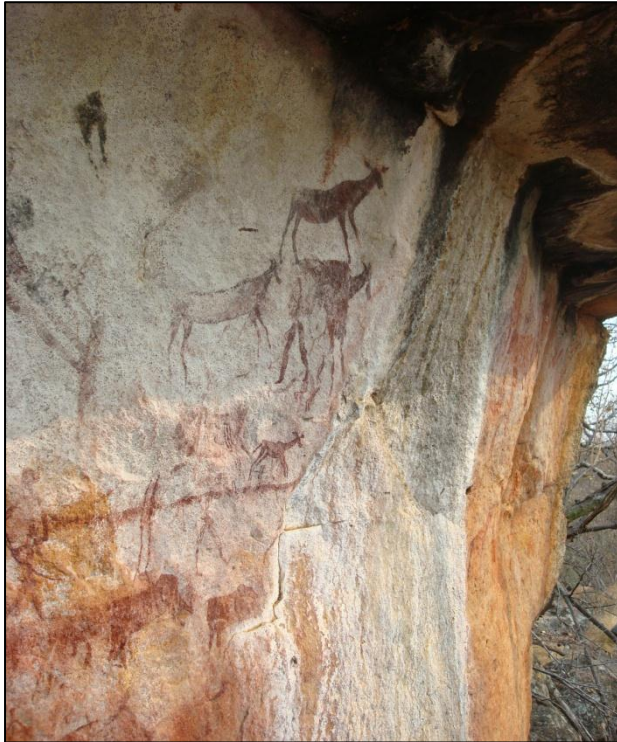


ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT

DESIRED STATE REPORT

AUGUST 2010



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT



Waterberg
District Municipality

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT

DESIRED STATE REPORT

AUGUST 2010

Produced by:
Environomics cc and NRM Consulting

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For:
The Department of Environmental Affairs,
In partnership with the Limpopo Department of Economic
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TABLE OF CONTENTS

	Page
1. INTRODUCTION	3
1.1 Purpose	3
1.2 Spatial context	3
1.3 Time perspective	3
1.4 Sectors	4
1.5 Sustainable development context	4
2. KEY ISSUES	5
2.1 Water availability and utilisation	5
2.2 Water quality and pollution	5
2.3 Air quality	6
2.4 Noise	6
2.5 Character of the Waterberg District	6
2.6 Waterberg Biosphere Reserve	7
2.7 Firewood	8
2.8 Change to the population structure and socio-economic conditions	8
2.9 Service infrastructure needs	8
2.10 Government	10
2.11 Planning and development	11
3. DESIRED STATE OF THE ENVIRONMENT AS EXPRESSED BY STAKEHOLDERS AND PUBLIC PARTICIPANTS	11
3.1 Introduction	11
3.2 Across all sectors	12
3.3 Game farming	12
3.4 Tourism	13
3.5 Conservation	14
3.6 Agriculture	15
3.7 Mining and industry	16
4. SENSITIVITY ANALYSIS AND ENVIRONMENTAL MANAGEMENT ZONES	16
4.1 Introduction	16
4.2 General environmental (ecological and landscape sensitivity)	17
4.3 Conservation planning priorities	17
4.4 Water production priority areas	18
4.5 Land capability for agriculture	18
4.6 Environmental management zones	18
5. DESIRED STATE FOR ENVIRONMENTAL MANAGEMENT ZONES	25
5.1 Zone 1: Conservation for research and protection focus areas with limited tourism	25
5.2 Zone 2: Tourism focus areas with a conservation setting	26
5.3 Zone 3: Game farming areas with conservation tourism focus	28
5.4 Zone 4: Game and cattle farming (including hunting) areas with commercial focus	30
5.5 Agriculture	30
5.6 Zone 5: Mining and industrial development focus area	31
5.7 Zone 6: Restricted mining focus areas in aesthetic and/or ecological resource areas	33

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT DESIRED STATE REPORT

5.8	Zone 7: Urbanisation focus areas and nodes	34
5.9	Zone 8: Rural settlement areas	36
5.10	Zone 9: Agriculture focus areas with a tourism component	37
5.11	Zone 10: Agriculture areas with a commercial focus	38
5.12	Zone 11: Major infrastructure corridors	39

List of Maps:

Map 1: Environmental Sensitivity	20
Map 2: Conservation Planning Priorities	21
Map 3: Water Production Priority Areas	22
Map 4: Agricultural Intensity Index	23
Map 5: Environmental Management Zones	24

Appendix 1: Comments / Responses submitted by stakeholders and the public : Public participation process

1. INTRODUCTION

1.1. PURPOSE

The future desired state of the environment must be based on what people across sectors and interests collectively believe can and should be achieved in the area, as well as what is possible and necessary in respect to the use of resources to move from a currently unsustainable development to sustainable development of the area in the long term. In this respect the spatial context, time perspective, needs and expectations of different groups and sectors and the sensitivity of the environment needs to be considered.

The sole purpose of this report is to serve as a vehicle for interaction and debate around what should be achieved in the district. The report includes the following sections:

- A distillation of key issues.
- A summary of the desired state of the environment as expressed by stakeholders and the public (submitted responses are included in Appendix 1).
- A sensitivity (priority) analysis of environmental factors.
- The preliminary identification of potential environmental management zones.
- Proposed desired state of the environment for each of the potential environmental management zones.

1.2. SPATIAL CONTEXT

The Waterberg District is a vast area with distinct areas of high and low population, rich and poor mineral wealth, relative high to very low rainfall, good to poor access to markets, vast natural areas to derelict degraded, spectacular landscape features to boring monotony etc. This context necessitates an approach that can maximise opportunities and minimise constraints for both conservation and development in a manner that will over time (30 to 50 years) result in an environment where sustainable development can start to become a reality instead of remaining an objective.

