

**INTEGRATED ENVIRONMENTAL MANAGEMENT
(IEM) IN SOUTH AFRICA: A CRITICAL
ASSESSMENT**

BY

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ABSTRACT

The “throwaway society” and the resulting effect on the environment combined with the exploitation of natural resources have resulted in a global environmental crisis. As a response to this crisis a concept developed that is known as sustainable development (SD). The concept of SD that is accepted world-wide is guided by a set of principles (Agenda 21) that had been officially launched at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. After the 1994 political transition in South Africa the government implemented widespread environmental policy and law reforms as a response to the global environmental crisis and the global trend towards SD.

This study was undertaken to assess the existing environmental management (EM) principles within environmental policy and law in South Africa. EM in South Africa operates within the framework of Integrated Environmental Management (IEM) but it was discovered during the study that there are not only one set of EM principles but a few within South African environmental policy and law. This study attempted to identify and sort these different sets of principles and then to measure it against the international standard of Agenda 21. It was concluded that EM in South Africa within the framework of IEM is an adequate response to the world-wide trend towards SD.

Unfortunately the outcome that was hoped for in South Africa was slower than anticipated. It didn't seem as if the environmental law and policy reforms had an impact at grassroots level. Two possible scenarios were presented (1) it's failure to be effectively implemented at grassroots level or (2) that the principles of SD in itself are unsound and therefore ineffective. It was concluded that some of the normative assumptions of SD are unsound and contribute to the environmental crisis. The approach of Christian stewardship was presented as a possible alternative.

KEYWORDS

Environmental crisis, integrated environmental management, sustainable development, Christian stewardship principle, environmental management principle, environmental law, environmental policy, Agenda 21.

OPSOMMING

Die “weggooi kultuur” se negatiewe effek op die omgewing asook die herhaaldelike misbruik van natuurlike hulpbronne het ‘n wêreldwye omgewingskrisis veroorsaak. ‘n Globaal erkende konsep genaamd volhoubare ontwikkeling (VO) is ontwikkel in reaksie teen die omgewingskrisis. Die beginsels van VO is voorgestel by die Verenigde Nasies se Konferensie oor die Omgewing en Ontwikkeling in Rio de Janeiro in 1992, en hierdie stel beginsels staan bekend as Agenda 21. Na die politieke oorgang in 1994 het die nuwe Suid-Afrikaanse regering grootskaalse omgewingsbeleid en wetgewing verandering bewerkstellig as a reaksie op die omgewingskrisis en die wêreldwye neiging van VO.

Die doel van hierdie studie was om die huidige omgewingsbestuurbeginsels wat te vinde is in omgewingsbeleid en wetgewing in Suid-Afrika te evalueer. Omgewingsbestuur in SA val onder die koepel van geïntegreerde omgewingsbestuur (GOB) maar gedurende die studie is dit ontdek dat daar nie net een stel omgewingsbestuur beginsels in die hoofstroming van omgewingsbeleid in SA is nie. Hierdie studie het ten doel gehad om hierdie verskillende stelle beginsels te identifiseer en te sorteer en dan teen die internasionale standaard van Agenda 21 te meet. Die bevinding is dat omgewingsbestuur in Suid-Afrika binne die raamwerk van GOB ‘n genoegsame reaksie is op die wêreldwye tendens van VO.

Ongelukkig was die uitkoms waarop daar gehoop is in Suid-Afrika stadiger as wat verwag is. Dit het geblyk dat omgewingswetgewing en beleidhervorming nie ‘n impak op die grondvlak gemaak het nie. Twee moontlike verklarings is voorgestel: (1) ‘n mislukte poging om dit te implementeer op die grondvlak of, (2) die beginsels van VO is inherent problematies en dus oneffektief. Dit is bepaal dat sommige van die uitgangspunte van VO wel problematies is en dus oneffektief is. ‘n Alternatiewe benadering tot VO is voorgestel vanuit die Christelike rentmeestermodel.

SLEUTELWOORDE:

Omgewingskrisis, geïntegreerde omgewingbestuur, volhoubare ontwikkeling, Christelike rentmeesterbeginsel, omgewingsbestuurbeginsel, omgewingswetgewing, omgewingsbeleid, Agenda 21.

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GLOSSARY OF TERMS

Since there are different terms within the field of environmental management, it is necessary to outline the following definitions and terms in order to prevent uncertainties and misconceptions.

- **Environment**

All biological, physical and socio-cultural elements in an area.

- **Environmental management**

When management skills and techniques are applied to care for the environment.

- **Integrated environmental management**

The co-ordinated planning and management of all human activities in a defined environmental system, to achieve and balance the broadest possible range of short- and long-term environmental objectives (South Africa, 1998b:14)

- **Environmental impact assessment**

The evaluation of the effects likely to arise from project developments that will affect the natural and man-made environment (Wood, 1999:52).

- **Sustainable development**

The ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987).

ABBREVIATIONS

Environmental impact assessment	EIA
Environmental management	EM
Environmental Conservation Act	ECA
Integrated environmental management	IEM
National Environmental Management Act	NEMA
National Water Act	NWA
Sustainable development	SD
United Nations	UN

CHAPTER 1

INTRODUCTION

1.1 ENVIRONMENTAL MANAGEMENT- THE CRISIS

Humankind continues to abuse the environment as a convenient dump for increasing amounts of wastes, including large quantities of man-made toxic materials. The term "throwaway society" is a reference to consumer attitudes for most of the 20th century, including the present. It refers to the belief that trash and pollution will take care of themselves, in short: "How can a few million cars possibly create a pollution problem? There's an awful lot of air in the world, we can't possibly fill it all up" (Jones, 1993). The same sentiment existed for the oceans of the world, where much dumping of (especially liquid) waste was done. Solid trash was just taken to the dump, either by a homeowner or by a municipal garbage hauling service, and that was that - out of sight and out of mind. The combination between the "throwaway society" and the ever increasing exploitation of natural resources, has resulted in a global environmental crisis. A further element of the ever-increasing crisis is that the population of the world is growing; this has a negative influence on the environment - especially the destruction of forests, wetlands, and savannahs to create new agricultural lands. In contrast with the creation of agricultural lands, cultivable land is lost through erosion and deserts continue to grow. The dilemma is that that the environmental crisis needs to be reversed in time to prevent a major catastrophe, but it seems that the magnitude of the above elements that contribute to the crisis is not decreasing but increasing (Boys, 2002; Wieland., 2001:13; Dobson, 1998:4; Jones, 1993; Attfield, 1983:1). Therefore to prevent a catastrophe the elements that contribute to the crisis should be eliminated. The major contribution to the crisis is human waste disposal patterns and human natural resource development patterns. Globally a trend developed that could influence current human behaviour patterns that have a negative influence on the environment, in such a way that human behaviour could actually make a positive contribution to the environment. This response to the environmental crisis it is called sustainable development (SD).

The concept of SD has in recent years become directional in international governmental policy making. Since the 1980's it has become increasingly important in international political discussions. It is featured in the publication of the World Conservation Strategy in 1980; the 1987 World Commission on Environment and Development (WCED) Report, *Our Common Future*; and the proceedings and agreements of the 1992 Earth Summit held at Rio de Janeiro, Brazil (Palmer, 1997:91). The most recent example is the World Summit on Sustainable Development held in Johannesburg, South Africa in 2002 where attention was focussed on various global problems regarding SD. In 1987 the World Commission on Environment and Development (the Brundtland Commission) defined SD as: "*humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.*" Its central notion is of balance, of moderation, of stewardship and of good husbandry. Ever since the Brundtland Commission's adoption and advocacy of the concept of SD the phrase has found its way into practically everything written or spoken about environmental management (EM) (Barnard, 1999:55; Palmer, 1997:91).

EM is the management of the environment that will result in a positive outcome for nature and mankind in the long run. How EM is practised depends on what individuals and communities think of themselves and how they practically interact with their environment. Different cultures have different views on resource use, and therefore their impact on the environment differs and ultimately their problems will differ. What is use and what is abuse to different individuals or societies of different cultures? What is responsible resource management for one society has the potential to be just rapacious plunder for another. The way a person perceives the environment (worldview) reflects that person's previous experience, education, life-style and interests (Barrow, 1999:66; Hugo *et al.* 1997:199).

A worldview is the integrating framework of the belief system of a person. Everybody has a worldview, which is not purely individual in character, but is shared with a community and which holds to that worldview as the basis for its culture. Cultural life both reflects and strengthens the worldview, which guides it. Humans are social creatures with a stake in the well being of their own community. A specific community's view of the environment is directly linked with its social values, therefore the way a community manages the natural resources available to it is influenced by the

underpinning worldview of that community (Retief, 2002; Daniel, 2001; Gousmett, 1999:16; Hugo *et al.* 1997:199; Russell, 1994:4; Wolters, 1991:2). Therefore the concept of EM cannot be seen as a neutral concept. Any vision of EM is socially, culturally and, ultimately, religiously determined.

Therefore it could be assumed that the way EM is practised in South Africa is also influenced by social, cultural and religious factors. For example, before the general election in 1994 the social and cultural boundaries of the South African nation was split into two spheres. On the one hand was the pre-1994 South African government that had a vision of protecting the white (Afrikaner) culture and its national heritage, which included natural assets. On the other hand the majority of South Africans that were non-whites were not considered in EM issues and natural assets were not seen as their heritage from the perspective of the apartheid government. It resulted in a lack of awareness amongst this group of people regarding environmental issues. To them EM was regarded as a luxury compared to more pressing needs like food, shelter and security. The forced land removals and urban segregation that was promoted by the South African government and the ignorance of the majority non-white population of South Africa concerning environmental matters resulted in widespread environmental damage and consequent environmental problems (Hugo *et al.*, 1997:201; Wood, 1999:52). South Africa did not escape the environmental crisis that the whole world was facing and the underlying worldviews of the pre-1994 society in South Africa contributed its part. As the political pressure mounted against the South African government because of its policy of apartheid, international pressure for environmental change also mounted. The only difference was that environmental management change was initiated long before political change took place.

A concept called Environmental Impact Assessment (EIA) was implemented in South Africa as a response towards better environmental protection. Since 1974 there had been great interest in EIA in South Africa despite the South African public's historical lack of awareness of environmental issues. EIA was first developed in the USA in 1970 and consists of the evaluation of the effects likely to arise from project developments that will affect the natural and man-made environment (Wood, 1999:52). The EIA Committee of the Council for the Environment, set up in 1983, was influential in EIA research in South Africa. This research led to the publication of a document on Integrated Environmental Management (IEM) in 1989 (Wood, 1999:52) because

conventional EIA was viewed to be “*too limited in scope, reactive, anti-development, too separate from the planning process, and often the cause of costly delays*” (quoted in Hamann *et al.* 2000:14). The term Integrated Environmental Management (IEM) was chosen to indicate an approach that integrates environmental considerations into all stages of a development proposal including post-impact monitoring and management (Wood, 1999:52). As a result of consultation arising from practical experience of IEM during the late 1980's and early 1990's, a revised IEM procedure was published in the form of six guideline documents in 1992 (South Africa, 1992). The impact of the 1992 IEM document and further development of IEM in South Africa and the role of EIA within IEM will be discussed in Chapter four.

After the 1994 political transition in South Africa the South African government implemented widespread environmental law reforms as a response to the global environmental crisis and the previous government's lack of incorporating all population groups in environmental policy decision-making. This response needed to be up to date with the international norm. Until 1998, the most important environmental legislation was the Environment Conservation Act (ECA) (73/1989). The most valuable provision in ECA (73/1989) relates to the identification of activities that require an EIA. These EIA regulations will be further discussed in Section 4.4.1. ECA (73/1989) didn't provide an overall framework for EM and conservation in South Africa. ECA (73/1989) reflected conservation thinking that predates EM and IEM thinking (Hamann *et al.* 2000). New environmental legislation was necessary. The catalyst to this new environmental legislation was the emergence of a democratic government in South Africa, and a new Constitution (108/1996) (Hamann *et al.* 2000; Glazewski, 1999). The most important new acts were the National Environmental Management Act (NEMA) of 1998 and the National Water Act (NWA) of 1998 (Baloyi, 1999; Glazewski, 1999). The impact of the Constitution (108/1996) and NEMA (107/1998) will be discussed in Chapter 3. The main focus areas of South African environmental policy that include EM principles are the Constitution (108/1996), NEMA (107/1998), 1992 IEM guideline series (South Africa, 1992), 1998 National Strategy for IEM (South Africa, 1998b) and the 1999 White paper on Environmental management policy (South Africa, 1999). Each of these documents presents a set of EM principles – see Figure 2.2. No literature could be found that identifies and compares these different sets of South African EM principles, as a unit, and this study will attempt to contribute towards filling this gap in the literature.

Another gap in literature exists – a comparison between the South African EM principles and an internationally accepted standard. In this study the Agenda 21 (United Nations, 2000) SD principles¹ will be presented as the standard against which the South African EM principles will be compared. The ideal is to compare South African EM principles with an internationally accepted norm of EM and not SD principles, but currently there is not an international norm that incorporates a broad sector of EM principles. The Agenda 21 (United Nations, 2000) principles focus on SD principles but is the closest to an international set of EM principles that are accepted world-wide.

1.2 PROBLEM STATEMENT

The Agenda 21 principles were developed at the United Nations Conference on Environment and Development in Rio in 1992. This blueprint saw both rich and poor countries agree on a common vision for growth, equity and conservation over the long-term (Pauling, 2002; Emmett, 1998:5). The environmental policy and law reform in South Africa since 1994 were an effort to build upon this international trend of growth, equity and conservation. Unfortunately the outcome that was hoped for was slower than anticipated and the state of the South African environment is still fragile and equity is not yet achieved. A large portion of the South African population still regard EM as a luxury compared to more pressing needs like food, shelter and security (Pauling, 2002). The reason for this could be that the South African government didn't really make an effort to implement internationally accepted principles in national policy or where it was implemented it didn't have the desired result. There may even be a third reason for the slow progress. In 1994 there was a transition in government and therefore a resulting change in the underpinning worldview of government. But this worldview change in the chambers of government didn't necessarily result in a worldview change in the different population groups in South Africa. The government changed their perspective on EM but because this perspective could not be internalised by the people of South Africa, it made the new perspective ineffective.

The question arises as to the nature and adequacy of the South African government's response. The South African IEM policy is questionable on two accounts: (1) its

¹ Principles are basic beliefs, standards, doctrines or ideals. Principles guide our actions and decisions.

compliance with international norms and practice, and (2) validity of its cultural and normative assumptions.

It is therefore the aim of this study to analyse and critically assess the South African programme of IEM in terms of international norms and to suggest an alternative approach to SD from a Christian perspective that might have a visible and positive effect in the way the broader South African population practise EM at grass roots level.

1.3 RESEARCH GOALS

Against this background the main research goals are:

1. To present a critical overview of EM and SD principles identified in South African environmental policy and compare it with the international SD standard.
2. To present an overview of South African legislation and policies regarding environmental management principles and compare it with the international SD standard.
3. To critically assess the South African approach of IEM in terms of the international accepted standard of SD.
4. To critically assess the validity of the cultural and normative assumptions of SD.
5. To suggest a more responsible approach to SD from a Christian perspective.

1.4 RESEARCH METHOD

This research will be based on analysis of relevant literature along the following lines:

1. (a) A literature review of EM and SD principles generally accepted in South Africa and internationally.
(b) Comparison of the EM and SD principles in South Africa with the SD international norm.
2. (a) A literature review of current South African legislation related to EM principles.
(b) Comparison of the current South African legislation related to EM principles with the SD international norm.

3. (a) A literature review of IEM in South Africa.
(b) Comparison of IEM in South Africa and the international SD norm.

4. (a) A literature review of stewardship principles in the Christian tradition. The focus will be on stewardship principles that focus on human interaction with nature.
(b) Comparison of the international accepted norm of SD and Christian stewardship principles.

