LESEDI ENVIRONMENTAL MANAGEMENT FRAMEWORK (EMF)

PRESENTATION TO THE MEC
3 SEPTEMBER 2007
BACKGROUND

- GDACE provided R500 000 and Lesedi provided R90 000 for the project.
- Project commenced in September 2005.
- Completed: November 2006.
INSTITUTIONAL ARRANGEMENTS AND LIAISON WITH GDACE

- Project was overseen by a Steering Committee which met monthly.
- Steering Committee Membership:
  - GDACE Reps
  - Lesedi LM Reps
  - Sedibeng Rep.
  - Consultant Team.
  - Ad-hoc invitations to other parties.
- Liaison with GDACE:
  - Through Steering Committee.
  - 3 Presentations to GDACE Top Management.
  - Separate meetings with Nature Conservation and Agriculture
  - Draft documents were submitted at key stages during the process.
PUBLIC PARTICIPATION : NEMA REQUIREMENTS

NEMA Regulations Chapter 8 Sect. 70 (2)(a),(b), and (c)

(2) In order to initiate an environmental management framework for an area, the Minister or MEC must -

(a) compile a draft environmental management framework;

(b) subject the draft to a public participation process by –

(i) making the draft available for public inspection at a convenient place; and

(ii) inviting potential interested and affected parties by way of advertisements in newspapers circulating in the area and in any other appropriate way to inspect the draft and submit representations, objections and comments in connection with the draft to that person or organ of state; and

(c) review the draft in the light of any representations, objections and comments received.
PUBLIC PARTICIPATION (Continued)

- 3 Public Meetings were held:
  - After Status Quo investigation.
  - After the Strategic EMF and Guidelines were formulated.
  - At the launch of the proposed ecological/butterfly corridors.

- Stakeholders were invited by means of:
  - Local press notices.
  - Personal letters to all stakeholders on municipal database
PUBLIC PARTICIPATION (Continued)

- Key stakeholders which were involved:
  - Ward councilors and committees.
  - Local resident committees.
  - Agricultural Union.
  - Lesedi Chamber of Business.
  - British American Tobacco.
  - Eskort.
  - Karan Beef.
  - Coal Mining Companies.

- Each Ward Councillor was provided with an environmental profile of his ward as well as a list of key local environmental issues.
THE EMF FORMULATION PROCESS

Technical Process

Phase 1: Project Inception
- Finalize T.O.R.
- Establish Project Steering Committee
- I.D. Stakeholders
- I.D. Information Gaps

Phase 2: Status Quo Investigation
- Literature review and primary research
- Key environmental issues

Phase 3: Strategic EMF
- Desired state of the environment
- Land use management areas
- Environmental control zones

Public Liaison

Public Meeting
- Presentation of status quo
- Public inputs
THE EMF FORMULATION PROCESS

(Continued)

<table>
<thead>
<tr>
<th>Technical Process</th>
<th>Public Liaison</th>
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</thead>
<tbody>
<tr>
<td><strong>Phase 4: Environmental Management Guidelines</strong></td>
<td><strong>Public Meetings</strong></td>
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<tr>
<td>• Management guidelines and action plans for implementation.</td>
<td>• Workshop of draft Phase 3 and 4 documentation.</td>
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<td>• Awareness day – Butterfly/ ecological corridors.</td>
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<td></td>
<td>• Public inputs.</td>
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<td><strong>Phase 5: Finalization</strong></td>
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<td>• Preparation of final EMF document and maps</td>
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<td>• Municipal and GDACE approval</td>
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</table>
ENVIRONMENTAL OVERVIEW OF LESEDI

- Rural municipality on the southeastern edge of Gauteng. Majority of the study area is sparsely populated.
- Two main urban nodes, namely Heidelberg/Ratanda and Devon/Impumelelo.
- Two main rivers, namely Blesbokspruit and Suikerbosrand River draining to the Vaalriver. Pans and wetlands in the eastern areas.
- Relatively large pristine natural areas with high biodiversity, e.g. highveld grasslands in the east and ridges in the west and south.
- Two provincial nature reserves, namely Suikerbosrand and Alice Glockner.
ENVIRONMENTAL OVERVIEW OF LESEDI
(Continued)

- Cultural features include Heidelberg CBD, some war memorials and historic graveyards and archeological sites in the Suikerbosrand.

- Large-scale commercial agriculture.

- Significant tourism potential.

