CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

South Africa's unique biological diversity – the variety of genes, species, ecosystems and ecological processes occurring in the country – is an asset of international, national and local value and significance. Based upon an index derived by the World Conservation Monitoring Centre (1992), South Africa ranks as the third most biologically diverse country in the world, and as such is of major global importance for biodiversity conservation (South Africa, Department of Environmental Affairs and Tourism,1997b). South Africa has therefore a tremendous responsibility to maintain and improve the management of these natural resources.

The Limpopo Province's main natural assets are the Waterberg, Soutpansberg, and Drakensberg mountain ranges with their rich wetland habitats. The Province further more has 54 nature reserve areas, which vary in size, biodiversity importance, tourism potential and conservation status. Their capacity to serve as water catchments and reservoirs constitute probably the single most important practical reason for the conservation of the provincial mountain ranges and wetland systems. In the arid Limpopo Province this is a significant attribute because the limited water supplies negatively influence development in the Province. The proper management of water resources, catchments and river systems is thus of major importance to the Province, known as one of the poorest provinces in the country (Limpopo Province, Department of Finance, Economic Affairs and Tourism, 1999a).

South Africa became part of the international world in1994, an event which led to its involvement in UNESCO's Man and Biosphere Reserve Programme (MaB) in 1995. The biosphere reserve concept is a well-established international programme that offers, within a wide framework of conservation management strategies, a number of excellent guidelines for forging balanced relationships between formally protected areas and neighbouring communities. Biosphere reserves further deal with one of the most important questions the world faces today: How can we reconcile conservation of biodiversity and biological resources with their sustainable use? (UNESCO, 2002).

The first official reference to biosphere reserves in the international world was made in 1970 (Batisse, 1986). However, only in 1995 did the General Conference of UNESCO adopt the Seville Strategy which recommends the kind of action to be taken for the future development of biosphere reserves in the 21st century. In addition, the Seville Conference helped to finalize a Statutory Framework setting out the conditions for the functioning of the World Network of Biosphere Reserves.

In 1996, a South African delegation (of which I was privileged to form part of), went to the USA on a biosphere reserve study tour. This event marked the official introduction of this concept to South Africa. Although a number of conservation initiatives in South Africa adopted the biosphere reserve concept as part of their project names, they are not registered as biosphere reserves under the Man and Biosphere Reserve (MaB) programme. There are currently only four registered biosphere reserves in South Africa, of which the Waterberg Biosphere Reserve is one. (The list of registered biosphere reserves world wide and in particular in Africa, is available on the internet at: [http://www.unesco.org/mab/brlistAFR.htm]).

At the end of 1996 a participation process with various role players started in the Waterberg District with the objective of exploring ways to establish a biosphere reserve in the area. The nomination process to register the Waterberg as an international biosphere reserve was completed at the end of 1998 and submitted to UNESCO. After an evaluation period of two years, the Waterberg Biosphere Reserve received its international status in March 2001 and now forms part of the World Network of Biosphere Reserves.

On the legal side the concept is currently only recognized in a policy document of the National Department of Environment Affairs and Tourism, named *A Bioregional approach to South Africa's Protected Areas* (South Africa, Department of Environmental Affairs and Tourism, 2001). However, new protected area categories as described in the National Environmental Management: Protected Area Bill (South Africa, Department of Environmental Affairs and Tourism, 2002) can be used to protect core areas and buffer zones within biosphere reserves.

The provincial Department of Finance, Economic Affairs and Tourism has identified ecotourism development as one of its key strategic objectives by striving "to make the Limpopo Province the preferred Ecotourism destination in Southern Africa" (Limpopo Province, Department of Finance, Economic Affairs and Tourism, 2001a). With the understanding that the word "eco-tourism" combines the two broad conceptual areas namely ecology and tourism (Addison, 1997), the Department of Finance, Economic Affairs and Tourism in the Limpopo Province developed the Golden Horse Shoe concept (Limpopo Province, Department of Finance, Economic Affairs and Tourism, 1999a). This describes the huge area of land that lies within the western, northern and eastern borders of the Province. To materialize this vision, the department then established the African Ivory Route and initiated three biosphere reserve initiatives to serve as unique building blocks to develop the Golden Horse Shoe. Map 1 illustrates this provincial vision.