1.5 PRESENTATION OUTLINE

This is an introductory chapter to the research theme. To support the research theme, the following related themes are presented:

Chapter 2: Identification of EM and SD principles generally accepted in South Africa and internationally and the comparison thereof with the international SD standard

Chapter 3: Overview of the current South African legislation related to environmental management principles and the comparison thereof with the international SD standard.

Chapter 4: Assessment of the South African approach of IEM in terms of the international standard of SD.

Chapter 5: Identification of Christian stewardship principles as an alternative approach to SD, and assessment of SD principles in relation of stewardship principles.

CHAPTER 2

SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA: A CRITICAL OVERVIEW

2.1 INTRODUCTION

The concept of sustainable development (SD) incorporates two words – sustain and develop. According to Porritt & Wright (2002:13) sustainability means simply “..*the capacity for continuance into the long term.*” The capability of nature to sustain all of life is limited to the constraints of its self-regenerating systems. If humans learn to live within these limits, their prospects of survival as a species are guaranteed. For the current generation to survive, their basic needs must be met and for the future generation to survive, their needs must also be met. If this is to continue into the future each generation must meet their needs within the limits of the self-regenerating systems of nature.

Development is involved with the creation of wealth by improving the environment in order to raise productivity; thereby increasing the standard of living for humans. Sensible development is to use the natural resources in the most efficient and effective way, so that human needs and wants can be satisfied, while improving the quality of life (Hugo et al, 1997:176).

It is with this focus on human needs that the WCED (World Commission on Environment and Development also known as the Brundtland Report) defined SD as development which meets the needs of the present generations without compromising the ability of future generations to meet their own needs (WCED, 1987). Other definitions of SD can also be listed. According to Behera & Erasmus (1999:3) SD is the lasting satisfaction of human needs and the improvement of human life; for Emmett (1998:5) SD is a balancing act between the immediate sometimes pressing needs of the present generation, and the needs of future generations; Kirsten & Möller (2002:15) see SD as the capacity of people to endure in the globalised world system by making a living and improve their quality of life without jeopardising the options of others – both

now and in the future; the White paper on Environmental Management in South Africa (South Africa, 1999:i) defines SD as development that does not use up resources more quickly than they are replaced by natural processes or new technology. It combines concerns for the environment with the social and economic issues to make sure that human health and natural and cultural resources are not harmed.

SD suggests a balance between three central themes: the biophysical environment, the economy, and social and cultural resources (Emmett, 1998:6):

- From the environmental / ecological point of view, the emphasis is on management of the environment in order to maintain the integrity of ecological systems and resources.
- From the economic point of view, the emphasis is to maximise human welfare within the constraints of existing capital and technologies.
- From the social point of view, the emphasis is on human actors, and the role played by their relationship and patterns of social organisations.

What makes development sustainable is a balancing act between economic, social and ecological factors. Economic development needs to be achieved without compromising the ecological and social environments. Economic growth cannot be sustained if natural resources are exhausted. However, while natural resources need to be protected, the needs of current and future populations must also be met – sufficient food has to be produced; cities have to be expanded to accommodate rapid urbanisation; energy needs to be provided, these factors in turn exert negative influence on natural resources, pollution rates and environmental degradation.

To achieve this balance between economic, social and ecological factors, specific guidelines are necessary. As mentioned in section 1.1 sustainable development (SD) suggests balance, moderation, stewardship and good husbandry. To achieve these ideals a generic set of principles was necessary to make SD a reality (Barnard, 1999:55; Palmer, 1997:91). To this end a generic set of SD principles had already been developed, this generic set of principles is presented in Agenda 21 (United Nations, 2000). A full description of each SD principle is presented in Annexure 1, and an abbreviated description of each principle is presented in Table 2.1. As mentioned in Section 1.2 the 1992 Earth Summit in Rio Janeiro was a significant event. The central

outcome of this conference was that environmental protection would no longer be regarded as a luxury but would be integrated with economic and social issues and that these issues would become a central part of all national policy-making processes (Pauling, 2002; Emmett, 1998:5). For SD to become part of any policy-making process the SD principles must form part of environmental policy for that entity. The South African government has done just that and SD principles also appeared in South African national environmental policy – See Figure 2.2, as a response to the international trends towards SD.

LEVEL 1 International policy

International generic SD principles – Agenda 21 (United Nations, 2000)

LEVEL 2 National overarching policy

South Africa generic SD principles
White Paper on Environmental Management Policy: EM principles (South Africa, 1999)

LEVEL 3 National policy

IEM (1992 / 1998)	Constitution (108/1996)	NEMA (107/1998)
IEM principles	SD principles	<ul style="list-style-type: none"> • Environmental management principles (EM) • SD principles

Figure 2.1 Occurrence of Sustainable Development (SD) and Environmental Management (EM) principles in international and South African policy

Three sets of different principles can be identified in Figure 2.1, Sustainable development (SD) principles, Integrated Environmental Management (IEM) principles and Environmental Management (EM) principles. SD principles are identified in all three levels – international policy (Level 1), national overarching policy (Level 2) and national policy (Level 3). IEM and EM principles are only identified on the national policy level (3). On level 3 all three the different sets of principles are present – IEM, SD and EM. The international generic SD principles according to Agenda 21 (United Nations, 2000) are at the top Level (1) and act as the standard against which all the sets of principles in level 2 and 3 will be measured. As already discussed in section 1.1 the international Agenda 21 SD principles are the only internationally accepted norm

against which any set of principles related to EM could be measured. In national policy (Level 3) the following sets of EM principles could be identified: IEM principles in the 1992 and 1998 IEM documents, SD principles in the Constitution (108/1996) and SD and EM principles in NEMA (107/1998). In section 2.3 the SD principles according to NEMA will be compared with the Agenda 21 (United Nations, 2000) SD principles. In section 2.4 the EM principles in NEMA will only be noted in abbreviated form and also compared with Agenda 21 principles. These principles in NEMA are more thoroughly explained in Chapter 3. To identify the SD principles in the Constitution (108/1996) a holistic look at the Constitution is necessary; this will be done in Chapter 3. In Chapter 4 the IEM principles will be identified and explained. In the next section (2.2) the Agenda 21 SD principles will be compared with the level 2 overarching SD principles of South Africa in the White Paper on Environmental Policy (South Africa, 1999). Even though the 1999 overarching SD principles (Level 2) were written a year after NEMA (107/1998), the 1999 SD principles act as the South African norm and do not contradict the NEMA principles in any way, they only support and expand on those mentioned in NEMA. The South African SD principles as in the White Paper on Environmental Policy (South Africa, 1999) are presented in Annexure 2.

2.2 SOUTH AFRICAN SD PRINCIPLES

The White Paper on Environmental Management Policy in South Africa (South Africa, 1999) outlined the basic sustainable development (SD) principles the South African government will use to achieve its vision of SD. The South African government uses these principles to apply its policy, to develop it further and to test already established policy. It will be especially used for decision-making, writing laws and regulations and enforcing laws and regulations (South Africa, 1999).

<u>Principle</u>	<u>Agenda 21 (United Nations, 2000) SD principle</u>	<u>Principle</u>	<u>South Africa SD principle</u>
1	Human beings centre of SD		Does not appear in SA - SD principles
2	Accountability	1	Accountability
3	Custodianship and Equity	9/12	Custodianship / Equity
4	Environmental protection	8/18	Cradle to grave / Open information
5	Eradicating poverty		Does not appear in SA - SD principles
6	Special priority to developing countries		Does not appear in SA - SD principles
7	Global partnerships	14	Global partnerships and responsibility
8	Eliminate unsustainable patterns	23	Waste avoidance and minimisation
9	Capacity building and education	4/16	Capacity building and education /Inclusivity
10	Participation	16/18/ 19	Inclusivity / Open Information / Participation
11	Good Governance	2/3/7/10/15	Allocation of Functions / Alienation of Resources / Co-ordination / Due Process / Good Governance
12	International co-operation	14	Global partnerships and Responsibility
13	Protection of victims of pollution	18	Open Information
14	Prevent relocation of harmful substances	23	Waste avoidance and minimisation
15	Precautionary principle	20	Precaution
16	Polluter pays	22	Polluter Pays
17	Environmental impact assessment (EIA)	13/17/ 21	Full Cost Accounting / Integration / Prevention
18	International alarm		Not relevant
19	Notification of negative transboundary effects		Does not appear in SA - SD principles
20	Role of women	12/16	Equity / Inclusivity
21	Role of youth	12.16	Equity / Inclusivity
22	Indigenous people	12/16	Equity / Inclusivity
23	Environmental justice	11	Environmental justice
24	Warfare		Does not appear in SA - SD principles
25	Development and environmental protection are interdependent	17	Integration
26	Resolve environmental disputes peacefully	5	Conflicts of interests
27	Co-operate in sustainable development	6	Co-ordination

Table 2.1 Agenda 21 (United Nations, 2000) SD principles compared to local SD principles (South Africa, 1999).

It is interesting to note that the South African SD principles do not make mention of the Agenda 21 (United Nations, 2000) principle that humans should be the centre of SD (Principle 1). There is also no mention of the Agenda 21 principle 5 that SD should focus on eradicating poverty. The other four Agenda 21 principles (6 / 18 / 19 / 24) that are not made mention of focus on international agreements and are not necessarily suitable for a local set of SD principles. Of the 27 Agenda 21 principles, South Africa incorporates 21 (of them) in their National set of SD principles. The White Paper on

Environmental Management Policy in South Africa (South Africa, 1999) is not the only place where SD principles are listed within South African environmental policy. NEMA (107/1998) highlights eight separate SD principles from the EM principles. These principles will be identified in the next section.

2.3 SD PRINCIPLES IN NEMA (107/1998)

Sustainable development (SD) plays a foundational role in NEMA (107/1998). The phrase “sustainable development” is defined in the list of definitions as:

“...the integration of social, economic and environmental factors into planning, implementation and decisionmaking so as to ensure that development serves present and future generations.”

Furthermore one of the guiding principles of NEMA (107/1998) is to “*secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*” or in other words “*development must be socially, environmentally and economically sustainable.*”

SD as a key provision of NEMA (107/1998) guides the Department of Environmental Affairs and Tourism (DEAT), as well as the government in general, to embark on institutionalising the concept of SD (Hamann et al. 2000).

Principle	NEMA (107/1998) SD PRINCIPLES	Principle	AGENDA 21 (UN, 2000)
1	that the disturbance of ecosystems and loss of biological diversity are avoided	4	Environmental protection
2	that pollution / degradation of the environment are avoided	4	Environmental protection
3	that the disturbance of landscapes / sites that constitute the nation's cultural heritage is avoided	17	EIA
4	that waste is avoided, minimised, reused, recycled where possible or disposed of in a responsible manner	8	Eliminate unsustainable patterns
5	that the use of / exploitation of non-renewable resources is responsible/equitable, and takes into account the consequences of the depletion of the resources	3 / 4 / 25	Custodianship and Equity /Environmental protection / Development and environmental protection are interdependent
6	that the development /use / exploitation of the renewable resources and the ecosystems of which they are part don't exceed the level beyond integrity	4	Environmental protection
7	that a risk-averse / cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions	15	Precautionary
8	that negative impact on the environment and on people's environmental rights be anticipated and prevented	17	Environmental impact assessment

Table 2.2 SD principles in NEMA (107/1998) compared to Agenda 21 (United Nations, 2000) SD principles

The SD principles that are mentioned in NEMA focus on specifics, for example NEMA (107/1998) principles 1,2,5,6 all fall under principle 4: Environmental protection of Agenda 21 (United Nations, 2000). The NEMA (107/1998) SD principles give more detail, whereas the Agenda 21 principles are broad global principles. All the NEMA SD principles could fit into the Agenda 21 SD principles in one way or another - because the latter are so encompassing.

2.4 NEMA (107/1998) ENVIRONMENTAL PRINCIPLES

The importance of NEMA (107/1998) is situated therein that it provides a broad foundation upon which environmental management (EM) in South Africa can be built. The value of this foundation is that it acts as a launch pad for equitable development, environmental protection and the transition to sustainable development (SD) in South

Africa. It defines EM and governance currently in South Africa and provides the legal framework for all related legislation (Hamann et al. 2000; Barnard, 1999:201).

NEMA (107/1998) provides a set of EM principles that guide decision-making in environmental matters. These EM principles provide a basic outline in which the Act can be interpreted in its application, and through which any action can be tested for administrative justice (Hamann et al. 2000). SD is a key provision of and plays a foundational role in NEMA (107/1998) as mentioned in section 2.3. Therefore the EM principles in NEMA support the vision of the South African government to move towards achieving SD. The relationship between the SD principles and EM principles are explained in section 4.3.2, specifically within the context of IEM principles. In Table 2.3 the NEMA EM principles are compared with the Agenda 21(United Nations, 2000) SD principles. Even though the Agenda 21 SD principles focus specifically on SD, a comparison like this is of value on two accounts, firstly because the Agenda 21 SD principles are the only set of internationally accepted principles that guide EM world-wide therefore there is a standard against which the NEMA (107/1998) EM principles could be measured, and secondly, if NEMA states that SD is a key provision to it then the EM principles should reflect the international standards of SD i.e. the Agenda 21 SD principles.

It is important to mention that NEMA (107/1998) was promulgated two years after the Constitution (108/1996) was written. As shown in more detail in section 3.2 the Constitution of South Africa provided a framework for the formulation of other legislation in South Africa. It is therefore reasonable to deduce that the NEMA EM principles had been built on the already established Constitution (108/1996). Section 24 of the Constitution (108/1996) provided this framework for NEMA (108/1996). Section 24 of the Constitution and other sections in the Constitution that relates to EM are expanded upon in section 3.2. But to give a broad view on the EM principles in NEMA (107/1998) and how they were built upon the Constitution (108/1996), an additional column in Table 2.3 provides this perspective. This column, that represents the Constitution (108/1996) (Table 2.3) will point forward to section 3.2 where each section of the Constitution (108/1996) that relates to EM is explained.

	NEMA (107/1998) EM Principle	Agenda 21 (UN, 2000) SD principle	Constitution (108/1996) Section number
1	Everyone has the right to an environment that is not harmful to his/her health or wellbeing	1	24
2	State must respect, protect, promote, fulfil the social, economic, environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities;	2	24
3	Everyone has the right to have the environment protected, for benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation.	1 / 3	24
4	Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable/disadvantaged persons.	3	24
5	Equitable access to environmental resources, benefits/ services to meet basic human needs and ensure human well-being must be pursued and special measures be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.	5	24
6	The participation of all I & AP's in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.	10	38
7	Decisions must take into account the interests, needs, values of all I & AP's, and this includes recognising all forms of knowledge, including traditional and common knowledge.	22	33
8	Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.	10	32
9	Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.	22	24
10	The social, economic, environmental impacts of activities, including disadvantages and benefits, must be considered, assessed, evaluated, and decisions must be appropriate in light of such considerations and assessment.	17	24
11	The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.	1	24
12	The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.	3	24
13	The cost of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.	16	24
14	The vital role of women and youth in environmental management and development must be recognised and their full participation must be promoted.	20 / 21	9

Table 2.3 EM principles in NEMA (107/1998) compared to Agenda 21 (United Nations, 2000) SD principles and the Constitution (108/1996)

All the environmental management (EM) principles contained in NEMA (107/1998) fit neatly into the sustainable development (SD) principles of Agenda 21 (United Nations, 2000). As was seen with the specific SD principles of NEMA the EM principles have more specific detail than the Agenda 21 SD principles. From the comparison it can be seen that the NEMA EM principles are clearly built upon the Constitution (108/1996) with Section 24 of the Constitution (108/1996) featuring 10 out of the 14 times. As already mentioned a closer look at the Constitution (108/1996) is presented in section 3.2.