1.3. TIME PERSPECTIVE

From the Status Quo Report it is clear that the Waterberg District has a specific set of assets which can shape the future of the district. Some of these assets will require

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT DESIRED STATE REPORT

consumptive utilisation of natural assets to generate income over time and will eventually in the long term become depleted. In order to ensure that the economy and environment of the district does not collapse in the long term it will therefore be necessary to invest in non-consumptive use of natural resources to gradually replace activities that consume natural resources.

1.4. SECTORS

The key sectors in the Waterberg District include:

- Mining which currently accounts for more than 50% of the income of the district.
- Agriculture which is by far the largest employment sector in the district, despite its relatively low income.
- Game and cattle farming which occupies more land than any other sector in the district.
- Tourism, especially nature based tourism which is the fastest growing sector in the district with significant additional potential.
- Conservation of habitat, threatened species, unique landscapes and a rich cultural heritage.

1.5. SUSTAINABLE DEVELOPMENT CONTEXT

There are many definitions of sustainable development which may apply to a greater or lesser extent to the district. What is however important in this particular instance is that it should be focussed on all of the following, failing which the concept itself will in all likelihood not be sustainable in the district:

- It must ensure the adequate and appropriate protection of biodiversity in the district.
- It must ensure a continued and even increased income for the district and especially its poor communities.
- It must provide for increased levels of employment and better types of employment.
- It must provide incentives for the establishment of a more balanced population structure especially in respect to the age, health and general prosperity of the population.

2. KEY ISSUES

The key issues for this project were identified in three stages. In the first stage, key issues were identified by the project team, before the public participation process began. In the second stage, issues that arose during the first round of public participation were identified and included in the Public Participation Report (appendix to the Draft Status Quo Report). During the third stage, additional and persistent issues that arose during the second round of public participation were identified.

A summary of the key issues that were identified up to this point in the project is presented below.

2.1. WATER AVAILABILITY AND UTILISATION

The following key issues were raised:

- The relative scarcity of water in the Waterberg District is recognised by all sectors and groups in the district (throughout all phases).
- The protection of important water catchment areas from activities (dams, weirs, road/track/path crossings, removal indigenous vegetation, etc.) that may have a negative impact on water production and runoff, and in particular the upper parts of river systems, is a major concern (throughout all phases, but particularly in the second round of the public participation process).
- The need to determine and maintain ecological reserves for all the rivers in the area should be addressed as a matter of urgency (raised during the first and second rounds of the public participation process).
- The extensive occurrence of alien vegetation along certain waterways impacts negatively on water production and runoff (raised during the first round of the public participation process).
- Illegal dams and water extraction impacts negatively on water production and runoff (raised during the first round of the public participation process).

2.2. WATER QUALITY AND POLLUTION

The following key issues were raised:

- Water pollution was identified as one of the major issues in the district (during all phases). Causes of water pollution include:
 - Failing of municipal sewage works (biggest concern);

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT DESIRED STATE REPORT

- Lack of proper sewage systems and management at lodges and tourism facilities on farms and game reserves in the area;
 - Other sources mentioned include agricultural pesticides and fertilisers as well as polluted water runoff from industries and mines.
- The quality of water for human consumption is an issue in especially the rural settlements as well as some of the small towns (during all phases).

2.3. AIR QUALITY

The following key issues were raised:

- Potential significant negative changes in the air quality of the district and the Lephalale area in particular, is likely to occur in future due to the development of the Lephalale Coal Field (LCF) (remained an issues through all phases).
- Current air pollution sources of concern are:
 - Dust from mines, quarries, brickworks, spoil/overburden heaps and heavy vehicles using gravel roads.
 - The burning of solid waste at waste disposal sites, informal waste dumps and especially on farms and at tourism facilities in natural areas.
 - Smoke from vehicles especially heavy vehicles that drive through towns.
- The adoption of ambient air quality standards for specific areas of the Waterberg District is regarded as a priority (second round of the public participation process).

2.4. NOISE

The high noise level caused by heavy vehicles through towns where the roads (surface and movement patterns) are not designed for such traffic is a major issue, especially at night.

2.5. CHARACTER OF THE WATERBERG DISTRICT

The following key issues were raised:

- The visual impact of the power stations and other large scale developments such as mines in the area is significant and imprints an industrial element onto the bushveld character of the area.

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT DESIRED STATE REPORT

- The sudden, rapid, poorly planned (at least the perception) expansion of the Lephalale urban area resembles a typical “boom town” with all its uncertainties and inability to maintain the old values and expectations of residents (remained an issue throughout the process).
- The Waterberg (not the district as a whole) is gradually losing its wilderness character as a destination, as more and more enterprises and individuals focus on individual marketing and branding instead of promoting the Waterberg as one nature/wilderness destination (an issue in both rounds of the public participation process).
- Certain types of development in the Waterberg such as lifestyle and golf estates are damaging the wilderness character of the greater area in return for localised individual benefits (an issue in both rounds of the public participation process).
- Random and seemingly unplanned advertisement and ad hoc retail activities in towns, especially along the main roads, is damaging to the character of the area (second round of the public participation process).

2.6. WATERBERG BIOSPHERE RESERVE

- The Biosphere Reserve concept is generally supported.
- The public at large is uncertain in respect to the meaning and implementation of the Biosphere Reserve concept. The roles of government and the private sectors are unclear (issue raised during the first round of the public participation process).
- The reasons for the current boundaries of the Waterberg Biosphere Reserve are not clear. Core areas seem to be determined by currently conserved (private and public) areas while many important sensitive areas are not included (issue raised during the second round of the public participation process).
- There is an opinion that the Waterberg Biosphere Reserve, especially the core area, has a fragmented layout and that it should be consolidated into one continuous area (issue raised during the second round of the public participation).
- The possible expansion of the Waterberg Biosphere Reserve boundaries to incorporate more sensitive areas as well as areas with high nature orientated

tourism potential was also suggested (raised during the second round of the public participation process).