As since the Province is known as one of the poorest provinces in South Africa, it is important to ensure that the rural population benefits from the planned ecotourism initiatives. The economic base of the areas comprising the Golden Horse Shoe currently lies mainly with private investments in the wildlife industry. Findings by Kessel Feinstein (2001) that the most common form of accommodation utilized by foreign air arrivals in the Limpopo Province are game lodges, enforces the importance to further develop these assets in the Golden Horse Shoe on a sustainable way that will contribute to the economic growth of the Province.

However, unrealistically high social expectations and economic pressure can lead to the over demand of products and the depletion of the natural resource base that presents the opportunities for ecotourism development in the Province. The Limpopo Province is in a certain sense privileged not to have over developed areas within the Golden Horse Shoe area. The opportunity to implement strategies that will enhance sustainable development through ecotourism therefore still exists.

This study will apply the biosphere reserve concept to the Waterberg Biosphere Reserve area to demonstrate that it can serve as a land use model for ecotourism development.

1.2 RATIONALE

The protected area category is perhaps the most valuable asset for the maintenance and management of genetic, species, community, and landscape diversity, as well as key ecological processes. However, the role of protected areas exceeds that of nature reserves since they provide valuable services, often beyond their boundaries. For example they can serve as a catchment area for the provision of clean water, as a propagule bank for rehabilitation, as a refuge for the recovery of species populations and communities, as a site for the replenishment of areas which have lost species through local extinction, and as a site for the future provision of genetic material for medical and horticultural interest (Bridgewater *et al.*, 1998). The influence of protected areas on rural local communities and *visa versa* has a direct influence on the management of protected areas. The "island" approach has over the last couple of years changed to the mainstream conservation philosophy and entails involving local communities in and around protected areas in all spheres of planning and developing protected areas. As such, it signifies that a much broader approach to the conservation of biodiversity should prevail, including the focus on the landscape scale as a key factor in an overall bioregional approach to land management (Bridgewater *et al.*, 1998). In this regard as the Global Biodiversity Strategy (Courier, 1992) notes: "*Protected areas linked by corridors become means of maintaining functioning natural or near-natural ecosystems over large regions"*. It is believed that the Biosphere Reserve concept, formulated to wed conservation and sustainable development, that has been developed and championed under UNESCO's Man and the Biosphere Program (MaB) could be used as a tool to implement such a broader approach.

Ecotourism is currently the principal land use in the Waterberg Biosphere Reserve. Sirakaya *et al.* (1999) remark that the underlying themes in ecotourism definitions are sustainable utilization of the resource base (both natural and cultural) and the involvement of the local community. Queiros and Wilson (2001) in turn include two further aspects, namely those of the ecotourism industry and tourists. In order to become a successful sustainable development tool worldwide, ecotourism requires a thorough investigation into the planning of ecotourism destinations and their long-term management (Wood, 2002). It is believed that this study will add an important

aspect to the explanation of ecotourism within the biosphere reserve context and its future legal protection.

1.3 THE BIOSPHERE RESERVE CONCEPT

1.3.1 Background

The first official reference to biosphere reserves was made in 1970 in the plan submitted to the General Conference of UNESCO for the launching of the MaB programme (UNESCO, 2002). Although the idea and the term "biosphere reserves" were launched, no clear understanding of their exact role and nature existed as emphasis was largely on the conservation of natural resources. This accounts for the fact that the first biosphere reserves registered in the 70s, were national parks and not a biosphere reserve as we currently understand the concept.

It was within this context that the MaB council requested that UNESCO officially set up an advisory committee on biosphere reserves in order to establish clear procedures for listing new sites. Under the advisory committee's leadership an International Conference on Biosphere Reserves was held in Seville (Spain) in 1995 where stock-taking led to the adoption of the Seville Strategy and Statutory Framework which paved the way for future biosphere reserve developments. A vision was formulated to regard biosphere reserves as a concept that should not form islands in a world that is increasingly affected by severe human impacts, but that they should become theatres for reconciling people and nature because by bringing knowledge of the past to the needs of the future, they can demonstrate how to overcome the problems of the sectoral nature of our institutions (UNESCO, 2002). In short, biosphere reserves are much more than protected areas.

The first biosphere reserve was designated in 1976 and by mid 2001 there existed a network of 393 reserves in 94 countries (UNESCO, 2002).

1.3.2 The Concept

Nominated by governments, biosphere reserves are areas of terrestrial, coastal or marine ecosystems that are internationally recognised under UNESCO's MaB

programme. Each biosphere reserve is intended to fulfil the following three complementary functions (UNESCO,1996).