2.5 CONCLUSION

Through the comparison of the Level 2 sustainable development (SD) principles in the White Paper on Environmental Policy (see Table 2.1) (South Africa, 1999) and the Level 3 NEMA (107/1998) environmental management (EM) (see Table 3.2) and SD principles (see Table 2.2), the conclusion can be drawn that SD principles as presented in Agenda 21 (United Nations, 2000) are incorporated thoroughly in these policy documents. Two sets of principles are left to be compared with the international Agenda 21 (United Nations, 2000) norm, i.e. the Level 3 Integrated Environmental Management (IEM) principles and the SD principles as outlined in the Constitution (108/1996). There is a closer look at IEM in Chapter 4. But before the focus falls on IEM, it is necessary to have a closer look at the South African legal basis for EM in South Africa, because without a legal base (that starts with the Constitution of any country) for implementing SD principles the vision of improving the quality of life that is built upon peace with neighbours, nature and environment and a moral economic system where all people are included to provide for their own needs and the needs of the environment will not be reached. This legal base is presented in Chapter 3.

CHAPTER 3

SOUTH AFRICAN LEGISLATION AND POLICIES REGARDING ENVIRONMENTAL MANAGEMENT

3.1 INTRODUCTION

Due to the South African Government's pre-1994 domestic policy of apartheid it had limited opportunities to contribute to the global efforts to improve the environment. The country's limited involvement in the global environmental movement meant that there were few influences from outside its borders that could check on the government's environmental performance. The world at large focused on apartheid and neglected to perform the additional role of environmental watchdog as far as South Africa was concerned (Steyn, 2001). Given the political context of the period, the environment was not a top priority for the South African government between 1972 and 1994. The South African governmental environmental management (EM) practises of this period compare unfavourably with governmental initiatives of other countries, notably those in North America and Western Europe. When compared with the US government, for example, the evidence points towards the South African government in 1994, being as many as twenty years behind that of its American counterpart. The USA promulgated its first wide-ranging and all-embracing environmental act, the National Environmental Policy Act (NEPA), on 1 January 1970. One of the major components of the NEPA was that it required all proposed federal developments to carry out an environmental impact assessment (EIA) before being allowed to proceed. The closest South African legislation came to the NEPA was the Environment Conservation Act (73/1989). EIA's, however, remained voluntary within the provisions of this act until 1997 (Steyn, 2001).

Before 1989 EM in South Africa was characterised by the "old" command-and-control approach. The management of the environment focused on the prevention of environmental degradation. Little regard was given to the nature of the processes that produced offensive material or the ability of organisations to avoid pollution; therefore sustainable development (SD) was not a primary consideration. Environmental considerations were ignored at all stages of a typical production process. The

environment only received attention when the organisation had to decide what could be done to address the pollution to avoid contravention of legislation (Barnard, 1999:196).

Hamann et al. (2000) and Khan (1998) claim that environmental policies of the pre-1994 government were unjust to the poor and were programmed to maintain inequality and powerlessness. A vast mass of the population was excluded from participation in political decision-making. Many conservation projects disregarded human needs and rights. Conservation was frequently used in the same sentence as dispossession of people. For instance, the establishment of game reserves meant forced removal and dislocation for many. An important legacy of apartheid is the deep distrust felt by the majority of black people towards environmental conservation and management.

The first full democratic election in South Africa was held in 1994. With the political change a worldview change occurred in the high chambers of government. The pre-1994 government had a primarily traditional Reformist Christian foundation. With the leadership change in 1994, agnostics, atheists, Muslims and Hindu's filled high level positions and the result was that no specific worldview was promoted. This political / worldview change initiated widespread law reform, including environmental law and EM policies. The emergence of a democratic government in South Africa, and with it a new Constitution, created profound shifts in environmental policies since 1994 (Hamann et al. 2000; Glazewski, 1999).

Figure 2.1 in the previous Chapter presents the Constitution (108/1996) within the framework of other EM policies that had an influence on South African EM. The Constitution slots in at the National policy level. In section 3.2 the focus will be on the sections in the Constitution that are related to EM. How each of these sections of the Constitution compares with the Agenda 21 (United Nations, 2000) international norm will be pointed out. The reason for this is to identify, as in the previous Chapter, how South African policy and law compares with the international Agenda 21 SD standard. But before the Constitution is explored it is of value to illustrate the chronological development of South African EM policy, and identify the chronological niche that the Constitution occupies. See Table 3.1 for an overview on the chronological developments of environment law in South Africa since 1989. The purpose of the Constitution was to provide a framework for any legislation that would follow. NEMA is

a good example of legislation built upon the Constitution (108/1996) as shown in Table 2.3.

1989	Integrated Environmental Management (IEM) guidelines as published by Council for the Environment
1989	Environment Conservation Act (ECA) (73/1989)
1992	Revised IEM procedure in the form of six guideline documents (South Africa, 1992)
1994	First full democratic election in South Africa
1996	The Constitution of the Republic of South Africa (108 of 1996)
	White Paper on Environmental Management Policy (1996)
1997	Housing Act (107/1997)
	Water services Act (108/1997)
	EIA Regulations under ECA (73/1989)
1998	The National Environment Management Act 107 of 1998 (NEMA)
	The National Water Act 36 of 1998 (NWA)
	Discussion document on a National Strategy for IEM
1999	White Paper on Environmental Management Policy (1999)

Table 3.1 Chronological developments of Environment law and IEM in South Africa since 1989

It is clear that the Constitution (108/1996) was a watershed in EM policy in South Africa. The only policy documents of value before 1996 are ECA (73/1989) and the six IEM guideline documents (South Africa, 1992). ECA is expanded upon in section 4.3.1. The six IEM guideline documents (South Africa, 1992) will also be presented in the next chapter. Because the Constitution was such a watershed in South Africa, the sections that relate to EM are presented in the next section.

3.2 CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA ACT 108 of 1996

In 1996 the Constitution (108/1996) of the Republic of South Africa was promulgated. This Act was an important piece of legislation that provided a framework for environmental management (EM) in South Africa. According to Henderson (1996:4) it was the first time in the history of South Africa that environmental rights were established in the supreme law of the land (*Agenda 21- Principles 1 & 11. UN, 2000*). The following sections in the Constitution influence EM in South Africa:

3.2.1 Section 24: Environmental rights

Section 24 of the Constitution (108/1996) provides the framework for the formulation and interpretation of other legislation, which controls EM. The overarching protection of environmental rights is contained in this section of the Constitution (108/1996) under the heading "*Environment*".

"Everyone has the right-

- a) to an environment that is not harmful to their health or well-being; and
- b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-
 - i. prevent pollution and ecological degradation;
 - ii. promote conservation; and
 - iii. secure ecological sustainable development and use of natural resources while promoting justifiable economic and social development."

The wording of part (a) has been criticised because it is anthropocentric and does not consider the conservation of resources and ecological processes per se. Commentators also criticised the clause on account of being phrased in the negative. The consequence is that there is no positive obligation on the state. Rather, there is a right to action only if there is an activity that negatively affects health or well-being (Hamann et al. 2000).

Part (a) provides for a right to have an environment that is not harmful to one's well-being (*Agenda 21- Principle 1. UN, 2000*). If a person's interests are harmed, his well-being is effected negatively. People do not have only indirect interests in their

environment; they also have direct interests. A clean and undisturbed environment has inherent and intrinsic value for people. In this respect, the environment can be linked to many cultural objects: a Boer War grave or a San rock painting. Therefore people have a direct interest in the preservation of certain environmental assets.

In part (a) the word "*well-being*" encompasses the essence of environmental concern, namely a sense of environmental integrity; a sense that we ought to utilise the environment in a morally responsible and ethical manner. The right to an environment conducive to well-being embraces a sense of stewardship, that people are the custodians (*Agenda 21- Principle 3. UN, 2000*) of the environment for future generations (Glazewski, 1999).

Part (b) is framed as a directive principle as it imposes a constitutional imperative on the state to secure the rights of the individual according to i, ii & iii (*Agenda 21- Principles 4 & 7. UN, 2000*). While other developing countries like India and Namibia, have relegated socio-economic rights to separate chapters of their respective constitutions and specify that these rights are not justifiable, South Africa significantly has not done so, and hence constitutionally both fundamental rights and socio-economic rights are on par. The importance of section 24(b) is that anyone can ask the court to force state authorities to take steps to protect the environment even where there is no obligation in terms of any other statute to do so (Hamann et al. 2000; Barnard, 1999:51; Glazewski, 1999).

3.2.2 Section 25: Property

Along with the environmental right comes the property right. As already mentioned from a historical perspective environmental issues and land dispossession in South Africa are closely linked, as the establishment of some of South Africa's protected areas fell under the broader land dispossession policy of the previous government.

The property clause 25 (1) of the Constitution (108/1996) states:

25 (1) "No one may be deprived of property except in terms of law of general application, and no law may permit arbitrary deprivation of property.

(2) Property may be expropriated only in terms of law of general application –

- (a) for a public purpose or in the public interest; and
- (b) subject to compensation, the amount of which and the time and manner of payment of which have either been agreed to by those affected or decided or approved by a court"

The property clause (Section 25 (1) and (2)) prevents the arbitrary deprivation of property as it was the case in the past and provides for compensation where property is expropriated for public purpose or in the public interest (*Agenda 21- Principle 5. UN, 2000*). (Hamann et al. 2000; Glazewski, 1999).

3.2.3 Section 32: Access to Information

The Access to Information clause (32) of the Constitution (108/1996) states:

- 32 (1) "Everyone has the right of access to-
- (a) any information held by the state; and
 - (b) any information that is held by another person and that is required for the exercise or protection of any rights."

Access to information is a vital aspect of community empowerment, specifically if community groups are to make effective use of legal resources for affecting their environmental justice aims (*Agenda 21- Principle 10. UN, 2000*). This is especially relevant considering the secretive ethic of the pre-1994 administration. Currently a wealth of research on environmentally related aspects is available in the files of both the public and private sectors. This section (32) of the Constitution (108/1996) gives access to this information. It could be information emanating from the organisations causing the environmental degradation (Hamann et al. 2000; Barnard, 1999).

3.2.4 Section 33: Right to just administrative action

Closely related to the right to information is the right to just administrative action (Section 33)

- (1) "Everyone has the right to administrative action that is lawful, reasonable and procedurally fair.
- (2) Everyone whose rights have been adversely affected by administration action has the right to be given written reasons."

Administrative law is central to the judicial pursuit of environmental justice, as conflicts around natural resources invariably entail the exercise of administrative decision-making powers (*Agenda 21- Principle 11. UN, 2000*). Part (2) is especially relevant to environmental policy because much of the legislation relevant to environmental planning and management, which has been inherited from the pre-1994 government, is of enabling nature, i.e. it allows administrators to devise regulations, impose control measures and allocate permits. Some hypothetical example of such decision-making would include a local authority approving a controversial industrial development in the vicinity of an established community. Administrative action, in order to prove justifiable in relation to decisions given, must pass an objective test of reasonableness. This will promote environmental justice for all (Hamann et al. 2000; Barnard, 1999:52; Glazewski, 1999).

3.2.5 Section 38: Legal standing

Section 38 of the Constitution (108/1996) drastically extends the *locus standi* of people who wish to approach the court. The *locus standi* rule has traditionally in South African law required that in order to have standing to challenge administrative unlawfulness an individual must show that he or she has some degree of personal interest in the administrative action under challenge. The enforcement of rights (Section 38) of the Constitution (108/1996) changed the situation. It provides that anyone listed in the section may approach a competent court alleging that a right in the Constitution (108/1996) has been infringed or threatened. Included in the list of such persons (Barnard, 1999:52; Glazewski, 1999) are:

- (a) “anyone acting in their own interest;
- (b) anyone acting on behalf of another person who cannot act in their own name;
- (c) anyone acting as a member of, or in the interest of, a group or class of persons;
- (d) anyone acting in the public interest; and
- (e) an association acting in the interest of its members.”

Therefore any person or organisation has the legal right to take action to protect the environment (*Agenda 21- Principle 4. UN, 2000*). The main value of this clause is that it enables communities directly affected by the actual or apprehended environmental degradation to take effective action and to launch litigation (Barnard, 1999:174).

3.2.6 Section 9: Equality

Section 9 of the Constitution (108/1996) lists the right to equality, which includes the full and equal enjoyment of all rights and freedoms (*Agenda 21- Principle 11. UN, 2000*). This principle has important implications for property rights, because of the unfair natural resource and land management by the pre-1994 government. With this focus on equality, the new government committed itself to a whole new way of allocating resources. Further more it remedies the eco-injustice that had worsened the well-being of the poor under the name of environmental conservation (Hamann et al. 2000).

3.2.7 Section 10: Human dignity

Section 10 of the Constitution (108/1996) also includes the right to human dignity:

10. "Everyone has inherent dignity and the right to have their dignity respected and protected."

It goes to the heart of environmental justice as the imposition of environmental injustices ultimately strikes at human dignity (*Agenda 21- Principles 1;5;6 & 23. UN, 2000*). This right has not been invoked directly by the South African courts yet but has rather been referred to in equality cases to determine unfair discrimination (Glazewski, 1999).

3.2.8 Conclusion

In the subsections of section 3.2 a holistic presentation was made of the different parts of the Constitution that have a relation with environmental management (EM). Each subsection also presented how it also specifically relates with Agenda 21 sustainable development (SD) principles. Table 3.2 presents a summary of the sections in the Constitution that have a relation with EM and how these sections are parallel to the SD principles in Agenda 21 (United Nations, 2000).

Constitution (108/1996)	Agenda 21 (UN, 2000)
Section 24 Environmental rights	1; 3; 4; 7
Section 25 Property	5
Section 32 Access to information	10
Section 33 Administrative action	11
Section 38 Legal standing	4
Section 9 Equality	11
Section 10 Human dignity	1; 5; 6; 23

Table 3.2 Constitution (108/1996) compared to Agenda 21 (UN, 2000) SD principles

The conclusion is that Agenda 21 SD principles are well represented in the Constitution, especially in Section 24 that acts as the framework upon which further EM legislation in South Africa was formulated. Section 10 of the Constitution (108/1996) that speaks of human dignity also encompasses a number of Agenda 21 SD principles. Human dignity is a central notion of Agenda 21 and SD principles 1, 5, 6 and 23 focuses in one way or another on human dignity.

As shown above, the Constitution (108/1996) is the framework for any further promulgation of EM laws in South Africa. NEMA (107/1998) is a good example of the promulgation of legislation within the context of the Constitution and will be presented in the next section.

3.3 ENVIRONMENTAL MANAGEMENT (EM) PRINCIPLES ACCORDING TO NEMA (107/1998)

The setting of NEMA (107/1998) within environmental management (EM) in South Africa was explained in Chapter 2. The principles that guide EM in South Africa according to NEMA were also identified in abbreviated form in Chapter 2, and in Table 3.2. This section will elaborate on these EM principles.

These EM principles are found in NEMA Chapter 1:

c) "Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination."

The equity principle (c & d) emerged due to poor people being neglected by the rich and emphasises the need for equitable access of rural people to resources and land (Baloyi, 1999:45). These two principles demonstrate the crucial significance of the Constitutional right (Section 9) of equality in the environmental arena.

f) "The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.

k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law".

The pre-1994 governments had a history of marginalizing the majority of the population from the decision making processes of society, therefore it is especially important to ensure that public participation procedures are truly all embracing (Khan, 1998). The implementation of these principles is important but also difficult. A widely recognised problem of the public participation procedures is the unequal ability of different sections of the society to participate in them. Current procedures also lack sensitivity to these differing abilities and modes of engagement (Hamann et al. 2000). It is important that all forms of knowledge are respected, this includes traditional and ordinary knowledge even if some of the environmental, social, and economic knowledge is expressed in an emotional rather than a rational way. It is necessary to involve the perceptions and decision-making processes of the local population into decisions relating to EM. Their contribution is often underestimated. The participatory principle is a fundamental component of EM because people must be able to share in decision-making about the

goals and means of a development project and also take an active role in the decision-making process (Gräb & Nusser 2001:65; Baloyi, 1999:59; Kruger *et al.* 1997:31).

h) "Community well-being and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate."

