

## CHAPTER TWO

### THE SUSTAINABLE DEVELOPMENT PARADIGM

#### 2.1 INTRODUCTION

"Hence, sustainable development is more than a green buzz word.  
It is central to our future" (Sunter, 1998: 83).

Sustainable development, sustainable practices and sustaining economic, social and environmental policies have become common expressions of the present time. Sustainability, at least as a concept, has permeated most spheres of life, not solely because it is a political requirement but because it clearly resonates with something deep within human beings, even though many have a poor understanding of what it is. The concept of sustainable development has received much attention and raised a great deal of controversy. However, a commonly accepted view is that it embodies, as its main ethos, the premise that development must meet the needs of present generations without compromising the capability of future generations (Hunter, 1997: 235; Taylor, 1998: 10; Moosa, 2002: 3; Organization for Economic Co-operation and Development (OECD), 2001a: 2).

Sustainable development is jeopardized by a vast number of problems that are a common concern of all societies, namely: mass poverty, environmental degradation and climate change, migratory movements, population growth, the spreading of contagious diseases, uncontrolled nuclear potentials, aggressive religious fundamentalism, ethnic fragmentation, problems of national debt and international trade, drug trafficking and international crime. The effect of global problems is that the development and progress of societies become

interdependent. Sustainable development serves to globally secure humanity's future. In this endeavour, all countries must contribute at the local, regional, national and international levels, and must establish coherence among all fields of policy that is oriented towards this global sustainability (Burger, 1997: 4).

Sustainable development is not an easy endeavour, it posits that economic vitality, and social equity and environmental protection must be addressed comprehensively. (Compare Banerjee, 2003: 144.) Sustainable development in South Africa cannot be considered in isolation from sustainable development in other countries and in particular in Africa. Narayan and Petesch (2002: 13) were very perceptive when they remarked: "Poverty anywhere is a problem for people everywhere". The lifestyles, policies and practices of people in South Africa have an impact on the rest of the world. All people have a moral duty to help the poorest people in the world, as there is a move towards a new global society. Allowing international inequalities and environmental degradation to grow could jeopardize social stability and sustainable development worldwide. Franklin D. Roosevelt, President of the United States from 1933 to 1945 stated in 1937: "The test of our progress is not whether we add more to the abundance of those who have much, it is whether we provide enough for those who have too little" (in Halweil, 1998: 2). A substantial part of sustainable development is finding a common vision of how people would like their future to be.

The Novartis Foundation for Sustainable Development (1999: 1) presented the following view: "Sustainable development seems to be something like motherhood and apple pie – everyone finds it a good thing, there is almost universal appreciation. At first sight, this is highly positive, as this could signal the entering of a holistic and responsible thinking into the world of politics and society. But as it often happens with other catch phrases that suddenly come into vogue, like "empowerment" and "participation", it might not be more than rhetoric which fails to translate into practice, this all the more so because sustainable development can be given several different interpretations".

While the term “sustainable development” is now relatively common, the substantive content of the concept is still somewhat evasive. Sustainable development is open to a variety of interpretations. (Compare Burger, 1997: 5 and Council for Scientific and Industrial Research (CSIR), 2002: 7.) Quite often the interests of those identifying themselves with the concept guide the interpretation. The differences in perception of the term “sustainable development” have often led to different actions for the development of natural resources and the environment. Scientists, economists, sociologists and politicians all have their respective understanding of the term.

Taylor (1998: 9) emphasized that it is apparent that the concept of sustainable development will be a prevailing force over the coming decades. Swarts (1998: 1) agreed with this view and expressed the opinion that it is evident, that not only are environment and development interrelated, but they are also intertwined with political, economic and societal issues on a local, national and a global scale. The ultimate challenge will be to ensure sufficient means and resources are employed to fulfil the promise of sustainability. It is important to note that the term sustainable development implies intentional progress because “sustainable” implies a wish to sustain something.

From the viewpoint of sustainable development as a relevant concept and approach to address social, political and economic development, this chapter focuses attention on the theoretical conceptualization of the concept sustainable development and sustainable development as an interdisciplinary science. Secondly, a brief history concerning the way in which the term “sustainable development” and its conventional interpretations have entered the development discourse will be discussed.

## 2.2 DEFINING SUSTAINABLE DEVELOPMENT

Sustainable development is an often-discussed topic by politicians, economists, anthropologists, environmental scientists and development planners and much has been written about it. The same can be said about definitions of sustainable development. Burger (1997: 5) was of the opinion that the vision of sustainable development is frequently criticized as being too vague, or is even viewed as an empty phrase. According to Burger this is because sustainable development does not exactly determine the course that development in the spheres of the economy, the environment and society should take. In his opinion this criticism is unfounded, the reason being, that a deterministic concept of sustainable development is neither possible nor purposeful. Burger (1997: 5) emphasized the following: "...a vision can, even if it is not deterministic, nonetheless most certainly guide the direction of future action".

Gladwin, Kennelly and Krause (in Banerjee, 2003: 153) in a content analysis of different definitions of sustainable development, identified several themes, including human development, inclusiveness (of ecological, economic, political, technological, and social systems), connectivity (of sociopolitical, economic, and environmental goals), equity (fair distribution of resources and property rights), prudence (avoiding irreversibility and recognizing carrying capacities), and security (achieving a safe, healthy, and high quality of life). Many of these definitions though, have been vague, inadequately capturing the environmental imperative to cease exhausting natural resources. Labonté (in Bloem, Biswas and Adhikari, 1996: 142) in an interesting essay on this subject, used the term "econology", a neologism that combined economy and ecology. Econology is the science, or rules, of managing the planet, and the human social systems that depend on the planet's resources. This would refer to the principles of sustainable development. Using this term, Labonté tried to explain that ecology and economy could not be seen as separate systems.

Banerjee (2003: 158) was of the opinion that sustainable development attempted to reconcile opposing interests and aims to maximize economic and environmental benefits simultaneously. He stated that this is a contradiction in terms, because sustainability and development are based on very different and often incompatible assumptions. To sustain means to support from below, to supply with nourishment; it is about care and concern, a concept that is far removed from development. Banerjee (2003: 158) postulated that development is an act of control, often a program of violence, organized and managed by nation states, international institutions, and business corporations operating under the tenets of modern Western science.

Bloem, *et al.* (1996: 142) on the other hand, were very clear in their opinion, when these authors stated that sustainable development is a matter of balancing environmental protection with sustainable growth. Engel (in DuBose, 1997: 2), in a comprehensive explanation of the concept “sustainable development”, contributed the following: “ ‘Sustainable’, by definition, means not only indefinitely prolonged, but nourishing for the self-actualizing of persons and communities. The word ‘development’ need not be restricted to economic activity, much less to the kind of economic activity that now dominates the world, but can mean the evolution, unfolding, growth, and fulfilment of any and all aspects of life. Thus ‘sustainable development’, in the broadest sense, may be defined as the kind of human activity that nourishes and perpetuates the historical fulfilment of the whole community of life on Earth”.

In the opinion of Lélé (1991: 607) and Lalumière (2001: 2) sustainability and sustainable development were merely catchphrases in the media and international policy for a number of decades. As a concept sustainability has captured people’s imaginations and aspirations. Unfortunately, as a tangible and identifiable goal it has for many remained elusive. (Compare Fricker, 1998: 4; Hoff, 1998: 11 and Lélé, 1991: 607.) Solow (in Lalumière, 2001: 1) had the following comment to make: “Sustainability is an essentially vague concept, and

it would be wrong to think of it as being precise, or even capable of being precise.” He indicated it to be: “at best, a general guide to policies that have to do with investment, conservation and resource use. And we shouldn’t pretend that it is anything other than that.” Banerjee (2003: 144) took up this argument and stated the following: “The concept sustainable development has emerged in recent years in an effort to address environmental problems caused by economic growth. There are several different interpretations of sustainable development, but its broad aim is to describe a process of economic growth without environmental destruction. Exactly what is being sustained (economic growth or the global ecosystem, or both) is currently at the root of several debates, although many scholars argue that the apparent reconciliation of economic growth and the environment is simply a green sleight-of-hand that fails to address genuine environmental problems”. (Compare Anand and Sen, 1994: 8.)

Teferra ([sa]: 1) was of the opinion that in spite of the fact that many conferences and summits have been held on the theme of sustainable development in an effort to narrow the gap and eliminate disparities of understandings, it still remains a widely debatable concept. (Compare Neefjes, 2000: 201.) It means different things under different circumstances encompassing a wide range of concepts from environmental security to community participation, social justice and democratic governance. For many people it started to mean almost anything they want it to mean. The very ambiguity, not to say contradiction of the term allows interests from many walks of life to debate it and to seek to achieve it. It is beginning to adopt the mantle of a new renaissance idea that covers the whole human endeavour and planetary survival.

Lélé (1991: 607) maintained that to some extent, the value of the phrase lies in its broad vagueness. It allows people with hitherto irreconcilable positions in the environment-development debate to search for common ground without appearing to compromise their positions. There are others like Solow (in Lalumière, 2001) and Banerjee (2003) who had similar views. Too many

economists, political scientists, scenario planners and journalists from different perspectives have in opposition to this view, been able to pinpoint those basic elements and approaches crucial for sustainable development. (Compare Davis, 1991; Kinsley, 2001 and Trzyna, 1995.)

It is now accepted that although sustainable development had its origins in the environmental sector, discussions about the concept underwent a significant change during the last decade, and now it brings together the different elements of development: social, economic and environmental and stresses the interconnectedness of each. (Compare Hart, 1998e, 1; Thin, 2002: 1; Novartis Foundation for Sustainable Development, 1999; Boersema and Bertels, 2000: 92.) Sustainability however is more than just the interconnectedness of the economy, society and the environment. For development to be sustainable, it must continue, or its benefits must be maintained, indefinitely. This means that there must be nothing inherent in the process or activity concerned, or in the circumstances in which it takes place, that would limit the time it can endure. The process or activity must be worthwhile and it must meet social and economic objectives. To characterize an activity as sustainable, or refer to sustainability, is to predict the future – an activity that is risky at best. In this regard it becomes evident that development is any and all kinds of activities or processes that increase the capacity of people or the environment to meet human needs and improve the quality of life. The product of such development is people who are healthy, well-nourished, clothed and housed; engaged in productive work for which they are well-trained; and are able to enjoy the leisure and recreation all people need. Thus development includes not only the extraction and processing of resources, the establishment of infrastructure, the buying and selling of products, but also of equal importance, activities such as health care, social security, education, nature conservation, and supporting the arts. Dixon and Pretorius (2002: 3) emphasized the perspective that sustainable development is a complex of activities, some with social, some with economic resources, some on intellectual resources, all enabling people to reach their full potential and

enjoy a productive, satisfying life. (Compare Dalal-Clayton and Bass, 1995; Dubois, Mahieu and Poussard, 2002: 12.) It is a continuous process, through and throughout which experience in managing complex systems is accumulated, assessed, and applied. All stakeholders are forced to look at various dimensions of a situation, in other words, at the total picture over a long term. (Compare Munro, 1995: 28; OECD, 2001b: 5-8.) Fricker (1998: 2) was of the opinion that sustainability therefore, may be “something more grand and noble, a dynamic, a state of collective grace, and a facet of Gaia, even of Spirit”. Rather than ask how humanity can measure sustainability, it may be more appropriate to ask how humanity measures up to sustainability.

The Secretary-General of the United Nations, Kofi Annan, presented the following statement during a lecture at the London School of Economics and Political Science on the 25<sup>th</sup> February 2002: “Far from being a burden, sustainable development is an exceptional opportunity – economically, to build markets and create jobs; socially, to bring people in from the margins; and politically, to reduce tensions over resources that could lead to violence and to give every man and woman a voice, and a choice, in deciding their own future”.

Sustainable development is thus seen as a process of holistic transformation of the society for self-reliance and the well-being of all. Hoff (1998: 17) contributed to this discussion and postulated that sustainable development is a process derived from a new vision of a society based in humanistic values, democratic politics, respect for the natural world, and a harmonization of wealth-generation goals with human welfare and socio-cultural goals. It has become evident that at all levels; politicians, administrators, managers and all members of society should realize that economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development. This should serve as the framework for all efforts to achieve a higher quality of life for all people. Political and social objectives are integral components of strategies of sustainable development. The

process involves questioning and changing the ways in which society deals with its natural and economic resources and the ways in which individuals in society deal with each other. It follows from the above discussion that sustainable development is primarily a political and social process. (Compare Burger, 1997:1.)

It is evident from the literature that there may be as many definitions of sustainable development and sustainability as there are different sectors within societies trying to define it. It is clear though that most of the definitions emphasised that sustainable development has to do with:

- Living within the natural resource limits.
- Understanding the connections and relatedness between economy, society and the environment, and
- Equitable distribution of resources and opportunities (Hart, 1998f: 1).

Dixon and Pretorius (2002: 3) contributed to this perspective and in their opinion the core objective of sustainable development is to optimize human welfare. Furthermore, sustainable development encompasses income and material consumption, the availability and accessibility of education and health facilities, equality of opportunity and human rights.

### **2.3 THE SUSTAINABLE DEVELOPMENT TIMELINE**

The concept “sustainable development” did not make an appearance overnight. There have been a number of key landmarks in its development.

#### **1962**

In 1962 Rachel Carson’s *Silent Spring* was published, a book many consider a turning point in understanding the interconnections between the environment, economy and social well-being, and the catalyst for worldwide acknowledgement

of environmental problems. It brought together research on toxicology, ecology and epidemiology to suggest that agricultural pesticides were building to catastrophic levels. These toxic substances were found to be persistent in the environment and to accumulate in the body tissues of mammals and birds. It shattered the assumption that the environment had an infinite capacity to absorb pollutants. In the decades that have followed, many milestones have marked the journey toward sustainable development (Banerjee, 2003: 161 and International Institute for Sustainable Development (IISD), 2002: 1). Banerjee (2003: 144) emphasized this perspective quite clearly by stating the following: “Progress has come at a price: global warming, ozone depletion, loss of biodiversity, soil erosion, air and water pollution are all global problems with wide-ranging impacts on human populations, impacts that are significantly more harmful for the rural poor in Third World countries, and for people who derive their sustenance from the land”.

### **1963**

The International Biological programme was initiated by nations around the world. This ten-year study analyzed environmental damage and the biological and ecological mechanisms through which it occurs. In creating a large body of data, it laid the foundation for a science-based environmentalism (IISD, 2002: 1).

### **1968**

Paul Ehrlich published “Population Bomb” on the connection between human population, resource exploitation and the environment (IISD, 2002: 1; Sagoff, 2000: 117).

## 1972

René Dubos and Barbara Ward wrote “Only One Earth”. The book sounded an urgent alarm about the impact of human activity on the biosphere but also expressed optimism that a shared concern for the future of the planet could lead humankind to create a common future (IISD, 2002: 1).

Dahl (2001: 1) stated that the United Nations Conference on the Human Environment, held in Stockholm in 1972, under the leadership of Maurice Strong, was the first major discussion of environmental issues at the global level. The agenda touched on virtually all aspects of natural resource use, but the focus was primarily on the threat to the natural environment posed by economic growth and industrial pollution. The conference led to the establishment of numerous national environmental protection agencies and the United Nations Environment Programme (UNEP). Thirty-six European economists and scientists established the Club of Rome, led by Italian industrialist Aurelio Peccei and Scottish scientist Alexander King. Its goal was to pursue a holistic understanding of and solutions to the “world problematique”. It commissioned a study of global proportions to model and analyze the dynamic interactions between industrial production, population, environmental damage, food consumption and natural resource usage. According to Elkington and Trisoglio (1995: 3) this study, “Limits to Growth”, became an extremely controversial report. It predicted dire consequences if growth continued without consideration for environmental concerns. Northern countries criticized the report for not including technological solutions while Southern countries were incensed because it advocated abandonment of economic development. The debate that followed this publication heightened the awareness of the interconnections between several well-known global problems. (Compare IISD, 2002.)

In the following years, it became increasingly apparent that economic development and the environment condition, endangered each other in a diverse

and global fashion. Environmental concepts on the one hand and economic and social development concepts on the other should not be understood as alternatives. What should happen is that the concepts of sparing use of natural resources within the limits of their regenerative capacity, meaning, ecological sustainability – need to be put in harmony with the concepts of economic and social development. It was for this new, no longer one-dimensional but now three-dimensional notion of development that the term “sustainable development” was coined (Burger, 1997: 2). Elkington and Trisoglio (1995: 2) stated that Barbara Ward, a founder of the International Institute for Environment and Development (IIED), is the person generally recognized as coining the phrase, “sustainable development”, and introducing it at the 1972 UN Stockholm Conference on the Human Environment. While the World Conservation Strategy first promoted the term “sustainable development”, several key events contributed to the development of the concept. (Compare CSIR, 2002: 8.)

#### **1974**

The United Nations Environmental Programme (UNEP) and the United Nations Conference on Trade and Development, held a seminar on Patterns of Resource Use, Environment and Development Strategies. This conference strengthened the international debate on the relationship between economic growth and the natural resource base (CSIR, 2002: 8).

#### **1976**

The first Habitat Conference took place in Vancouver, Canada in 1976. The Vancouver Conference focused on problems of urban and rural human settlements and the problems being faced due to an increase in the population (IISD, 2002: 1). The Vancouver Declaration on Human Settlements, 1976 issued the following declaration: “Human settlements mean the totality of the human

community – whether city, town or village – with all the social, material, organizational, spiritual and cultural elements that sustain it” (CSIR, 2002: 12). The sustainability of settlements is a multidimensional problem, dealing with spatial characteristics, geographical location, settlement dimensions, environmental conditions, economic viability, institutional ability and structure, human development, social relationships, and values and aspirations. Sustainable human settlements are those cities, towns, villages and their communities which:

- enable societies to live in a manner that supports the state of sustainability and the principles of sustainable development, and
- have institutional, social and economic systems that will ensure the continued existence of those settlements (CSIR, 2002: 13).

The Habitat Agenda offered, within a framework of goals, principles and commitments, a positive vision of sustainable human settlements where all people have adequate shelter, a healthy and safe environment, basic services, and productive employment.