- It was suggested that the Waterberg Biosphere Reserve should be managed according to an Environmental Management Plan, which has clear boundaries, zonation and guidelines on acceptable activities (raised during the second round of the public participation process).

2.7. FIREWOOD

- The collection of firewood from natural vegetation is causing significant damage in certain areas (raised during the second round of the public participation process).

2.8. CHANGE TO THE POPULATION STRUCTURE AND SOCIO-ECONOMIC CONDITIONS

- The change to the population structure and socio-economic conditions, across the area and working both ways, is significant and results in major adjustments that people have to get used to in their daily lives (an issue through all phases).
- Towns (particularly Lephalale) have difficulty in dealing with the sudden influx of people into the area. The infrastructure is under pressure, especially in respect to waste disposal, sewage, housing, electricity and water supply (an issue in both rounds of the public participation process).
- The number of people flocking into the Lephalale area exceeds the number of available jobs. This leads to severe poverty and increased crime rates (raised during both rounds of the public participation process).
- The use of imported labour, “because the local population is unskilled” is a significant cause of tension in the area (raised during both rounds of public participation process).

2.9. SERVICE INFRASTRUCTURE NEEDS

Service infrastructure needs came out as the most pertinent issue during both phases of the public participation process. The issues include:

2.9.1. Roads

- The general condition of roads in the district is very poor. In many places the deterioration of the roads has progressed to such an extent that the roads are

hazardous to use. Coupled to high volumes of heavy vehicles on the main roads it has now become a matter of “life and death” on certain roads.

- The poor conditions of the roads have major negative effects for especially the tourism (difficult to transport visitors safely and efficiently) and agriculture (difficult to get goods to markets in and acceptable state) sectors but also for other economic sectors.
- The poor maintenance of road shoulders means that roads no longer serve as fire breaks which place crops and grazing across the district at risk.

2.9.2. Telecommunications

- Telecommunication is generally very poor in the Waterberg District. The existing infrastructure is overloaded and unreliable.
- Unreliable telecommunication impacts negatively on services such as banking, and internet communication.
- Bookings cannot be made from local tourism facilities which mean that booking agents in Gauteng are used by most operators in the tourism and hunting industries.

2.9.3. Electricity

- The electricity supply to certain areas of the Waterberg District is unreliable and power outages often occur.

2.9.4. Water and sewage

- The almost complete failure of sewage works in much of the area and the subsequent pollution of rivers and wetlands is a major concern for many.
- The provision of potable water to communities, especially rural communities is of concern especially in the light that ground water levels seem to be declining in many places.

2.9.5. Education and skills training

- The low level of education in the Waterberg District is a far reaching issue which hampers the development of the entire population of the area.
- The quality of education offered is considered to be well below standard. This impact on the ability of school leavers to integrate more readily into urban areas, or attend tertiary education facilities.

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT DESIRED STATE REPORT

- The need for skills training in the Waterberg District has been emphasised by several participants. Many of the local people are not considered for employment opportunities in the area, as they are considered unskilled.

2.9.6. Waste disposal

- Very few proper solid waste disposal sites exist in the Waterberg District. This makes disposing of waste legally very expensive, as it is necessary to transport it over a distance. There is no provision for hazardous waste which is transported to a facility in Gauteng.
- Most farms, lodges and tourism facilities have their own waste sites. These are often mismanaged and the burning of waste is a common occurrence.
- A strong desire for recycling to become the preferred destination for waste in the Waterberg District was expressed by various participants.

2.10. GOVERNMENT

- Better co-operation between the various government departments is needed (raised during both rounds of the public participation process).
- A long-term perspective and vision from government for the district is needed (raised during both rounds of the public participation process).
- Government procedures and regulations are too time consuming and difficult to follow (raised during both rounds of the public participation process).
- Government officials often display indifference to the public (raised during both rounds of the public participation process).
- There is a desperate need for more, better and faster implementation, monitoring and enforcement from government. No more regulation (raised during both rounds of the public participation process).
- Decisions should be made, based on what is best for the people and the area concerned. There is too much political interference in decision-making (raised during both rounds of the public participation process).
- The government must take responsibility for and act on the results of the EMF (raised during both rounds of the public participation process).

2.11. PLANNING AND DEVELOPMENT

- The development of suitable transport infrastructure, especially for the bulk transport of coal and ore, whether by road or rail, is a burning issue that should be addressed as a very high priority (raised during both rounds of the public participation process).
- Certain key roads should be upgraded in order to unlock the tourism potential of the area (raised in the first round of the public participation process).
- The possibility of further large dams in the area should be investigated as an alternative to importing water from other catchments (raised during the second round of the public participation process).
- The suggestion of infrastructure corridors was met with a positive reaction from all participants. However, technical issues should also be taken into account to ensure that needs could be met and that the corridors themselves do not sterilise minerals or productive land (raised during the second round of the public participation process).
- The uncertainty of the future of the area, especially in respect to mooted large scale development projects, is resulting in major socio-economic impacts (e.g. abnormally inflated land prices) and a general paralysis of decision-makers in government and in the private sector. Everybody seems to be waiting for everybody else to make decisions first. There is a need for a clear and transparent plan for the area that spells out what will happen and when (a key issue raised during both rounds of the public participation process).

3. THE DESIRED STATE OF THE ENVIRONMENT AS EXPRESSED BY STAKEHOLDER AND PUBLIC PARTICIPANTS

3.1. INTRODUCTION

This section illustrates what is important to the different sectors as conveyed by participants in the stakeholder and the public participation process. It is not always in line with what is generally expected and the focus of the desires expressed also often reflects needs and expectations of participants, rather than what people collectively would suggest the desired state should be. It is nonetheless important as it clearly shows that any future desired state must take the needs and expectations of people into account in order to be realistic and feasible.

