resources like water as an act of mercy for which we ask our fellow-humans or "the authorities", and which they grant us out of sympathy or pity. It is demanded that justice be done.

In the face of injustice, one does not turn away in disappointment - one is indignant or incensed and makes a protest (Hoffe, 1989). The researcher agrees totally with Ritsert (1997) that an institution or society is unjust if it is so constituted as to make it possible for some to gain advantages or superiority at the expense of, and against the will of, others. It is important when talking about the issue of water in South Africa that we understand that it is a question not of equal but of sufficient access to resources - sufficient for individual physical existence, and for the overall development of a society (Sachs and Santariurs, 2007).

In seeking the solution to the absence of sustainable development in South Africa it is very important for both the African National Congress and the citizens of the country

both black and white to inculcate the monumental work of Freire (1970) who has sought to establish the 'pedagogy of the oppressed.' By means of unalienating and liberating 'cultural action', which links theory with practice -linking the policy of affirmative action with the naked reality that, for sustainable development to become real in South Africa, there has to be a 'sunset clause' in the policy of affirmative action, to make use of the scarce white skills which are badly needed by the councils in the country in order to accelerate delivery of water services. The government can even adopt a better and imaginative immigration policy that will address South Africa's skills requirements in order to make growth and development sustainable, while they prepare the black South Africans to fulfill the country's skill requirement in the years to come.

According to Freire (1970), the oppressed (black South Africans) can perceive and modify their relationship with other persons (whites and other people of Africa globally). They thus make the transfer from a 'naïve awareness' - which does not deal with problems, gives too much value to the past, tends to accept mythical explanations, and tends toward debate - to a 'critical awareness', which delves into problems, is open to new ideas, replaces magical explanations with real causes, and tends to dialogue. In this process, which Freire (1970) calls 'conscientization', the oppressed or hitherto marginalised reject the oppressive consciousness which dwells in them, become aware of their situation, and find their own language (and strength). They become, by themselves, less dependent and freer, as they commit themselves to the transformation and building up of their society.

In this respect, following Freire's analysis (1970), it is important for policy makers and black South Africans to stop blaming everything that is wrong in South Africa on apartheid and viewing issues and problems in the country through only the prisms of race and colour. Although there is a relationship between some of these problems and apartheid, it is incumbent upon the new government and people of the country to make a conscious effort to inculcate the principle of sustainable development through unlearning the things we have learned as a country, imbibing the special gift of the diversity of languages, races and cultures which exist in South Africa, and eschewing those attitudes and behaviours that do not contribute towards real development and progress.

6.4 FINDINGS AND SUMMARY

In the final analysis, it is critical to note that this study is an attempt to provide an answer or basis for the entrenchment of sustainable development in the water sector in South Africa. We were able to understand that it presents itself as a construct that acquires its meaning from a particular socio-cultural context, and in this respect, the importance of sustainable development in South Africa comes to light. Coupled with this is the view of De Beer (1997) that development must involve the people, and one gets an understanding that since local municipalities are the closest level of government to the general population, they should be able to exercise their functions and pursue sustainable development (Agenda 21, cited in Agyeman and Evans, 1994:492).

South Africa's past history was racially based and Eurocentric, and as such was unable to promote and advance sustainable development, since it was rooted in paternalistic, discriminatory and non-participatory methods which did not encourage sustainable development. The old policies of apartheid South Africa placed more emphasis on water resources and not on water services, and it was not humanistic and people-centred enough to promote sustainable development.

In post-apartheid South Africa, despite massive improvements made by the new government to increase coverage and delivery of water in the country, some practices and policies are still acting as disincentives to the attainment of sustainable development in the use of water in South Africa:

- Unfounded belief in the role/efficiency of the markets in addressing centuries of inequality, exclusion and marginalisation in the distribution of resources, especially water, in South Africa.
- Scarcity of institutional experts in the water sector, which is directly linked to the global shortage of water engineers.
- The racial nationalism of the African National Congress-led government, which encourages strict employment equity for local councils, discourages the

employment of non-black South Africans to maintain existing water infrastructures, bearing in mind the lack of skills in the country as a result of Bantu education.

- Absence of original thinking on the part of policy makers to encourage and retain skilled, white and increasingly scarce water engineers to work in the councils, in order to promote sustainable development (while mentoring black engineers in the process), or even to adopt a more proactive immigration policy that will attract the skills needed from Africa or elsewhere, instead of the current defensive immigration policy that helps no one, even the poorest of the poor, who need affordable water by all means, and are at the receiving end of ill-conceived policies in local councils.
- Error prone management systems and a lack of human capital to monitor and manage contracts and initiate policies on the part of the Department of Water Affairs and Forestry.
- Lack of participation by the local communities in decision making processes that will promote sustainable development in the use of water - all the policies were initiated from the top echelons of the government.
- Many South Africans were denied access to water in the past, because of the apartheid regime of the National Party, and in the new and democratic South Africa, many South Africans are being denied the same services as a result of the market regime of the ANC government.
- The policy of cadre deployment has left most of the municipalities in South Africa with few experts and technicians, and many career politicians who owe their allegiance not to service delivery but to the party in power. This subsequently results in a lack of sustainable development in the use of water in the country.