This principle includes two sustainable development (SD) principles -

- Transfer of technology principle: Technologies, knowledge and skills to empower everybody must be transferred between the community and all the other role players in a development project.
- Intergenerational principle: The aim of the intergenerational principle is that knowledge will not be lost if one of the role players moves away or dies. Skills and knowledge may even be improved through evaluation over time. From the side of the project developers the empowerment of the previously disadvantaged is important. This principle requires the identification, development and implementation of capacity building programmes in time to empower the community to enable them to benefit from the project (Baloyi, 1999:56).

(i) "The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in light of such considerations and assessment.

The aim of EIA's in South Africa is to incorporate the above principle. An expert assessment of a project's social, economic and environmental effects is conducted and the results are presented in such a way the significance of the predicted impact and scope for modifying or mitigating them, can be properly evaluated by the relevant decision making body before a decision is given (Hugo *et al.* 1997:213).

(j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected."

The health and safety of workers ought to be taken seriously. It is estimated that 50 000 to 70 000 Americans are killed every year by occupational disease. With the increase in industrial processes likely to be seen if the government's growth strategy is to be successful this principle may become of critical importance in the future (Kidd, 1999:160).

(o) "The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage."

This principle (o) speaks of sensible stewardship, where environmental resources must serve the basic needs of the public but in the same breath be protected for all people, not only in this generation but also for the next.

(p) "The cost of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment."

This is also referred to as the "polluter pays principle" and is the basic principle that the person that was responsible for the pollution must pay for the remedy thereof. For example if a factory polluted a nearby river, the factory is also responsible to pay for the cleanup of the river

(q) "The vital role of women and youth in environmental management and development must be recognised and their full participation must be promoted"

According to Harper (1996:2) the involvement of women in all levels of management will undoubtedly lead to more meaningful EM. Through their daily work, rural women have accumulated intimate knowledge of their ecosystems. Centuries of practical experience have given women a unique decision-making role and knowledge about local crop and farm animal management, ecosystems and their use. This local knowledge is highly sophisticated and is traditionally shared and handed down between generations. Through experience, innovation and experimentation, sustainable practices are developed to protect soil, water, natural vegetation and biological diversity (SD dimensions, 2001).

The EM principles in NEMA (107/1998) presented in the above paragraphs and the SD principles according to NEMA that were presented in paragraph 2.3, form a set of principles that guide EM in South Africa. This combined set of SD and EM principles are the most expanded set of EM and SD principles (in one set) in South African policy. As shown in paragraph 2.3 and 2.4 all the sustainable development (SD) and environmental management (EM) principles according to NEMA reflect the Agenda 21 (United Nations, 2000) sustainable development (SD) international standard.

3.4 OTHER POST-CONSTITUTION (108/1996) ENVIRONMENTAL LAWS

In the previous sections of this chapter the focus fell on the Constitution and NEMA (107/1998). But these two acts are not the only South African legislation that influence environmental management (EM) in South Africa. It is worthwhile to briefly make mention of this additional legislation.

3.4.1 The National Water Act (36/1998) (NWA)

The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled (South Africa, 1998c). Table 3.3 lists the EM principles contained in this act that are built upon the Constitution (108/1996).

NWA (36/98) principles	Constitution 108/96
meet the basic human needs of present and future generations	24
promote equitable access to water	27
redress the results of past racial and gender discrimination	9
promote the efficient, sustainable and beneficial use of water in the public interest	27
facilitate social and economic development	24
establish suitable institutions and ensure that they have appropriate racial and gender representation	9

Table 3.3 NWA (36/1998) compared to the Constitution (108/1996)

3.4.2 National Housing Act (107/1997)

This act contains principles applicable to housing development. The general principles referred to include giving priority to the needs of the poor in respect of housing development, and taking due cognisance of the impact of housing development on the environment. The administration of this Act includes complying with all other applicable provisions of the Constitution and promotes and facilitates the integrated environmental management (IEM) principles of *"the opportunity for public and specialist input in the*

decision-making and consultation with interested and affected parties” (South Africa, 1997a).

3.4.3 National Water Services Act (108/1997)

The important objectives of this act are the provision of the rights of access to basic water supply and basic sanitation necessary to ensure sufficient water and an environment not harmful to human health or well being and promote effective water resource management and conservation. Administration procedures must be fair and equitable and the standards and water tariffs must reflect the need for equitable access to water (South Africa, 1997b).

3.4.4 Other legislation

The Minerals Act (50/1991) and the Environment Conservation Act (73/1989) (ECA) also play a role in EM in South Africa, but will be briefly discussed in the next chapter within the framework of IEM. There are various other acts that influence EM in South Africa but will not be presented in this study. The reason is that one of the focus areas of this study is to identify EM and SD principles within South African policy and compare them with the Agenda 21 (United Nations, 2000) international standard; these additional acts do not represent EM or are a duplication of what has already been discussed.

3.5 CONCLUSION

Environmental management (EM) and sustainable development (SD) and the principles thereof are well represented within South African legislation. The foundation was laid in the Constitution (108/1996) and the best example of legislation that was built upon the Constitution with specific reference to environmental matters are NEMA (107/1998). The SD principles in the Constitution are presented in the previous chapter and as already shown they fit into the Agenda 21 (United Nations, 2000) international standard. The EM and SD principles in NEMA were also presented in Chapter 2 and the EM principles according to NEMA were expanded upon in section 3.3. Through the comparison of the SD and EM principles in Tables 2.2 and 2.3 with the Agenda 21 (United Nations, 2000) international standard and the discussion of the EM principles in

section 3.3, it is concluded that NEMA is representative of the international standard of Agenda 21. Therefore it is also concluded through the comparison of NEMA (108/1996) EM principles in Table 2.3 with the Constitution (108/1996) and the holistic view of the Constitution in section 3.2 and the comparison thereof with the Agenda 21 (United Nations, 2000) international standard that the Constitution of South Africa contains most of the environmental principles that are presented in the Agenda 21 international SD standard.

The South African government's response to the ecological crisis and the international standard of SD is not only through the legislative processes. A twin partner is also active in this endeavour. The twin to the legislative process is Integrated Environmental Management (IEM) practise which will be discussed in the next chapter.

CHAPTER 4

INTEGRATED ENVIRONMENTAL MANAGEMENT (IEM) IN SOUTH AFRICA

4.1 INTRODUCTION

As shown in Chapter 1, an individual's perception of the environment is formed and conditioned by the individual's worldview. It is important to recognise that different professions attach different connotations to the concept "*environment*". An urban planner will understand the term to apply to the spatial structure of a city, with an architect envisaging the fabric of the city, and an engineer the essential services. It is therefore sensible to refer to different types of environment for example a natural environment, a built environment, a social or cultural environment and an economic environment. When the term environment is applied to human beings, it refers to the total sum of elements and their interrelationships that surround and routinely influence human beings (Hugo et al. 1997:199; Fuggle & Rabie, 1996:4). NEMA (107/1998) defines "*environment*" as:

"the surroundings within which humans exist and that are made up of—

- (i) the land, water and atmosphere of the earth;
- (ii) micro-organisms, plant and animal life;
- (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and
- (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being;"

The context of the term environment in this study refers to all biological, physical and socio-cultural elements in an area. The term environmental management (EM) was extensively used in the previous chapters. Management means the implementation of planned controls to achieve a desired outcome. When management skills and techniques are applied to care for the "environment" to achieve certain goals it is EM. The nature of EM is determined by the need for human beings to be conscious of the effects of their actions and to conduct their activities so as to maximise benefits and

minimise costs (Hugo et al. 1997:199; Fuggle & Rabie, 1996:4). In Chapter 1 the term Integrated Environmental Management (IEM) was used to describe the national strategy for EM in South Africa. The first version of IEM published by the statutory Council for the Environment in 1989 was replaced by a set of six IEM guideline documents published by the then Department of Environmental Affairs in 1992 (South Africa, 1992). The principles and approach of the 1992 IEM procedure were generally well accepted by authorities and business leaders alike and until 1997, had been implemented in a variety of ways on a voluntary basis (Hamann et al. 2000).

The 1992 document was upgraded with the 1998 discussion document on a national strategy for IEM (South Africa, 1998b). In this document IEM was conceptualised as a comprehensive, yet flexible procedure that is suitable for the South African circumstances, primarily in terms of the need to facilitate rather than obstruct development (Hamann *et al.* 2000). The objective was to develop a framework of harmony between development and environment - i.e. sustainable development (SD) (South Africa, 1998b:9). The South African government's vision for IEM was to lay the foundation for environmentally sustainable development (SD) based on integrated and holistic EM practices and processes (South Africa, 1998b:14). The 1998 document defined IEM as the *"co-ordinated planning and management of all human activities in a defined environmental system, to achieve and balance the broadest possible range of short- and long-term environmental objectives. The term "environmental" is used in a broad sense, encompassing biophysical and socio-economic dimensions."*

A second definition of IEM was also noted in the document: *"IEM is a combination of pre-active and preventive processes and procedures that maintain the environment in good condition for a variety of short and long range sustainable uses"* (South Africa, 1998b:14). IEM deals with the First World² component in South Africa in that it improves the way environmental resources are utilised; it provides a cost-effective procedure for ensuring that environmental concerns are carefully considered in all development. Concerning the Third World³ component in South Africa the overarching goal of IEM is to redirect and re-orientate the developing economy of South Africa from

² The First World is the developed world – For example countries such as the US, Canada and Western Europe.

³The Third World is the underdeveloped world - agrarian, rural and poor. Many Third World countries like South Africa have one or two developed world qualities, but the rest of the country is poor, rural and agrarian.

environmentally unsustainable growth and development towards environmental sustainability (South Africa, 1998b:14).

4.2 PURPOSE OF IEM

Integrated environmental management (IEM) is a holistic approach to project management. Although IEM is a toolbox of different instruments (see Figure 4.1) it is essentially a philosophy and a formalised approach which acknowledges that all actions taken during the project development must be planned and should ensure that no consequences are overlooked or underestimated (Hugo et al. 1997:201).

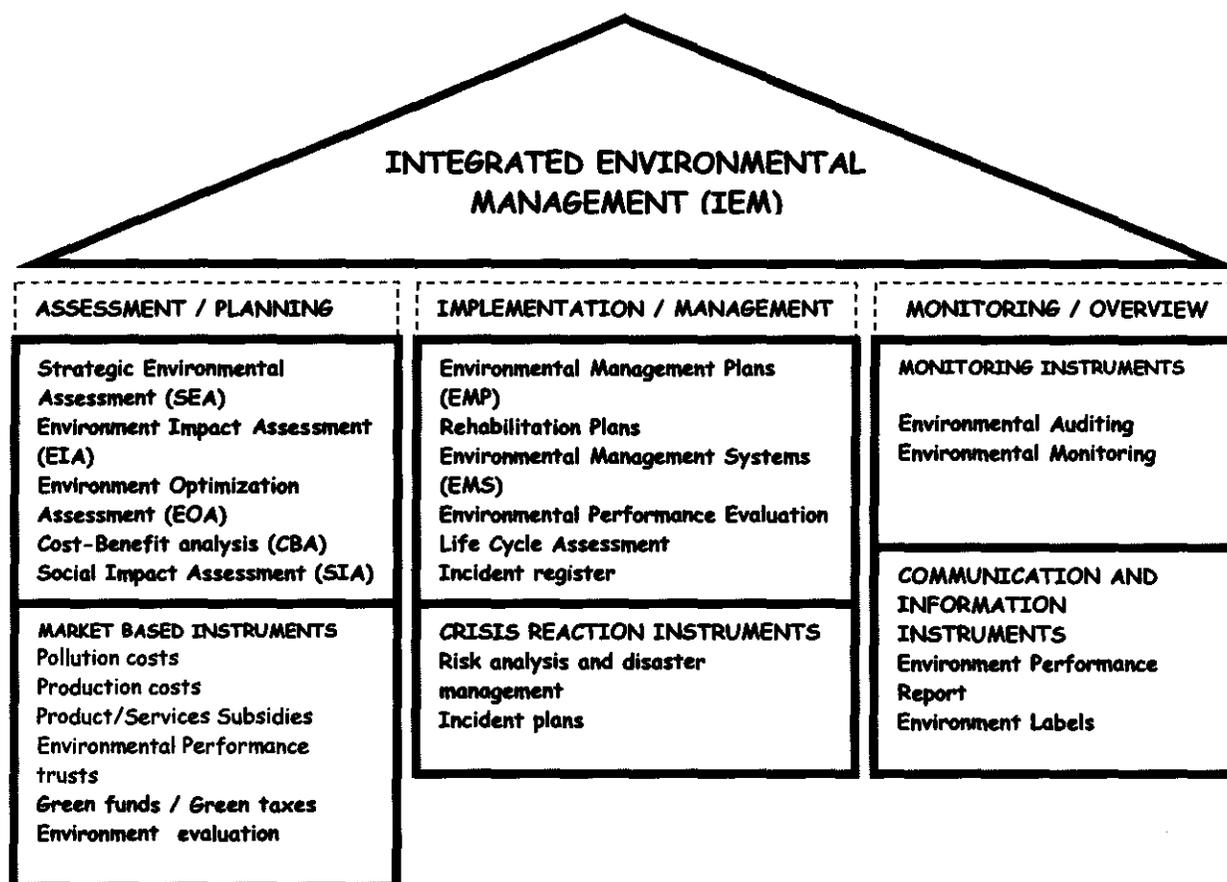


Figure 4.1 IEM- Toolbox of instruments (Retief, 2001)

Through the development process three stages can be identified – (1) the assessment / planning phase, (2) the implementation / management phase and (3) the monitoring / overview phase. What makes the IEM toolbox of instruments so efficient is that for each developmental phase different tools are available that can be used so that no environmental consequences are overlooked or underestimated.

IEM also establishes a framework of co-operation between the role players, namely the developer, the government authorities and the public in each of these developmental phases. This framework of co-operation aims to:

- stimulate creative thinking in the planning and initial design stage
- provide a systematic approach to the evaluation of proposals
- formalise the approval process in the decision-making stage
- ensure that monitoring and desirable modifications take place in the implementation phase (Hamann *et al.* 2000).

To fulfil the purposes of IEM a set of principles was developed that guide the IEM process. These IEM principles were first mentioned in Figure 2.1 that presented its place in South African environmental policy. These principles are situated at policy Level 3 – Local specific, i.e. local South African environmental policy with specific reference to IEM and will be discussed in the next section.

4.3 PRINCIPLES GUIDING IEM IN SOUTH AFRICA

The integrated environmental management (IEM) principles that could be identified according to the 1992 IEM discussion document (South Africa, 1992) are presented in Table 4.1 and the relevant Agenda 21 sustainable development (SD) principles were included for each IEM principle.

1992 IEM principles	Agenda 21 (UN, 2000)
1. <i>informed decision-making</i>	10
2. <i>accountability for information on which decisions are taken</i>	n.a.
3. <i>accountability for decisions taken</i>	13
4. <i>a broad meaning given to the term environment (physical, biological, social, economic, cultural, historical and political)</i>	n.a.
5. <i>an open, participatory approach in the planning of proposals</i>	10
6. <i>consultation with interested and affected parties</i>	10
7. <i>due considerations of alternative options</i>	n.a.
8. <i>'social costs' outweighed by the 'social benefits'</i>	8
9. <i>democratic regard for individual rights and obligations</i>	1
10. <i>compliance with these principles during all stages of the planning, implementation and decommissioning of proposals</i>	8
11. <i>the opportunity for public and specialist input in the decision-making process</i>	10

Table 4.1 IEM principles according to the 1992 IEM guideline document (South Africa, 1992) compared with Agenda 21 SD principles (United Nations, 2000)

These IEM principles in Table 4.1 can be defined as follows:

- To incorporate pro-active planning in the development process so that the social costs of development (those borne by society and not by the developer) are outweighed by the social benefits. Through good planning, IEM endeavours to decrease negative impacts on the environment and increase positive impacts of a development on the environment (*Agenda 21- Principle 8. UN, 2000*). A broad meaning is given to the term environment that incorporates physical, biological, social, economic, cultural, historical and political components.
- Decision-making should be informed (*Agenda 21- Principle 10. UN, 2000*). This is achieved by integrating contributions from professionals involved in all disciplines (e.g. biology, hydrology, geology, sociology, urban planning) relevant to the planning of a particular proposal, and all interested and affected parties.
- Possible alternative options for development should be considered, including the option of no development at all.
- There should be accountability for information on which decisions are based as well as for the decisions themselves (*Agenda 21- Principle 13. UN, 2000*). A record of decisions made, and the reasoning behind each must be kept, and should be made available on request. This is necessary if decision makers are to be held accountable (i.e. responsible and answerable) for the decisions made. Consultants, too, must be accountable for the information they provide, often the basis of decision-making.
- That affected parties participate in the planning process- therefore that an open, and participatory approach should be followed (*Agenda 21- Principle 10. UN, 2000*). Participation of interested and affected parties in the planning and decision-making process is an essential component of IEM. It ensures that all role players, including the applicant, the authorities and any other person that is affected by or has an interest in the process, participate in the planning of a particular development by an interactive constructive planning procedure.