## **1980**

The International Union for the Conservation of Nature (IUCN), the World Wildlife Fund (WWF) and the United Nations Environmental Programme (UNEP), produced the World Conservation Strategy. This is recognized as the first global attempt to link environment and development. The phrase “sustainable development” was brought into the international debate. According to Atkinson (2000: 2) the International Union for the Conservation of Nature and Natural Resources (IUCN) – through the World Conservation Strategy of 1980 – brought the term “sustainable development” into the development discourse. Atkinson (2000: 2) stated that the concern of the IUCN was the evident deterioration of the ecological and resource base that was a consequence of “conventional” approaches to development. Their focus was on the physical environment rather than on showing a concern for the human side of achieving sustainable

development and the potential social impacts of the management regimes that might be employed to achieve sustainable development in the way they understood it. In the report, the section “Towards Sustainable Development” identified the main agents of habitat destruction as poverty, population pressure, social inequity and the terms of trade. It called for a new international development strategy with aims of redressing inequities, achieving a more dynamic and stable world economy, stimulating economic growth and countering the worst impacts of poverty. (Compare IISD, 2002: 2.)

The United Nations Secretary General called for an independent commission to investigate the rate and irreversibility with which the earth’s environmental resources were being used. Between 1983 and 1986, the World Commission on Environment and Development (WCED) studied and debated these issues and held public hearings. The Norwegian Prime Minister Gro Harlem Brundtland, chaired the commission. The commission, after a number of years, produced a report on social, environmental, economic and cultural issues. (Compare IISD, 2000.)

## **1987**

According to McNeill (2000: 10) the Report of the World Commission on Environment and Development (the Brundtland Report), published in 1987, put the term “sustainable development” on the map. The World Commission on Environment and Development’s work led to the publishing of the report “Our Common Future”, which set out a global agenda for action and called for changes in the perceptions of individuals, nations and institutions. The opening paragraph of this report starts with the following proposition: *“In the middle of the 20<sup>th</sup> century, we saw our planet from space for the first time. Historians may eventually find that this vision had a greater impact on thought than did the Copernican revolution of the 16<sup>th</sup> century, which upset the human self-image by revealing that the earth is not the center of the universe. From space, we saw a*

*small and fragile ball dominated not by human activity and edifice, but by a pattern of clouds, oceans, greenery, and soils. Humanity's inability to fit its doings into that pattern is changing planetary systems, fundamentally. Many such changes are accompanied by life-threatening hazards. This new reality, from which there is no escape, must be recognized – and managed” (Warburton, 1998).*

The definition of sustainable development used in the report, namely – “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” – is now widely used and accepted. This definition is often referred to as the Brundtland definition, named after Gro Harlem Brundtland who was, at the time chairman of the World Commission on Environment and Development and Prime Minister of Norway (McNeill, 2000: 11). The IISD and The Earth Council [sa], stated that this definition contains within it two key concepts:

- The concept of “needs”, in particular the essential needs of the world's poor, to which overriding priority should be given; and
- The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. (Compare McNeill, 2000: 11.)

Dalal-Clayton and Bass (1995: 3) provided a comprehensive explanation of this definition, and according to these authors, a commitment to meet the needs of present and future generations has various implications. These authors wrote that “meeting the needs of the present” means satisfying:

- Economic needs – including access to an adequate livelihood or productive assets; also economic security when unemployed, ill, disabled or otherwise unable to secure a livelihood.
- Social, cultural and health needs – including a shelter which is healthy, safe, affordable and secure, within a neighbourhood with provision for piped water, drainage, transport, health care, education and child development, and

protection from environmental hazards. Services must meet specific needs of children and of adults responsible for children (mostly women). Achieving this implies a more equitable distribution of income between nations and, in most cases, within nations.

- Political needs – including freedom to participate in national and local politics and in decisions regarding management and development of one's home and neighbourhood, within a broader framework which ensures respect for civil and political rights and the implementation of environmental legislation.

Meeting such needs “without compromising the ability of future generations to meet their own needs” means:

- Minimising use or waste of non-renewable resources – including minimising the consumption of fossil fuels and substituting with renewable sources where feasible. Also, minimising the waste of scarce mineral resources (reduce use, re-use, recycle, reclaim).
- Sustainable use of renewable resources – including using freshwater, soils and forests in ways that ensure a natural rate of recharge.
- Keeping within the absorptive capacity of local and global sinks for wastes – including the capacity of rivers to break down biodegradable wastes as well as the capacity of global environmental systems, such as climate, to absorb greenhouse gases.

The report set out the concept of “sustainable development”, as an integrated approach to policy- and decision-making in which environmental protection and long-term economic growth is seen as complementary and mutually dependent. (Compare Fricker, 1998; Atkinson, 2000.) According to the report sustainable development requires:

- a political system securing citizen participation in decision making,
- an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis,
- a social system that provides for solutions for the tensions arising from disharmonious development,

- a production system that respects the obligation to preserve the ecological base for development,
- a technological system that can search continuously for new solutions,
- and an international system that fosters sustainable patterns of trade and finance, and a flexible and self correcting administrative system.

The World Commission on Environment and Development (McNeill, 2000) concluded in the publication “Our Common Future”, that a new development path was required. It is a path that should lead to sustained human progress for the entire planet, into the future.

### **1990**

The International Institute for Sustainable Development (IISD) was established in Canada, with the objective to encourage innovation to facilitate sustainable societies. It began publishing the “Earth Negotiations Bulletin” in 1992 (IISD, 2002: 3).

In 1990 the United Nations Summit for Children took place. It was an important recognition of the impact of the environment on future generations (IISD, 2002: 3). According to White (2002: 31) more than 180 countries took part and signed a final declaration and plan of action. Following the summit, 155 countries drew up national programmes to ensure the survival, protection and development of children.

### **1992**

According to the CSIR (2002: 11) during the 1990s, the concept of community “sustainability” gained interest and support. The concept moved in two directions. The first is the “critical limits” view of sustainability, which focuses on the earth’s carrying capacity and the speed with which limited resources are used. (Compare

Hart, 1998i.) A second view of sustainability, the “competing objectives” view, focuses on whether a community is able to balance its economic, social, and environmental goals. In order to be sustainable, a community has to balance these competing goals.

The Brundtland Report set in motion a process, which culminated in the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil in June 1992. It brought together representatives of 180 countries, including 108 heads of State. This is often referred to as the “Rio Conference”. Burger (1997: 3) emphasized that it was an important milestone in the promotion of the idea of sustainable development. The Earth Summit highlighted that sustainable development is a wide-ranging concept concerned not only with protecting the environment and living within the carrying capacity of the Earth’s support systems but also with people’s quality of life, with equity within and between generations and with social justice. It brought together economic, environmental, social, political, cultural, ethical and health considerations that required new and integrated thinking and action. (Compare CSIR, 2002: 8; Dahl, 2001: 2; Hart, 1998i: 1; World Health Organization (WHO), 1999.)

The Rio Conference adopted a Programme of Action for Sustainable Development, referred to as Agenda 21. It set a global plan for sustainable development that has since become the basis for many national and local plans worldwide (CSIR, 2002: 9). This document clarified the growing environmental problems experienced in the process of global development. A range of solutions to these problems, including the allocation of responsibility between a wide range of actors, from international agencies, national and local governments and the private sector as well as of a variety of “civil society” actors, was proposed. According to Atkinson (2000: 3) Agenda 21 started with a focus on economic disparities and poverty, but promoted the same solutions of free-market economics and economic growth, as had the Brundtland Report. Much of the rest of the document was on problems and solutions of a technical nature, rather than

on addressing the social and political issues that underlay many of the problems identified. The United Nations Commission on Sustainable Development (UNCSD) monitors implementation and meets annually to review progress. (Compare Dalal-Clayton and Bass, 1995; Todaro, 1997: 676; Atkinson, 2000; IISD, 2002.)

The Rio Declaration and Agenda 21 were the fundamental documents at an international level underlying sustainable development. Together they defined “sustainable development”. Fundamental to this definition is the integration of environment and development. The environment is seen as both physical and social (Appleby, Colon and Hamilton, 2001: 55). According to the World Bank Group environment is the complex set of physical, geographic, biological, social, cultural and political conditions that surround an individual or organism and that ultimately determines its form and nature of its survival.

Agenda 21 was a wide-ranging assessment of social and economic sectors with goals for improving the environmental and developmental impact of each. Agenda 21 stressed the importance of integrated policy development, citizen participation in decision-making including the full participation of women, institutional capacity-building and global partnerships involving many stakeholders (United Nations Economic and Social Council, 2001: 1).

In the preamble of Agenda 21, paragraph 1.1 (United Nations Economic and Social Council, 2001: 1) the following statement was made:

*Agenda 21 is derived from an international recognition that “we are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can*

*achieve this on its own; but together we can - in a global partnership for sustainable development”.*

While Rio emphasized integration, the link between economic development and environmental stewardship (the focus was solely on environmental issues) were better articulated than the link with social equity (or social well being). Agenda 21 was motivated by perceptions of a deteriorating world environment and the need for humankind to reconsider its actions. However, like all compromises engineered by the United Nation system, and despite the best efforts of the able people involved, Agenda 21 was a version of everything. For the developing world, as the initial chapters of Agenda 21 made quite clear, the priority remained economic development and the alleviation of poverty and its worst manifestations – hunger, disease, and illiteracy. In this document poverty alleviation and underdevelopment was often mentioned. The People’s Movement for Human Rights Education ([sa]: 4-5) highlighted a number of principles and commitments pertaining to specifically the eradication of poverty contained in various declarations made at the Earth Summit in Rio and the World Conference on Women in Beijing. The following were of particular relevance to this research study:

- “All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development...” – (Rio Declaration, Principle 5).
  
- “A specific anti-poverty strategy is ...one of the basic conditions for ensuring sustainable development. An effective strategy for tackling the problems of poverty, development and environment simultaneously should begin by focusing on resources, production and people and should cover demographic issues, enhanced health care and education, the rights of women, the role of youth and of indigenous people and local communities and a democratic participation process...” (Agenda 21, chapter 3, paragraph 2).

- “More than one billion people in the world today, the great majority of whom are women, live in unacceptable conditions of poverty....Women’s poverty is directly related to the absence of economic opportunities and autonomy, lack of access to economic resources...lack of access to education and support services and their minimal participation in the decision-making process...” (Beijing Platform for Action, paragraphs 47 and 51).
- “We are determined to... eradicate the persistent and increasing burden of poverty on women by addressing the structural causes of poverty through changes in economic structures, ensuring equal access for all women ... as vital development agents, to productive resources, opportunities and public services ...” (Beijing Platform for Action, paragraph 26).

For the developed world the priorities are rather different. Poverty is not really much of an issue, except at the margins of society. The developed world has the time to look at what it is doing to its natural surroundings, its environment, and to feel an overriding sense of concern about it (Dodds, 2001: 3 and Atkinson, 2000).

In 1992 The Earth Council was established in Costa Rica as a focal point for facilitating follow-up and implementation of the agreements reached at the Earth Summit and linking sustainable development councils (IISD, 2002: 3).

### **1993**

On 25 June 1993, representatives of 171 States adopted by consensus the Vienna Declaration and Programme of Action of the World Conference on Human Rights. They presented to the international community a common plan for the strengthening of human rights work around the world. The most important aspect of this plan was the recognition of interdependence between democracy, development and human rights (Office of the United Nations High Commissioner for Human Rights, 1995: 1-3).

## **1994**

The United Nations International Conference on Population and Development (ICPD) was held in September 1994 in Cairo, Egypt. World leaders, government officials, representatives of non-governmental organizations, and United Nations agencies gathered to negotiate a Programme of Action. This document recommended to the international community a set of important population and development objectives, including:

- sustained economic growth in the context of sustainable development;
- education, especially for girls;
- gender equity and equality;
- infant, child, and maternal mortality reduction; and
- the provision of universal access to reproductive health services, including family planning and sexual health care (United Nations Population Information Network, 1994).

The Conference recognized that population policy should be oriented toward improving social conditions and expanding choices for individuals. The key aspect was that focusing on people – their rights, capabilities, and opportunities – would have multiple benefits for individuals, for society, and for their sustainable relationship with the environment (Global Science Panel, [sa]). Mellor (2000: 149) stated that the Cairo summit offered some hope for women in particular when it was agreed that encouraging women's economic and social progress (and in particular education) was the most effective way of encouraging birth control.

## **March 1995**

The World Summit for Social Development was held in March 1995 in Copenhagen, Denmark. Governments adopted a Declaration and Programme of Action, which represented a new consensus on the need to put people at the centre of development (IISD, 2002: 3). According to the United Nations Division

for Social Policy and Development (1999: 1) among the groundbreaking agreements made by the world's leaders in the Declaration were ten commitments, namely to:

- eradicate absolute poverty by a target date to be set by each country;
- support full employment as a basic policy goal;
- promote social integration based on the enhancement and protection of all human rights;
- achieve equality and equity between men and women;
- accelerate the development of Africa and the least developed countries;
- ensure that structural adjustment programmes include social development goals;
- increase resources allocated to social development;
- create an economic, political, social, cultural and legal environment that will enable people to achieve social development;
- attain universal and equitable access to education and primary health care; and
- strengthen cooperation for social development through the United Nations.

### **September 1995**

The Fourth World Conference on Women (FWCW) met in Beijing, China in September 1995. The Beijing Declaration recognized that the status of women had advanced but that inequalities and obstacles remained (IISD, 2002: 3). It reaffirmed commitments to equal rights; ensuring the full implementation of human rights of women and girl children; empowerment and advancement of women, including the right to freedom of thought, conscience, religion and belief. Delegates stated their conviction that: women's empowerment and full participation are fundamental to equality, development and peace; equal rights and responsibilities are critical to families; women's involvement is required to eradicate poverty; peace is linked to the advancement of women; and gender-sensitive policies are essential to foster women's empowerment and

advancement. Governments were determined to eliminate discrimination and remove obstacles to equality; encourage men to participate in actions towards equality; promote women's economic independence; promote sustainable development and education; prevent and eliminate violence against women and girls; ensure full participation; and ensure equal access to economic resources (Earth Negotiations Bulletin, 1995: 1-11).

### **1996**

The Second United Nations Conference on Human Settlements (Habitat II), meeting in Istanbul, Turkey in June 1996, allowed the participants to consider the issue of sustainable human settlements through a variety of forums. The objectives of the Second United Nations Conference on Human Settlements were: (1) in the long term, to arrest the deterioration of global human settlement conditions and ultimately create the conditions for achieving improvements in the living environment of all people on a sustainable basis, with special attention to the needs and contributions of women and vulnerable social groups; and (2) to adopt a general statement of principles and commitments and formulate a related Global Plan of Action capable of guiding national and international efforts through the first two decades of the next century (Earth Negotiations Bulletin, 1996: 1-2).

### **June 1997**

The Commission on Sustainable Development (CSD) was created to monitor and report on implementation of the Earth Summit agreements. It was agreed that a five-year review of the Earth Summit progress would be made in 1997 by the United Nations General Assembly meeting in a special session. This special session of the United Nations General Assembly took stock of how well countries, international organizations and sectors of civil society have responded to the challenge of the Earth Summit (IISD, 2002: 4). The Earth Summit +5 objectives were:

- To revitalize and energize commitments to sustainable development.
- To frankly recognize failures and identify reasons why.
- To recognize achievements and identify actions that will boost them.
- To define priorities for the post-97 period.
- To raise the profile of issues addressed insufficiently by the Rio Summit (United Nations: Department of Economic and Social Affairs, 1997: 1).

The General Assembly, in its 1997 Programme for the Further Implementation of Agenda 21 accepted poverty eradication as the overriding theme of sustainable development for the future. Priority actions included the following:

- Improving access to sustainable livelihoods, entrepreneurial opportunities and productive resources.
  - Providing universal access to basic social services.
  - Progressively developing social protection systems to support those who cannot support themselves.
  - Empowering people living in poverty and their organizations.
  - Addressing the disproportionate impact of poverty on women.
  - Working with interested donors and recipients to allocate increased shares of ODA to poverty eradication.
  - Intensifying international cooperation for poverty eradication.
- (United Nations Department of Economic and Social Affairs, 2003: 1).

### **December 1997**

In December 1997, the Climate Change Conference, in Kyoto, Japan took place. 159 Nations attended the conference. This conference strengthened commitments under the Climate Change Convention and adopted legally binding emission targets, namely that developed countries will be legally bound to reduce their greenhouse gas emissions by at least 5% on average relative to 1990 levels, by the years 2008-2012. There was also agreement to consider the use of carbon sinks, carbon trading and joint implementation projects to meet the

targets – details and methodologies are now to be finalized at a later stage. Developing countries, that is countries which are in the process of becoming industrialized but have constrained resources with which to combat their environmental problems, which include China and India, have no formal binding targets, but have the option to set voluntary reduction targets (IISD, 2002: 4).

### **1999**

The Third World Trade Organization Ministerial Conference was held in Seattle, Washington, United States, in 1999. Thousands of demonstrators took to the streets, protesting the negative effects of globalization and the growth of global corporations. Conflict existed among the delegates and this affected the negotiations. As the first of many such anti-globalization protests, it signalled a new era of confrontation between disaffected stakeholders and those in power (IISD, 2002: 4).

### **2000**

The United Nations Millennium Summit, in September 2000, was the largest-ever gathering of world leaders. It was called “The Role of the United Nations in the twenty-first century”. One hundred and forty-seven world leaders agreed to a set of time-bound development goals central to the objectives in Agenda 21. They adopted the United Nations World Summit Declaration, which spells out values and principles, as well as goals in key priority areas. World leaders agreed that the UN’s first priority was the eradication of extreme poverty and highlighted the importance of a fairer world economy in an era of globalization. The leaders declared that the central challenge of today is to ensure that globalization become a positive force for all people (IISD, 2002: 3; United Nations Press Release, 2000: 1-2).