6.5 RECOMMENDATIONS FOR THE ENTRENCHMENT OF SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA

6.5.1 Intellectual capital

Human and institutional skills and wherewithal play a critical role in the entrenchment of sustainable development, and it is important that if sustainable development is to take place in South Africa, there has to be a more organised and concerted effort to attract the best talents and skills available in order to improve growth and development in the country. Employment equity needs to be overhauled, so that competence and merit are given due consideration with regard to their impact on poverty alleviation. The spectre of Bantu education is still haunting the country, and care should be taken to attract the few white technicians in the country and stop them from emigrating, and create an enabling environment where they can mentor upcoming black engineers.

6.5.2 Public-Private partnerships

In view of the fact that the government alone in South Africa, just like in most developing countries of the world, is not able to supply the huge financial resources needed to improve the performance of key government infrastructures such as water and sanitation, the private sector should be encouraged to invest in the sector, without giving them *carte blanche* in all areas, given the imperfections of market fundamentalism and the need to protect the weak and vulnerable segments of the population who are unable to compete in a free market for various reasons.

6.5.3 Equity through access

Closely related to this is the fact that it is the sole responsibility of government to strive to maintain equity through access, especially in a divided and unequal society such as South Africa, which has suffered centuries of exclusion and marginalisation. In order for sustainable development to take place in the distribution and availability of critical and important resources like water, it should not be allowed to become only a social good but also an economic good.

6.5.4 Skill Shortages in the councils needs to be addressed

The municipal councils in South Africa should be encouraged to hire workers from anywhere in the world, since they are the nearest level of government to the rural community and hence in a good position to ensure sustainable development in the country. The government should help the councils because the skills shortage is a global phenomenon, and the defensive immigration policies of the government need to be overhauled, so that South Africa attracts and retain people with the needed competence and skills to contribute towards the sustainable development of the country, until such time as local talent becomes available. But for now, the situation is dire in the councils, and critical skills are needed to avert the doom and lack of service delivery that characterise most of the councils in the country.

6.5.5 Improved public participation

In view of South Africa's history of colonialism and apartheid, when most of community projects undertaken by the government lacked public and community participation, it is imperative in the new, modern and democratic South Africa that for sustainable development to take place, community involvement and participation needs to become part of policy formulation in the country. The government and councils should do away with past practices, which involved the imposition of service providers or policies on the people, as these will not promote sustainable development in the country. Public participation is the key to community development, which subsequently leads to sustainable development of the country as a whole.

6.5.6 Synergy between central and municipal governments

Most times because of a lack of individuals with the required administrative and technical know-how, councils are not in sync with the policies of the central government and are consequently unable to implement some of the policies of the government, because they lack the intellectual wherewithal needed to do so. It is important for government to strive to maintain synergy and coordination between all

levels of government, as this is critical for the promotion of sustainable development in the country.

The government of South Africa should adopt a more flexible approach to the developmental needs of the people. It is almost impossible to find anywhere in the world that the market is allowed to correct social injustices and inequalities. In order to promote sustainable development, the government should become more involved with clear guidelines and performance parameters for all service providers in the water sector, given the relationship between water and basic human survival.

6.5.7 Indigenous knowledge

Since real development is about improving the lives of the people, it is important for the indigenous knowledge, cultures and languages of people in rural South Africa to be recognized, as this is a good way of instilling sustainable development in the country. Indigenous knowledge also needs to include the skills of all South Africans, as enshrined in the Freedom Charter. If South Africa belongs to all who live in it, everybody must be mobilised. At the rate of 4% economic growth per annum, it will take almost 130 years for poverty to be eliminated in South Africa, without white skills (or with only black talents). It is debatable if this is the real liberation that South Africans are expecting from the ruling party or a death sentence to 'perpetual purgatory'.

6.5.8 More funding

The concomitant effect of the massive drop in the fiscal allocation in the late 1990's needs to be properly revisited. The deleterious effect of this neo-liberal policy is very pervasive and dangerous for the rural poor, and their ability to access services such as water is becoming difficult, and even the capacity of municipalities to continuously provide reasonable services is questionable. There is no way that the ANC can reduce centuries of inequality without compromising delivery of a critical resource such as water to the majority of South Africans.

6.6 AREAS FOR FURTHER RESEARCH

There is a need for more research on the insidious effects of employment equity. The concept of the developmental state, which helped to leverage poverty in parts of Asia, is obviously not working in South Africa because of the lack of skills. It is critical that, in order for sustainable development to take place, the ruling party does not wear the clothes of the National Party, which it despised and later supplanted, especially in the area of Black Nationalism, which hinders the delivery of essential services such as water to the millions of marginalised, poor and unemployed South Africans. In actual fact, the link between paucity of skills, service delivery and attainment of sustainable development is important for a developing country such as South Africa. The government needs to minimise the importance of the colour of the skin in order to alleviate poverty, and rather concentrate on alleviation of poverty through equality in water provision to the whole country, without undue emphasis on the power of the market.

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