- a conservation function to contribute to the conservation of landscapes, ecosystems, species, and genetic variation;
- a development function to foster economic and human development which is socio- culturally and ecologically sustainable;
- a logistic support function to support demonstration projects, environmental education and training, research, national and global issues of conservation, and sustainable development.

By combining the three functions biosphere reserves become living examples of the integration of sustainable development and conservation through a bioregional and integrated land use approach, as Figure 1 indicates:

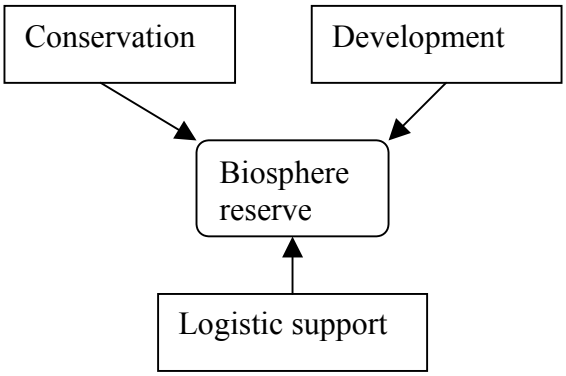

Figure 1: The three functions of a biosphere reserve

To implement the above mentioned functions, biosphere reserves are organized into three interrelated zones known as the core area, the buffer zone and the transition area. Bridgewater *et al.* (1998) refer to biosphere reserves as a special kind of conservation area, traditionally a nested series of zones with different management objectives (core area, buffer zone and transition area), designated to include people within an overall conservation framework.

UNESCO (2002) describes these zones as follows:

Core areas - securely protected sites for conserving biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses.

Buffer zones – they usually surround or adjoin the core areas and are used for co-operative activities compatible with sound ecological practices.

Transition zone - a flexible zone which may contain a variety of agricultural activities, settlements and other uses, and which local communities, management agencies, scientists, non-governmental organizations, cultural groups, economic interests, and other stakeholders work together to manage and sustainably develop the area's resources.

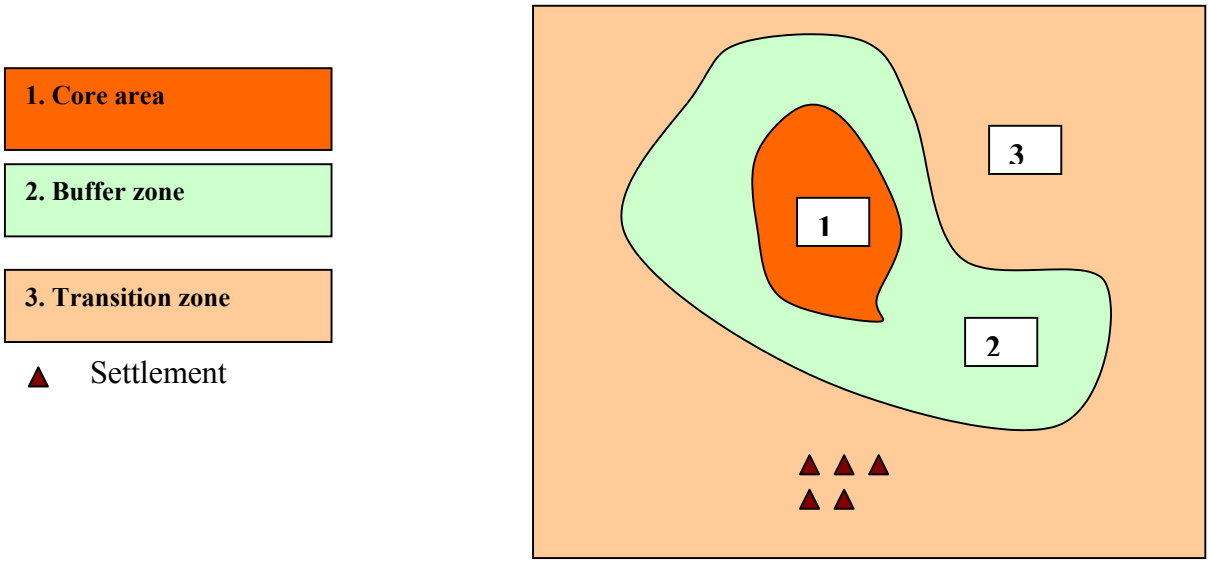

Figure 2: Example of the zonation pattern of a biosphere reserve

According to the Statutory Framework (UNESCO,1996), each biosphere reserve should be subjected to a periodic review every ten years, based on a report prepared by the concerned authority, on the basis of the criteria of Article 4 in the Statutory Framework. The International Coordinating Council (ICC) examines the periodic reports. If the ICC finds that the biosphere reserve does not conform to the seven criteria as contained in article 4, it may recommend to the State involved to implement certain measures that might lead to de-registration. The maintenance and

development of a biosphere reserve, therefore, pose enormous responsibilities for all the involved parties.