3.2. ACROSS ALL SECTORS

All the sectors expressed a need for improvement in service infrastructure. It is also generally expected that these improvements should be government's contribution to the economic development of the area over the short term. Infrastructure improvements required are:

- The upgrade of roads to levels that is appropriate to the traffic that uses them.
- The upgrade of the rail network to fulfil the bulk transportation needs of the mining and industrial sector and to take as much bulk transportation off the roads.
- The securing and provision of water for the development of the area including mining, electricity generation municipal needs and farming allocations.
- The upgrade and proper management of sewage treatment works of municipalities to enable them to comply with the relevant standards.
- The improvement of the capacity and quality of the telecommunication network in the area, especially in respect to businesses such as banks.
- The establishment of a more reliable electricity network that is less prone to regular outages (caused by lightning etc.).

3.3. GAME FARMING

The game farming community is being represented by various sub-groups whose activities are dictated by the specific "markets" they operate in. These sub-groups include:

- "Weekend farmers" who represent individuals, groups or organisations that own farms with game, primarily for their own recreation and enjoyment. Hunting is often a secondary activity and is mostly focussed on meat for own use.
- Residential farmers who represent persons who stay on farms on which they keep game, often in conjunction with cattle. Hunting is mostly for stock control and own use.
- Private "conservation areas" where the focus is on commercial tourism in natural environments. In these areas the focus of hunting is mostly on the management of game stock.

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT DESIRED STATE REPORT

- Trophy hunting areas where the focus is on providing high quality hunting stock with upmarket facilities to cater for the discerning needs of high end customers.
- Game breeders where the focus of the activities is on the breeding and raising of game stock for re-sell.
- A number of combinations of the above.

Due to the strict regulations that are applied many (not all) game farmers are of the opinion that they are unfairly discriminated on by government, which makes their industry unnecessarily difficult and expensive to the extent where it is becoming difficult to operate. They operate and want to be seen as farmers who provide a certain product to the market and not as conservation agencies that generate a by-product. Conservation of land is a secondary benefit that is derived because game farmers have to manage their farms properly to ensure sustainable businesses. There is therefore a need for a change in the regulations that are used to manage the industry in order to also meet the “commercial farming” needs of game farmers, while preserving only the necessary controls.

There is a need to establish a unique brand for South African game meat and the expansion and promotion of game meat as a high quality product that can become a profitable and sustainable industry in the Waterberg District.

3.4. TOURISM

The tourism industry in the Waterberg District has a rich offering of landscape, biological and cultural features with a potential to develop a high quality tourism product for a variety of markets. It is also very favourably located in relation to Gauteng which makes it an ideal area for weekend and short holiday breakaways. Tourism destinations and activities in the Waterberg District include:

- Lodges in nature reserves
- Hot springs with spas
- Recreation lodges/hotels with recreational facilities
- Sectional title ownership on conservation farms
- Scenic routes
- Cultural villages and traditional hospitality venues

- An abundance and variety of landscape, biological and cultural features and areas.

There is a need for a strong “Waterberg brand”, supported by government that promotes the area as a whole, as a destination. This should include a strategy, guidelines and implementation plans to improve the image of the towns in the area to the extent that they can also fit in and benefit from the “Waterberg brand”.

Although tourism is already an important sector in the Waterberg District, there is a need for a long term strategy to build the full potential of the tourism product over time to become a key driver in the economy of the area, in respect to both income and employment generation.

The maintenance and preservation, including labelling and descriptions of historic building, artefacts and cultural historic features should be better funded and supported by government.

An education programme should be developed and implemented for the people in the district to make them aware of the importance of tourism in the area and how they can contribute to make it a success. This should also include the training of guides.

3.5. CONSERVATION

3.5.1. General

Conservation areas in the Waterberg District include:

- A national park
- Provincial reserves
- Private conservation areas (some of them quite large)
- A world heritage site and
- A Ramsar site.

Much of the current attention in respect to conservation expansion seems to be focussed on the Waterberg Biosphere Reserve and the expansion thereof onto private property.

There is very little public investment into the expansion of conservation areas, and the focus of the conservation authorities is therefore on the strict management of development and change on private land which could impact negatively on the

natural environment, whether such properties fall within or outside conservation areas. Education of landowners and reliance on conservation of private land is, however not enough. This approach is at least partly to blame for the currently strained relationship between conservation authorities and certain game farmers.

There is a clear need for much higher levels of public investment into conservation in the area over the medium term (up to 30 years from now). Sources for such capital injection may range from allocations from the Global Environmental Facility to compensative investments from large development projects in the area.

Certain conservation NGO's also proposed a much more hard-line "sustainable development" approach to conservation that should restrict and even stop further development of the area in total in order to achieve a truly sustainable state (for biodiversity) in the area. The political and practical implications of this suggestion are however, obvious.

3.5.2. Waterberg Biosphere Reserve

The Waterberg Biosphere Reserve concept has been developed over many years and is in several respects the model for this form of conservation in South Africa. It is generally accepted and also supported by the sectors in the Waterberg District.

There is a need to support and develop the Biosphere Reserve further. The current mismatch between important ecological and landscape areas in relation to the different zones of the Biosphere Reserve needs to be addressed.

An Environmental Management Plan to manage the Waterberg Biosphere Reserve has been proposed and it was suggested that it be linked to much stricter compliance monitoring and enforcement. Landowners should also be educated in respect to the implementation and advantages of the Environmental Management Plan.

The Biosphere Reserve should be promoted as a core eco-tourism element in the wider Waterberg area.

3.6. AGRICULTURE

Agriculture in the area is important for the production of food for the expanding markets in parts of the district and also for markets nearby Gauteng. In addition, agriculture remains the most important employment sector in the district and as such has an important function in the stability of the social structure of the area. For these reasons it is important that current agricultural practices, especially intensive

agriculture be maintained and expanded onto additional high potential agricultural land in future.