- Increasing development pressure.
Lesedi Local Municipality
ENVIRONMENTAL MANAGEMENT FRAMEWORK

Locality and context
Lesedi Local Municipality
ENVIRONMENTAL MANAGEMENT FRAMEWORK

Major Land Uses and Settlement Pattern

LEGEND

LONG USES
- Natural Reserve / Forest
- Private Land
- Mining (underground)
- Other Industrial
- Residential
- Other Urban land Use
- Rural Settlement
- Schools
- Educational
- Government
- Industrial
- Rail
- Other Rail
- Airport
- Other Public Use
- Other Public Use

5 10 15 20 25 30 35 40 45 Kilometers
Map 7

Lesedi Local Municipality
ENVIRONMENTAL MANAGEMENT FRAMEWORK
Topography and Surface Hydrology

LEGEND
KEY ENVIRONMENTAL ISSUES

- Poor environmental conditions in the townships and informal settlements.
- Urban development pressure.
- Transformation of natural habitats by agriculture.
- Significant coal deposits.
- The need to create linkages between natural areas.
Lesedi Local Municipality
ENVIRONMENTAL MANAGEMENT FRAMEWORK

Mineral map

Source: Council for Geosciences

Map 9
THE DESIRED STATE OF THE ENVIRONMENT

- Based on the concept of sustainable development:
  - Development that meets the needs of present generations without compromising the ability of future generations to meet their own needs.

- Visions were workshopped with the public for:
  - Residential areas.
  - Industrial/commercial areas.
  - Agriculture.
  - Mining.
  - Roads and other infrastructure.
  - Historic, cultural and archeological features.
  - Biodiversity.
  - Rivers, waterbodies and wetlands.
  - An open space system.
  - Public involvement.
ENVIRONMENTAL INDICATORS

- In order for the municipality to measure its progress towards attaining the desired state of the environment, it should regularly measure certain key environmental indicators.

- A list of 24 relatively easily measurable indicators were identified.
## ENVIRONMENTAL INDICATORS

<table>
<thead>
<tr>
<th>Feature/Aspect</th>
<th>Indicator</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-economic Profile</td>
<td>Population Growth</td>
<td>Who measures: Lesedi Dept. Development Planning (house counts)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency: Annually.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reporting mechanism: IDP</td>
</tr>
<tr>
<td>No of households without access to basic services</td>
<td></td>
<td>Who measures: Lesedi Dept. Engineering Services.</td>
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<td></td>
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<td>Frequency: 6 monthly.</td>
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<td></td>
<td></td>
<td>Reporting mechanism: PMS, IDP</td>
</tr>
<tr>
<td>Confirmed cases of: Cholera, TB, STD’s, HIV/AIDS</td>
<td></td>
<td>Who measures: Lesedi Community Services (Health) Gauteng Dept. Health</td>
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<td></td>
<td></td>
<td>Frequency: Ongoing in Clinics/hospital.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reporting mechanism: IDP</td>
</tr>
<tr>
<td>Feature/Aspect</td>
<td>Indicator</td>
<td>Remarks</td>
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<tr>
<td></td>
<td></td>
<td>Frequency: Annual.</td>
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<tr>
<td></td>
<td></td>
<td>Reporting mechanism: IDP</td>
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<tr>
<td>Unemployment</td>
<td></td>
<td>Who measures: Stats SA</td>
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<td></td>
<td></td>
<td>Frequency: Sensus.</td>
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<td></td>
<td></td>
<td>Reporting mechanism: IDP</td>
</tr>
<tr>
<td>Housing</td>
<td>Formal vs informal top structures</td>
<td>Who measures: Lesedi Dept. Development Planning (Housing)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency: Annual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reporting mechanism: PMS, IDP</td>
</tr>
<tr>
<td>Industrial/commercial</td>
<td>Pollution levels</td>
<td>Who measures: Selected industries, DWAF, ERWAT, Rand Water, Lesedi Dept Community Services (Health)</td>
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<tr>
<td></td>
<td></td>
<td>Frequency: Varies.</td>
</tr>
<tr>
<td></td>
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<td>Reporting mechanism: Annual report by EMO.</td>
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</tbody>
</table>
ENVIRONMENTAL MANAGEMENT GUIDELINES AND ACTION PLANS

- Urban Open Space.
- The industrial areas.
- The informal settlements.
- The major national and provincial roads.
- The Heidelberg “Zone of Integration”.
- The Heidelberg CBD and other historic, cultural and archeological sites.
- The agricultural holdings.
- The commercial agricultural areas.
- The mining areas.
- Areas with alien vegetation, specifically the many blue gum, wattle and poplar plantations.
ENVIRONMENTAL MANAGEMENT GUIDELINES AND ACTION PLANS (Continued)

- The monoculture agricultural fields (maize, sunflowers, soya beans, sorghum, etc.).
- The aquatic and wetland habitats.
- The natural grassland areas.
- The mixed woodland savannah areas and ridges.
- The protected areas and proposed Lepidoptera corridors.
- Solid waste management and disposal.
### Guideline Objective

1. To promote the conservation status of these areas and to promote migration opportunities for Heidelberg Copper Butterfly colonies.