1.4 OBJECTIVES OF THE STUDY

Due to the fact that a biosphere reserve is a relatively new concept in South Africa, and that the Limpopo Province presents excellent opportunities to implement the concept as a land use model for ecotourism development, it will be appropriate to conduct a study to investigate the concept and the practical implementation thereof within a South African context. This study could further contribute towards future planning and policy initiatives.

Therefore, the main objectives of this study are:

a) to apply the biosphere reserve concept to the Waterberg area,
b) to specifically look at the development function in the Waterberg Biosphere Reserve of which ecotourism forms the major component, and
c) due to the fact that biosphere reserves are a relatively new protected area classification in South Africa, the study will investigate current legislation that could be used to secure registered biosphere reserves in future.

1.5 METHODOLOGY

1.5.1 Introduction

It could probably be said that no two biosphere reserves will ever present exactly the same configuration, face the same problems, and require the same management measures since each one of them deals with a specific geographical, historical, human and socio-economic situation (Batisse, 1986). There is further more no single way or written protocol for putting the biosphere reserve concept into practice. Indeed, one of the great strengths of the concept is that it could be adapted to a whole range of local conditions and settings in different parts of the world.

The only guiding documentation that currently assists in defining the biosphere reserve concept in which such a biosphere reserve must function is the Seville Strategy and Statutory Framework of the World Network of Biosphere Reserves (UNESCO, 1996). This document recommends the action to be taken for the future

development of biosphere reserves and sets out the conditions for the functioning of biosphere reserves.

Due to the fact that South Africa only started in 1995 to participate in UNESCO's MaB programme, and as no registered biosphere reserves had existed in South Africa at that time, no comparisons could be made to evaluate the implementation of the concept during the participation process in the proposed Waterberg Biosphere Reserve which started at the end of 1996. (The Kogelberg Biosphere Reserve was registered in 1998, and became the first biosphere reserve registered in South Africa. Its unique conservation value - representing the Fynbos biome made this biosphere reserve a valuable addition to the World Network of Biosphere Reserves (UNESCO, 2002). Not one other biosphere reserve represented this floral kingdom at that stage). The Waterberg Biosphere Reserve differs from the Kogelberg in almost every aspect and therefore could not be compared. Apart from the conservation features and administrative structures, the real difference is found in the population dynamics and socio-cultural aspects. It is believed that the Waterberg Biosphere Reserve presents a much more African cultural component. The only guiding documents in the establishment of the Waterberg Biosphere Reserve, therefore used, were the above-mentioned Seville Strategy and Statutory Framework for Biosphere Reserves.

1.5.2 The beginning of an idea.

In July 1996 I was sent on a study tour to the United States to explore the biosphere reserve concept by investigating ways in which to apply it in the Limpopo Province. With a better understanding of the concept and a broad knowledge of the dynamics within the Limpopo Province, this study tour convinced me of the suitability of the Waterberg area as an ideal pilot project to establish a biosphere reserve.
The Waterberg was identified for the following reasons:

- Its unique biodiversity and relatively "under researched" components;
- Its cultural diversity;
- Its population dynamics;
- The organized private and community structures that were in place;
- The land use profile and vastness of the area; and the
- Eagerness of the local people to participate in such a project.

Other areas e.g. the Soutpansberg and Drakensberg were identified as possible biosphere reserve sites too – especially when considering the unique biodiversity of these mountains. However, the population dynamics had a direct influence on the time it needed to get such a project from the ground. In these two areas the communities and private landowners had not yet been organized into representative structures. The participation process in formalizing these structures would have taken a long time, especially when considering the fact that parts of the Drakensberg have the highest human population density in the Province. Further, since the involvement of local communities in resource management was a relatively new idea at that time, the implementation of a concept unknown to the communities, would undeniably have been time-consuming.