- That all alternative options must be considered; that any negative impacts be identified in time and be mitigated if they cannot be avoided by using other alternatives, and the proper monitoring and auditing procedures are established (Barnard, 1999:185; Hugo et al. 1997:201).
- The democratic regard for individual rights should be respected (*Agenda 21- Principle 1. UN, 2000*).
- There should be compliance with these principles during all stages of the planning, implementation and decommissioning of proposals (*Agenda 21- Principle 8. UN, 2000*). One of the most persistent criticisms of IEM is its limited guidance in the implementation phase. This is also relevant in terms of government implementation, whereby there is often a lack of will and financial resources on behalf of the authorities to conduct legal action, even when there is substantial non-compliance with the condition of approval (Hamann *et al.* 2000).

From the discussion above of the integrated environmental management (IEM) principles and the comparison in Table 4.1 it is concluded that the specific IEM principles (South Africa, 1992) reflect similar thinking than the Agenda 21 norm. The 1992 IEM principles appeared at the same time as Agenda 21 and were therefore not simply an implementation of Agenda 21. These IEM principles were also developed before the Constitution (108/1996) was promulgated. Therefore it is necessary to explore the connection between IEM and current South African legislation, which is done in the next paragraph.

4.4 LEGISLATION AND IEM

4.4.1 The Environmental Conservation Act (73 /1989) (ECA)

Before the focus falls on post-1994 legislation, it is necessary to have a closer look at ECA (73/1989) because it included the procedure of environmental impact assessment (EIA), and EIA is sometimes confused with integrated environmental management (IEM). ECA was promulgated even before the 1992 IEM guideline documents were

written (South Africa, 1992) (See Table 3.1) therefore ECA was not written in direct accordance with IEM principles and procedures, and hence the 1997 EIA regulations promulgated in its terms did not institutionalise IEM in a strict sense (Hamann *et al.* 2000).

ECA contained principles and procedures for environmental management (EM), measures for nature conservation, for pollution control and for waste management (Barnard, 1999:201). The primary focus of ECA (73/1989) was nature conservation, rather than EM.

The ECA was partially repealed by NEMA (107/1998) but sections 21, 22 and 26 were retained, and the regulations will be repealed at a date yet to be announced i.e. they are still legally binding. The promulgation of legislation for compulsory EIA was regarded as a very significant step in formalising EIA's in South Africa and was in line with similar developments internationally (South Africa, 1998a; Baloyi, 1999). Table 4.2 lists the objectives of sections 21, 22 and 26 of ECA that are still effective and the extent to which they are in agreement with the Agenda 21 (United Nations, 2000) international norm.

According to Barnard (1999:179) the promulgation of legislation for compulsory EIA was regarded as a significant step forward but it still did not mean that IEM was practised in full. In fact in some cases it worked against IEM, where EIA's were used to justify environmentally degrading activities, hiding behind huge reports, to impress an "uneducated audience".

The value of EIA is to facilitate decision-making, but it is only a small part of the overarching goal of IEM – see Figure 1.1 *IEM toolbox of instruments*. It does have a limitation in that it only focuses on the direct impacts on the environment of a development project in a specific location. There is another tool in the IEM toolbox that overcomes this limitation. Strategic Environmental Assessment (SEA) zooms the lens out to get a picture of the broader region and an extended time scale. The purpose of SEA is to provide a framework for an entire development region or economic sector to ensure that an individual development is compatible with the broader opportunities of a region (Barnard, 1999:184).

Sections 21, 22 and 26 of ECA	1992 IEM principle (see Table 4.1)	Agenda 21 (UN, 2000)
<i>to ensure that environmental effects of activities are taken into consideration before decisions in this regard are taken</i>	1	4
<i>to promote sustainable development, thereby achieving and maintaining an environment which is not harmful to people's health or well-being</i>	10	1;3;4
<i>to ensure that identified activities which are undertaken do not have a substantial detrimental effect on the environment and</i>	8	2; 8
<i>to prohibit those activities that will have an detrimental effect on the environment</i>	n.a.	2; 8
<i>to ensure public involvement in the understanding of identified activities</i>	5;6;11	10
<i>to regulate the process and reports required to enable the Minister or his designated competent authority to make informed decisions on activities</i>	n.a.	11; 15

Table 4.2 The objectives of the foregoing sections 21, 22 and 26 of ECA, and the measure of agreement with the 1992 IEM and Agenda 21 principles

Table 4.2 clearly shows that the foregoing sections 21, 22 and 26 of ECA (that have not yet been repealed) are in line with the 1992 IEM principles (South Africa, 1992) and also with the Agenda 21 (United Nations, 2000) international norm. However, the greatest part of ECA (73/1989) is not applicable any more and was replaced by NEMA (107/1998). The relationship of NEMA (107/1998) to IEM will be discussed in the next paragraph.

4.4.2 National Environmental Management Act (107/1998) (NEMA)

NEMA states that sustainable development (SD) requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations (South Africa, 1998a). The SD principles outlined in NEMA form part of the principles of environmental management (EM) that need to be integrated in the decision-making process so that SD, which is one of the objectives of IEM is attained. The general objective of IEM is to promote the integration of these SD principles combined with the national EM principles outlined in NEMA into the making of all decisions, which may have a significant effect on the environment. Therefore the already outlined SD principles in Chapter 2 combined with the EM principles according to NEMA that were also identified in Chapter 2 and explained in Chapter 3 are ground rules for IEM because NEMA gives them legal status.

4.4.3 Minerals Act (50/1991)

According to the Minerals Act (50/1991) prospecting and mining companies are required to complete an environmental management programme (EMP) before mining commences. After the principles for IEM were published in the 1992 IEM guideline document the Department of Minerals and Energy used these IEM principles in the development of an aide-mémoire (support or assistance memorandum). It was developed to assist mining companies in preparing an environmental management programme report (EMPR). An EMPR contains an EIA, as well as an EMP defining how the prospecting or mining company will manage the impacts the mine has on the environment. The specific purpose of the aide-mémoire was to recommend a practical way for the effective investigation of environmental impacts, which will specifically aid the IEM process (Baloyi, 1999:32; Barnard, 1999:186).

The development of the aide-mémoire was definitely a huge step forward and its use is one of the most effective methods to implement IEM principles in the day-to-day running of mines. The aide-mémoire is only an aide for the mining companies, so the question still arises if it is used or only partially used and therefore its existence does not guarantee that all mines in South Africa apply IEM principles.

4.5 CONCLUSION

The primary aim of integrated environmental management (IEM) is to encompass sustainable development (SD) principles to ensure that there is intelligent and sensible use of resources by both present and future generations. NEMA (107/1998) stated that IEM, as part of environmental management (EM) must place people and their needs at the forefront of its concern, (*Agenda 21- Principle 1. UN, 2000*) and serve their physical, psychological, developmental, cultural and social interests equitably. The EM principles in NEMA already discussed in section 3.3 do just that. Most of the specific IEM principles outlined in Table 4.1 can also be linked with the SD principles in Agenda 21 (United Nations, 2000).

The conclusion is that environmental management (EM), in South Africa within the framework of integrated environmental management (IEM), is an adequate response to the world-wide trend towards sustainable development (SD). This conclusion is drawn on the grounds of the following statements:

- The contents of EM and SD principles in national legislation are adequate in terms of international trends of SD according to Agenda 21 (United Nations, 2000).
- National legislation was written specifically for local law enforcement and therefore the incorporation of the EM principles should account for local environmental problems.
- The overarching framework of EM in South Africa (IEM) has a vision of SD and the IEM principles outlined in the 1992 IEM guideline document and national legislation correlate with international Agenda 21 (United Nations, 2000) standards.

However, it is still questionable whether the concept of SD will reverse the continuing downward spiral of environment degradation and poverty in the world, including South Africa. This question is based on the fact that in the ten year period between the 1992 Rio conference on SD and the Johannesburg summit in 2002 it cannot be conclusively determined that SD was practised by all role players nor that it turned the environmental crisis around (Pauling, 2002). The role of the worldview driving the international standard of the SD movement can be questioned. As already mentioned in the problem statement in Chapter 1, the state of the South African environment is still fragile, equity is not yet achieved and a large portion of the South African population still regards EM

as a luxury compared to more pressing human needs. It was shown throughout the previous chapters that the South African government did really make an effort to implement internationally accepted SD principles in national policy but it still didn't have the desired result. A possible reason was given that even though national environmental policy changed, the perspectives of people at grassroots level concerning EM hadn't changed. Therefore even if it was concluded that the current South African environmental policy is on par with the world standard it still remains ineffective on ground level. There is therefore a possibility that the world standard of SD according to Agenda 21 (United Nations, 2000) has two possible shortcomings (1) its failure to be effectively implemented at grassroots level or (2) that the principles are implemented at grassroots level, but the principles are inherently unsound and therefore ineffective. In the next chapter the Christian tradition of stewardship will be explored in order to give insight in a possible alternative approach on EM that could bring about positive changes at grassroots level.

CHAPTER 5

STEWARDSHIP: TOWARDS A MORE RESPONSIBLE APPROACH TO ENVIRONMENTAL MANAGEMENT

5.1 INTRODUCTION

As indicated in Chapter 1 (par 1.2) sustainable development (SD) rests on certain assumptions and norms. The purpose of this chapter will be to unearth those norms and assumptions that makes SD ineffective and also to critically assess the globally accepted Agenda 21 (United Nations, 2000) SD principles from a Christian stewardship worldview. The generic set of Agenda 21 SD principles is presented in Annexure 1 (see Table 2.1) and for the purpose of this study represents the internationally accepted principles for SD. In the next paragraph some of the Agenda 21 SD principles are highlighted in terms of their normative assumptions that may contribute to the ineffectiveness of SD. Since there are 27 Agenda 21 SD principles it is possible to assess every single one of them on its normative assumptions, but it is not necessary for this study. Only those SD principles that propagate broad SD ideals that will negatively affect the environment will be examined.

1. Agenda 21 (1): *"Humans are the centre of concern for SD and they are entitled to a healthy and productive life in harmony with nature."* Therefore humans are the primary focus and their developmental needs are of primary concern. If any development were planned the primary focus would be what advantages the development will have for humans. When this advantage is established, the possible environmental damages will be determined. Then those environmental damages would be managed in such a way as to still get the highest possible advantage for humans. Therefore the purpose of SD is to develop humans on a sustainable basis and nature is of much less value than the developmental needs of humans. SD is true to the nature of humans to look out for themselves. Therefore it is concluded that SD is more an initiator of environmental damage than it is a control mechanism that decreases environmental damage. SD therefore enhances the environmental crisis.

2. Agenda 21 (2): *“States have, ..., the sovereign right to exploit their own resources pursuant to their own environmental and development policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States...”* This SD principle starts with the human right to develop and in the process exploit the environment, then the principle proposes a reactive response to the fact that human development is going to damage the environment. It is therefore determined that environmental exploitation and damage is inevitable prior to any development initiative, but that states have the responsibility to ensure the safety of the environment of neighbouring states. This is not a feasible ideal because man-made borders cannot control environmental exploitation. If a person has the right to exploit the environment in a specific country, how will that person guarantee that neighbouring countries are not negatively affected? Therefore on the basis that this principle gives the right to exploit the environment and environmental management is only a reactive secondary ideal it must be concluded that SD contributes to environmental damage and exploitation and therefore contributes to the environmental crisis.
3. Agenda 21 (3): *“The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.”* This principle states that everyone has the right to develop. But to assume that any development proposal could be measured and assessed and managed to meet the unknown needs of the future environment and human tendencies is not realistic. Human needs are changing all the time, as a simple example in fashion trends and new developmental trends shows. Twenty years ago there were very few computers in private homes, but currently close to every home in the western world has a computer. That was not predicted or anticipated a generation before. Environmental and human needs of the future can only be subjectively speculated about, but they cannot be measured. Therefore the only part of this SD principle that will stand the test of time is that humans have the right to develop and therefore there is always a possibility that the environment will come off second best.
4. Agenda 21 (4): *“In order to achieve SD, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.”* Again the primary concern is the development process. The human needs are first established and then it is considered how the environment could be protected

while fulfilling human desires. The environment will not improve but will deteriorate. In other words, in order to achieve SD, the environment will be exploited and only those parts of the environment that are not damaged by the developmental process will be protected.

5. Agenda 21 (7) *“States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystems”* and Agenda 21 (27) *“States and people shall co-operate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration...”*. These are noble ideas but as recently proven by the United States not reachable. The United States didn’t attend the Johannesburg Summit on SD in 2002. It can be assumed that they do not want to be part of this global partnership to conserve, protect and restore the Earth’s ecosystem. Currently they are the most powerful nation on earth with tremendous influence and developmental powers as well as the greatest environmental impact in the world. If they are not on board, the implementation of SD principles through global partnerships remains merely a noble idea.

From the discussion above of the broad normative assumptions of sustainable development (SD) that could have a negative influence on the environment, the following can be concluded:

1. Humans are the primary focus and their developmental needs are of primary concern in SD, therefore any action to minimise environmental damage is only a reactive effort to try to remedy the primary negative influences that SD has on the environment.
2. SD establishes the right of humans to develop and therefore it establishes the possibility that humans could exploit and damage the environment.
3. The foundation of SD is to meet the needs of the present generation without negatively influencing the capability of future generations to meet their development needs. This ideal is not possible because environmental and human needs of the future could only be subjectively speculated about, and therefore this principle cannot be implemented to proactively serve the unknown needs of the future.

4. An ideal of SD is global partnerships, but that is where it stays- an ideal. If the most powerful nation in the world (USA) does not accept the concept of SD, effective implementation of SD globally is a distant dream.

It is therefore concluded that SD in essence could contribute to the environmental crisis. In the section 5.5 SD will be critically assessed from a Christian stewardship perspective. But before this is done it is necessary to identify the already existing critique on the view of the Christian faith on environmental management. This will be done in the next section. It is interesting to note that the Christian faith was also blamed for contributing to the environmental crisis. It is also important to plot a specific Christian worldview from which stewardship will be defined because within the Christian faith different views concerning environmental stewardship exist, as explained in the next section.

5.2 CHRISTIANITY AND ENVIRONMENTAL MATTERS

The treatment of nature by the Christian⁴ faith has attracted a great deal of criticism over the years. Some critique is built on the assumption that all people who belong to the Christian faith do not always treat nature according to the Christian truths that they have affirmed (Wilkinson, 1991:276). The problem is that in Christianity, when it comes to the relationship that man has with nature, there is not only one set of "Christian truths". Within Christianity three clear eschatology's⁵ with different interpretations of environmental stewardship, can be distinguished. People within the Christian faith interpret their responsibility towards nature differently, but they all are Christians. Therefore blaming Christianity in the broad sense for the environmental crisis cannot be accepted. For example, some scholars blame Christianity for the notion that society has no responsibility to care for nature and therefore the natural outflow of this viewpoint is that humans have the right to exploit nature. The critique is then built on the view that Christians believe that their personal needs are more important than the needs of the environment (Milroy, 2002; Cooper, 1998:34; Martin, 1992). This criticism

⁴ A shared belief in God's creation of the universe, the fall of humans and nature from perfection with the sin of Adam and Eve, the restoration or redemption of mankind through the death and resurrection of Jesus Christ, and the return of Christ.