3.7. MINING AND INDUSTRY

Mining is the cornerstone of the economy of the district and currently accounts for more than 50% of the GDP of the area. It is highly unlikely that this contribution will decrease over the next 60 to 100 years. The mining industry is therefore important for the development of the district over the medium to long term. The mining and industry sectors desire to see skills development and training programmes implemented.

There is a need for better coordinated government, especially in respect to permitting (including licensing authorisations etc.). The processes should also be more efficient and integrated to avoid long waiting periods.

There is a desperate need for clarity on what government's long term plans are in respect to the further development of the Waterberg Coal Field, especially in relation to electricity generation and potential liquid from coal processes. Commitments from government to supply adequate water, transport infrastructure and other necessary infrastructure is also required to reduce the risks of private enterprise and to make proper planning possible.

4. SENSITIVITY ANALYSIS AND ENVIRONMENTAL MANAGEMENT ZONES

4.1. INTRODUCTION

The sensitivity analysis together with the structural spatial elements (towns, villages, mineral resources, economic activities, etc.) identified in the status quo stages and the desired state as expressed in the previous section of this report, provides the basis for the development of Environmental Management Zones (next section of the report).

Based on the findings contained in the draft Desired State Report it was decided to do further analysis on the following aspects in order to refine a spatial base that would be relevant and accurate for the identification of Environmental Management Zones:

- General environmental sensitivity (ecological and landscape).

- Conservation planning (current protected areas and potential expansion areas).
- Water production priority areas.
- Agricultural intensity (footprint).

4.2. GENERAL ENVIRONMENTAL (ECOLOGICAL AND LANDSCAPE) SENSITIVITY

The purpose of determining the environmental sensitivity is to delineate the boundaries of areas that are important from a biodiversity and landscape conservation perspective, irrespective of the relative values of constituent parts for conservation (it is either important or not). Based on the Status Quo Report the following elements were considered “sensitive” in this assessment:

- The occurrence of vegetation types of conservation importance (i.e. vegetation types that are well represented in conservation areas have a low conservation status, while those that have been reduced by transformation and have a low representation in conservation areas will have a high conservation value).
- Occurrence of threatened species.
- Centres of endemism.
- Existing protected areas (including the Waterberg Biosphere Reserve).
- Occurrence of perennial and non-perennial rivers and streams including a 32m buffer on each side of the rivers or streams.
- Sensitive or high value (aesthetic) landscapes including escarpments, high mountains and hills, mountains and hills, parallel hills, enclosed plains, undulating plains, incised river valleys and hills as well as terraces.

This sensitivity is indicated on Map 1: Environmental Sensitivity Index, and reflects the relative sensitivity of the different areas in the district in detail. No attempt was made to place a weighted value on the various input elements and they were either considered sensitive or not.

4.3. CONSERVATION PLANNING PRIORITIES

The purpose of including a data layer depicting current conservation planning, Map 2: Conservation Planning Priorities, is to make a comparison between what is being

conserved or being planned to be conserved in terms of current plans and the environmental sensitivity discussed under point 4.2.

4.4. WATER PRODUCTION PRIORITY AREAS

Given the relatively low rainfall in the area but the unique localised catchment formed by the Waterberg Mountain, it was also necessary to consider the water production as depicted in Map 3: Water Production Priority Areas, as a key element for determining Environmental Management Zones. This is especially important as much of the current development and proposed development in Lephalale depends on water generated in the Mokolo River Catchment, at least in the short term.

4.5. LAND CAPABILITY FOR AGRICULTURE

Agriculture is an important sector in the district that is dependent on natural resources (soils and water). It also makes a significant contribution to the rural character of the district and in places it forms a visual and physical link between sensitive natural areas. It is therefore a strong giving element that has to be considered in the delineation of the environmental management zones. The intensity of agriculture, as depicted on Map 4: Agricultural Intensity Index was used to identify core agricultural areas (hubs).

Grazing areas have not been considered as it represents the default activity (what is left) in the district.

4.6. ENVIRONMENTAL MANAGEMENT ZONES

The following environmental management zones have been identified and are delineated on Map 5: Environmental Management Zones:

- Zone 1: Conservation for research and protection focus areas with limited tourism
- Zone 2: Tourism focus areas within a conservation setting
- Zone 3: Game farming areas with conservation tourism focus
- Zone 4: Game and cattle farming (including hunting) areas with commercial focus
- Zone 5: Mining and industrial development focus areas
- Zone 6: Restricted mining focus areas in aesthetic and/or ecological resource areas

ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT DESIRED STATE REPORT

- Zone 7: Urbanisation focus areas and nodes
- Zone 8: Rural settlement areas
- Zone 9: Agriculture focus areas with a tourism component
- Zone 10: Agriculture areas with commercial focus
- Zone 11: Major infrastructure corridors

**ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT
DESIRED STATE REPORT**

Insert Map 1: Environmental Sensitivity

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DESIRED STATE REPORT**

Insert Map 2: Conservation Planning Priorities

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DESIRED STATE REPORT**

Insert Map 3: Water Production Priority Areas

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DESIRED STATE REPORT**

Insert Map 4: Agricultural Intensity Index

**ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT
DESIRED STATE REPORT**

Insert Map 5: Environmental Management Zones

5. DESIRED STATE FOR ENVIRONMENTAL MANAGEMENT ZONES

5.1. ZONE 1: CONSERVATION FOR RESEARCH AND PROTECTION FOCUS AREAS WITH LIMITED TOURISM

5.1.1. Water utilisation

Water extraction from the natural system in this zone should be kept to an absolute minimum. Preservation of the water systems in the most natural state is desired. No additional damming of rivers or stream should be allowed in this zone.

5.1.2. Water quality

Water quality should be kept as clean and natural as possible to prevent ecological damage and to ensure that the quality of the water is maintained for downstream use. Implementation of legislation, compliance monitoring and enforcement should be a high priority in this zone. Where polluting sources from sewage disposal is suspected, it must be investigated and appropriate remedial measures should be taken.