However, the implementation of the biosphere reserve concept have since started in these areas through the initiatives of forming conservancies and community structures so that both these areas are currently zoned as potential biosphere reserves in the provincial tourism strategy of the Department of Finance, Economic Affairs and Tourism (Limpopo Province, Department of Finance, Economic Affairs and Tourism, 1999a).

As mentioned, Kogelberg was registered as the first biosphere reserve in South Africa (UNESCO, 2002) with the Waterberg Biosphere Reserve the first savanna biosphere reserve with the involvement of a vast rural community component. This makes the Waterberg an ideal pilot site for exploring the biosphere reserve concept within an African context.

1.5.3 The strategy

To implement a project of this magnitude one must ensure that the main stakeholders in the area are convinced that such a project would benefit the area and its inhabitants. To obtain the necessary relationship of trust, the main community leaders were identified, namely the then Chairperson of the Waterberg Nature Conservancy, Mr Clive Walker, and the Transitional Local Councillor of Bakenberg, Mr Gilbert Pila. The then government authorities involved were the National Parks Board and the provincial Department of Environmental Affairs, both of whom were very positive and supportive of the project.

At the end of 1996 I started negotiations with Mr Walker (Walker, 1998) and Mr Pila. A common vision was shared and an action plan drafted on how to take the process forward. A small technical team was thus formed to do so. Its main objectives were:

- to identify all the relevant role players;
- to involve and inform them about the biosphere reserve concept and its potential benefits;
- to establish a representative steering committee to drive the process; and
- to complete the nomination for international recognition from UNESCO's Man and Biosphere Reserve programme. This involved considerable information gathering and data processing. In Chapter 3 the seven criteria of a biosphere reserve as determined by UNESCO are applied to the Waterberg that indicate the wide range of information that was needed as well as the processes that should have been in place before the nomination could be finalised.

To achieve the above mentioned objectives the following process was facilitated:

- Information gathering of all aspects pertaining to the Waterberg.
- Identification and involvement of all the relevant stakeholder groups to ensure full participation.
- Detailed inventories of all the actual and potential stakeholders.
- Internal discussions with each group.
- Stakeholder analysis which determined each stakeholder's future role in the biosphere reserve.
- Information sharing and awareness campaigns.
- Helping stakeholders organize.
- Meetings and workshops to build bridges amongst stakeholders.
- Set up a collaborative management agreement.
- Determine a common vision and objectives.
- Receive endorsements of all the stakeholders involved to continue with the project.
- Finalise the nomination form and submit it to UNESCO via the National Department of Environmental Affairs and Tourism.

The role players involved consisted of local and provincial political leaders, private landowners, the tourism sector, government departments, traditional leaders, and community representatives from 26 rural villages. This led to the completion of the nomination form and the endorsement of the National Minister of Environmental Affairs and Tourism in 2000. In March 2001, the Waterberg Biosphere Reserve received its international status, thereby becoming the first savanna biosphere reserve registered in southern Africa.

1.5.4 Consolidation and updating of information

The information gathered in 1996 and 1997 was consolidated so that it could be incorporated into the study material. However, due to the study's specific reference to ecotourism and legal documentation, a vast amount of new information needed to be gathered. Information from communities and landowners was updated through new questionnaires to ensure that the information in the biosphere reserve reflects the most recent data.

Information pertaining nature reserves (core areas) was obtained from departmental files and verbal discussions with reserve/park managers. Before 1994, the nature reserves were managed by five different administrations (the Lebowa, Gazankulu, Venda governments, the Development Aid, and the Transvaal Provincial Administration). In 1994 the Department of Environmental Affairs and Tourism was formed with the responsibility of managing these resources. This department has been transformed twice since then, an inefficient filing system currently exists. Information was, therefore, mainly obtained from personal files and the questionnaire that were handed out to the reserve managers.

a) Literature Surveys

Due to the relatively unknown concept (especially within an African context) and its functional implementation various literature sources pertaining the biosphere reserve concept were obtained. As a large number of these publications concerning the concept are not readily available in South Africa, they had to be obtained directly from UNESCO or the IUCN.

The Internet and website addresses of UNESCO were often used since only a small number of publications pertaining to our local biosphere reserve initiatives exist.

In the assimilation and collation of general data pertaining the Waterberg area, even less published literature is available. Data were thus assimilated from masters and doctors theses and documentation (policies, business plans and economic studies) available from departmental divisions in provincial and national authorities.