Noble (2001: 1) stated that at the 2000 World Economic Forum (WEF) in Davos, Switzerland, the business and government leaders in attendance were polled about the greatest challenge facing the world at the dawn of the new century. Global climate change was voted as the number one concern. According to the International Centre for Trade and Sustainable Development (2003: 3-4) the WEF brought together world leaders and corporate representatives to address global citizenship under the heading of “building trust”.

## **2001**

The World Trade Organization, at its fourth Ministerial meeting in Doha, Qatar, in November 2001, adopted a declaration stating: “We are convinced that the aims of upholding and safeguarding an open and non-discriminatory multi-lateral trading system, and acting for the protection of the environment and the promotion of sustainable development can and must be mutually supportive” (World Trade Organization, 2001: 1-2; IISD, 2002: 4).

## **March 2002**

At the International Conference on Financing for Development, held in Monterrey, Mexico in March 2002, governments reaffirmed the commitment to sustainable development, and donor countries promised a total of \$30billion in additional resources through 2006 (United Nations International Conference on Financing for Development, 2003: 1).

## **2.4 SUMMIT 2002, JOHANNESBURG, SOUTH AFRICA**

### **2.4.1 An overview**

The World Summit on Sustainable Development, held in Johannesburg from August, 26 to the 4<sup>th</sup> September 2002, marked the tenth anniversary of the

ground-breaking Rio Earth Summit. The slogan used for the World Summit 2002 was “People, Planet, Prosperity”.

Björn Stigson, president of the World Business Council for Sustainable Development (2002: 32) confirmed that the Johannesburg Summit presented a platform for business, and with that a new dimension to sustainable development was added to the debate. Sustainable development was now linked to poverty eradication, economic development and a better quality of life for all people. The focus of the Rio Earth Summit in 1992 was on environment and development, a shift from solely environment at the 1972 United Nations Stockholm Summit. The World Summit 2002 reflected a shift in emphasis from purely environmental issues to the importance of sustainable social and economic development within the context of environmental stewardship. The intention was not to renegotiate Agenda 21, but to review the progress on its implementation. (Compare Singh, 2002: 2.)

David Brackett (2002: 61) chairperson of the International Union for the Conservation of Nature and Natural Resources Species Survival Commission stated that the 1992 Rio Summit emphasized environmental protection. In comparison the World Summit 2002 (WSSD) pursued an integrated approach to the three pillars of sustainable development, namely: environmental stewardship, economic development and social development. WSSD reflected an increasing concern with devising and promoting approaches that treat issues of poverty, equity and environmental protection together, probing causal relationships and complex connections, and searching for synergistic solutions. It was a positive trend, as it represented a departure from the polarized positions of the Rio conference that pitted Northern preoccupations with the environment against a Southern focus on poverty alleviation.

Valli Moosa, South Africa’s Minister of Environmental Affairs and Tourism, (2002: 3) discussed the importance of understanding the concept sustainable

development as a holistic approach to development. In his opinion it means different things to different people and has in the past wrongly been characterized as an environment issue. This view is supported by Porritt (in Warburton, 1998: xi) stating in this regard: “In a remarkably short period of time, ‘sustainable development’ has become one of those protean concepts that means a hundred different things to a hundred different people”. Minister Moosa (2002: 3) reiterated that unless sustainable development is understood as “development” that meets social, economic, health, environmental and political needs without compromising the very basis on which these human needs depends, sustainable development will remain a “green” concept. Minister Moosa emphasized that in Rio a set of principles encapsulated by Agenda 21 were agreed upon. While these principles and the Agenda 21 framework laid the basis for sustainable development, it did not provide the consensus and commitment needed to implement sustainable development. Ten years down the road the reality of the world today is that 2.4 billion people live in poverty. The gap between rich and poor countries is widening. All over the world workers are facing increased hardship due to retrenchments and a reduction in formal employment opportunities. There is widespread food insecurity and cultural destruction affecting indigenous people globally. Many countries carry heavy economic debt. Human rights abuses are widespread and there is an alarming increase in crime and violence.

The United Nations General Assembly mandated the Summit 2002 to assess progress on interrelated economic, environmental and social issues, to identify gaps and new challenges (such as globalization) since Rio, and agreed to action-orientated measures to deliver real improvements in the quality of life for people around the world. Mr. Tony Blair, Prime Minister of Britain (United Kingdom Government, 2003: 5), presented the following point of view: “We know the problems. A child in Africa dies every three seconds from famine, disease or conflict. We know that if climate change is not stopped, all parts of the world will suffer. Some will even be destroyed, and we know the solution – sustainable

development. So the issue for this summit is the political will...Rio of course did not deliver everything, neither will Johannesburg, no summit can, but this summit can and will make our world change for the better...”.

In this regard, the question remains, what is the paradigm of sustainable development? What has changed since Rio? The challenge of the summit is to place the world economy on a sustainable path. For poor nations, there is the implication to focus on small business and subsistence or semi-subsistence agriculture, rather than the large-scale, high-input commercial farming. It implies a shift, with set targets and timetables, towards renewable energy resources. For the developed nations, the message appears to be one of transcending nationalism and acknowledging their responsibilities. There is a further implication that corporate environmental practice has to be subjected to international scrutiny. The core of the problem in essence is, what and how people produce and consume. This is a complex issue, because it encroaches on the fundamental doctrines of economic development, and on the aspirations that everyone has a chance of a better life through increased economic means. Banerjee (2003: 162) added to this discussion and stated that there were substantial efforts to broaden the scope of “green issues” to include social sustainability. The “triple bottom line” approach assesses the social and environmental impacts of business, as distinct from its economic impact. The theoretical perspectives of the triple bottom line approach focus on maximizing sustainability opportunities (corporate social responsibility, stakeholder relations, and corporate governance) while minimizing sustainability-related risks (corporate risk management, environmental, health and safety-audits). The “triple bottom line” approach thus acknowledges that economic, environmental and social issues are the components of an overall sustainable development paradigm.

Dodds (2000: 6) was of the opinion that poverty must be addressed and not only for moral reasons. Economic desperation is a direct spur to unsustainable energy

production, water use, agriculture and fishing. According to the OECD (2001b: 12) there are important synergies between the goals of poverty reduction and better environmental protection. Rural populations depend directly on their surrounding ecosystems – pastures, forests, wetlands and coastal fisheries – to meet their needs for food, fuel, shelter, fodder and medical plants. The poor are most vulnerable to the effects of environmentally unsound practices. It is increasingly understood that the paradigm for sustainable development implies changes in culture, in patterns of development, production and consumption. Raising awareness and understanding of the implications of current production and consumption levels could facilitate these changes. It is clear that it will require substantive transformation in attitudes and social behaviour. The OECD (2001b: 13) made it very clear that environmental sustainability can only be achieved within a broad development strategy, encompassing sustained economic growth, financial solvency, institutional development, improved governance, effective investment in education and health, and poverty reduction.

#### **2.4.2 Key commitments, targets and timetables - Summit 2002**

More than 180 countries attended the Summit. Strong contingents were present from parliaments, local governments, business and NGOs. In summary the Summit produced the following:

- a statement by world leaders underlining their commitment to global sustainable development;
- a Plan for Implementation, which was the main focus of negotiations, setting out the priority actions needed to achieve global sustainable development;
- a wide range of partnerships (known as “Type 2 partnerships”) for action involving governments, businesses, NGOs and other stakeholders and focused on the Plan of Implementation.

The Summit forged close links between development and environment policy, in the service of sustainable development. Agreements on poverty eradication

highlighted the importance of good environmental and natural resource management to sustainable livelihoods and the Millennium Development Goals (MDGs). As well as reaffirming the importance of delivering the existing MDGs and reinforcing the importance of the Monterrey (International Conference, Monterrey, Mexico, February 2002) Consensus on Financing for Development, the Summit agreed on new commitments on access to water, sanitation and energy:

- Sanitation – a new target was set to halve by 2015 the proportion of people living without basic sanitation, adding to the MDGs. This should save millions of lives in developing countries, and support existing goals on safe drinking water and health.
- Water – a commitment to a programme of actions to help meet the new sanitation target and the associated MDG on safe water. Countries should also develop integrated water resource management and water efficiency plans by 2005.
- Energy – an agreement to take joint actions to provide reliable and affordable energy for the poor, to underpin achievement of the MDGs.

In addition to the abovementioned commitments the following main issues were addressed, namely:

- Negotiations on **trade** proved to be particularly difficult as countries had differing expectations on what the WSSD could achieve.
- For industrialized countries, a priority will be to elaborate on the agreement to develop a global framework for action programmes to make **patterns of consumption and production** more sustainable, and to bring development within the carrying capacity of ecosystems (Hart, 1998i: 1-2). Work should focus on de-coupling economic growth from environmental degradation. Industrialized countries are tasked with leading the way. Specific terminology, for example, eco-efficiency came to the fore. The term eco-efficiency is a contraction of ecological and economic efficiency. It advocates *doing more*

*with less*. Companies benefit from eco-efficiency by reducing the energy and material requirements of production.

- The current trend **in natural resources degradation** should be reversed as soon as possible by implementing strategies to protect ecosystems and achieving integrated management of land, water and living resources.
- The pace of **globalization** since Rio was recognized as a new challenge, offering both opportunities and risks for sustainable development. In this context, **corporate social responsibility** should be actively encouraged and promoted, including through the full development and effective implementation of intergovernmental agreements and measures, international initiatives, private-public partnerships and appropriate national regulations.
- Countries agreed to significantly reduce the current rate of loss of **biodiversity** by 2010. Action will include strengthening efforts to control invasive alien species, one of the main causes of biodiversity loss, promoting the development and implementation of the ecosystem approach, which is a strategy for the integrated management of land, water and living resources, and the integration of biodiversity objectives into all policy areas.
- **Marine protection and fisheries** figured heavily at the Summit. A new target has been set to restore depleted fish stocks urgently and where possible by 2015, with enhanced action against illegal fishing. Governments agreed to establish networks of Marine Protected Areas by 2012 and produce a new Global Marine Assessment by 2004.
- The Summit agreed to urgently and substantially increase the **global share of renewable energy sources**, recognizing the role of national and regional targets. Every effort should be made to develop cleaner and more efficient energy technologies and taking action, where appropriate, to phase out energy subsidies that inhibit sustainable development.
- A new target tasks nations to use and produce **chemicals** in ways that lead to the minimization of significant adverse effects of human health and the environment by 2020 and help developing countries deal with chemicals management and hazardous wastes.

Existing commitments on human rights and good national governance were reconfirmed as a cornerstone of sustainable development, with expansion at the Summit of the Rio commitments on public participation and access to justice.

The Summit also agreed to strengthen the way the United Nations deals with sustainable development issues. The outcomes of Monterrey and Johannesburg should be followed up in a coordinated manner.

The following were highlighted as key outcomes of the Summit 2002 as cited by the United Nations in 2002 (INPECO, 2002: 6):

- The Summit reaffirmed sustainable development as a central element of the international agenda and gave new impetus to global action to fight poverty and protect the environment.
- The understanding of sustainable development was broadened and strengthened as a result of the Summit, particularly the important linkages between poverty, the environment and the use of natural resources.
- Governments agreed to and reaffirmed a wide range of concrete commitments and targets for action to achieve more effective implementation of sustainable development objectives.
- Support for the establishment of a world solidarity fund for the eradication of poverty was a positive step forward.
- Africa and NEPAD were identified for special attention and supported by international community to better focus efforts to address the development needs of Africa.
- The views of civil society were given prominence at the Summit in recognition of the key role of civil society in implementing the outcomes and in promoting partnership initiatives.
- The concept of partnerships between governments, business and civil society was given a large boost by the Summit and the Plan of Implementation. Over 220 partnerships were identified in advance of the Summit and around 60 partnerships were announced during the Summit by a variety of countries. (Compare World Resources Institute, 2003; INPECO, 2002.)

More than ten years after Rio, the third link of the sustainability triangle, the social interface, is receiving increasing attention. Issues of equity, of poverty eradication, and of social exclusion have been highlighted, particularly in the transition to a market economy in Central and Eastern Europe and Central Asia, and by the perceived effects of globalization almost everywhere.

In summary, sustainable development may be regarded as the progressive and balanced achievement of sustained economic development, improved social equity and environmental sustainability. Sustainability is therefore a holistic concept, which includes environmental, social and economic issues. Sustainable development encompasses vital issues such as human development, social and economic justice and the advancement of democracy. The social and economic components as integral parts of the sustainable development paradigm are of particular relevance to this study.

## **2.5 CONCEPTUALIZING SUSTAINABLE DEVELOPMENT**

Sustainability is a concept with several dimensions. Trzyna (1995: 16) stated that a complicating factor in conceptualizing sustainable development is that it is not a precise goal, but a criterion for attitudes and practices. Over the years and through the exploration by various disciplines, numerous other definitions and or comprehensive explanations have emerged, but they all resolve around the interconnectedness of society, economy and environment. (Compare Anand and Sen, 1994, 12-13; The Sustainable Living Network [sa]; International Federation of Social Workers, 2002; Hasegawa, 2001; Bartelmus, 1999.)

According to Hart (1998d: 1) a sustainable community is one in which the economic, social and environmental systems that make up the community provide a healthy, productive, meaningful life for all community members, present and future. Sustainable communities acknowledge that there are limits to the natural, social and built systems upon which they depend. Many organizations

are supporting the philosophy that poverty cannot be eliminated in the long term, without protecting the environment and that the environment cannot be protected without tackling poverty. As noted earlier, sustainability is a concept with several dimensions and it is clear that the link between conservation and social and economic development works in both directions. Kinsley (1997: 1) made a valuable contribution by emphasizing that when placed in front of the word “development”, the word “sustainable” offers both opportunities and constraints. It offers opportunities because its new perspective reveals development options that previously weren’t obvious. It offers constraints because, when proposals are considered in light of their long-term effects, some options that might otherwise appear attractive are seen to be unworkable, or not worth their negative effects.

The International Union for the Conservation of Nature and Natural Resources (IUCN), United Nations Environment Programme (UNEP) and the World Wildlife Federation (WWF) developed “Principles of a sustainable society” in preparation for the Earth Charter Project (Rockefeller, 1996: 1-4). These organizations stated that living sustainably depended on accepting a duty to seek harmony with other people and with nature. The guiding rules stipulate that people must share with each other and care for the Earth. Humanity has to monitor what is taken from nature and that should be in line with what nature can replenish. This in turn means adopting lifestyles and development paths that respect and work within nature’s limits. Rockefeller stated that this could be done without rejecting the many benefits that modern technology has brought, provided that technology also works within those limits.

### **2.5.1 Principles of a sustainable society**

The principles of sustainable society are interrelated and mutually supporting. The IUCN, UNEP and the WWF indicated the following as principles (Rockefeller, 1996). Of those listed below, the first is the founding principle providing the ethical base for the others. The next four define the criteria that should be met,

and the last four indicate the directions to be taken in working towards a sustainable society at the individual, local, national and international levels. The principles are:

**Respect and care for the community life**

This principle reflects the duty and care for other people and other forms of life, now and in the future. It is an ethical principle and means that development should not be at the expense of other groups or later generations. All life on earth is part of one great interdependent system, which influences and depends on the non-living components of the planet – rocks, soils, waters and air. Disturbing one part of this biosphere can affect the whole. Human societies are interdependent and future generations are affected by present actions. The world of nature is increasingly dominated by human behaviour. It is a matter of ethics as well as practicality to manage development so that it does not threaten the survival of other species or eliminate their habitats (Rockefeller, 1996: 2).

**Improve the quality of life**

The real aim of development is to improve the quality of human life. It is a process that enables human beings to realize their potential, build self-confidence and lead lives of dignity and fulfilment. Economic growth is an important component of development, but it cannot be a goal in itself, nor can it go on indefinitely. Although people differ in the goals that they would set for development, some are universal. These include a long and healthy life, education, access to the resources needed for a decent standard of living, political freedom, guaranteed human rights, and freedom from violence. Development is real only if it ensures a better life for all (Rockefeller, 1996: 2).

**Conserve the earth's vitality and diversity**

Conservation-based development needs to include deliberate action to protect the structure, functions and diversity of the world's natural systems, on which all species utterly depends. Human beings need to conserve life-support systems.

These include all the ecological processes that keep the planet fit for life. They share climate, cleanse air and water, regulate water flow, recycle essential elements, create and regenerate soil, and enable ecosystems to renew themselves. Human beings need to conserve biodiversity, including all species of plants, animals and other organisms, the range of genetic stocks within each species, and the variety of ecosystems. Human beings need to ensure that uses of renewable resources are sustainable. (Compare Boersema and Bertels, 2000: 87.) Renewable resources include soil, wild and domesticated organisms, forests, rangelands, cultivated land, and the marine and freshwater ecosystems that support fisheries (Rockefeller, 1996: 3).

#### **Minimize the depletion of non-renewable resources**

Non-renewable resources, meaning, gas, oil, minerals and coal cannot be used sustainably and should receive special care and attention. However, their “life” can be extended, for example, by recycling, by using less of a resource to make a particular product, or by switching to renewable substitutes where possible. Widespread adoption of such practices is essential if the Earth is to sustain billions more people in future, and ensure a decent quality of life (Rockefeller, 1996: 3).

#### **Keep within the earth’s carrying capacity**

There are finite limits to the “carrying capacity” of the Earth’s ecosystems – to the impacts that they and the biosphere as a whole can withstand without dangerous deterioration. The limits vary from region to region, and the impacts depend on how many people there are and how much food, water, energy and raw materials each uses and wastes (Rockefeller, 1996: 3; Hart, 1998i: 1-2).

#### **Change personal attitudes and practices**

Values and behaviour need to be examined. Society must promote values that support the new ethic for living sustainably, and discourage those that are incompatible with a sustainable way of life. Information must be disseminated

through formal and informal educational systems so that the policies and actions needed for the survival and well-being of the world's societies can be explained and understood (Rockefeller, 1996: 3).

**Enable communities to care for their own environments**

Most of the creative and productive activities of individuals or groups take place in communities. Communities and citizens' groups provide the most readily accessible means for people to take socially valuable action as well as to express their concerns. Properly mandated, empowered and informed, communities can contribute to decisions that affect them and play an indispensable part in creating a securely-based sustainable society (Rockefeller, 1996: 3-4).