5.1.3. Conservation

Conservation is the priority land-use in this zone and should be promoted as the core activity in every instance.

5.1.4. Tourism

Limited, low impact tourism facilities may be allowed in this zone provided that it does not have a negative impact on the conservation priority. Existing tourism facilities that do not comply to this zone may continue, provided that such activities are not expanded.

5.1.5. Agriculture

Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.

5.1.6. Game and cattle farming

Game and cattle farming in this area must conform to the conservation requirements for this zone including the carrying capacity and the suitability of game species.

5.1.7. Business and retail

Business and retail is not desired in this zone and should be limited to existing facilities.

5.1.8. Service infrastructure

Service infrastructure should be limited to what is necessary but should nonetheless be of a good quality. Roads should be kept to the minimum standard necessary but should be well maintained and safe to use. The maintenance of certain key existing roads as scenic routes should be encouraged.

5.1.9. Solid waste disposal

Solid waste disposal is not desired in this zone. A programme should be established to deliver pre-sorted solid waste generated in this area to designated depots from where reuse, recycling and composting can be implemented.

5.1.10. Sewage treatment and disposal

The disposal of any untreated sewage in this zone where there is a concentration of people in facilities such as lodges should not be allowed.

5.1.11. Employment

Employment in the area should focus on conservation and related employment opportunities.

5.1.12. Housing

Housing is not desired in this zone except for Vaalwater where as many as possible employees in the area should be accommodated.

5.2. ZONE 2: TOURISM FOCUS AREAS WITHIN A CONSERVATION SETTING

5.2.1. Water utilisation

Water extraction from the natural system in this zone should be kept to an absolute minimum. Preservation of the water systems in the most natural state is desired. No additional damming of rivers or stream should be allowed in this zone.

5.2.2. Water quality

Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced and policed.

5.2.3. Conservation

Conservation is the secondary focus of this zone. As such, conservation legislation should be observed and enforced. Conservation areas should be well maintained to encourage further tourism to the zone.

5.2.4. Tourism

Tourism within a conservation/natural setting should be the focus of activities and development in this zone. Sufficient facilities to accommodate tourist, at various levels, from basic to luxurious should be invested in. A possible unified brand for the Waterberg District's tourism and a definitive marketing strategy should be implemented to ensure the growth of the tourism industry in this zone, and the Waterberg District overall.

5.2.5. Agriculture

Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.

5.2.6. Game and cattle farming

Game and cattle farming in this zone should not detract from the tourism experience of the zone.

5.2.7. Business and retail

Large scale commercial business and retail is not desired in this zone. Instead, business that would promote and enhance tourism is desired. Such business could include curio shops, restaurants etc.

5.2.8. Service infrastructure

Service infrastructure should be limited to what is necessary but should nonetheless be of a good quality. Roads should be kept to the minimum standard necessary but should be well maintained and safe to use. The maintenance of certain key existing roads as scenic routes should be encouraged.

5.2.9. Solid waste disposal

Solid waste disposal is not desired in this zone. A programme should be established to deliver pre-sorted solid waste generated in this area to designated depots from where reuse, recycling and composting can be implemented.

5.2.10. Sewage treatment and disposal

The disposal of any untreated sewage in this zone where there is a concentration of people in facilities such as lodges should not be allowed.

5.2.11. Employment

Employment in the zone should be focused mainly in the tourism, hospitality and conservation sectors. Skills training programmes supported by the government and private sector is strongly desired.

5.2.12. Housing

Housing should be limited to what is necessary in this zone. Housing in this zone should accommodate those employed at the tourism facilities and conservation areas.

5.3. ZONE 3: GAME FARMING AREAS WITH CONSERVATION TOURISM FOCUS

5.3.1. Water utilisation

Water should be used sensibly as a scarce resource in this zone.

5.3.2. Water quality

Water quality in this zone should meet the applicable standards.

5.3.3. Conservation

Conservation is one of the secondary focuses of this zone. Conservation should be integrated with game and cattle farming in this area in order to preserve the natural character.

5.3.4. Tourism

Tourism is one of the secondary focuses of this zone. Investment in tourism facilities that do not affect the conservation/natural setting negatively should be encouraged in this zone.

5.3.5. Agriculture

Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.

5.3.6. Game and cattle farming

Game and cattle farming should be the primary focus of activities in this area, but in a way that does not affect the conservation/natural setting and tourism in the zone negatively.

5.3.7. Business and retail

Large scale commercial business and retail is not desired in this zone. Instead, business that would promote and enhance tourism is desired. Such business could include curio shops, restaurants etc.

5.3.8. Service infrastructure

There should be no large infrastructure corridors running into or through this zone, such as pylons and major roads. Access roads should be well maintained in order to encourage tourism, but should remain small, single lane roads to limit heavy traffic and associated pollution.

5.3.9. Solid waste disposal

Large scale solid waste disposal is not desired in this zone. A central point for waste collection and recycling should be determined, such as within or near an existing town or settlement. All waste from such tourist facilities should be brought to this point to be recycled.

5.3.10. Sewage treatment and disposal

Large scale sewage treatment plants and disposal sites are not desired in this zone. However, sewage from lodges and other tourism facilities need proper management in order to prevent sewage pollution.

5.3.11. Employment

Employment in the zone should be focused mainly in the game farming, tourism, hospitality and conservation sectors.

5.3.12. Housing

Urban expansion including life style estates would be discouraged for this area.

**5.4. ZONE 4: GAME AND CATTLE FARMING (INCLUDING HUNTING)
AREAS WITH COMMERCIAL FOCUS**

5.4.1. Water utilisation

Water should be treated as a scarce resource in this area.

5.4.2. Water quality

Water quality in this zone should not be allowed to deteriorate.

5.4.3. Conservation

Although nature conservation is not the focus in this area, farms should be managed in such a way that the natural vegetation cover is maintained in a good sustainable condition.