⁵ A person's eschatology (end time thinking) will affect everything about his life, including how he views the future, how he lives today, how he relates to society, and how he acts towards nature.

may be valid, but only for one Christian eschatological view i.e. – dispensational premillennialism (and is in fact the essence of Agenda 21-1).

Dispensationalist premillennialism maintains that the only hope for the present ecological deterioration is the return of Christ. Little can be done about the current state of the environment. Dispensational premillennialism expects the worst and almost welcomes it, because the worse things get, the sooner all believers will be taken away to heaven. There is no value in taking care of the earth because it is bound to deteriorate (Daniel, 2000:16; Curry-Roper, 1990:161).

Typical of criticism that only considered the dispensational premillennialist view is Lynn White's landmark essay, *The Historical Roots of Our Ecological Crisis* (1967). The problem with the essay is that the blame was laid at the feet of Christianity as a whole; it was not narrowed down to only premillennialism. According to White (1967) the current ecological crisis is a direct result of "*the orthodox Christian arrogance towards nature*" and that Christianity arose as "*the most anthropocentric religion the world has seen.*" He goes on to contend that the only way to reduce the ecological crisis, which we are now facing, is to "*reject the Christian axiom that nature has no reason for existence save to serve man.*" He goes further and argues that through the centuries Christianity subdued the earth for the sole purpose of serving humankind. These aspects of the Christian view on the environment are considered by White (1967) to be the philosophical basis for the complete exploitation of land for the benefit of man. He feels that the modern problems of land destruction and pollution originated in the Christian philosophies. White (1967) therefore didn't focus on the primary viewpoint of premillennialists that nature is destined for destruction, but he focused on the resulted outflows - that if it is so, why then not exploit it? Since all Christians do not hold to the premillennialist Christian worldview, it is problematic for White (1967) to lay the problem at the feet of all Christians. The specific thesis of White (1967) that modern problems of land destruction and pollution originated in Christianity as a whole can also be contested on the facts that (Southwick, 1972; Moncrief, 1970):

1. Much ecological damage had occurred long before the first formulation of the book of Genesis in the Old Testament – the Yahwist text of Genesis was written between 850 BC and 750 BC. White (1967) himself notes that there is evidence for the idea that man has been dramatically altering his environment since antiquity. This

mediated against the idea that the Christian religion uniquely predisposes cultures within which it thrives to exploit their natural resources with indiscretion. His own examples weaken his arguments considerably. He points out that human intervention in the periodic flooding of the Nile River basin and the fire-drive method of hunting by prehistoric man have both probably wrought significant unnatural changes in man's environment. The absence of Christian influences in these cases is obvious.

2. Misuse, exploitation and destruction of the landscape have occurred with equal severity throughout the centuries in non-Christian parts of the world as well.

The other two prominent eschatological positions are amillennialism and postmillennialism. Amillennialism teaches that some restoration of the fallen natural world is possible before Christ returns because of the presence of the Holy Spirit on the earth. Christians are also called to work at this partial restoration in order to give evidence of the global restoration that will take place when Christ returns (Curry-Roper, 1990:157).

In contrast with amillennialism, postmillennialism teaches that the kingdom of God will be extended in the present age, creating a new earth. Gradually unbelievers will be uprooted from the land and Christians will move into a full inheritance of the earth. Christians will inherit the earth by obedience to God's law and by implementing it into every sphere of society. Christians are responsible for undoing the work of the fall of mankind and creating the new earth (Daniel, 2000:15; Curry-Roper, 1990:157)

The thesis of White (1967) does not fit into neither of the Christian views of amillennialism or postmillennialism, it is in fact exactly the opposite. Either of these two views has an arrogant stance towards nature. They rather promote responsible stewardship. The main difference between the two in terms of the focus on the relationship between man and environment is that amillennialism anticipates a partial restoration of the creation, and postmillennialism anticipates a full restoration of the creation, in both of which humans must play an active role in accomplishing the restoration.

The focus of this chapter is Christian stewardship and the associated principles. As discussed in Chapter 1 the worldview of a person will determine the way he perceives

the environment and therefore influences the way he acts towards it. As seen in this chapter, even within the Christian tradition there are vast variations in the way different Christian groups perceive nature. From the brief discussion of Christian eschatologies, with the specific focus on the relationship between man and nature, it is clear that the environmental stewardship principles derived from a premillennialist Christian worldview will differ considerably from the amillennialist and postmillennialist Christian worldviews. For the purpose of this study stewardship will be defined and stewardship principles will be derived from the postmillennialist and amillennialist Christian worldviews. As already mentioned these two Christian worldviews have one fact in common, i.e. that humans play an active role in the restoration of the environment, be it a full or partial restoration.

Before the stewardship principles can be properly identified it is necessary to focus on the already mentioned statement of White (1967) that the current ecological crisis is a direct result of "*the orthodox Christian arrogance towards nature*" and that Christianity arose as "*the most anthropocentric religion the world has seen.*"

It must be recognised that Christianity is indeed partially guilty of propagating a type of anthropocentrism. The paradigm through which the church views reality is more properly theanthropocentric; that is, everything revolves around God and humanity. Theanthropocentrism differs from secular anthropocentrism in that it still recognises God as the sovereign Lord of the universe. Although Christian anthropocentrism would agree that everything exists for the service of humankind and that humanity is the crown of creation, people are still accountable to a higher authority for their conduct. Humans are given a prominent place, but they are not autonomous masters of creation and are not completely free to do anything they wish. The problem is that theanthropocentrism is still anthropocentrism where everything in the universe is seen in terms of human values and human interests. Anthropocentrism that White (1967) labelled as a Christian axiom that:

"stands contrary to fundamental Judeo-Christian beliefs. It is the result of a process through which the theocentric worldview of Judeo-Christian faith was turned into the anthropocentric worldview of our present secular age. God was replaced by man and thus not only did the source and direction of history become obscured, but he for the glory of God was replaced by the glorification and deification of man" (Young, 1994:123).

An alternative to anthropocentrism is theocentrism. It teaches that God is the centre of the universe and that He alone is the Source and Upholder of meaning, purpose, values, and ethics, as well as the unifying principle of the cosmos. Everything finds existence, value, purpose, and meaning in serving the infinite transcendent God. Theocentrism affirms man as God's representative on earth but also as a servant of God on earth (Young, 1994:129; Martin, 1992:6; Van der Walt, 1990:87). Stewardship that is defined in the next section and the stewardship principles identified further on in the chapter will be noted out of the presupposition that Christians play an active role in the restoration of nature by being God's representative on earth and that servanthood towards man and God (as the Creator) will be the motivating factor.

It is important to position stewardship within a specific Christian worldview framework because the different Christian traditions will differ considerably from each other on their view of stewardship. Within the dispensational premillennialist view the concept of stewardship would not fit because there is no need to be good stewards of the environment. According to this view the earth is going from bad to worse and nobody can do anything about it. For the postmillennialist Christians, environmental stewardship is a fundamental part of their worldview because they see themselves as the agents that are going to initiate a full environmental restoration.

5.3 THE CONCEPT OF STEWARDSHIP

Theocentrism turns stewardship away from only management, wise or unwise, towards servanthood. A concept of "theocentric stewardship" can be explained along the following lines:

Only God has absolute authority and dominion according to 1 Chronicles 29:11: "*Yours, O Lord, is the greatness and the power and the glory and the victory and the majesty, for all that is in the heavens and the earth is Yours...*"(Bible, 1987). Psalm 24:1 reaffirms the above passage: "*The earth is the Lord's, and the fullness of it, the world and who dwell in it*" (Bible, 1987).

Any dominion that is given to humans is delegated from God. As evidence Genesis 1:26 and 1:28 can be quoted. "*God said, Let Us [Father, Son, and Holy Spirit] make*

mankind in Our image, after Our likeness, and let them have complete authority over the fish of the sea, the birds of the air, the [fame] beasts, and over all of the earth, and over everything that creeps upon the earth...(Bible, 1987).

“And God blessed them and said to them, Be fruitful, multiply, and fill the earth, and subdue it [using all its vast resources in the service of God and man]; and have dominion over the fish of the sea, the birds of the air, and over every living creature that moves upon the earth” (Bible, 1987). This is called the dominion mandate. It involves the freedom of humankind to shape and mould the world we live in through control over its resources (Gousmett, 1999:21). But in theocentric thinking, the calling to have dominion is the calling to be a servant. Dominion is to be modelled after Jesus Christ, who did not come to earth to exercise lordship over creation but to give his life in service to others. The charge to follow Christ leads to a path of service to all God’s creatures, not to paths of arrogant domination. Humans as stewards are therefore managers and servants (Daniel, 2002:3; Russell, 1994:147; Young, 1994:172). According to the Collins Dictionary and Thesaurus (1987:983) a steward is a person who administers the property, house, finances etc. of another. The Greek term for steward is *oikos-nemos*, manager of the household (Bible, 1987: Matthew 25:14-30). The original word used for stewardship is *oikonomia*.

- *Oikos* = house / family/ household / palace
- *Nemos* = to manage

Oikonomia, which is the Greek word for stewardship throughout the New Testament, literally means – to be manager of someone’s estate or household (Daniel, 2002:3; Russell, 1994:147; Young, 1994:172). The duties of a steward include managing, but never for the steward’s own benefit or in such a way to be contrary to the desires of the owner. In Egypt, Joseph functioned as a household servant- manager or steward in the home of Potiphar. Joseph found favour in his eyes and became his attendant (Bible, 1987: Genesis 39:1-6). The same apply to humans; they are managers of the environment that God created. The environment must be managed according to the desires of God in the same way Joseph had to manage Potiphar’s household according to Potiphar’s desires.

The question then is what is God's desire for humans as environmental managers? This chapter attempts to make God's desire practical for humans by identifying stewardship principles that humans can act upon so that the desires of God are achieved. These stewardship principles are compared to the Agenda 21 principles identified in Annexure 1. In Chapter 2 it was established that Agenda 21 acts as an internationally accepted standard of sustainable development (SD) and it was concluded in Chapter 4 that integrated environmental management (IEM) is an adequate response to the international trend of SD. For the purposes of this study the generic stewardship principles will be compared with the generic internationally accepted Agenda 21 principles (Table 5.2). This is a more logical comparison than with the IEM principles because each stewardship principle encompasses a broad idea that could be applicable to any set of EM principles anywhere in the world and the Agenda 21 principles can also be applied to any set of EM principles in the world. The IEM principles are narrowed-down principles that concentrate on specifics and the problem arises that one stewardship principle could almost cover all the IEM principles. In Table 5.1 the NEMA (108/1998) SD principles are compared with stewardship principles and act as an example that such a comparison is problematic. As previously mentioned the South African principles of SD, EM and IEM are all adequate reflections of Agenda 21. Hence a comparison of stewardship principles with Agenda 21 SD principles is in effect a comparison with South African principles. The stewardship principles that are going to be used in these comparisons are presented in the next section.

5.4 PRINCIPLES OF STEWARDSHIP

In literature that was reviewed no single set of stewardship principles could be found that could serve as a standard set of stewardship principles that is widely accepted by most scholars, as is the case with for example the Agenda 21 SD principles. But by reviewing literature and the Bible, stewardship principles were identified that have some application to the relationship of man with nature. This generic set of stewardship principles will be used as a first attempt to evaluate the Agenda 21 principles from within the amillennial, postmillennial and theocentric Christian worldviews. These stewardship principles are presented below.

5.4.1 Stewardship implies dominion and servanthood

According to Genesis 2:15 "...the Lord God took the man and put him in the Garden of Eden to tend and guard and keep it" (Bible, 1987). The garden did not belong to humans. Ownership is based upon God's creatorship. God delegated responsibility to humans, and humankind is responsible to the delegating Authority for how they work and take care of (serve) ecological resources (Milroy, 2002; Young, 1994).

Management on God's behalf requires authority. Since God has delegated this authority to people, it is reasonable to assume that our dominion should be modelled after God's dominion of rule and servanthood. God's dominion is marked by taking loving care of other creatures (1 Pet. 5:7); by sustaining all kinds of life (Heb. 1:3); by helping creatures in need (Heb. 4:16) and always doing what is morally right (Ps. 45:7; Isa.9: 7; Hos. 14:9; Heb. 1:8; and Rev. 15:3). There is even mention of specific areas of nature; humans need to respect the life of birds (Deut. 22:6), have regard for the well-being of domesticated animals (Ex. 23:5; Deut. 5:14; 22:4; 25:4; and Prov. 12:10), take care of the land (Lev. 25:1-5), and should protect trees (Deut. 20:19)⁶.

Apart from the dominion mandate there is also a culture mandate (first glimpse of human work ethic) that is found in Genesis 2:15 "*And the Lord God took the man and put him in the Garden of Eden to tend and guard and keep it*" (Bible, 1987). Two Hebrew verbs, *abad* and *samar* describe human responsibility. The word "tend" is the Hebrew word *abad*, which means to work, to serve or to cultivate. The other word *samar* can be translated to guard, keep, watch or preserve. The significant thing about both words is that they describe actions undertaken not primarily for the sake of the doer but for the sake of the object of action. The kind of tending that is to be done is a service to the earth. The keeping of the garden is not just for human comfort but is a kind of preservation. Human dominion, then, should be exercised in such a way as to serve and preserve the beasts, the trees, and the earth itself. It is in such a relationship that the image of God is demonstrated, not with a focus on humans, but by carrying out a pattern of self-giving service demonstrated by Jesus Christ. This service is demonstrated in the cultivation, improvement, nurturing, development and enhancement of the environment (Daniel, 2002:10; Wilkinson 1991:287).

⁶ All these references to Bible, 1987

Humans are to rule and serve, responsible to God for the care that they provide, as good stewards of the gifts of His creation. For humans to think only of their own well being and themselves would not be stewardship patterned after the divine example where love and justice and serving others is paramount (Milroy, 2002; Young, 1994).

5.4.2 Stewardship through exploring nature

Genesis 2:20: *"...Adam gave names to all the livestock and to the birds of the air and to every [wild] beast of the field.."* (Bible, 1987).

God's first stewardship job description is for Adam to name the animals. This constitutes a mandate given to Adam that in turn provides a motivation and rationale for science (science mandate), as we know it. The Creator challenges humans to understand the world around them, to categorise and name the animals. God wants to stimulate human curiosity about that which surrounds them. God invites humankind into partnership with himself in order to name the animals. The invitation implied is for humans to pursue knowledge of the habits and to discover hidden wisdom locked within the physiology, ecology, and natural history of the creation. Humans must use their creativity for positive ends rather than for destruction. Work is seen as creative interaction with the environment. It takes creative skills to maintain the fertility of the soil and reap a bountiful crop without adding synthetic fertilisers, pesticides, fungicides, or herbicides. It also takes creative skill to use science and technology to rectify the destruction already done without introducing more adverse effects (Milroy, 2002; Young, 1994; Wilkinson, 1991:257).

5.4.3 Stewardship implies taking responsibility for nature

The fact that there are plenty of natural resources does not mean that humankind has a ticket to exploit the earth and do with it as they see fit. In Luke 16:1 a story is used to explain what responsibility stewardship implies. According to the story a steward was performing poorly in his responsibility towards his master. The steward was called in and informed he would soon no longer be needed. In desperation he called in his master's debtors and summarily reduced their debts. He thought he would then have some friends who would help him after he was fired. The owner of the household congratulated the man on his shrewdness. The story was used to make several points

regarding stewardship. If a person can be trusted with very little, that person can also be trusted with much, and if a person is dishonest with very little the same person will also be dishonest with much. If someone has not been trustworthy in handling worldly wealth, who will trust him with true riches? And if he had not been trustworthy with someone else's property, who will give him property of his own? The connection with environmental trust is obvious. Humans have been given the environment to live in. The environment does not belong to them. God holds humankind responsible to manage the environment and its resources on His behalf. God allows humans to choose in freedom to work alongside him and to recover their full potential as righteous stewards of the planet (Milroy, 2002; Young, 1994).