Articles, textbook publications and seminar information pertaining to ecotourism were obtained as well including relevant legal documentation (on provincial and national level) e.g. acts, bills and policies required for the study.

b) Questionnaires

Questionnaires were compiled to obtain information from the five core areas and the buffer zone in the Waterberg Biosphere Reserve. The questionnaires from all five core areas were received and 24 of the 28 landowners in the buffer zone responded. These 24 landowners represent 146 157 hectares of the affected land.
The main reasons for distributing the questionnaires were:

- To update the data that were needed for completing the seven criteria of UNESCO to illustrate that the Waterberg Biosphere Reserve area complies with the set criteria.
- To determine the actual size of the core and buffer zones.
- To determine the type of activities currently undertaken within the core and buffer zones.
- To compare the ecotourism activities within the core and buffer zones with the principles of ecotourism.
- To determine the current economic contribution the buffer and core areas of the biosphere reserve makes to benefit the local economy and local communities.
- To determine the land use changes in the buffer zone over the last few years.

The questionnaire was divided into four sections.

Section A: Related to general farm information e.g. the registration name of the farm, the commercial name of farm, the size, how long a landowner had owned his property in the Waterberg, expansion of the property and whether he/she had changed the land use since becoming the landowner.

Section B: Intended to obtain information pertaining to the current tourism activities on the property. Questions that were asked related to the number of tourist beds, type of accommodation, markets targeted, tourism activities, including hunting, the game product currently being offered and ecological management.

Section C: Related mainly to the socio-economic aspects, for example:

- Current job opportunities on the property.
- Type of jobs provided.
- Recruitment of labour.
- Contracting out of services needed on farm.
- Provision of training and education programmes.
- Long term monitoring and research programmes.

Although information assimilated does not reflect the current tourism scenario in the whole of the Waterberg District area (an aspect that will be broadly dealt with in Chapter 2), it specifically refers to the scenario within the core and buffer zones of the biosphere reserve area.

Section D: To obtain all the contact details for all future correspondence.
Graphics, tables and figures were used to present the findings as obtained from the questionnaires.

c) Geographical Information System (GIS)

Due to the fact that the spatial configuration of the study area plays an important role in illustrating the biosphere reserve zonation and associated conclusions made, GIS mapping was done. To determine the current land use scenarios GIS data was assimilated to assist in compiling well-illustrated maps.

The information gathered through the questionnaires as discussed above and the information obtained from departmental data were added into the GIS system to ensure an updated version of the current scenario in the Waterberg area.

Information pertaining to current number of exemption farms in the Waterberg region was obtained from the different regional offices of the provincial Department of Finance, Economic Affairs and Tourism (currently responsible for Environmental Affairs). This increased the reliability of determining the land use pattern of the area.

The current zonation pattern in the Waterberg Biosphere Reserve was finally added to the GIS that clearly indicates the different zones and other major developments within the region.

d) Fieldwork

Due to the nature of the study, fieldwork mainly entailed talking to as many stakeholders within the Waterberg Biosphere Reserve area as possible, to obtain their views and aspirations, as well as to determine the viability of the concept in future. The groups addressed or interacted with ranged from politicians, government officials from all relevant departments, local authorities, local community structures, traditional leaders, and private land owners to organized groups, e.g. from agriculture, conservancy members and non government organizations.

These interactions mainly took place within meetings, workshops and one to one discussions. It must be noted that before the initiative started almost no contact had existed between the organized community structures from Bakenberg and the private landowners. Separate meetings were held with the different stakeholders until the time it was felt that all the stakeholders involved were well enough acquainted with the concept and that they respect the views and aspirations of the other stakeholder groups. It was only when the stakeholders could set a common vision to pave the way forward, that joint meetings could be organised.

More detailed work and strategies were also discussed and planned with the Waterberg Biosphere Reserve Management Committee (WBRMC).

Community structures representing the Masebe and Moepel areas form part of the Waterberg Biosphere Reserve Management Committee and are therefore, updated on all aspects pertaining the larger project. A separate working committee was established between the provincial Departments of Finance, Economic Affairs and Tourism, Land Affairs, Agriculture and various community representatives to streamline the process and devise an action plan to develop Masebe and Moepel as a community owned ecotourism project. All the recommendations within this study are therefore in line with the communities' needs and the working committee's mandate. As such the present study can indeed contribute to illustrating the way forward for the above mentioned initiative.