**Provide a national framework for integrating development and conservation**

All societies need a foundation of information and knowledge, a framework of law and institutions, and consistent economic and social policies if they are to advance in a rational way. A national programme for achieving sustainability should involve all stakeholders, and identify and prevent problems before they appear. It must be adaptive, continually redirecting its course in response to experience and to new needs. National measures should:

- treat each region as an integrated system, taking account of the interactions among land, air, water, organisms and human activities;
- recognize that each system influences and is influenced by larger and smaller systems – whether ecological, economic, social or political;
- consider people as the central element in the system, evaluating the social, economic, technical and political factors that affect how they use natural resources;
- relate economic policy to environmental carrying capacity;
- increase the benefits obtained from each stock of resources;
- promote technologies that use resources more efficiently;

- ensure that resource users pay the full social costs of the benefits they enjoy (Rockefeller, 1996: 4).

### **Create a global alliance**

No nation today is self-sufficient. If humanity is to achieve global sustainability, a form of alliance must be established. The levels of development in the world are unequal, and the lower-income countries must be helped to develop sustainably and protect their environments. Global and shared resources, especially the atmosphere, oceans and shared ecosystems, can be managed only on the basis of common purpose and resolve (Rockefeller, 1996: 4).

Mustafa Tolba (in Murcott, 1997: 3; Mngoma, 1997 and FitzGerald, Mc Lennan and Munslow, 1996: 4) emphasized that in broad terms the concept “sustainable development” encompasses the following:

- Help for the very poor as they have no option but to destroy the environment. When people lack the basic amenities or when essential needs are not met, they are forced to damage the natural resources. Deforestation for example, presents a major problem; the reason being that trees are important to prevent soil erosion. Contaminated water and polluted air are responsible for an increase in water-borne and respiratory diseases. The result is an overburdened health care system. People not having access to immunization and disease eradication programs place excessive demands on healthcare and social services;
- The idea of self-reliant development, within natural resources constraints.
- The idea of cost effective development using differing economic criteria to the traditional approach, meaning that development should not degrade environmental quality and should not reduce productivity;
- The issues of health control, appropriate technologies, food self-reliance, clean water and shelter for all;
- The notion that people-centered initiatives are needed; human beings are the resources in the concept.

### 2.5.2 Sustainable development: A holistic approach to sustainable living

The importance of a focus on human development is clear from the following extract: *Sustainable Development is a process which enables people to realise their potential and improve their quality of life in ways which protect and enhance the earth's life support system* (Sustainable Lifestyles Conference, 1999 in Department for Environment; Food and Rural Affairs (DEFRA), 2000: 1). From the same source (2000: 1) the following extract stressed a holistic approach to sustainable living: *Sustainable Development is about liveability. It is about creating and maintaining healthy communities and economies, which can lead to a healthy environment and enhanced qualities of life. Communities working towards the goal of Sustainable Development commit themselves to examining the links, and trade-offs of the choices they face.*

The Forum for the Future (Annual Report, 2000) supported the notion that sustainable development is a dynamic process that enables all people to maximize their potential, thereby improving the quality of their lives without harming the environment (United Kingdom Government, 2001: 3). Barbier (in Tacconi and Tisdell, 1992: 270) suggested the following: "sustainable development should be seen as the maximization of the human ascribed goals across the biological, economic and social systems through a process of dynamic trade-offs".

A number of authors (compare Walsh, 1993; Cook, 1997: 275; Hunter, 1997: 233 and Fricker, 1998) were of the opinion that an improved definition of "sustainable development" must also embody the following concepts:

- the place of human beings in the environment, and the relationship between both;
- the nature of human, social, cultural and economic development, their current imbalances and inequities, and their future course;
- the healing of existing injury to the natural environment.

In this regard The Sustainable Living Network ([sa]: 1) explained the scope of the concept “sustainable living”: “Sustainable living is an approach to social and economic, indeed, all activities, for all societies, rich and poor, which is compatible with the preservation of the environment. It is based on a philosophy of interdependence, of respect for life as well as non-living parts of Nature, and of responsibility for future generations”. Walsh (1993: 1) made a valuable contribution and cautioned that: “...development is different things to different people: it is people, society, and time specific; it is something which requires vision, deferred gratification and hard work, it cannot be achieved without cooperation; it is dependent on the favourable interaction of political, social and economic forces at local, national and global levels, it is not inevitable, and it can so easily come unstuck”. Achieving progress toward sustainability thus implies maintaining and improving, both human and ecosystem well-being. The interdependence between people and the surrounding world is clear.

Many unanswered questions remain. How does society get beyond the semantics and rhetoric? What measures are being implemented to ensure a lasting progress on a social, economic and environmental front? Has society adequately defined the multiple dimensions of sustainable development? The United Nations Educational, Scientific and Cultural Organization (UNESCO) (2001: 1-3) had put considerable effort into describing the various aspects of the sustainable development paradigm, namely:

- Sustainable development is perhaps more a moral precept, in other words, a rule of conduct, than a scientific concept, linked as much with notions of fairness as with theories of global warming.
- Sustainable development involves the natural sciences and economics, but is primarily a matter of culture. It is connected with values people cherish and with the ways in which they perceive their relationship with others.
- Sustainable development is a response to the unavoidable need to develop a new approach to relations between peoples and a new understanding of habitat – the foundation and nourishing source of human existence.

- Sustainable development occurs when humanity acknowledge the relationship between human needs and the natural environment. The independence of humans and the environment necessitates a refusal of the obsessive pursuit of any single development or environmental objective to the detriment of others. The environment cannot be protected in a way that leaves half of humanity in poverty.
- Linking social, economic and environmental concerns is a crucial aspect of sustainable development. Creating such links demands a deeper, more ambitious way of thinking about education, one that retains a commitment to critical analysis while fostering creativity and innovation. It demands an ethic and value system sensitive to the value of cultural identity and multicultural dialogue.
- To avoid false dilemmas, there has to be an understanding of sustainable development as a new and viable long-term relationship between human beings and their habitat, one that places humanity at the forefront.  
From the methodological point of view, an affirmation of what sustainable development should be, can be achieved by formulating its opposite:
- Sustainable development does not embody a new, fully formed theory of human existence. Sustainable development incarnates a plea for integral thinking – thinking responsive to the complexity of the real systems of everyday life.
- Sustainable development is not a magic answer; it is a new vision of the future. It requires, on the one hand, that the countries of the North take radical steps to address problems related to consumption, production and their impact. Developing countries must promote fairness, alleviate poverty, reinforce justice and democracy, adopt development strategies that benefit all strata of society, and address the serious environmental problems of the present time.
- Sustainable development is not a new method of analysis. It is a new way of looking at reality. It requires that people reject four features of contemporary life that put the future of the world in jeopardy: (a) inequality, caused by

excessive confidence in the distribution of savings revenue in times of crisis; (b) instability, brought about by an excess of State intervention, lax monetary policies and inflationary processes; (c) inefficiency, caused by countries turning in on themselves, accompanied by market shifts that seriously affect the rural areas; and finally, (d) exclusion and inequality which are still very much in evidence and wrongly accepted as inevitable.

- Sustainable development is not an end in itself but a way of managing possible scenarios for the future and fostering new approaches to social dialogue. It is about searching for ways of promoting new priorities, options and possibilities, while maintaining harmony in all things.
- The idea of sustainable development brings about nothing new. It is an invitation to goodwill in fostering prevention, risk control and harmony. It contributes to the creation of new synergy among social actors and of strategies that promote more efficient and transparent governance.
- Sustainable development is not a new way of dividing society into sectors. It reflects and promotes a quest for unity, a respect for all cultures, acceptance of diversity and integrative responses to the complex problems humanity are obliged to face.
- Sustainable development does not imply the affirmation of a neo-liberal economic model; rather, it proposes a world of solidarity that would accompany profound changes in existing economic arrangements and a reassurance of democratic procedures.
- Sustainable development is not a new utopian vision. It is in fact an alarm bell set off by the lack of respect for humane values in everyday life.
- Sustainable development is not an abstraction. It is rooted in common sense and practical values, stressing what is important, therefore placing it at the service of new ways of living.
- A commitment to sustainable development is not a search for new forms of government that ensure the continued exercise of power by minorities in ways that reflect a disregard for human security, freedom and autonomy.

Todaro (1997: 341) was of the opinion that environmentalists have used the term sustainability in an attempt to clarify the desired balance between economic growth and progress on the one hand and environmental preservation on the other. The same author (1997: 343) stressed the fact that much of the concern over environmental issues stemmed from the perception that humanity may reach a limit to the number of people whose needs can be met by the earth's finite resources.

It is evident that continuing on the present path of accelerating environmental degradation, the ability of present and future generations to meet their needs, would be in jeopardy. The importance of addressing the process of sustainable development, as an interdisciplinary concept is evident from the above discussion and for the purpose of this research study will be discussed in more depth.

## **2.6 SUSTAINABLE DEVELOPMENT AS AN INTERDISCIPLINARY SCIENCE**

Thyer (2002: 110) supported the importance of sustainable development as an interdisciplinary science. He emphasized the following perspective: "Since human behavior is unlikely to be guided by one set of principles in economic matters, another distinct and unique set of laws in politics, and another in social activities, it is unrealistic to expect that ultimately, meaningful differences will emerge in coherent accounts to explain human conduct in diverse areas. Perhaps in time, disciplinary divisions will break down to be replaced by more inter-disciplinary programs of study related to human affairs". Sustainable development is by nature an interdisciplinary concept, drawing on social and physical sciences, as well as law, management and politics.

From the reviewed literature (Encyclopaedia of Life Support Systems, 2001: 3; McNeill, 2000: 15) it is clear that the subject matter of sustainable development is composed of contributions from ecology, biology, physics, chemistry, geology,

economics, anthropology, sociology, psychology, and computer science. Its repertoire is bolstered by other interdisciplinary work such as system science and nonlinear dynamics; chaos, catastrophe, and complexity theory are showing up regularly in literature. So far sustainable development does not have a core theory from which everything else proceeds. Rather, it lives by an open-textured definition, and is defined by the topics researchers have an opportunity to delve into. McNeill (2000: 15) for example, selected three disciplines, namely, economics, anthropology and ecology, to explain the interdisciplinary nature of sustainable development. McNeill stated that economics is concerned with the interactions of individuals as rational, self-interested, autonomous, maximizing decision-makers. According to McNeill it treats nature typically as a material/resource constraint. McNeill (2000: 15) further stated that Anthropology regards human beings interacting with one another not only as decision-makers but also as meaning-makers, with the emphasis on the collective. Nature is both a resource and constraint as a locus of meaning. Ecology is concerned with human beings as a species, interacting as biological beings, both with their own and other species and with the inorganic environment; the emphasis is on the whole as a system. Trzyna (1995: 19) emphasized that sustainable development requires cutting across many professions and disciplines: it is therefore a crosscutting concept and people are forced to think beyond compartmented thinking. To understand sustainable development the importance of fully comprehending the interconnections between environment, economy and social well-being, are all important. It requires bringing together people who have very different backgrounds, mindsets and agendas. Trzyna (1995: 20) further postulated that sustainable development is a social and political process and the ultimate challenge is not only scientific or technical, but more importantly, the changing of human behaviour.

One example that is most important, as far as the economic sector is concerned is that the goal of sustainable development is to improve living standards and quality of people's lives, both now and for future generations. The goal is

therefore, to maximize human welfare within the constraints of existing capital stock and technologies.

It is clear in this regard that economic issues are linked with social concerns. A classic example would be that inadequate investment in education and training of workers limits the potential for economic growth. Rapid population growth may limit the economic system's ability to meet people's basic needs and provide jobs for everyone. Social sector issues are closely linked to economic issues such as poverty (The World Bank Group, 1998a: 1). In any society, it is the poor who are least likely to receive adequate health care, education, and family planning services. Higher birth rates may result, making it difficult for these families to meet their basic needs and break out of the cycle of poverty. All people in a society must have access to certain basic goods and services in order to lead healthy, fulfilling and productive lives. Education and training must be available, so that everyone has the chance to earn a decent living and learn new skills. Education is crucial if a society is to reproduce itself and maintain a level of achievement essential for the welfare of its members. Social concerns in one country can have an impact that reach beyond national borders. Unequal access to education or lack of job opportunities can lead people to migrate. This may cause profound changes in the country they leave, as it adjusts to the loss of certain groups.

Social issues are also linked with environmental concerns. In many countries, contaminated water and polluted air are responsible for an increase in water-borne diseases and respiratory problems, all of which place an extra burden on the local health care system. Economic, social and environmental issues are all important pieces of the development "puzzle" (The World Bank Group, 1998b: 1).

Fakir (2002: 14) stated very clearly that the linkages between crucial issues in the environmental/underdevelopment debate could only be understood in terms of risk and vulnerability that poor communities face when trying to secure

sustainable livelihoods. Risks and vulnerabilities emanate from changes in the international and domestic socio-economic environment. Fakir further postulated that the entire strategy for sustainable development is premised on the idea that the linkages between political governance and social and economic programmes are intertwined with environmental considerations. In developing countries the reality of the linkages are much more obvious. Fakir (2002: 14) stated that most urban environmental problems, particularly the ones in developing countries, could be attributed to weak local government capacity. This implies that there is little capital to invest in infrastructure improvements, and the weak monitoring of compliance to various regulations. This ultimately leads to more impoverishment and squalid living conditions.

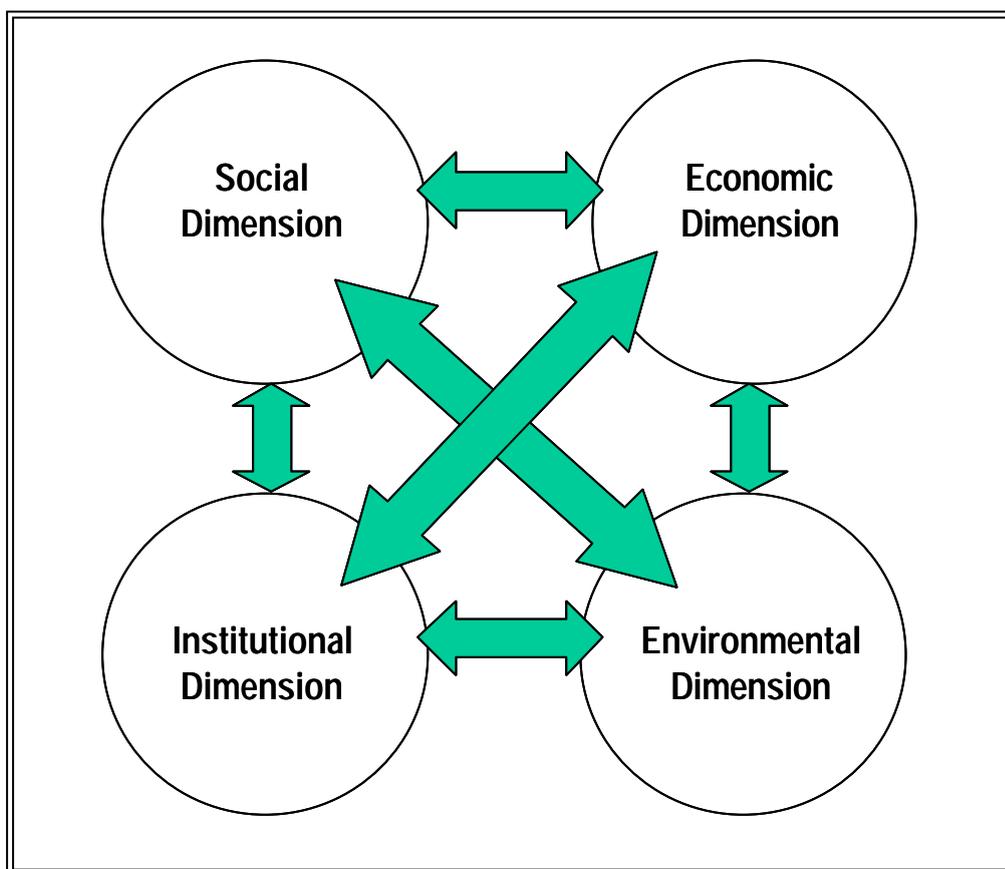
As previously mentioned, several knowledge resources are essential for an integrated and comprehensive understanding of the sustainable development paradigm. Often scholars from diverse fields of specialization tend to use different terminology to characterize this knowledge. The following broad framework has received wide acceptance (Encyclopaedia of Life Support Systems, 2001: 3):

- Natural resources or natural capital (The environmental dimension)
- Economic resources or built capital (The economic dimension)
- Social resources or social capital (The social dimension)
- Institutional resources or institutional capital (The institutional dimension)

Community capital is needed to ensure the survival and maintenance of communities. Within the context of sustainability, human, social, natural and built capitals are the components of community capital and absolutely necessary for continued existence (Hart, 1998g: 1).

Among the different dimensions of sustainable development there exist complex interactions (Encyclopaedia of Life Support Systems, 2001: 4). Figure 1 shows the various fundamental dimensions of the sustainable development paradigm, which rely on a wide spectrum of disciplines as indicated below. According to the

Encyclopaedia of Life Support Systems (2001: 3) the knowledge needed for the understanding of the subsystems for their sustainability is highly interdisciplinary. For example to understand the sustainability of the Natural Capital (or Environmental Dimension), knowledge of the disciplines such as Biology, Chemistry, Physics, Geology as well as Mathematical Sciences in addition to the use of technological tools such as Computer Systems, Remote Sensing and Global Information Systems are necessary.



**Figure 1: Fundamental dimensions of the sustainable development paradigm** (Adapted from Encyclopaedia of Life Support Systems, 2001: 4)

These dimensions as indicated in figure 1 will be discussed next.