5.4.4. Tourism

Tourism in the form of commercial hunting lodges and game viewing should be encouraged as secondary activities in this zone.

5.5. AGRICULTURE

Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.

5.5.1. Game and cattle farming

Commercial game and cattle farming is the focus of this zone. This includes commercial hunting. The focus of this zone is farming in order to make a profit, with conservation of nature as a secondary benefit.

5.5.2. Business and retail

Large scale commercial business and retail is not desired in this zone. Businesses should adhere to local planning requirements.

5.5.3. Service infrastructure

Service infrastructure should be limited to what is necessary but should nonetheless be of a good quality. Roads should be kept to the minimum standard necessary, but should be well maintained and safe to use.

5.5.4. Solid waste disposal

Solid waste disposal is not desired in this zone. A programme should be established to deliver pre-sorted solid waste generated in this area to designated depots from where reuse, recycling and composting can be implemented.

5.5.5. Sewage treatment and disposal

The disposal of any untreated sewage in this zone (where there is a concentration of people in facilities such as lodges) should not be allowed.

5.5.6. Employment

Employment in the zone should be focused mainly in the game farming, cattle farming, hunting, and hospitality sectors. Skills training programmes for local people, supported by the government and private sector, is desired.

5.5.7. Housing

No urbanisation of any kind should be allowed in this zone.

5.6. ZONE 5: MINING AND INDUSTRIAL DEVELOPMENT FOCUS AREA

5.6.1. Water utilisation

Larger scale water utilisation will be necessary to support mining and industrial activities in this zone. Activities should not be allowed to proceed unless the necessary water allocations and permits are in place.

5.6.2. Water quality

Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced. Heavy penalties should be imposed on pollution caused by mining and industry.

5.6.3. Conservation

Conservation of natural habitat should be the primary focus of required buffer areas around mining and industrial sites. Preference should be given to catering for threatened species that may occur in this zone.

5.6.4. Tourism

Not applicable.

5.6.5. Agriculture

Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.

5.6.6. Game and cattle farming

Game and cattle farming should be the default activity in parts of the zone that is not used for mining or industrial purposes.

5.6.7. Business and retail

Not applicable.

5.6.8. Service infrastructure

Service infrastructure should be sufficient to support both mining and other developments in the area. Transport infrastructure is of particular importance. A strategy for the transport of coal out of the Waterberg District, by rail or by road should be carefully planned. The current infrastructure is insufficient.

Service infrastructure development in the area should also cater for the influx of people associated with the new developments in these zones.

5.6.9. Solid waste disposal

All solid waste should be discarded at permitted solid waste sites. Sufficient permitted solid waste disposal sites should be established at key locations to deal with the waste generated in this zone. Strict enforcement and proper management at such sites is necessary to minimise negative impact. Recycling collection points should be encouraged wherever possible.

5.6.10. Sewage treatment and disposal

Sewage treatment plants and disposal sites capable of properly dealing with the sewage and waste water generated in the area is necessary to prevent pollution of rivers and streams.

5.6.11. Employment

Employment in the zone should be focussed on providing opportunities for local unemployed people. This should go hand in hand with appropriate education and training.

5.6.12. Housing

Housing the area should preferably be concentrated in urban areas where the benefits of high densities can be exploited in respect to education facilities, health care facilities and the efficient provision of municipal services.

5.7. ZONE 6: RESTRICTED MINING FOCUS AREAS IN AESTHETIC AND/OR ECOLOGICAL RESOURCE AREAS

5.7.1. Water utilisation

Water utilisation should be kept to a minimum. Ecological water requirements should be met at all times.

5.7.2. Water quality

Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced. Heavy penalties should be employed to punish users who pollute water sources.

5.7.3. Conservation

Conservation of ecological and/or aesthetic resources should be a prerequisite to mining and industrial development in the area.

5.7.4. Tourism

Tourism should be encouraged as a secondary activity especially in respect to cultural tourism.

5.7.5. Agriculture

Agriculture is not desired in this zone. Existing agricultural activities may continue provided that such activities are not expanded.

5.7.6. Game and cattle farming

Game and cattle farming is a secondary activity in the areas.

5.7.7. Business and retail

Not applicable.

5.7.8. Service infrastructure

Service infrastructure should be sufficient to support mining in the area. Transport infrastructure is of particular importance. The impact of heavy vehicle traffic especially through towns should be limited.

5.7.9. Solid waste disposal

All solid waste should be discarded at permitted solid waste sites. Sufficient permitted solid waste disposal sites should be established at key locations to deal with the waste generated in this zone. Strict enforcement and proper management at such sites is necessary to minimise negative impact. Recycling collection points should be encouraged wherever possible.

5.7.10. Sewage treatment and disposal

Sewage treatment plants and disposal sites capable of properly dealing with the sewage and waste water generated in the area is necessary to prevent pollution of rivers and streams.

5.7.11. Employment

Employment in the zone should be focussed on providing opportunities for local unemployed people. This should go hand in hand with appropriate education and training.

5.7.12. Housing

Housing the area should preferably be concentrated in existing urban areas.

5.8. ZONE 7: URBANISATION FOCUS AREAS AND NODES

5.8.1. Water utilisation

The main water utilisation in this zone will be for human consumption.

5.8.2. Water quality

Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced and policed. The quality of water supplied should be monitored at all times to ensure that it remains potable.

5.8.3. Conservation

Conservation should be focussed on cultural historical elements that can contribute to the character of towns.

5.8.4. Tourism

Some tourism (to take advantage of the people and culture of the area) could take place.

5.8.5. Agriculture

Not applicable.

5.8.6. Game and cattle farming

Not applicable.

5.8.7. Business and retail

Commercial business and retail is a primary function of these zones.

5.8.8. Service infrastructure

Service infrastructure should be sufficient to support the anticipated growth of urban areas. Transport infrastructure is of particular importance.