5.4.4 Stewardship implies accountability to man and God

As the God-appointed stewards, humans will be required to give an account of what they did before God according to Romans 14:12: *"Yes, each of us will have to give a personal account to God"* (Bible, 1996) and 1 Corinthians 4:1-2: *"So then, let us [apostles] be looked upon as ministering servants of Christ and stewards (trustees) of the mysteries (the secret purposes) of God. Moreover, it is [essentially] required of stewards that a man should be found faithful [proving himself worthy of trust]"* (Bible, 1987).

God made humankind answerable for the way in which they use that dominion/authority (Young, 1994; De Vos *et al.* 1980:226). Their responsibility to God circumscribes their responsibility to others, to future generations, to animals and to the rest of nature. Ultimately the principle of public accountability is grounded in their answerability to God (Young, 1994; Van der Walt, 1984:16).

5.4.5 Stewardship implies self-government

According to McDowell & Beliles (1995:6) all government begins internally in the heart of man, with his ability to govern his conscience, will, character, thoughts, ideas, motives, convictions, attitudes, and desires. How a man governs himself internally affects his external actions, speech, conduct, use of property, and use of his environment.

The management and protection of the environment works from the internal to the external. If a person does not have internal self-government and self-control, how will he control and manage his environment? Self-government cannot be imposed externally, so there needs to be another source of internal control. The basis of self-management is obedience to the Creator and His standards of conduct as found in the Bible. A person's internal conviction will manifest externally. If a person has the power to control himself, he is more likely to have the power to manage and control his environment. Self-government gives a person the power to rule himself and his environment.

5.4.6 Stewardship implies faith and planning

Humans are not at all responsible for sustaining the earth, for it is beyond their capabilities. They merely co-operate with God in the task of maintaining creation (Young, 1994). Faith in God is therefore needed for the "beyond our capabilities" part. By faith humans could understand that God made the world sufficient for His entire household according to Heb. 11:3:

"By faith we understand that the worlds [during the successive ages] were framed, fashioned, put in order, and equipped for their intended purpose by the word of God, so that what we see was not made out of things which are visible" (Bible, 1987).

God wants to bless humankind with enough resources and he has already done so. He has made the earth sufficiently large, with plenty of resources to accommodate all the people He knew would come into existence (McDowell & Beliles, 1995:159).

Faith in God and His abundance does not mean that planning is not needed. For example, by faith Noah expected God to do what He had promised, so he built the ark and planned according to what he expected God to do (Genesis 6 and 7). The same principle applies with the environment. God told human beings that there is more than enough for their children, but careful planning is still needed to walk in this promise and stay alive as humankind.

5.4.7 Worship inspires sensible stewardship

According to Bohlin (1992) man is a creature and therefore can be identified with other creatures but he is also created in God's image. It is this image that separates humans from the rest of creation according to Genesis 1:26-27.

God did not bestow His image anywhere else in nature. Therefore, while a tree or an elephant has value because God created it, it is inappropriate to romanticise the tree or elephant as though it had human emotions. All God's creatures glorify Him by their very existence, (Psalm 148:5-6) but only humans are able to worship Him by an act of the will.

A person's appreciation for the Lord's created beauty and provision must be acted out in some way or another. People did nothing out of themselves to receive God's grace and His abundant blessing. Humans need to worship God as an act of appreciation for His beautiful creation (Stoll, 1997:14). David wrote in Psalm 65:8-13 what the attitude should be:

"Those who live at the ends of the earth stand in awe of your wonders. From where the sun rises to where it sets, you inspire shouts of joy. You take care of the earth and water it, making it rich and fertile. The rivers of God will not run dry; they provide a bountiful harvest of grain, for you have ordered it so. You drench the ploughed ground with rain, melting the clods and levelling the ridges. You soften the earth with showers and bless its abundant crops. You crown the year with a bountiful harvest; even the hard pathways overflow with abundance. The wilderness becomes a lush pasture, and the hillsides blossom with joy. The meadows are clothed with flocks of sheep, and the valleys are carpeted with grain. They all shout and sing for joy" (Bible, 1996).

David writes that God's creation "inspires shouts of joy". In this passage God's abundant provision is seen and God need to be worshipped for that (Stoll, 1997:14). The Creator of nature and not nature itself should be worshipped. To acknowledge like David the God-created wonders of nature gives a person an understanding of the value of God's created order and should result in management with integrity.

5.4.8 Stewardship values the next generation

According to Dobel (1977) humanity's relation to the earth is illustrated in Psalm 155:16: *"The heavens belong to the Lord, but he has given the earth to all humanity"* (Bible, 1996).

This does not mean sovereign control. God is still the King, Ruler and Owner. No one generation of people can claim the earth as their possession. The earth was made "to endure" and was given for all future generations. The Bible is permeated with a careful concern for preserving the land and the earth as an allotted heritage according to Psalms 2:8: *"Only ask, and I will give you the nations as your inheritance, the ends of the earth as your possession"* (Bible, 1996).

The world is given to all. Its heritage is something of enduring value designed to benefit all future generations. It is humanity's duty to conserve the natural resources and pass them on for future generations to enjoy. Each generation exists only as sojourner. They hold the resources and the earth in trust for future generations.

God is a God of generations according to Acts 3:13: *"For it is the God of Abraham, the God of Isaac, the God of Jacob, the God of all our ancestors who has brought glory to his servant Jesus by doing this"* (Bible, 1996). The Lord is a generational thinking God. The next generation is very important for Him. Proverbs 13:22 states that *"Good people leave an inheritance to their children"* (Bible, 1996).

To value the next generation, stewards have to value the life support system. Without a life support system there is no future generation. Natural resources are the life support system for this generation but also for the next, and need to be protected.

5.4.9 Stewardship implies reciprocity

Matthew 7:12 states *"Do unto others what you would like them to do for you..."* (Bible, 1996). In environmental management it is applicable for example where a company wants clean water for its cooling process, that they should not pollute the water. If a person wants to breathe clean air, that person should not pollute the air. If this principle

were put into practice environmental problems would be relieved and the burden of governments reduced.

5.4.10 Stewardship is taught in the family

According to De Vos *et al.* (1980:287) the family is the basic building block of society. The family still remains the institution where the most basic and influential decisions about resource use are made. The decisions families make include all the specific choices by which society directly consumes natural resources, for example the choice of the location a person lives in, the jobs he has, the place where he is going for his holiday. These important choices are made in most cases not simply by isolated individuals, but by a household, a family. The most basic decision a family can make is how many children to have. The more children a family has the more pressure there will be on the environment. This statement is in contrast with the Bible (Genesis 1:28) *"God blessed them and told them, "Multiply and fill the earth and subdue it. Be masters over the fish and the birds and all the animals""* (Bible, 1996) where humans are given the responsibility to multiply, to have children and fill the earth. Psalms 127:3 states that *"...children are a heritage from the Lord, the fruit of the womb a reward.."* (Bible, 1987). It appears that these statements are in contradiction to each other but according to 1 Timothy 3:4-5 they are not: *"He must rule his own household well, keeping his children under control, with true dignity, commanding their respect in every way and keeping them respectful. For if a man does not know how to rule his own household, how is he able to take care of the church of God?"* (Bible, 1987). The part *"how is he able to take care of the church?"* can just as well be substituted to illustrate the principle with *"how is he able to take care of the environment"*.

Psalms 127:3 states that children are a blessing, therefore the family decides (the father with the mother) how many children they want to have. The responsibility to manage those children is theirs. They must see to it that their children's impact on the environment is minimised. The same principle applies if they have one child or six. How they manage the "blessing" and how they educate the "blessing" on good environmental stewardship is up to the parents. It must be remembered that parents must never lose sight of the fact that they are accountable to the Creator how they raise their children. According to Deuteronomy 6:6-7, Ephesians 6:4 and Proverbs 1:8 the responsibility to educate children lies with the family. Environmental management and

stewardship education must form part of parents' commitment to the Lord to raise their children properly.

5.4.11 Stewardship implies taking responsibility for actions

Organisations must be sure that they reckon all the costs involved in the context of their natural resource use. For example, a coal company incurs costs in getting a natural resource out of the earth, but there are also social costs, for example, polluted drinking water that a community near an industry is exposed to. This cost must be paid, but some of the costs can never be settled. For example, ecosystems may never be able to recover, or there may be permanent damage to the health of individuals (De Vos *et al.* 1980:265).

Organisations do not always take responsibility for their actions. But responsible stewardship implies voluntary acknowledgement of guilt. A central command of God is to love one's neighbour as oneself. If an organisation is guilty of polluting the air, and people get ill from breathing it, they do not take the well-being of their neighbours into account and therefore disobey God's command. In Biblical terms disobedience is a sin. The Bible is very clear that people need to confess their sins according to 1 John 1:9 *"If we [freely] admit that we have sinned and confess our sins, He is faithful and just...and will forgive our sins..."* (Bible, 1987). According to James 5:16 people honestly have to confess their sins towards each other (Van der Walt, 1996:15). James 5:16 *"Confess to one another therefore your faults (your slips, your false steps, your offences, your sins)"* (Bible, 1987). Confession must be followed by restitution. A possible result will be an improvement of behaviour and the circumstances of those who were unjustly treated. A well-known example in the Bible is the story of Zacchaeus (Luke 19:1-9), whose confession was followed by restitution.

According to Van der Walt, (1996:20) the Old Testament is also very clear about God's demands for restitution. Exodus chapter 21 and 22 provide many examples (Exodus 21:19,26,27 and 34 and 22:2,5,6 and 7). Repayment or redressing is also compulsory in the case of negligence and carelessness.

God's law is clear: the criminal is held accountable and is responsible to pay for his crime. The restitution or payment is to be made to the victim and not to the state according to Numbers 5:7 *"They must confess their sin and make full restitution for what they have done, adding a penalty of 20% and returning it to the person who was wronged"* (Bible, 1996). The punishment must fit the crime. The more serious the crime the more severe the punishment needs to be (Hammond, 1992:13). For example, when children play in a river near a chemical factory and as a result of water pollution get serious skin burns, the negligence of the company could be considered as a "serious crime". Compensation of medical costs must be paid, even a life-long grant for physical disabilities because the children cannot function as proper economically active citizens in the future. In contrast, if the company's air pollution rate is found to be just a small percentage over the national standard, the company does not have to take responsibility for all air-pollution illnesses in the community and might only pay a small fine.

5.5 SIGNIFICANCE OF STEWARDSHIP FOR ENVIRONMENTAL MANAGEMENT

5.5.1 Tables of comparison

Table 5.1 shows that it is problematic to compare specific local sustainable development (SD) principles with the stewardship principles, not in the sense that they contradict each other but that they were written for two different purposes. The SD principles of NEMA (107/1993) are principles (see Table 2.2) that focus on detail written for local conditions, the stewardship principles focus on broad concepts written for a global audience.

	NEMA (107/1998) SD principles	Stewardship principles
1	That the disturbance of ecosystems and loss of biological diversity are avoided	1;3;5
2	that pollution / degradation of the environment are avoided	1;3;5;9
3	that the disturbance of landscapes / sites that constitute the nation's cultural heritage is avoided	1;3;8
4	that waste is avoided, minimised, reused, recycled where possible or disposed of in a responsible manner	1;3;4;5;9
5	that the use of / exploitation of non-renewable resources is responsible/equitable, and takes into account the consequences of the depletion of the resources	1;3;4;5;6
6	that the development /use / exploitation of the renewable resources and the ecosystems of which they are part don't exceed the level beyond integrity	1;3;4;5;6
7	that a risk-averse / cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions	1;2;5;6
8	that negative impact on the environment and on people's environmental rights be anticipated and prevented	1;3;4;6;11

Table 5.1 NEMA (107/1998) SD principles versus stewardship principles

In Table 5.2 the Agenda 21 (United Nations, 2000) SD principles and stewardship principles are compared with each other, because both of the sets of principles encompass a global audience with broad concepts, hence it is a more objective comparison.

	Stewardship principles	Agenda 21 principles
1	Stewardship implies dominion and servanthood	1;4
2	Stewardship through exploring nature	9;22
3	Stewardship implies taking responsibility for nature	4;7
4	Stewardship implies accountability towards man and God	19
5	Stewardship implies self-government	n.a.
6	Stewardship implies faith and planning	15;17
7	Worship inspires sensible stewardship	n.a.
8	Stewardship value the next generation	3
9	Stewardship implies reciprocity	16
10	Stewardship is taught in the family	20;21
11	Stewardship implies taking responsibility for actions	13;16

Table 5.2 Stewardship principles versus Agenda 21 principles

This table presents similarities between the two sets of principles but also shows gaps where a stewardship principle could not be lined up with LA21 SD principles. In the next section the principles that could be compared with each other are expanded on. That is followed by a closer look at stewardship principle five (Stewardship implies self-government) and stewardship principle seven (Worship inspires sensible stewardship) that are not apparent in Agenda 21.

5.5.2 Review of Table 5.2 Stewardship principles versus Agenda 21 principles

5.5.2.1 Dominion and servanthood versus Agenda 21 (1 & 4)

The first stewardship principle states that humankind received delegated authority from God over nature. It involves the freedom of humankind to shape and mould nature but this freedom must be exercised in such a way to serve humans and nature. In this picture humans take centre stage, but this place of authority implies a responsibility towards other men, nature and God. This is in accordance with Agenda 21 (1) (United Nations, 2000), which states that human beings are at the centre of SD. All humans are entitled to a healthy and productive life.

In both principles humans take centre stage but the foci of the two principles are slightly different. Agenda 21 principle one focuses on the rights of human beings, stewardship principle one focus on the delegated right from God to be the centre of creation, but the purpose of the delegated position is not to have the position in itself with its accompanying privileges. The purpose of stewardship principle one is to serve other men and nature effectively and through this attitude of servanthood bring glory to God. The responsibility must be taken by all humans to serve the needs of others in such a way to not impact their health negatively or to hamper the right to be productive. The only way this is going to be achieved is when there is harmony between humans and nature because nature provides the essentials for life for humankind, therefore if nature is impacted negatively, humans will suffer.

Agenda 21 (4) also fits into this scenario that in order to achieve SD, environmental protection shall constitute an integral part of the development process. Serving nature (stewardship principle 1) means to take dominion over nature and serve it by protecting

it because nature cannot protect itself. The “position” of dominion over nature is build on a foundation of responsibility for nature and part of that responsibility to protect it.

5.5.2.2 Stewardship through exploring nature versus Agenda 21 (9 & 22)

According to stewardship principle two humans are invited by God to pursue knowledge and use their creativity positively. This is in accordance with Agenda 21 (9), which states that people must be empowered through SD so that knowledge is transferred from one group of people to another. Agenda 21 (22) also falls in this category, which states that the indigenous knowledge that was developed over centuries must play a vital role in environmental management because this knowledge may add value to existing knowledge.

Within the stewardship framework the underlying principle of servanthood towards humans and nature are central. Stewardship principle two combined with servanthood would definitely produce a transfer of knowledge between population groups. But the motivation for the transfer of knowledge is not essentially in the task but in the love for God and fellow humans. This is manifested in a spirit of servanthood by unselfishly teaching other people so that they can live healthy and productive lives in harmony with nature.

5.5.2.3 Stewardship implies taking responsibility for nature versus Agenda 21 (4 & 7)

Stewardship principle three states that God holds humankind responsible to manage the environment and its resources on His behalf. Therefore humans are responsible to protect the environment on behalf of God. The motivating factor is to serve God and the result is that humans and the environment benefit. Agenda 21 (4) states that environmental protection is needed in any development process. The freedom of humans to develop does not mean freedom to exploit. All development must be done within the parameters of environmental protection. The outcome of both principles is the same – environmental protection. The difference is that in the Agenda 21 principle the motivation is development that will benefit humans (serving humans primarily), but the development must be done in such a way not to negatively influence the environment (serving nature secondarily). The motivation behind stewardship principle

three is serving God primarily and the benefit of positive results for man and nature is secondary.