### 2.6.1 The environmental dimension of sustainable development

People are dependent on the natural environment for meeting all their needs, and therefore the interactions between people and the environment cannot be separated (Department of Environmental Affairs and Tourism, 1999: 1). Natural capital or natural resources constitute the environmental dimension of sustainable development. It encapsulates agriculture, mining, industry and forestry. It encompasses living systems, plants and animals, water, metal, wood, energy and fossil fuels (coal, gas and oil) and minerals (many of them being non-renewable). All of these are deteriorating worldwide at an unprecedented rate. (Compare Lélé, 1991: 612; Hart, 1998g: 1-2; OECD, 2001b: 8.) Within these ecological communities are the fungi, ponds, mammals, humus, amphibians, bacteria, trees, flagellated, insects, songbirds, ferns, starfish and flowers that make life possible and worth living on this planet. These ecosystem services facilitate economic activity and the immense value thereof cannot be overestimated (Hawken, Lovins and Lovins, 2000: 2). Ecosystem resources that form part of natural capital are: farmlands, wetlands, estuaries, fisheries, fertile soil, sun, wind and tides. Important concepts within this paradigm are “carrying capacity” meaning, the population that an area will support without undergoing environmental deterioration (Hart, 1998i: 1-2). Development becomes sustainable when the need to maintain the ecological balance is taken seriously. All forms of environmental destruction are harmful to human development.

The transboundary nature of many environmental problems comes to the fore when the environmental dimension of sustainable development is under discussion (Hawken, *et al.*, 2000: 4). The main examples of transnational environmental problems are global warming, ozone depletion, air pollution (acid rain), the declining variety of species and the loss of biodiversity. Sustainability implies that present levels of consumption and lifestyles should not threaten the survival needs of future generations (Dobson, 2000: 49; Rodenburg, 1995: 78; O'Connor, 1995: 92).

Mayfield (1997: 421) in his discussion on the significance of the environmental dimension of sustainable development, emphasized the importance of protecting the natural resources needed for food production and cooking fuels – from soils to woodlots to fisheries – while simultaneously providing enough for the needs of growing populations. Mayfield (1997: 421) in his assessment of the environmental dimension made it quite clear that these are potentially conflicting goals. He was adamant that failure to conserve the natural resources on which agriculture depends would ensure future shortages of food. Therefore, sustainable development means more efficient use of arable lands and water supplies, as well as the development and adoption of improved agricultural practices and technologies to increase yields. (Compare Hart, 1998g: 1-4.) Mayfield (1997: 422) further postulated that sustainable environmental management meant avoiding overuse of chemical fertilizers and pesticides, so that they do not degrade rivers and lakes, threaten wildlife, and contaminate human food and water supplies. Mayfield elaborated on this discussion and emphasized that the careful use of irrigation, to avoid salinization or water logging of cropland had to be taken into consideration. The expansion of agriculture onto steep hillsides or marginal soils that would rapidly erode should be avoided.

An important concept within the environmental dimension of sustainable development is eco-efficiency. According to Wolfe (1999: 11) eco-efficiency is a measure of the relative amount of pollution or resource use required to produce a unit of product or service. Wolfe further stated that improving eco-efficiency means producing more of the goods and service desired with fewer resources and less waste. The example given by Wolfe is that by investing in energy efficiency and renewable energy communities are solving environmental problems and building stronger economies. Wolfe further added to this discussion by emphasizing that a key component of sustainability is to adjust economic and accounting calculations by including the effect on the environment. It is thus clear that sustainability recognizes that the economy is a particular

subsystem of the ecosystem. As such, it is dependent on the environment, both as a source for inputs (raw materials) and as a sink for outputs (waste).

The sustainability of the Earth's ecosystems is threatened by human conduct. Sustainability of biodiversity depends on preservation of the delicate balance among them. The Earth's existence itself will be jeopardized by the continued exploitation of natural resources and manufacturing and industrial activities, already affecting negatively the delicate balance that exists in the ecosystem. (Compare Lélé, 1991: 609-611; Wolfe, 1999: 5.) Mayfield (1997: 425) emphasized that economic development and care for the environment are compatible, interdependent, and necessary. A greater emphasis on environmental ethics is needed. Economics and the environment are inextricably linked. Natural resources form the basis of production, manufacturing and waste disposal. Human beings have to consider the conduct of affairs to realize sustainable human development, while at the same time, preserving the integrity of the Earth (Hawken, *et al.*, 2000). The economy depends on the sustainable use of renewable sources. Overuse of these resources for short-term gain may undercut a country's long-term economic future. (Compare Department of Environmental Affairs and Tourism, 1999: 1-2.) Lélé (1991: 614) stated in this regard that a basic premise of sustainable development is that poverty is largely responsible for environmental degradation. According to the Department of Environmental Affairs and Tourism (1999: 3) the impacts of poverty on the environment include amongst others, deforestation from excessive collection of wood for fuel, soil degradation through the cultivation of unsuitable soils, and exploitation of rare and endangered species to supplement incomes. The Department of Environmental Affairs and Tourism further emphasized that an inability to adequately provide for the basic needs of the population will lead to collapse of the natural ecosystem services and deterioration in quality of life. Lélé (1991: 614) stressed that removal of poverty through development is necessary for environmental sustainability. This, it is argued, implies that economic growth is absolutely necessary for sustainable development. What needs to be done is to

“change the quality of [this] growth” to ensure that it does not lead to environmental destruction. (Compare World Commission on Environment and Development, 1987.)

For the purpose of this research study, the ecological perspective is of particular importance. People and the environment should be seen as a whole ecosystem. Ecological oriented social work practitioners prefer to use an integrated method of practice which is “based on a more extended knowledge base” and is able to study, analyze, explain and clarify people on their psychological level, group and community level (Lombard, 1991: 17-18). Mamburu (2000: 64) concluded by emphasizing that this perspective enables practitioners to intervene on the wholeness between people and environment.

According to Ife (1995: 43) the ecological perspective uses as unifying theme four basic principles of ecology, namely holism, sustainability, diversity and equilibrium – these are fundamental to any ecological approach and apply both to the natural world and to the social, economic, and political order. Ife (1995: 44) stated that the principle of holism requires that every occurrence or phenomenon be seen as part of a whole, and that it can only be properly understood with reference to every other part of the larger system. Ife further explained that the basic premise of this principle is that problems do not have simple or linear solutions but must be understood as manifestations of a wider system. The interdependence between phenomena is of extreme importance and therefore everything must be understood in terms of its relationship and interaction with everything else. Ife stated clearly that phenomena (both physical and social) must be seen as part of a seamless web of complex interconnecting relationships. Holism values generalist rather than specialist approaches to problems and their solutions. It values organic change and change should proceed in small steps but on the broad front. Ife (1995: 45) further emphasized that the holistic perspective requires integrative links to be made between phenomena that have been regarded as distinct.

According to Ife (1995: 45) the second principle, namely sustainability, implies that systems must be able to be maintained in the long term; that resources should be used only at the rate at which they can be replenished; that renewable energy sources should be utilized; that output to the environment should be limited to the level at which it can adequately be absorbed, and that consumption should be minimized rather than maximized.

The third ecological principle, namely, diversity, maintains that there is not necessarily just one answer, or one right way of doing things, and so encourages a range of responses (Ife, 1995: 46). Diversity encourages a variety of different ways of doing things, so that people can learn from the experience of others, and change can proceed on the basis of a variety of accumulated wisdom. According to Ife (1995: 47) difference rather than uniformity is valued.

The fourth ecological principle is equilibrium that emphasizes the importance of the relationship between systems, and the need to maintain a balance between them (Ife, 1995: 48). This perspective values balance, harmony and the capacity to incorporate opposing positions, and dialectical relationships – thus dualisms such as male and female, yin and yang, competition and co-operation, central and local, theory and practice, mind and body, personal and political, fact and value, subjective and objective. According to Ife (1995: 48) these are not seen in “all or nothing” terms, but rather are integrated within a perspective of dynamic tension. It is the balance between them which is important and which must be maintained. The emphasis is on management of the environment in order to maintain the integrity of ecological systems and resources. (Compare Lélé, 1991: 610.) Anand and Sen (1994) supported the principle of preserving productive capacity, or society’s broad “stock of capital”. Anand and Sen (1994: 10) emphasized the following basic premise: “We may enjoy the fruits of the accumulated capital and environmental resources that we inherit (in the form of the income and amenities to which they give rise), but we may not deplete the total stock. This principle requires us to pass on to future generations what we

have inherited from past generations –since we did not accumulate or produce it ourselves”.

As previously mentioned the ecological perspective stresses the importance of biodiversity, meaning the variability among living organisms from all sources, including land-based and aquatic ecosystems, and the ecosystems of which they are part. These include diversity within species, between species, and of ecosystems. Diversity is the key to ensuring the continuance of life on earth. It is also a fundamental requirement for adaptation and survival and continued evolution of species. (Compare De Leo and Levin, 1997: 2.)

The above discussion has centered on the various ecological aspects of the sustainable development paradigm. As indicated the environmental aspects of sustainable development require that a balance be found between protecting the physical environment and its resources, and using these resources in a way that will allow the earth to continue supporting an acceptable quality of life for present and future generations of human and animal life.

### **2.6.2 The economic dimension of sustainable development**

The economic dimension of sustainable development encapsulates economic resources, or as it is sometimes referred to, the built or physical capital in a community. Human-made material, buildings, equipment (including machinery, tools and furniture), information, infrastructure (roads, railways, schools and hospitals) are all built or physical capital (Hart, 1998g: 3). It refers to the monetary value of any form of financial asset, money holdings, credit facilities, loans, subsidies, dividends, donations, pensions and grants. Property and capital stock used for production, are part of built capital (Attanasio and Szekely, 1999: 8). It further includes the various ways and means of production and allocation of scarce and useful goods and services (wealth), whether that is through gift

giving, obligations, barter, market trade, transfer payments, lottery winning (gambling) or state allocations in a community.

Bartelmus (1999) wrote that sustainable development is the globally embraced paradigm for integrating environment and development policies and two basic concepts of sustainability can therefore be distinguished. Bartelmus (1999: 3) further emphasized that the long-term preservation of produced and natural capital, income or consumption is the focus of economic sustainability. According to Bartelmus, on the other end of the sustainability scale, ecological sustainability is demanding the full preservation of vital environmental assets and their services. In this author's opinion, economists see the role of the environment as a scarce requisite for economic growth, whereas environmentalists stress nature's provision of life support and other essential facilities.

The World Development Report (1999-2000) stated the following: "Fifty years of development experience have yielded four critical lessons. First, macroeconomic stability is an essential prerequisite for achieving the growth needed for development. Second, growth does not trickle down; development must address human needs directly. Third, no one policy will trigger development: a comprehensive approach is needed. Fourth, institutions matter; sustained development should be rooted in processes that are socially inclusive and responsive to changing circumstances" (The World Bank, 2000: 57). From the same report (The World Bank, 2000: 58) it is emphasized that sustainable development has many objectives. Raising per capita income is only one among many development objectives. Improving quality of life involves more specific goals, namely: better health services and educational opportunities, greater participation in public life, a clean and safe environment and intergenerational equity.

Mayfield (1997: 419) emphasized that economic development does not necessarily mean economic growth; the type of economic activity can change

without increasing the quantity of goods and services. In Mayfield's opinion, many authors argue that not only is economic growth compatible with sustainable development – as long as it is the right kind of growth – it is in fact greatly needed to alleviate poverty and supply the necessary resources for development and therefore prevent further environmental degradation. Mayfield was adamant that the issue is both the quality of the growth and how its benefits are distributed, not growth for the sake of expansion. Mayfield (1997: 419) further stated that some argue, however, that “sustainable growth” is a contradiction in terms, and that a more equitable redistribution of wealth, not growth, is the way to combat poverty. Mayfield concluded that sustainable development related to greater equity is defined as development that improves health care, education, and social well-being. This kind of human development is now recognized as critical to economic development.

The Human Development Report 1991 of the UNDP (in Mayfield, 1997: 419) stated: “Men, women and children must be the center of attention – with development woven around people, not people around development”. Development is not about economic performance alone, but about people, communities and well-being. (Compare Jahan, 2001: 1.) According to Mayfield (1997: 419) definitions of sustainable development stress that development must be participatory and must involve local people in decisions that affect their lives. Mayfield further commented on the fact that some authors have expanded the definition of sustainable development still further to include a rapid transformation of the technological base of industrial civilization. In Mayfield's opinion these authors pointed out that new technology is needed that is cleaner, more efficient, and more sparing of natural resources to facilitate a reduction in pollution, and accommodate growth in population and economic activity. From the above discussions it is evident that definitions of sustainable development attempt to encompass several dimensions, namely: economic, human, environmental, and technological.

The above discussion has centered on the economic dimension of sustainable development. The economic aspects of sustainable development require the development of an economic system that facilitates equitable access to resources and opportunities. It implies the fair sharing of ecological resources that enables sustainable livelihoods and establishes viable businesses and industries based on sound ethical principles. The focus is on attempting to create prosperity for all, not just profits for a few, and to do this within the bounds of the ecologically possible and by protecting basic human rights. (Compare CSIR, 2002; OECD, 2001b: 5.) The long-term sustainability of economic growth and progress depends on maintaining the overall ecosystem resources, a healthy environment and cohesive societies.

### **2.6.3 The social dimension of sustainable development**

As already mentioned in chapter one of this study, sustainable development has been defined as a process whereby future generations receive as much or more capital per capita as the current generation has available (Grootaert, 1998:1). Anand and Sen (1994: 12) emphasised the following: “The moral obligation underlying sustainability is an injunction to preserve the capacity for future people to be as well off as we are”. Traditionally, this has included natural capital, physical or produced capital, and human capital as the wealth of nations on which economic development and growth are based. It is now recognized that these three types of capital determine only partially the process of economic growth because they overlook the way in which the economic actors interact and organize themselves to generate growth and development. The missing link was social capital (Grootaert, 1998: 1; Hart, 1998g: 2). Banerjee (2003: 162) contributed to this discussion and stated the following in this regard: “Efforts to broaden the scope of greening to include social sustainability are also under way. This “triple bottom line” approach assesses the social and environmental aspects of business, as distinct from its economic impact”.

An overview of the literature (compare Anand and Sen, 1994: 12; Midgley, 1995; Grootaert, 1998; Hart, 1998g; Falk and Kilpatrick, 1999: 20; Dubois, *et al.*, 2002; Ikerd, 2000: 4; and Grootaert and van Bastelaer; 2001) supported the following description of the different capitals. Human capital refers to the development of knowledge and skills. Within the concept of human capital there is support for ongoing education and lifelong learning to achieve personal empowerment. Economic capital entails all income generating activities and the development of business infrastructure on micro and macro levels, which will, in turn, empower individuals on socio-economic and political levels. Social capital includes the development of social networks and support systems, relationships and infrastructure that will facilitate empowerment on an interpersonal level. Grootaert (1998: 3) emphasized that social capital also includes the social and political environment that enables norms to develop and shapes social structure. In the context of this research study the social dimension and therefore the development of social capital was of particular importance.

Martin (2001: 3) emphasized the general agreement that the social dimension is one of the three integral pillars of the concept sustainable development and is much broader than just the interface between environmental and social policies. Martin (2001: 4) further highlighted the importance of the intergenerational dimensions of the concept of socially sustainable development and irreversible social problems –such as poverty and social exclusion should receive the highest priority. Thin (2002: 4) added to this discussion and contributed the following: “Today, everyone seems to agree that it is important to pay more attention to the “social” dimensions of development. This is to complement the “economic” dimensions (which have often been so dominant in development analysis that “development” is used as shorthand for “economic development”) and the “environmental” dimensions (which have dominated sustainability analysis)”. Dubois, *et al.* (2002: 1) contributed a valuable description of the social dimension. These authors stated the following: “... the social dimension focuses on the reinforcement of human and social capital and social sustainability

becomes a key component for a sustainable human development. Social sustainability means that no social imbalance would be generated by economic growth. For such imbalance, by destroying human and social capital, could in turn jeopardize the long-term growth and the improvement in the living conditions". These authors (2002: 8) postulated that social sustainability refers to two particular forms of capital: human capital and social capital. In their opinion (2002: 9) human capital is the result of years of continued education and professional experience, of regular good health care and adequate food and nutrition. Dubois, *et al.* stressed that situations such as unemployment, poverty, and social exclusion contribute to the lack of development of human capital. Slowing down the access to health and education services further hampers this, and therefore the accumulation of human capital is limited. This decreases the value of individual as well as collective human capital. (Compare Ikerd, 2000: 5.)

According to the OECD (2001c: 4), different researchers have defined social capital variously. The OECD (2001c: 4) defined this concept to include the networks, norms, values and understandings that facilitate co-operation within or among group. The OECD (2001c: 4) stated that social capital is to be distinguished from the more formal political, institutional and legal arrangements that have a complementary role in this process. Dubois, *et al.* (2002: 9) confirmed that social capital is connected to the relationships and interactions that exist between individuals through families, neighbours, networks and associations, as the sharing of standards and common values. In their opinion this capital allows the individual to obtain social advantages, for example, transfers of money or personal help, granting of loans, and access to information and jobs. (Compare Attanasio and Székely, 1999: 8.) Grootaert (1998: 4) stated that the information-sharing role of social capital is of key importance for poverty alleviation. Grootaert cited the case of mutual credit groups as an important example of information-sharing. These groups permit the poor to overcome one of their main constraints, namely access to credit.

Grootaert and van Bastelaer (2001: 6) also provided the following explanation of social capital: “The social capital of a society includes the institutions, the relationships, the attitudes and values that govern interactions among people and contribute to economic and social development”. According to these authors the notion that social relations, networks, norms, and values matter in the functioning and development of society has long been present in the economics, sociology, anthropology, and political science literature. The idea of social capital as a unifying concept, embodying multidisciplinary views, came to the fore in the last ten years. These authors mentioned that the concept had been greatly stimulated by the writings of scholars such as James Coleman, (1988 and 1990); Robert Putnam, (1993); Portes, (1998); Narayan, (1999) and Serageldin, (2000).

Portes (in Falk and Kilpatrick, 1999: 2) observed that, “Whereas economic capital is in people’s bank accounts and human capital is inside their heads, social capital inheres in the structure of their relationships”. The focus in the social dimension of sustainable development is thus on the structure and outcomes of relationships and social interactions. Every community contains enormous resources of human potential and capability – even those communities that seem to have severe problems – such as poverty, crime, drug and alcohol addiction, environmental degradation, ill health and sub-standard housing. Every community has untapped potential that can create decent-wage paying employment. Social capital must ultimately be seen in the context of the contribution it makes to sustainable development (Grootaert and van Bastelaer, 2001: 6).