5.8.9. Solid waste disposal

All solid waste should be discarded at permitted solid waste sites. Sufficient permitted solid waste disposal sites should be established at key locations to deal with the waste generated in this zone. Strict enforcement and proper management at such sites is necessary to minimise negative impacts. Recycling collection points should be encouraged wherever possible.

5.8.10. Sewage treatment and disposal

Sewage treatment plants and disposal sites capable of properly dealing with the sewage and waste water generated in the area is necessary to prevent pollution of rivers and streams. Compliance monitoring and enforcement is important.

5.8.11. Employment

Employment in the zone should be focussed on providing opportunities for local unemployed people. This should go hand in hand with appropriate education and training.

5.8.12. Housing

The identified urban areas should become the focus for housing that serves the surrounding area as well as education facilities, health care facilities and the efficient provision of municipal services.

5.9. ZONE 8: RURAL SETTLEMENT AREAS

5.9.1. Water utilisation

Water utilisation in this zone should be primarily used for human consumption and subsistence farming. The protection of underground water resources is very important in these areas, both in terms of reserves and the prevention of pollution.

5.9.2. Water quality

Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced. Education in the possible hazards involved in water consumption directly from rivers and other untreated water supplies should be provided.

5.9.3. Conservation

Not applicable.

5.9.4. Tourism

Cultural tourism should be encouraged in this zone.

5.9.5. Agriculture

Subsistence farming is a key element of survival in this zone. Education and farming skills training is essential to ensure that the soil resource is not degraded any further and that sustainable farming practices are adopted.

5.9.6. Game and cattle farming

Not applicable.

5.9.7. Business and retail

Commercial business and retail in support of the rural communities should be encouraged.

5.9.8. Service infrastructure

Basic infrastructure and services should be provided.

5.9.9. Solid waste disposal

The reuse and recycling of solid waste within the communities should be encouraged as a contributing economic activity in this zone.

5.9.10. Sewage treatment and disposal

Efficient water borne sewage systems will not be feasible in all places due to the relatively low density of the dwellings in these areas. Pit latrines are therefore acceptable within these areas.

5.9.11. Employment

People in these areas are mostly self-employed and the focus should be education and training with government support to enhance skills and increase economic activity.

5.9.12. Housing

Government should support the replacement of informal structures with formal structures and also encourage urbanisation to cities and towns.

5.10. ZONE 9: AGRICULTURE FOCUS AREAS WITH A TOURISM COMPONENT

5.10.1. Water utilisation

Sustainable use of water for irrigation should be the priority in these areas.

5.10.2. Water quality

Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced, especially pollution from fertilisers and pesticides.

5.10.3. Conservation

These areas are surrounded by natural areas with prominent visual features (e.g. the Waterberg escarpment). It is a zone from which spectacular natural scenes can be viewed and should therefore be maintained as agricultural land in order to maintain the rural harmony that currently exists between this zone and Zone 1.

5.10.4. Tourism

Limited tourism facilities on farms should be encouraged in this zone.

5.10.5. Agriculture

Commercial agriculture is the main focus of this zone.

5.10.6. Game and cattle farming

Not applicable.

5.10.7. Business and retail

Business and retail is not the focus in this zone.

5.10.8. Service infrastructure

Service infrastructure in the form of roads is especially important. Well maintained roads will ensure that agricultural produce can be efficiently transported to the relevant markets.

5.10.9. Solid waste disposal

Large scale solid waste disposal is not desired in this zone. Central points for waste collection and recycling should be determined.

5.10.10. Sewage treatment and disposal

Not applicable.

5.10.11. Employment

Appropriate skills training facilities, supported by both the government and private sectors would help to uplift people on the farms and should align the area.

5.10.12. Housing

Farms provide essential housing in rural areas for a large population. Housing in this zone should accommodate those employed within the agricultural sector.

5.11. ZONE 10: AGRICULTURE AREAS WITH COMMERCIAL FOCUS

5.11.1. Water utilisation

Sustainable use of water for irrigation should be the priority in these areas.

5.11.2. Water quality

Water quality in this zone should not be allowed to deteriorate. Legislation to protect water quality and prevent pollution should be strictly enforced, especially pollution from fertilisers and pesticides.

5.11.3. Conservation

Not applicable.

5.11.4. Tourism

Not applicable.

5.11.5. Agriculture

Commercial agriculture is the main focus of this zone. Agriculture provides employment and stability. Land with high agricultural potential should be protected and reserved for agricultural purposes. Support of emerging land owners is desired, so that they may utilise their land productively and responsibly. This support should also include skills training and technical support.

5.11.6. Game and cattle farming

Not applicable.

5.11.7. Business and retail

Business and retail is not the focus in this zone.

5.11.8. Service infrastructure

Service infrastructure in the form of roads is especially important. Well maintained roads will ensure that agricultural produce can be efficiently transported to the relevant markets.

5.11.9. Solid waste disposal

Large scale solid waste disposal is not desired in this zone. Central points for waste collection and recycling should be determined.

5.11.10. Sewage treatment and disposal

Not applicable.

5.11.11. Employment

Appropriate skills training facilities, supported by both the government and private sectors would help to uplift people on the farms and should align the area.

5.11.12. Housing

Farms provide essential housing in rural areas for a large population. Housing in this zone should be to accommodate those employed within the agricultural sector.

5.12. ZONE 11: MAJOR INFRASTRUCTURE CORRIDORS

This zone forms part of the game and cattle farming areas (Zone 4). It is however proposed that these areas also be used as the major corridors for bulk infrastructure including high voltage power lines, railway lines, major roads and pipelines. This is necessary in order to prevent these infrastructure elements from impacting negatively on more sensitive areas in the district.

**ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE WATERBERG DISTRICT
DESIRED STATE REPORT**

**PLEASE NOTE THAT ZONE 1 TO ZONE 11 HAS BEEN REVISED IN THE FINAL
EMF REPORT**