Agenda 21 (7) states that internationally there needs to be a spirit of partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. This is directly in line with stewardship principle three. Without a global partnership between nations to take responsibility for nature globally the health and integrity of the Earth's ecosystem will not be restored because neither nature nor pollution has any boundaries.

5.5.2.4 Accountability towards man and God versus Agenda 21 (19)

Agenda 21 (19) states governments have the responsibility to notify other governments of any activities that may have a significant adverse transboundary environmental effect. Therefore governments are accountable towards each other if activities within their borders could affect one another. This Agenda 21 principle is close to the fourth stewardship principle that humans are accountable to fellow humans and God, but it is not exactly the same. The environmental management (EM) principle in NEMA (107/1998) that states that decisions must be taken in an open and transparent manner incorporates stewardship principle four more directly. This NEMA principle speaks of accountability on decisions taken. What is left out of all the EM and SD principles discussed in the previous chapters is that God is the Creator and that mankind is accountable towards him. The reason for this in the context of the South African principles was noted in Chapter three that after 1994 no specific worldview was promoted in formulation of policies. Since it was also not noted in Agenda 21 (United Nations, 2000), the assumption could be made that the same applied.

5.5.2.5 Faith and planning versus Agenda 21 (15 & 17)

Stewardship principle six states that it is impossible for humans to sustain the earth, they merely co-operate with God in maintaining it. Humans cannot create more life to sustain themselves; they need faith in God that he has already created enough life-sustaining resources on earth. None of the principles discussed in previous chapters mentioned this fact. Without faith, planning will always be reactive, trying to fix the damage, to keep humankind alive a bit longer, but the ultimate end will be death to the planet. This is contrary to the framework of amillennialism and postmillennialism from where the stewardship principles were identified. Amillennialism states that humans

play a role in the partial restoration of nature and postmillennialism states that humans are responsible for the full restoration of nature. The contribution of this stewardship principle is that faith in God for his provision will make humans proactive, working with God to improve the environment.

It is important to recognise that according to stewardship principle six, faith alone is not going to improve nature and that planning is needed. This is in accordance with Agenda 21 (15 and 17), which are both proactive principles. Agenda 21 principle 15 states that a precautionary approach is necessary when decisions are made concerning the environment and Agenda 21 principle 17 states that EIA should be undertaken for proposed activities that are likely to have a significant adverse impact on the environment. Both of these Agenda 21 principles are in full agreement with the stewardship principle that proactive planning is needed.

5.5.2.6 The next generation versus Agenda 21 (3)

According to stewardship principle eight no one generation of people can claim the earth as their possession. The earth was given for the current generation and all future generations. The environment needs to be protected. Without a life support system there will be no future generations. This is fully in accordance with Agenda 21 (3) that states that the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

In essence this stewardship principle is built on the fact that God values all generations throughout history and that he has a specific plan and purpose for each generation. The motivation of this principle is to honour God by acknowledging that he is the one that creates each generation and that he has a specific purpose for them. The motivation of the Agenda 21 principle is not in essence respect for the next generation and its purpose on earth but more a subjective concern for their needs. It was already shown that it is not possible to determine what this future need is going to be. It is almost an unrealistic reactive approach towards future needs, whereas the stewardship principle is a proactive faith in God that their needs will be met, combined with a present attitude of servanthood towards a generation that does not even exist yet.

5.5.2.7 Stewardship implies reciprocity versus Agenda 21 (16)

This principle is of great value in any set of EM principles and it simply states: Do unto others what you would like them to do unto you. This principle is in accordance with the Agenda 21 principle 16 (Polluter pays). The polluter pays principle is again a principle that is enforced from the external to the internal, therefore it will be acted upon out of the fear of persecution rather than out of a personal belief system of a person. The polluter pays principle is a reactive principle that tries to remedy an already worst-case scenario. The stewardship principle is not motivated by fear but by love and servanthood for fellow human beings. It is a proactive principle where God is respected because He created humans and nature. The result is an environment that is not polluted, therefore human health is not compromised.

5.5.2.8 Stewardship is taught in the family versus Agenda 21 (20 & 21)

Although Agenda 21 (20 & 21) mention the vital role of women and the youth in environmental management (EM), it does not note the vital role the family structure plays in EM. According to stewardship principle 10, stewardship is taught in the family (see 5.3.10). The Agenda 21 principle is a proactive principle that has the purpose to incorporate women and children in the development and environmental management (EM) process and is of great value for EM but the stewardship principle goes a step further. Before these two groups form part of any decision-making forum, the skills should have already been imparted in their lives to make a success in their newfound capacity as environment decision makers. Through teaching and modelling sound environmental practises to the children within the family structure they would acquire environmental decision-making skills and even the ability to implement it long before they serve on any local environmental management forum.

5.5.2.9 Responsibility for actions versus Agenda 21 (13 & 16)

Stewardship principle 11 states that responsible stewardship implies voluntary acknowledgement of guilt and that a person is held accountable and is responsible to pay for his actions. This is in accordance with Agenda 21 (16) that the polluter bear the cost of pollution and with Agenda 21 (13) that national law needs to be developed regarding liability and compensation for the victims of pollution and other environmental

damage. Stewardship principle 11 also states that restitution or payment is to be made to the victim and not the state. Although the stewardship principle states that voluntary acknowledgement of guilt needs to take place, this very rarely happens and a court often determines guilt. Therefore both the stewardship principle and the two Agenda 21 principles are reactive principles trying to remedy an existing wrong but it is still necessary because there is no utopia where laws are not broken and principles not violated.

5.5.3 Stewardship principles that are not comparable with Agenda 21 principles

The following two principles are uniquely stewardship principles and could not be measured against specific Agenda 21 SD principles.

5.5.3.1 Stewardship implies self-government

This principle states that how a person governs himself internally affects how that person will manage the environment. If a person has discipline in ruling himself he will manage the environment well. For a government to initiate self-government is near to impossible, since laws are reactive instruments of control, from the external to the internal, and do not contribute to self-government. In section 5.4.10 and section 5.5.2.8 the value that the family structure could add to EM was explained. Within a family, sound environmental rules should and could be inculcated in children, for example a family could have a rule that bottles may not be thrown out of the car window, and if a child disobeys, it is punished. The same problem that a government would experience applies when an external rule is forced upon someone. A child will not throw the bottle out the window because of the fear of punishment. This is a good beginning but in a family structure there could be much more. The child could be educated in a loving way as to why pollution is undesirable. If the child comes to the understanding of why not to do it, internal government starts to develop.

Secondly, the parents model the way EM is demonstrated to their children. If EM principles apply in a family, but the parents are disobeying their own EM principles, these EM principles will not build internal government in the children. But if the parents demonstrate the EM principles, and the children see how their parents act, the same

behaviour would be copied out of their natural affection for their parents, and a habit would be formed, and internal government would be developed.

For any vision of sustainable development (SD) to succeed it is important to educate parents in environmental management (EM) principles and also in how to model and educate their children.

5.5.3.2 Worship inspires sensible stewardship

This principle focuses on the worship of God as one of the many agents that can produce sensible stewardship. Within the framework of this study sensible stewardship of the environment is when humans make decisions about the environment that will benefit the environment and humans in the long term. All of the SD principles in Agenda 21 (United Nations, 2000) have the purpose to produce this outcome, but none of them make mention of worship. When humans worship God as an act of appreciation for His beautiful creation the desire to appreciate God's creation would be synonymous with the desire to care for it. The vertical spiritual worship experience between man and God produces a horizontal physical worship experience where the act of caring for God's creation forms part of the worship experience. The motivation is to praise God for his beautiful creation, the outcome is sensible stewardship that benefits man and the environment directly.

5.6 CONCLUSION

In section 4.4 the possibility was presented that even if the world standard of sustainable development (SD) according to Agenda 21 (United Nations, 2000) is implemented at grassroots level, there have been no visible results because some of these principles are inherently unsound and therefore ineffective. These SD principles were discussed in section 5.1. The conclusion was made that SD essentially contributes to the environmental crisis.

The comparison between the stewardship principles as identified in this study and the Agenda 21 SD principles in Table 5.2 shows that nine out of the eleven stewardship principles identified agree in one way or another with 13 different international SD principles. But it was shown in the discussions in sections 5.5.2 and 5.5.3 that the

underlying motivation of the Agenda 21 SD principles and the stewardship principles differ considerably. The following normative assumptions of the stewardship approach will add value to any vision of environmental management (EM):

1. The right of humans to develop must not be the motivating factor but the “right” to have dominion is to serve humans and nature effectively and through this attitude of servanthood bring glory to God.
2. If development is the primary objective the environment will always suffer but if the primary objective is to serve God, there will always be positive results for man and nature.
3. Accountability is a valuable concept, but accountability that is built upon the opinions and standards of humans could be flawed. If there is accountability towards the Creator of the universe, the respect for God and the fear of judgement will motivate sound environmental management.
4. Without faith environmental planning will always be reactive, trying to fix environmental damage. Faith in God for his provision will make humans proactive, working with God to improve the environment.
5. The SD ideal to meet the needs of future generations is unrealistic because it is not possible to determine what the needs of the future generations are going to be. Stewardship is a proactive faith in God that the needs of future generations will be met combined with an attitude of servanthood towards a generation that does not even exist.
6. The SD approach is mostly reactive in trying to remedy an already worst-case scenario through environmental legislation. Stewardship principles are not only motivated by the fear of God and his laws but by love and servanthood for fellow human beings.
7. When the priorities of humans are central, the needs of humans will be central. When the needs of man are the most important factor, man becomes the most important factor therefore man is actually “worshipped” in SD. When humans worship God as an act of appreciation for His beautiful creation the desire to appreciate God’s creation becomes synonymous with the desire to care for it. The outcome will then be sensible stewardship that benefits man and the environment directly.

In Chapter 4 (section 4.4) another possible shortcoming was noted, namely that even if the SD principles presented in Agenda 21 (United Nations, 2000) are sound environmental management principles there is still a possibility that it cannot be implemented at grassroots level. Stewardship principle five: “Self-government is taught in the family” has the ability to remedy this shortcoming. For any vision of EM to succeed it is important to educate parents in EM practices. Parents should also be taught how to demonstrate these practices to their children and also how to educate their children in these matters. When these children are adults, they could be in any position or circumstance, these principles that were demonstrated to them in their childhood will always guide their decision-making because their underlying motivation will always centre around serving God, man and nature.

It was concluded in Chapter 4 that the contents of EM, SD and IEM principles in South African legislation and policies are adequate in terms of international trends of SD and that the overarching framework of EM in South Africa (IEM) has a vision of SD. Therefore the norms and assumptions that make SD ineffective are also applicable to the South African EM policies. The alternative stewardship approach that was presented in this chapter therefore could make a positive contribution to the South African framework of IEM.

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Principle 6. Special priority to developing countries

The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7. Global partnerships

States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their society place on the global environment and of the technologies and financial resources they command.

Principle 8. Eliminate unsustainable patterns

To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9. Capacity building and education

States should co-operate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10. Participation

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including

information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11. Good Governance

States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12. International co-operation

States should co-operate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13. Protection of victims of pollution

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also co-operate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14. Prevent relocation of harmful substances

States should effectively co-operate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15. Precautionary principle

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16. Polluter pays

National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17. Environmental impact assessment (EIA)

Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18. International alarm

States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. The international community shall make every effort to help States so afflicted.

Principle 19. Notification of negative transboundary effects

States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20. Role of women

Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21. Role of youth

The creativity, ideals and courage of the youth of the world should be mobilised to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22. Indigenous people

Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognise and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23. Environmental justice

The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24. Warfare

Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and co-operate in its further development, as necessary.

Principle 25. Development and environmental protection are interdependent

Peace, development and environmental protection are interdependent and indivisible.

Principle 26. Resolve environmental disputes peacefully

States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27. Co-operate

States and people shall co-operate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

ANNEXURE 2. GENERIC SOUTH AFRICAN SUSTAINABLE DEVELOPMENT PRINCIPLES (South Africa, 1999)

Principle 1. Accountability

The government is accountable for creating environmental policy, and for monitoring and enforcing it.

Principle 2. Allocation of Functions

The government will allocate functions or tasks, within the framework of the Constitution, to the institutions and government departments at all levels of government that can best achieve the objectives of this policy.

Principle 3. Alienation of Resources

When ownership of land or any resources is transferred from one person or group to another, people's environmental rights must be respected

Principle 4. Capacity Building and Education

The government must create opportunities to develop peoples' understanding, skills and general capacity concerning the environment. This will enable people to participate in achieving sustainable development and the sustainable use of resources.

Principle 5. Conflicts of Interest

Conflicts of interest, whether they are real or only potential, must be resolved through conflict resolution procedures. This specifically includes conflicts of interest that relate to responsibility for:

- the use of resources, and
- the environmentally sustainable management of those resources

Principle 6. Co-ordination

Environmental issues affect every part of peoples' lives. All government institutions must harmonise their policies, management practices, laws and regulations to match the principles in this environmental policy.

Principle 7. Cradle to Grave

Whoever is responsible for a programme, project, process, service or action is also responsible for all the environmental, health and safety impacts. This runs through all the stages of implementation to re-use, recycling, disposal and decommissioning.

Principle 8. Custodianship

The government acknowledges that it has a constitutional duty to protect the environment for the benefit of present and future generations of South Africans. This duty of Public Trust includes:

- Guarding and protecting the nation's resources
- Protecting the public interest in the resources
- Ensuring that people have access to the resources
- Ensuring that people live in an acceptable environment

Principle 9. Demand Management

The price of goods and services must include the long-term cost to the environment.

Principle 10. Due Process

The government itself must obey the Constitution. It must make sure that its administrative actions are just and fair and that it encourages public participation in environmental governance.

Principle 11. Environmental Justice

Environmental justice means that the government must integrate environmental justice with social, political and economic justice and development. It must address the needs and rights of all communities, sectors and individuals.

Principle 12. Equity

Everybody should have fair access to environmental resources, benefits and services, to meet their basic needs and ensure their well being. Each generation has a duty to avoid damaging the ability of future generations to ensure their well being.

Principle 13. Full Cost Accounting

Governments and private companies must base their policies, plans, programmes, projects or activities on an assessment of the full social and environmental costs and benefits to the environment.

Principle 14. Global Partnerships and Responsibility

The government must recognise that it shares a responsibility with other countries for global and regional environmental issue.

Principle 15. Good Governance

Good governance depends on mutual trust and good relations between the government and the people. The government must fulfil its constitutional, legislative and executive duties and must govern in a responsible, transparent and accountable way.

Principle 16. Inclusivity

Environmental management must include the interests, needs and values of all interested and affected, when decisions are being made about sustainable development. This includes recognising traditional and common knowledge.

Principle 17. Integration

All parts of the environment are linked. Environmental management must therefore pay attention to the connections between them. Integrating environmental concerns into every area of human activity is necessary for sustainable development. This means integrating environmental, social and economic concerns in the development of structures and the use of land. An EIA is necessary at policy, planning, programme and project levels.

Principle 18. Open Information

According to the Constitution, everybody must have access to information that will help him or her to:

- Protect their health and well being
- Protect the environment
- Take part in environmental governance
- Obey environmental laws and regulations

Principle 19. Participation

The government must encourage the inclusion of all people and groups who are interested in environmental governance, or affected by it, so that it can make sure that participation is fair and effective.

Principle 20. Precaution

The government will be cautious and not take risks in making environmental decisions. It must recognise the limits of our current knowledge about the environmental consequences of decisions or actions.

Principle 21. Prevention

The government must try to anticipate problems and prevent damage to the environment, and to people's environmental rights, before they happen.

Principle 22. Polluter Pays

Those who are responsible for environmental damage must pay all the repair costs. These include costs to the environment, costs to human health and well being, and costs of reducing or preventing any further environmental damage.

Principle 23. Waste Avoidance and Minimisation

Waste management must minimise or avoid the creation of waste, at source. This is especially important if the waste is toxic or hazardous. The government must encourage waste recycling, separation of waste at source, and safe disposal of unavoidable waste.