Robinson (in Byrne, 1999: 5) linked the concepts of social cohesion and social capital by arguing that social capital is a contributing factor to a cohesive society. He stressed that social capital should not be confused with other non-economic forms of capital (specifically human and cultural capital). Robinson suggested that the collective impact of all three could be encompassed in the term “community capital”. Byrne (1999: 5) added to this discussion and in her

perspective social capital is one of the three key requirements of a strong civil society – alongside active citizenship and effective interactions between communities and their organizations.

Boody and Krinke (2001: 10) referred to social capital in a community as being the mutual reciprocity and mutual trust that exists among its citizens, collective identity, a shared vision and working together. These authors stated that social capital contributes to the formation of financial and human capital. Boody and Krinke stipulated that social capital that forms between like people or groups, is called “bonding” social capital. Social capital that forms between or among groups with different interests is called “bridging” social capital. (Compare Boody and Krinke, 2001: 10; Stocker in Byrne, 1999: 6.) Putnam (in Byrne, 1999: 5) referred to social capital being: “...feature of social organization, such as networks, norms, and trust, that facilitate co-ordination and co-operation for mutual benefit. Social capital enhances the benefits of investment in financial and manufactured and human capital”. Grootaert and van Bastelaer (2001: 7) emphasized that social capital could be horizontal, vertical or non-existent. Vertical social capital refers to strong hierarchical structures and relationships, where the receivers of favours are indebted to the “patron”. Non-existence or the absence of social capital is characterized by isolation, high levels of conflict, and in poorer communities, there are often high levels of crime. In communities with low levels of social capital, there are lower levels of government efficiency, lower levels of satisfaction with government, and slower rates of economic development than in communities with high levels of social capital. Dubois, *et al.* (2002: 9) confirmed this viewpoint and added that the stock of social capital could be affected by a decrease in the social cohesion, a loss of confidence, religious or ethnic group conflicts, which could degenerate into civil war or genocide.

According to Putnam (in Byrne, 1999: 5), social capital is a public good, self-reinforcing and cumulative – those who possess it tend to accumulate more. It is also a moral resource, “that is, a resource whose supply increases rather than

decreases through use and which (unlike physical capital) becomes depleted if not used". Trust emerged in Putnam's work as an important dimension of social capital. (Compare Falk and Kilpatrick, 1999: 3.) Putnam (in Byrne, 1999: 6) also emphasized the risks of destroying social capital: "Precisely because social capital is a public good, the costs of closing factories and destroying communities go beyond the personal trauma borne by individuals...The fact that these collective costs are not well measured by our current accounting schemes does not mean that they are not real. Shred enough of the social fabric and we all pay". Reid (in Byrne, 1999: 11) confirmed that social capital is generated in the relationships and connections between people and therefore primarily constructed at a community level (Compare Bynner, 2002: 3.) A community builds social capital from individual to group levels through the learning interactions of its members. It is produced and used in everyday interactions between individuals and between communities. Learning is a mechanism for building social capital and is an important determinant of economic growth and political stability (Compare Falk and Kilpatrick, 1999: 7.)

According to Ife (1995: 84) the concept of sustainability, fundamental to the ecological perspective, has been developed primarily from the study of biological and physical systems. Within this particular paradigm it focused on population, species survival, pollution, energy and a vast array of environmental problems. Ife (1995: 84) stated that it was subsequently applied to economic systems, the result being the original and exciting work of Green economists such as Paul Ekins (1986), Manfred Max-Neef (1991) and Hazel Henderson (1988, 1991). An integration of an ecological and social justice perspective leads to a further extension of the concept to incorporate an understanding of social sustainability. According to Ife (1995: 84) this suggests that social systems and institutions, such as the family, the community, bureaucracies, educational institutions and voluntary organizations, need to be evaluated from the point of view of their sustainability. Ife contributed further to explain that the principle of sustainability applied to social systems, implies that they must be evaluated not simply in terms

of their immediate role and function, but also in terms of their long-term viability, their impact on other systems, the energy they extract from their environment, and their output.

In the context of this research study and in agreement with the abovementioned viewpoint of Ife, the contribution made by Dubois (2003: 4) is of particular importance, namely: “ Social sustainability refers to the social dimension of sustainable development. It implies that the various economic, social and ecological policies being implemented in the context of development should not generate negative consequences or social dysfunctionings that destroy the social cohesion, jeopardize human and social capital and reduce people’s capability of improving their well-being presently or in the future”.

Ife (1995: 89) was of the opinion that the ecological and social justice perspectives, taken together, form the basis of a vision of a future society. Ife further suggested that the social justice perspective provided a vision of what is socially desirable: a society based on equity, empowerment, the overcoming of structural disadvantage, freedom to define needs and have them met, and the definition and guaranteeing of rights. (Compare Hart, 1998h: 1.) This author (1995: 89) further stated that the ecological perspective provides a vision of what is feasible, that is the kind of society, which will be viable in the long term, one that is based on the principles of holism, sustainability, diversity and balance. In this regard Ife (1995: 89) contributed the following: “Taken together they represent a powerful vision of the future, and an important component of that vision is the concept of community, which is inevitably a fundamental concept for any “community development” perspective”.

Wolfe (1999: 8) added another dimension to this discussion, namely, that a truly sustainable community must concern itself with the deeper issues of social justice and environmental racism. Wolfe’s concern was that sustainability could easily deteriorate into ecological efficiency for the rich. Wolfe (1999: 9) further

expanded on this discussion and stated that environmental racism is the term for the thesis that in certain countries, people of colour and other minority groups are more likely to live in districts with a shortage of green space and parks, and are exposed to polluting industries, contaminated waste sites, noisy and noxious highways. Society must concern itself with the geographic and social location of its efforts, avoiding locating polluting-generating activities in impoverished areas or neighbourhoods, and appropriately locating remediation and prevention efforts. There is a need to go beyond local community and consider the impacts of energy, financial and material flows in the community. A global view of community means that there is serious consideration whether the use of resources is exploitative and unfair to other people. Wolfe (1999: 9) postulated that a healthy community is one where everyone enjoys a high quality of life, including environmental, social, political, economic, behavioural, biological and medical factors. (Compare Mamburu, 2000: 63.)

According to Wolfe (1999: 9) equity is a subjective perception that things are just and fair. Wolfe mentioned that it is not synonymous with equality, but rather emphasizes that the distribution of wealth, opportunity, and power is seen to be fair. Thin (2002: 6) was of the opinion that the issue of equity has become emphatically linked with sustainability issues, reason being that the promotion of equity is a pragmatic issue, since sustainability of development depends on the reduction of poverty and insecurity everywhere. In this regard the UNDP (in Thin, 2002: 6) stated: "Development that perpetuates today's inequalities is neither sustainable nor worth sustaining". The alleviation of poverty is fundamental to the achievement of sustainable development. For poor countries that means the commitment of resources toward continued improvement in living standards. Hart (1998h: 1) added to the discussion with regard to equity (or inequity) and emphasized the following: "The preservation (or acquisition) of basic human rights and the fulfilment of basic human needs are the fundamental driving forces behind economic transactions, social interactions, and resource consumption. When people are operating under duress in any of these areas, concern for

immediate needs overwhelms any consideration for long term needs, thereby undermining the whole principle of planning for the future”.

Alleviating absolute poverty also has important practical consequences for sustainable development, since there are close links between poverty, environmental degradation, and rapid population growth. People whose basic needs are unmet and whose survival may be in doubt perceive no stake in the future of the planet and have no reason to consider the sustainability of their actions. Hvid and Lund (2002: 2) with reference to the abovementioned UNDP Report stated that sustainability has both an environmental and a social dimension, and these two dimensions are clearly related. It has very little meaning to ask poor peasants in the third world, living in hunger and having a high mortality rate, to act sustainably. Survival is their first priority. The links between poverty and environment arise in terms of three vitally important dimensions of poverty reduction – livelihoods, health, and vulnerability.

The World Bank (2002: 1) stated that the poor are strongly dependent on natural resources for their livelihoods. A polluted environment, particularly unclean water and indoor pollution, affects the poor adversely. The World Bank emphasized that the poor are particularly vulnerable to environmental stress and disasters such as droughts and floods. It is of the utmost importance that in the search for solutions there are decisive indications to go beyond a narrow focus on “environmental management” in order to tackle the root causes of degradation. The OECD (2001b: 12) indicated the importance of international co-operation to address economic priorities and how difficult this can be when a large number of people – mainly in developing countries – cannot satisfy their fundamental needs because of poverty, malnutrition, illiteracy and inadequate access to basic services. The consequences of poverty often persist over time, and spread across countries in the form of conflicts, migration and disease. The OECD (2001b: 12) stated clearly that poverty reduction is therefore integral to the pursuit of sustainable development worldwide.

Within the context of the social dimension of sustainable development, an important contribution is that of Valli Moosa, South Africa's Minister of Environmental Affairs and Tourism. In his opinion (2002: 8-9) sustainable development refers to a kind of development that aims for equity within and between generations. This approach implies that the economic, social and environmental aspects of development are considered in a holistic manner. According to Minister Moosa, it is useful to think of the three pillars of sustainable development as a tripod with three legs corresponding with economic, social and environmental pillars. A weakening of one leg will weaken the whole structure and without one leg the structure cannot stand. A country's governance framework constitutes the glue that holds the different legs together. Sustainable development according to Moosa (2002) is not a contradiction in terms. It is essential to understand that environment and development is interlinked and that poverty is the major threat to sustainable development. It would therefore appear to be vital to recognize that it is not just about the environment. People want a clean environment, but they also need jobs, health care and a good education. It was for that reason that South Africa argued in favour of poverty eradication as the over-arching theme for the World Summit in Johannesburg in 2002. Poor people are more vulnerable to the effects of environmental destruction. If natural resources are depleted, those communities making a living from the land or from the fruits of the sea, rivers and dams, will undoubtedly suffer. Sustainable development is not possible without focusing on the social dimension and the related social issues that form an integral part of this very important dimension. Ikerd (2000: 6) contributed the following in this regard: "Admittedly, the most difficult challenges in developing a sustainable economy are likely to arise from the integration of its economic, social and ecological dimensions – in maintaining a positive, dynamic balance or harmony among the three".

An important aspect of a comprehensive sustainable development approach is equity. When different groups of people are denied the opportunity to fully participate in all activities, benefits and decision-making in a society, it will

undermine their capacity to make informed choices and contributions to their communities. The message appears to be that fairness, whether all people have similar rights, opportunities and access to all forms of community capital, is vital for sustaining development. The protection of human rights and the fulfilment of basic human needs are the fundamental driving forces behind economic transactions, social interactions, and resource consumption.

The social dimension of sustainable development encapsulates human development, and that is equally about fair distribution of resources and opportunities. A distinction has to be made between equity and equality. All people must have an equal opportunity to maximize their full potential, and have adequate access to the basic necessities of life. If this is compromised, tensions will develop within communities and broader society. Within this context social sustainability means maintaining social capital, meaning the investments and services that comprises the basic framework for society to function effectively. (Compare Monaheng, 1998: 36.)

Njiro (2002: 3) was in support of the abovementioned view and stated the following in this regard: “It is clear that sustainable development is a complex process. The earth’s environment constitutes many ecosystems, terrains and diverse cultures that determine survival mechanisms for people. Who determines what is sustainable development and what indicators are used to measure it? Is it possible to prescribe uniform solutions or make agreements at world conferences that adequately address major issues facing the earth’s environment? To what extent are policy-makers prepared to address the fact that environmental problems are intricately linked to economic conditions? Are they prepared to challenge forms of political-economic and social justice in the world? How do we address poverty and the poor living standards caused by weak national economies that force people to over-consume natural resources?”

The journalist Niki Moore (2002: 30) contributed a valuable perspective to this debate: “The Lake St Lucia World Heritage Site in Zululand might have one of the world’s most valuable wetland systems, but the rural women living nearby who have to walk 2km every day to fetch water don’t really care about that. The Ukhahlamba Drakensberg World Heritage Site might have some irreplaceable San rock paintings, but the neighbouring herdsman don’t give a hoot about that either. The malnourished teenager living on the border of the Mkuze game reserve doesn’t know that the animal he is eyeing through the electric fence might be the last of its species – all he knows is that barbed wire stands between him and dinner”.

Mayfield (1997: 420) added another dimension to the debate when it is stated that poor families tend to have more children in an effort to increase the family labour force and to provide security for their old age. With regard to this perspective of Mayfield, sustainable development means significant progress toward stable populations. Mayfield (1997: 420) emphasized that this is clearly important because rapid growth puts severe strains on natural resources and on the ability of governments to provide services. In this regard vigorous rural development is crucial to help slow migration to cities. Mayfield (1997: 421) further stressed that policy measures and the development of technologies are important to minimize the detrimental environmental consequences of urbanization.

Mayfield (1997: 421) discussed the important role of women in development by stressing the magnitude of tasks and roles they perform. He emphasized the fact that in many developing countries, women and children grow the subsistence crops, graze animals, gather wood and water, use most of the household’s energy in cooking, and care for the household’s immediate environment. Women are the primary resource and environmental managers in the household, as well as the primary caregivers for children. Unfortunately their health and education are often neglected in comparison to those of men. The importance of education

is highlighted when it becomes evident that better educated women have greater access to contraception and, on average, lower fertility rates, as well as healthier babies. Mayfield (1997: 421) was very clear when he stated that the investment in the health and education of women could have significant benefits for sustainability. According to Mayfield (1997: 340) education and training that improves literacy, leadership, technical skills, and functional knowledge have been instrumental in increasing the economic strength of the family unit and that of the community.

A valuable opinion is that of Ramphela (2002: 161) when she expressed the following view: “It is the strength of black, especially African, women in situations such as these ravaged areas like New Crossroads that has kept a semblance of normality in families under siege from the legacy of racism, sexism and poverty. A lot more appreciation of this fact is needed to ensure that the implementation of social policies and the provision of services builds on, and supports, the strengths in women. Development that undermines women is bound to fail for this and many other reasons. There is fortunately growing recognition among people in development agencies that eliminating gender inequity is essential to sustainable development. Women are better managers of scarce resources, so enhancing their participation in socioeconomic and political decision-making is essential to the promotion of greater efficiency and effectiveness of public resources”. It would therefore appear to be of the utmost importance to invest in the education, health and development of women, as they are the caregivers and often, the primary providers for not only their own families but also those of friends, extended families and neighbours.

As previously stated social capital refers to the institutions, relationships, networks and norms that shape the quality and quantity of a society’s social interactions. It is an integral component of social and economic development on micro and macro level (Grootaert, 1998; Falk and Kilpatrick, 1999; Grootaert and van Bastelaer, 2001). It refers to connections in a community – the ways in which

people interact and relate to each other, between family, neighbours and the wider community. Local and provincial government, volunteer organizations, clubs, community action groups; information sources all form part of social capital. Social capital is an integral part of community existence, needed to create goods and services to satisfy the needs of community.

Attanasio and Székely (1999: 8) added to this discussion and adopted a conventional definition by Putman, which referred to the set of norms and social networks that facilitate collective action among individuals. Unlike other forms of capital, social capital inheres in the structure of relations between persons and among persons, so it is the most difficult to quantify. The NGO, Ecotrust ([sa]: 1) contributed to the description of social capital by stating that it includes education (schools, colleges, universities, libraries and knowledge archives), health clinics and legal and police systems. Ecotrust ([sa]: 1) further emphasized that social capital, like natural capital, suffers from chronic underinvestment because its stream of benefits, including safety and security, friendship and community and a sense of civic identity, access to knowledge and many others, is hard to quantify in economic terms. As previously mentioned, in practice, the concept of social capital is difficult to make operational and to measure. The OECD (2001b: 14) also referred to Putnam who developed proxy measures based on statistics of the following dimensions of community life:

- i. the amount of involvement in community and organizational life;
- ii. public engagement (e.g. voting);
- iii. volunteer community activities
- iv. informal sociability (e.g. visiting friends); and
- v. reported levels of interpersonal trust

Social capital represents people's ability and willingness to create and sustain voluntary associations, based on the idea that a healthy community is essential to economic prosperity. It also represents people's ability to work together to solve their own problems through collective action (Carmen and Sobrado, 2000:

162). Social capital can be accumulated when people interact with others in families, workplaces, neighbourhoods, local associations and a range of informal and formal meeting places. It constitutes those networks, together with shared norms, values and understandings that facilitate cooperation within or among groups. Mamburu (2000: 65) and Midgley and Livermore (1998: 29) contributed to the discussion and referred to the contribution made by individuals, families or communities to their community organizations as “social capital”, and defined the concept as it “is widely used to connote the importance of local community networks and associations in society”.

Of particular importance to this research study is the fact that social capital also refers to the interactions and relationships between community workers, community members, consultants and funding agencies. Higher levels of mutual trust, reciprocity, unwritten and unspoken agreement about societal rules, and social cohesion characterize communities or societies with high social capital. Such societies may also be more effective at achieving collective goals – including those for environmental protection. In developing countries, where the role of formal institutions is less developed, informal arrangements provided by families, friends and local communities might be crucial in ensuring well-being and, indeed, survival. While the notion of social capital is relevant for both developed and developing countries, it seems especially important in the context of development and poverty eradication, and has been given much prominence in recent World Bank work (OECD, 2001b: 14).

A collaborative relationship is the one that ensures community development. It is social capital that enhances social well-being and promotes economic capital of the community. Midgley and Livermore, (1998: 32) added their voice to the discussion with regard to social capital and stated that it may be defined as a “social infrastructure in which individuals develop a relationship that are aimed at common goals and objectives”. Mamburu (2000: 65) postulated that social capital formation is a process supported by the community worker that has as its aim

bringing together members of the community with common interest, to identify and define their problem, plan interventions, take action to redress the problem and evaluate the outcome of interventions taken. Mamburu further emphasized that social capital influences and is in turn influenced by the economic capital, e.g. there would be poor investments in areas where there is social disintegration and high incidence of crime. Social capital, however, is not simply the sum of the institutions, which underpin society; it is also the glue that holds them together. Without a degree of common identification with forms of governance, cultural norms, and social rules, it is difficult to imagine a functioning society (The World Bank, 1998: 1).

The level of social capital in societies, and individual access to such capital, is often measured through participation rates in different types of associational life, and self-reported levels of trust. Research (OECD, 2001c: 4) links social capital, and access to such capital, with:

- improved health – for example, one study shows that social connectedness is associated with a reduced risk of Alzheimer’s disease;
- greater well-being according to self-reported survey measures;
- better care for children; for example, the social connectedness of mothers has been shown to reduce the risk of child abuse and social problems among children and teenagers;
- lower crime; neighbourhood trust is associated with lower crime rates ;
- improved government – regions or states with higher levels of trust and engagement tend to have better-quality government.

The OECD (2001c: 5) further suggested that it appears that particular aspects of social capital are positively linked to economic activity. For example, the evidence suggested that:

- social networks help people to find jobs;
- trust encourages more effective use of credit;
- co-operative attitudes within firms re-linked to output and profitability; and

- regional clusters of innovative industries depend on local social networks to spread and share tacit knowledge. (Compare Schuller, 2000.)

Within the sustainable development paradigm, from the social dimension point of view, the emphasis is on human actors, and the importance of their relationships and patterns of social organization. Kleinman (in Schuller, 2000) was of the opinion that social capital is as important to economic development as economic capital. Some kinds of human capital – like teamwork and communication skills – act to support social capital, and investment in those skills will therefore represent a contribution to both types of capital. The OECD (2001c: 6) stated in this regard that given the strong role, which human capital, and access to social capital, has in determining the life-chances of individuals, they would have an equally powerful impact on social exclusion and equity. Human capital is an integral part of the creation of social capital and refers to people with their skills, interests, capabilities, intellectual abilities, self-esteem, courage, perseverance, creativity and physical and mental health. It includes education and training and life experiences. The ability of people to obtain and process information is influenced by human capital. Human capital is the building of assets and self-reliance and includes the set of skills that are needed to produce products or services. It would include organizations with people and their ability to be economically productive. Education, training and health care can help increase human capital (Boody and Krinke, 2001: 10). Banerjee (2003: 173) added another dimension to the discussion with regard to the development of social and human capital as integral parts of the social dimension of sustainable development. Banerjee postulated the following: “The literature on sustainable development has virtually no discussion on the empowerment of local communities, except for some passing references to “consulting” with communities or “ensuring their participation”, without providing any framework for how this is to be achieved (Derman 1995)”.

In the context of this research study the concept of social justice as extensively defined by Ife is of particular importance. According to Ife (1995: 51) the **social justice perspective** is based on six principles, namely: structural disadvantage, empowerment, needs, rights, peace and non-violence and participatory democracy. For the purpose of this study a short summary of the main issues of each of the principles will be discussed.

□ **The principle of structural disadvantage**

According to Ife (1995: 53) structural accounts of social issues state the problem as caused by oppressive and inequitable social structures. Ife stated that this approach might be termed “blaming the system”, as it concentrates on issues such as patriarchy, capitalism, institutional racism or income distribution, and identifies oppression or structural disadvantage as the major issue to be addressed. Its prescriptions for change require major restructuring of society, in that it sees social problems as embedded in the oppressive structures of that society, whether seen in terms of class, race or gender.

□ **The principle of empowerment**

Ife stated that the notion of empowerment is central to a social justice strategy. According to Ife (1995: 56) a simple working definition of empowerment is as follows: “empowerment aims to increase the power of the disadvantaged”. In Ife’s opinion (1995: 60) there are seven kinds of power as being involved in community-based empowerment strategies, these overlap and often in complex ways, namely:

- **Personal choices and life chances:** Ife (1995: 60) stated that many people have little power to determine the course of their own lives. This refers to making decisions about their lifestyle, where they will live and the occupation that they choose to follow. Ife (1995: 60) further stated that very often patriarchal structures restrict the power of women in making personal choices. Cultural norms and values come into play. An empowerment strategy

would seek to maximize people's effective choices, to increase their power over decisions involving their personal futures.

- **The definition of need:** Often needs are not determined or defined by the person who is supposedly experiencing them. In socialist regimes the state has taken on responsibility for defining people's needs. In other cases, it is professionals such as doctors, social workers, and psychologists, and teachers who have become the experts in definition of need. This is seen as disempowering, and an empowerment perspective would require that people are given the power of defining their own needs. Ife stated (1995: 61) that need definition requires relevant knowledge and expertise and such an empowerment process requires education and access to information.
- **Ideas:** Ife (1995: 61) postulated that an empowerment process should incorporate the power to think autonomously and not have one's worldview dictated either by force or by being denied access to alternative frames of reference. It should allow people to engage in dialogue with each other and expression of ideas. People should be encouraged to contribute to public culture by expressing their ideas and entering into dialogue with one another.
- **Institutions:** Ife (1995: 61) stated that a good deal of disempowerment comes from the effect of social institutions, such as the education system, the health system, the family, the Church, the social welfare system, government structures and the media. Ife further stated that to counteract this, an empowerment strategy would aim to increase people's power over these institutions and their effects, by equipping people to have an impact on them, and by changing institutions to make them more accessible, responsive and accountable to all people.
- **Resources:** Ife (1995: 61) stated that an empowerment strategy would seek to maximize the effective power of all people over the distribution and use of resources, namely; financial resources and non-monetary resources, e.g. education, personal growth, recreation and cultural experience.
- **Economic activity:** According to Ife (1995: 61) the basic mechanisms of production, distribution and exchange are vital in any society. To have power

in a society an individual must be able to have some control over and access to these mechanisms. This power is unequally distributed in a modern capitalist society. An empowerment process would, therefore, seek to ensure that power over economic activity was more evenly distributed.

- **Reproduction:** Ife (1995: 62) mentioned that this category closely relates to power over personal choice and power over ideas. Included in the notion of reproduction is not only the process of birth, but child rearing, education and socialization. It implies all mechanisms by which the social, political and economic order is reproduced in succeeding generations.

Ife (1995: 63) stated that through a process of policy and planning and by developing or changing structures and institutions, empowerment is achieved. This is necessary to bring about more equitable access to resources or services. Policies of affirmative action acknowledge the existence of disadvantaged groups and seek to redress this disadvantage by “changing the rule” to favour the disadvantage. Empowerment through social and political action emphasizes the importance of political struggle and change in increasing effective power. It emphasizes the activist approach and seeks to enable people to increase their power through some form of direct action. Ife (1995: 64) further mentioned that empowerment through education and consciousness raising emphasizes the importance of an educative process in equipping people to increase their power. This incorporates notions of consciousness raising: helping people to understand the society and the structures of oppression, giving people the vocabulary and skills to work towards effective participation in society.

Ife (1995: 65) wrote that social justice principles are frequently expressed in terms of need. The notion of need is fundamental in social policy, social planning and community development. There are two ways in which need is seen as basic to social justice and community development; firstly, a belief that people or communities should have their needs “met”, and secondly, that people or communities should be able to define their own needs rather than have them

defined by others. Ife (1995: 68) made the argument that an empowerment base for community development requires that people have the capacity to define their own needs, and to act to have them met. The role of professionals, community caretakers, researchers and planners must be to assist the community with its own need definition – through helping to provide expertise when necessary and through facilitating the process. The way in which needs are defined or expressed may well be relative, because of cultural or other variations, but the human rights inherent in them can be claimed to be universal.

A social justice perspective, by acknowledging the reality of structural disadvantage and pursuing an empowerment model, will seek to improve the effective rights of the disadvantaged. According to Ife (1995: 71) people must be assisted to know their rights – many people are not aware of rights although there may be legislation. It is further necessary for people to be helped to assert and define their rights – often rights can only be realized if they are effectively claimed and many people will lack the knowledge, skills and resources to do so.

Ife (1995: 72) was of the opinion that the non-violent position also accepts a broader definition of violence than is normally understood, in that it includes notions of institutional and structural violence. From this perspective structures, which perpetuate inequality, poverty and oppression, are by their very nature violent and need to be opposed. The way in which many social institutions operate is seen as violent in that it perpetuates the structures and practices of oppression.

A valuable contribution was made by Ife (1995: 74) when it was stated that like peace, democracy is an idea, which is widely if not universally valued, and again, like peace, it is significant that its achievement has been so difficult despite its widespread appeal. Democracy basically means “rule of the people”. What is more important is how that rule will be exercised. One possibility is participatory democracy – the people participate directly in decision-making. In representative

democracy the role of the people is to select through elections those who are then entrusted to make decisions on their behalf. A more participatory model of democracy is an important component of a social justice strategy. There are four important characteristics of a participatory democracy approach, which are of particular significance for community development: decentralization, accountability, education and obligation.

From the above discussion it was evident that the six key components, namely structural disadvantage, empowerment, needs, rights, peace and non-violence and participatory democracy of a social justice approach are not independent. There are obvious links between them, and all are necessary for sustainable development.

**Table 1: Empowerment** (Adapted from Ife, 1995: 64)

To increase the power of:	primary structural disadvantaged groups:	class: the poor the unemployed low income workers Social Security beneficiaries gender: women race/ethnicity: indigenous people ethnic and cultural minorities
	Other disadvantaged groups:	the aged children and youth the disabled (physically, mentally and intellectually gays and lesbians the isolated (geographically and socially) etc.
	The personally disadvantaged:	Those experiencing grief, loss, personal and family problems, etc.
over:	personal choices and life chances need definition ideas institutions resources economic activity reproduction	
through:	policy and planning social and political action education	

According to The World Bank (2000: xxiii) the empowerment approach focuses on enhancing poor people's freedom of choice and action. Empowerment of poor people is an end in itself and is critical for development to be effective. It is not a stand-alone strategy but a way of doing development, grounded in the conviction that poor people themselves are the most invaluable partners in the task of poverty reduction. Empowerment approaches include behaviours that build people's self-confidence and their belief in them, and respect their dignity. From the same report (2000: 6) it is stated that when inequality is high, poor people lack capabilities and assets (ranging from literacy to collateral for credit) and thus have difficulty taking advantage of economic opportunity. This limits a society's potential for growth in general and pro-poor growth in particular, and consequently the effectiveness of development efforts. It is clear that empowerment is the key for a quality of life and human dignity, good governance, it is pro-poor growth and project effectiveness and improved service delivery.

From the above discussion, it can be concluded that the social dimension is as important as the environmental and economic dimensions to ensure the sustainable development of communities and of nations.

#### **2.6.4 The institutional dimension of sustainable development**

Sustainability has an important institutional dimension, which inextricably links it with the other three aspects of human development (empowerment, equity and capacity building). Empowerment, which follows from the equitable distribution of resources, enhances the capacity for sustaining the development process. It facilitates the tapping of the potentials of previously excluded individuals and groups. (Compare Monaheng, 1998: 36.) According to the European Commission (2002: 6) during the 20<sup>th</sup> century, tangible elements such as capital, natural resources and labour were the driving forces behind economic development. Now, in the 21<sup>st</sup> century, many development experts and policy-makers regard investing in science and technology as a means for driving forward progress in

development. Successful science and technology endeavour is a gradual process that combines training, education, infrastructure, continued investment, competence and experience. The European Commission (2002: 6) stated in this regard: “The message is clear. In the new century, intangible elements such as the capacity to generate and use scientific and technological knowledge, access to information, and human creativity will give nations a competitive edge. Developing countries that lagged behind in their industrialization during the 20<sup>th</sup> century can overcome poverty and achieve economic growth by successfully developing their human and institutional resources”. The Commission expressed a view that knowledge has become an important and growing factor in economic development and competitiveness, and the tool to overcome the imbalance in “knowledge assets” between industrialised and developing countries. Investing in knowledge generation and use will prevent the exclusion of developing economies from the knowledge society and all the negative impacts associated with such exclusion. In this context, it is important to emphasize European Commissioner Paul Nielsen’s remarks to the European Parliament (in European Commission, 2002: 6): “I agree that sustainable improvement of human well-being now depends crucially on knowledge, its production, distribution, ownership and wise application. Research carried out domestically and internationally is vitally important for the production of knowledge that a country can use for its development. Smallness, remoteness or lack of a natural resource base, factors which have traditionally been regarded as handicaps to development, have been turned on their head. Knowledge management, the capacity to apply information to social and economic development, is emerging as a key factor”.

The institutional dimension of sustainable development emphasizes the importance of effective organizations and institutions. Sustainable development means a people-centered process, whereby an integrated and holistic approach is followed. It stresses a participatory, empowering and enabling approach. Capacity is the ability of actors (individuals, groups, organizations, institutions,

countries) to perform specified functions (or pursue specified objectives) effectively, efficiently and sustainably. The capacity of actors (individuals, groups, institutions, organizations) to achieve their objectives or to perform their functions in a larger whole is critically influenced by factors in their environment. Capacities can be enhanced or restricted by organizations, institutions, regulations, law, cultural beliefs, mindsets and other variables (United Nations Development Programme, 1995). The institutional dimension is closely linked to sustainable human development, which in turn is part of the social dimension. Individual and organizational capacities are strongly influenced by the systems, processes, roles, rules and procedures created to manage and execute activities. These systems and procedures form the immediate environment within which people and organizations act. The European Commission emphasized that the broader institutional and societal environment must also be made supporting, facilitating and enabling of the effectiveness of capable people.

The institutional dimension is a crucial component of sustainable human development because it implies empowering people and creating an enabling environment for their initiatives in all spheres of life. Sustainable human development further recognizes that developing peoples' capacities to make informed decisions and to implement their decisions is central to empowerment. People create institutions and organizations and contribute their time, energy, experience and intelligence in the process. Organizations and institutions in turn, can contribute to the personal growth and gaining of experience for people within the institution. Sustainable development requires institutions and organizations to develop frameworks and strategies that would enhance and support a developmental approach. Banerjee (2003: 169) added to this perspective and stated the following in this regard: "Sustainable development is not just about managerial efficiency (although that has a part to play); it is about rethinking human-nature relationships, re-examining current doctrines of progress and modernity, and privileging alternate visions of the world".

It is evident from the above discussion that the institutional dimension is central to a systems perspective, recognizing the complex interdependencies among all elements. An important contribution was made by the United Nations Development Programme (1995: 6) when it was stated that in the past capacity development efforts, have focused on the development of individual capacities, without attention to the organizational/ institutional context: “Where the latter was the focus of capacity development efforts, policy factors were not included and the larger environment that influences the retention and utilization of the acquired capacities, was not taken into account”.

The disciplines that contribute to this dimension are psychology, sociology, human resources, management practices, business development and industrial relations.

## **2.7 INDICATORS OF SUSTAINABLE DEVELOPMENT**

An overview of the literature (Winograd, 1995: 205; Hart, 1998a; Fricker, 1998; International Institute for Sustainable Development (IISD), 2000; Martin and Pearson, 2001) provided a number of explanations and descriptions of indicators. The International Institute for Sustainable Development (IISD) (2001-2002) stated that indicators are multi-faceted concepts. They are presentations of measurements or bits of information that summarize the characteristics of systems or highlight what is happening in a system. Indicators simplify complex phenomena, and make it possible to gauge the general status of a system. Indicators of a sustainable community point to areas where the links between economy, environment and society are weak. Sustainability indicators are not just a statement of what exists, they also show the community’s vision of the future. Hart (1998a: 1) stated that traditional indicators, such as stockholder profits, asthma rates, and water quality, measure changes in one part of a community as if they were entirely independent of the other parts. Hart (1998a: 1) emphasized that sustainability indicators reflect the reality that the three different segments,

environment, economy and society, are very tightly interconnected. Communities are webs of interactions between the three segments. The number of people gainfully employed, affect the poverty rate and the poverty rate is related to crime. Sheng (1995: 216) explained this particular perspective as follows: "...economic sustainability is an integral part of overall sustainability. Income is not only economic, but also social and ecological in terms of the ways in which it is generated, distributed, and spent. When income is miscalculated, and spending (therefore resource use activities) misguided and inappropriately promoted due to the omission of environmental values, eventual impoverishment will affect all dimensions of sustainability".

Hart (1998a: 2) further elaborated that air and water quality, and materials used for production have an effect on health. They may also have an effect on stockholder profits: if a process requires clean water as an input, cleaning up poor quality water prior to processing is an extra expense, which reduces profits. Hart (1998a: 2) was adamant that health problems, whether due to general air quality problems or exposure to toxic materials, have an effect on worker productivity and contribute to the rising costs of health insurance. Sustainability requires this type of integrated view of the world.

Hart (1998a: 3) postulated that multidimensional indicators are valuable to show the links among a community's economy, environment and society. They are useful to different communities for different reasons. For a healthy, vibrant community, indicators help monitor that health, so that negative trends are caught and dealt with before they become a problem. For communities with economic, social or environmental problems, indicators can point the way to a better future. For all communities, indicators can generate discussion among people with different backgrounds and viewpoints, and, in the process, help create a shared vision of what the community should be. (Compare Fricker, 1998: 8 –17.)

For the purpose of this research study a brief description of the following broad categories of indicators, namely, economic growth, social progress and environmental protection is as follows:

### **Economic growth**

- Economic output – maintaining a high and stable level of economic growth is one of the key objectives of sustainable development. A healthy economy leads to higher living standards and greater prosperity for individuals. It also helps business to be profitable, which generates employment and income.
- Investment is vital for a healthy economy and to ensure competitiveness in international markets. Investment in social assets such as railways, buses, hospitals, schools, water and sewage are important for providing high quality public services that benefit everyone.
- Employment enables people to meet their needs and improve their living standards and is the single most effective and sustainable way to tackle poverty and social exclusion for those who can work.

### **Social progress/Social indicators**

Social policy covers a great number of issues that do not stand on their own but, as is increasingly recognized, are both diverse and interlinked. For example, addressing social exclusion involves simultaneously addressing those barriers to labour market reintegration, health care issues and educational aspects. Social indicators have been developed to provide the broad perspective needed for any international comparison and assessment of social trends and policies. Social indicators aim to serve the need for a concise overview of social trends and policies while paying due attention to the different national contexts in which such policies are being pursued (OECD, 2001b: 16).

Fricker (1998: 8) emphasized that many social indicators are in part economic, environmental and sustainability measures too. They can be comparative, between and within socio-economic and ethnic groupings. Objective conditions, such as the standard of living, are measured by analyzing time-series information on observable phenomena. Subjective conditions, such as quality of life, are measures of perceptions, feelings and responses obtained through questionnaires with graded scales. Martin and Pearson (2001: 1) described how the OECD developed social indicators in order to help international comparisons of social conditions and social policies. In their opinion (2001: 3) this approach has been to distinguish broad social goals upon which all countries can agree, and then to identify various “social status” indicators, which reflect different dimensions of the underlying objective. These authors (2001: 4) emphasized that the following objectives and indicators were not simply “plucked out of the air”. They had engaged in in-depth discussions with all the OECD countries about whether these objectives were the appropriate ones to highlight various aspects of indicators and the use of “subjective” as opposed to “objective” data.

In Table 2 the social indicators as adapted from Martin and Pearson (2001: 3-5) were highlighted.

**Table 2: Social indicators** (Adapted from Martin and Pearson, 2001: 3-5)

<b>Context Indicators</b>	
National Income	Fertility Rates
Old age dependency ratio	Foreigners and foreign-born population
Refugees and asylum-seekers	Divorce Rates
Lone-parent families	
<b>Self-Sufficiency Indicators</b>	
<i>Social status</i>	<i>Societal responses</i>
Employment	Activation policies
Unemployment	Spending on education and care
Jobless youth	Educational attainment
Working mothers	Literacy
Retirement ages	Replacement rates
	Tax wedge
<b>Equity Indicators</b>	
<i>Social status</i>	<i>Societal responses</i>
Relative poverty	Minimum wages
Income inequality	Public social expenditure
Low paid employment	Private social expenditure
Gender wage gap	Net social expenditure
	Benefit reciprocity
<b>Health Indicators</b>	
<i>Social status</i>	<i>Societal responses</i>
Life expectancy	Older people in institutions
Infant mortality	Health care expenditure
Potential years of life lost	Responsibility for financing health care
Disability free life expectancy	Health infrastructure
Accidents	
<b>Social Cohesion Indicators</b>	
<i>Social status</i>	<i>Societal responses</i>
Strikes	Prisoners
Drug use and related deaths	
Suicide	
Crime	
Group membership	
Voting	

A short description of a number of these indicators with regard to social progress is of particular importance to this study:

- **Poverty and social exclusion** – sustainable development is about ensuring a better quality of life for everyone, not just a privileged few. To achieve sustainability, poverty and social exclusion have to be the priority of all concerned. Social exclusion is not just about income, it is also about the public services that people need and use on a daily basis, namely, access to justice, education and health care facilities, and safer communities.
- **Education** – Martin and Pearson (2001: 5) stated that educational attainment is a good indicator of how well people will be able to participate in society in general and in the labour market in particular. These authors included educational attainment as a *societal response* indicator of particular importance when looking at the underlying social objective of promoting *self-sufficiency*. To achieve stable and sustainable growth, communities need a well-educated, well-equipped and adaptable labour force. Learning has a wider contribution to make – it promotes active citizenship and helps combat social exclusion. It opens up opportunities for people and gives them the chance to make a full contribution to the community.
- **Health** – improving people's health and especially the health of the worst-off in society is a key sustainability objective. Men and women in unskilled occupations generally have lower total life expectancy than those in professional occupations.
- **Housing** is a key component of a decent quality of life. Poor quality housing causes harm to health and is often associated with other social problems.

- **Crime** – everyone has a right to live in a community that is safe. Crime imposes economic costs, reinforces social exclusion and is a contributing factor to the environmental decline of communities.

From the above discussion it was evident that social indicators are valuable measurements of social progress and development in a community. In the context of this research study, a short description of a number of environmental/ecological indicators was important.

### **Environmental protection**

Fricker (1998: 8) wrote that environmental indicators tend to relate to the environmental sphere closest to human activity and can include economic, social and sustainability measures too. They measure the quality of the living and working environment. The following indicators are important guidelines in any strategy to explore sustainable development. They are multi-faceted concepts and capture key aspects of daily existence in all communities. A short description of the main ecological indicators is important for the purpose of this study (United Kingdom, Department for Environment, Food and Rural Affairs, 2004):

- **Climate change** is a major threat to global sustainable development. Some climate change is now inevitable, and the world will have to adapt to that. Climate change must be kept within limits which global society can accommodate. Reducing greenhouse gas emissions is of the utmost importance.
- **Air quality** - A key sustainability objective is to control air pollution in order to reduce the risks of harm to human health, the natural environment and the overall quality of life.

- **Road traffic** - The key objective is to strike the right balance between transport's role in helping the economy progress and allowing people to travel wherever they need to go, while at the same time protecting the environment and improving quality of life. The volume of traffic, the world over, leads to congestion, noise and air pollution and contributes to greenhouse gas emissions, leading to climate change.
- **River water quality** is important because rivers are a major source of water used for drinking and by industry. Rivers support a wide variety of wildlife and are used extensively for recreation. Water is vital for public health and the environment. Safeguarding freshwater resources and water quality, at a time when pressures from climate change and household demand are likely to increase, is a very real concern.
- **Wildlife** - the key objective is to reverse the decline in wildlife and habitats. Forests and woodlands enhance the landscapes and are habitats for wildlife.
- **Land use** - re-using previously developed land, in order to protect the countryside and encourage urban regeneration. New development within existing urban areas contributes to the revitalization of communities and enables people to live near to areas of employment, reducing the need to travel. Use of previously developed land wherever possible is important for the protection of greenbelt areas and countryside.
- **Waste** - Household, commerce and industry waste is normally disposed of in landfill sites. Landfill can be a wasted opportunity and produces greenhouse gases. Important concepts e.g. biodegradable and the recycling of waste have emerged (United Nations Department of Economic and Social Affairs: Division for Sustainable Development, 2001; United Kingdom, Department for Environment, Food and Rural Affairs, 2004).

For the purpose of this study it is important to note, as indicated in Table 3 the primary environmental problems, the health concerns relating to those problems and the possible effects on productivity.

**Table 3: Principal health and productivity consequences of environmental damage**

Environmental Problem	Effect on Health	Effect on Productivity
Water pollution & water scarcity	More than 2 million deaths & billions of illnesses a year attributable to pollution; poor household hygiene & added health risks caused by water Scarcity	Declining fisheries; rural household time & municipal costs of providing safe water; aquifer depletion leading to Irreversible compaction; constraint on economic activity because of water shortages
Air pollution	Many acute & chronic health impacts: excessive urban particulate matter levels are responsible for 300,000 to 700,000 premature deaths annually and for half of childhood chronic coughing; 400 million to 700 million people, mainly women & children in poor rural areas, affected by smoky indoor air	Restrictions on vehicle & industrial activity during critical episodes; effect of acid rain on forests and water bodies
Solid & hazardous wastes	Diseases spread by rotting garbage and blocked drains; risks from hazardous wastes typically local but often acute	Pollution of groundwater resources
Soil degradation	Reduced nutrition for poor farmers on depleted soils; greater susceptibility to drought	Field productivity losses in range of 0,5% to 1,5% of gross national product (GNP) common on tropical soils; offsite siltation of reservoirs, river-transport channels, and other hydrologic investments
Deforestation	Localized flooding, leading to death & disease	Loss of sustainable logging potential and of erosion prevention, watershed stability, and carbon sequestration provided by forests
Loss of biodiversity (biodiversity is the sum total of species and their genetic constituency in a locality)	Potential loss of new drugs	Reduction of ecosystem adaptability and loss of genetic resources
Atmospheric changes	Possible shifts in vector-borne diseases; risks from climatic natural disasters; diseases attributable to ozone depletion = 300,000 additional cases of skin cancer; 1,7 million cases of cataracts	Sea-rise damage to coastal investments; regional changes in agricultural productivity; disruption of marine food chain

Sustainable development is a long-term goal. Its achievement requires a concerted pursuit of economic prosperity, environmental quality, and social equity. It calls for behavioural changes by individuals and organizations. The

World Bank (2001: 28) emphasized that throughout the world, this change is occurring. The argument is offered that economic development has led to dramatic improvements in the quality of life in developing countries. Striking gains, unparalleled in human history, have been made. Unfortunately the picture is far from positive. Gains have been unevenly distributed, leaving a large part of the world's population desperately poor. At the same time, environmental factors such as indoor and outdoor air pollution, waterborne diseases, and exposure to toxic chemicals threaten the health of millions of people. The decline in natural resources – land, water, and forests – is occurring at an alarming rate in many countries. Simultaneously, far-reaching trends i.e. globalization, the increased role of the private sector and of civil society, and rapid technological advances – have been reshaping the world, causing development and environmental challenges to be ever more intertwined (World Bank, 2001: 5).

From the above discussion it is evident that environmental concerns are inextricably linked to economic development and social progress in communities. The concept of sustainable human development is an integral part of the process of social progress and development.

## **2.8 SUSTAINABLE HUMAN DEVELOPMENT**

The concept of “sustainable development” transcends the classical development paradigm, and consists of two components, namely, sustainable human development and environmental sustainability. Human and environmental sustainability are linked through the continuous interactions between man and environment. Of importance to this study, is a description of the various elements or objectives of sustainable development, as it is geared towards enhancing both human and environmental concerns. These are listed as follows:

- Social progress which recognizes the needs of everyone – e.g. better education, learning resources, training, health services, and safer communities, assessable to all and not just by the privileged few.
- Effective protection of the environment by limiting global environmental threats and by protecting human health and safety, wildlife, landscapes and historic buildings from natural and human-made hazards.
- Prudent and efficient use of natural resources in order to preserve them and/or limit the serious damage they can cause if used inappropriately and/or excessively.
- Maintenance of high and stable levels of economic growth and employment – for everyone to share in higher living standards and greater job opportunities now and in the 21<sup>st</sup> Century. (Compare United Kingdom Government, 2004.)

Sustainable Human Development represents an evolution of the classical concepts of development: its emphasis moved from the material well being of states to the well-being of individual human beings. By enhancing human capabilities to expand choices and opportunities for men, women and children, an environment is created in which human security is guaranteed and individual human beings can develop their full potential and lead a life of dignity and freedom.

The concept “human development” was developed by the United Nations Development Programme in 1990, and is the process of enlarging people’s choices. The Human Development Index (HDI) is an indicator of the degree of human development enjoyed in respective countries. It comprises of the following components:

- longevity: for people to lead long and healthy lives (life expectancy at birth)
- knowledge: educational attainment (adult literacy and combined primary, secondary and tertiary enrolment ratio)
- decent standard of living: to have access to the resources needed for a decent standard of living (GDP per capita).

If these basic capabilities are not achieved, many choices are simply not available and many opportunities remain inaccessible. But the realm of human development goes further, essential areas of choice, highly valued by people, range from political, economic and social opportunities for being creative and productive to enjoying self-respect, empowerment and a sense of belonging to a community. Income is one of the main means of expanding choices and well-being. But it is not the sum total of people's lives. Human development emphasizes equity in basic opportunities for all – equity in access to education, in health and political rights. Access to education implies the development of human capital, which includes knowledge, skills and attributes such as perseverance. For individuals, investment in human capital provides an economic return, increasing both employment rates and earnings (OECD, 2001c). The underlying implication of a human capital perspective is that investment in knowledge and skills brings economic returns, individually and therefore collectively (Schuller, 2000: 3). Schuller (2000: 1) emphasized the importance of this kind of investment and added the following to the discussion: "Increasing educational opportunity has long been seen as a major factor in achieving greater social equality. Expanding participation has generally been taken as the key indicator of progress in this respect; but little attention has been paid to the actual effects or outcomes of participation". According to the OECD (2001c: 4) human capital also has a wide range of non-economic benefits. For example, education:

- tends to improve health (itself a form of human capital). An additional year of schooling has been estimated to reduce daily cigarette consumption by 1.6 for men and 1.1 for women;
- seems to make people happier;
- promotes the education of the next generation. Children of parents with upper secondary attainment are themselves more likely to complete upper secondary education; and
- is associated with higher civic participation, volunteering and charity giving, and a lower risk of criminal activity.

Human capital is created in diverse contexts, in the family and home, in communities, in the workplace and in many other social settings. The arena for policy intervention is therefore wide.

According to Singh and Titi (1995) sustainable development implies a process of change in which the utilization of resources, the direction of investments, the orientation of technological innovation and exchanges, and institutional change reflect both future and present needs. Singh and Titi (1995) further stated that the path towards sustainable development and the reversal of impoverishment processes lies in the recognition of the existence of mutual and dynamic interactions between social, political, cultural, economic and ecological factors – referred to as “horizontal” linkages. As previously discussed in this chapter, there is no single path towards a sustainable future. Each person, community, region or country should search, develop and maintain those elements that would improve their well-being (O’Brien and Mazibuko, 1998: 145; Goulet, 1995: 47).

This recognition and holistic transformation is possible by gaining and developing knowledge to facilitate a process towards a sustainable society. Facilitating appropriate training at all levels of society can decrease the knowledge gap. The abovementioned transformation process is essentially related to all spheres of human existence. As such the process of transformation will have to ensure social, cultural, economic and political sustainability together with ecological and environmental sustainability. This is expected ultimately to lead to a holistic development of society (de Koning and Martin, 1996: 142).

Development means to expand or realize potentialities. It means bringing those potentialities gradually to a fuller, greater, or better state. It has qualitative and quantitative characteristics. It can be differentiated from growth that applies to a quantitative increase in physical dimensions. Sustainable development is not a “fixed state of harmony”. Rather, it is an ongoing process of evolution in which people take actions leading to development that meets their current needs

without compromising the ability of future generations to meet their own needs. Sustainable development commits all people to considering the long-term and to recognizing humanity's place within the ecosystem. It provides a new perspective from which to see the world. It is a perspective that forces the bridging of many ideas and disciplines (contemporary and traditional) that have previously remained disparate.

The concept of sustainable development links people with the surrounding world. Assessing progress toward sustainable development therefore implies that information must be gathered about people, and about the surrounding world. Such an approach is closely linked to ideas that have emerged within systems theory. A core element of the approach is the idea of the "whole" system that can co-evolve successfully in a changing environment (Hardi and Zolan, 1997: 9). Johnson and Schwartz (1994: 143) wrote that social systems theory brought new understanding about the earlier social work view of people's reciprocal relationship with their environment. It further developed the notion that social work processes should focus on what was called "the person in the situation" – meaning that people are involved in life situations that include interactions with various social systems in the environment that affect their social functioning. Assessing the person in the situation now involved understanding the relationship between individuals and environmental systems, and the problems of social functioning that appear out of that interaction.

Hardi and Zolan (1997: 10) sought out the different models that emerged as being influential in assessing progress toward sustainable development, and extrapolated five that are listed as follows: (1) models with roots in economics; (2) stress and stress-response models; (3) multiple capital models; (4) various forms of the three-part or theme "social, economic, environment" model; and (5) the linked human-ecosystem well-being model. The first two are considered partial system models. The latter three are full system models that try to capture all aspects of the system, including people and environment.

A sustainable community is one where change is noticeable, where people are constantly looking for ways to address problems differently coupled with an openness that exist for innovative solutions. Sustainable development is therefore a social process and a moral principle and it needs to be part of every decision-making process.

It is evident from the reviewed literature that sustainable development requires new architecture for political and social organization to bring about fundamental change (Novartis Foundation for Sustainable Development, 1999: 23). Albert Einstein (in Viederman, 1995: 37) made a valuable contribution when he stated: “We cannot solve the problems that we have created with the same thinking that created them.” John Maynard Keynes contributed to this viewpoint, and stated: “The difficulty lies not in new ideas, but in escaping from old ones”. It requires changing human behaviour.

Development is a complex of activities, some with social and some with economic objectives. Some based on material resources, some on intellectual resources, all enabling people to reach their full potential and enjoy a good life. The interdependencies of these factors are the crucial link in making any development effort sustainable.

Development includes a long-range concern for the future. For development to be sustainable the different types of capital must continue, or its benefits must be maintained, indefinitely. Sagoff (2000: 135) concluded with the following valuable contribution: “The world has the wealth and the resources to provide everyone with the opportunity to live a decent life. We consume too much when market relationships displace the bonds of community, compassion, culture, and place. We consume too much when consumption becomes an end in itself and makes us lose affection and reverence for the natural world”.

## 2.9 CONCLUSION

As a literature study, this chapter provided an overview of the existing theoretical foundation of the sustainable development paradigm. The existing information indicated that sustainable development in the 21<sup>st</sup> century is a multi-dimensional concept. Extensive research of the available literature indicated that sustainable resource management, environmental education, policy research, analysis and advocacy, community sustainable energy development and corporate environmental management are all important aspects of a holistic environmental approach to discover practical solutions for a sustainable world.

In considering the concept of sustainable development, a number of basic essential factors have been identified, of particular relevance to this study. Sustainable development can be defined as a development path along which the maximization of human well-being for today's generations does not lead to declines in future well-being. Sustainable development is a combination of social, economic, environmental and institutional processes. It needs to address: (i) basic needs issues; (ii) better opportunities, education and issues pertaining to culture and humanistic values; and, (iii) expanding the range of choice and, therefore, freedom of the individual. Sustainable development is therefore about providing for basic needs, as much as the value of people and freedom. A balance needs to be struck among the goals of economic efficiency, human needs and aspirations, environmental issues and the social aspects of community life, in the face of a vast number of difficult challenges. Progress towards sustainable development requires changes at both the domestic and international level. Sustainable development should aim to secure the continued, quality existence of humans, in harmony with their environment. Sustainable development also underscores the importance of taking a longer-term perspective about the consequences of today's activities, and of global co-operation among countries to reach viable solutions. Sustainability is as much a process of discourse and effort as it is a state.

The following chapter will focus on poverty, underdevelopment and unemployment.