### Location and Target Groups

- Conservation areas such as the Alice Glockner & Suikerbosrand Reserve and SANDF-grounds, wetlands, pristine grasslands
- Community of Lesedi, Conservation-groups, schools, relevant land owners

### Major Activities

<table>
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<tr>
<th>Major Activities</th>
<th>Responsible Agencies</th>
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<tbody>
<tr>
<td>1. Develop a data basis of where the <em>Chrysuritisaureus</em> (Heidelberg Copper Butterfly) has been recorded including its host plant, the lightning bush and make this available to interested parties.</td>
<td>LLM, GDACE, Conservation Specialists</td>
</tr>
<tr>
<td>2. Enforce a program for the removal of alien plants in the protected areas and in the bufferzones around them.</td>
<td>LLM</td>
</tr>
<tr>
<td>3. Identify and promote the creation of selected natural corridors between butterfly colonies. Cooperation of the relevant land owners need to be obtained.</td>
<td>LLM, GDACE, Land owners</td>
</tr>
<tr>
<td>4. The community and especially those residing in Heidelberg Extension 23 and Ratanda should be educated on an ongoing basis on the conservation status of the Heidelberg Copper and its habitat due to the influence of coal and wood fires and the removal of natural vegetation for these purposes.</td>
<td>LLM, GDACE, community groups, conservation groups</td>
</tr>
<tr>
<td>5. Promote a pollution-free area within Heidelberg Extension 23 and Ratanda.</td>
<td>LLM</td>
</tr>
<tr>
<td>6. Compliance to the following NEMA regulations needs to be ensured:</td>
<td>GDACE, LLM, Dept. Agriculture, Farmers, Land owners.</td>
</tr>
<tr>
<td>• Authorization is required for the construction of facilities or infrastructure, including associated structures or infrastructure, for resorts, lodges, hotels or other tourism and hospitality facilities in a protected area contemplated in the National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)</td>
<td></td>
</tr>
<tr>
<td>• Authorisation is required for the transformation or removal of indigenous vegetation of 3ha or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of Section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No.10 of 2004).</td>
<td></td>
</tr>
<tr>
<td>• Authorisation is required for any process or activity identified in terms of Section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004).</td>
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</table>
**Remarks**

The koppies and ridges of Heidelberg form a unique ecological habitat for the Heidelberg Copper Butterfly. The butterfly knows only a small world with adults flying no farther than 20 metres from their site. The habitat has however been seriously degraded by uncontrolled and exceptional growth, which has smothered crucial plants. The Heidelberg Copper is unique in that it can only be seen in February and September and it inhabits steep rocky ridges. It requires a specific host plant, namely the lightning bush and the ants play an important role in the safe guarding of her larvae. They can not adapt to modern day pressures such as agriculture and the growing of residential areas, which are threatening their very existence. It is therefore of utmost importance that this specie and its relevant habitat be protected at all costs and that the community of Lesedi realize the significance of it.

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<td><strong>7.</strong> Promote the educational facility at the Alice Glockner Reserve especially amongst schools within the greater Gauteng area.</td>
<td>GDACE, LLM, Dept of Education</td>
</tr>
<tr>
<td><strong>8.</strong> Disseminate information in an effective way, eg. informing land owners, developers and town planners of sensitive environments, red data species, bufferzones.</td>
<td>LLM, Dept. of Agriculture, GDACE</td>
</tr>
<tr>
<td><strong>9.</strong> Introduce a management programme to include actions such as the burning of the veld every 4 years to retain the current vegetation structure for the host ant. The area should not develop into a woodland environment.</td>
<td>LLM</td>
</tr>
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**Environmental Management Guideline for:**
**PROTECTED AREAS AND PROPOSED LEPIDOPTERA CORRIDORS (Continued)**
Based on the environmental constraint zones and combinations of them.

The three zones are:

- Ecological and hydrological constraints.
  * Water courses, waterbodies, wetlands, high biodiversity areas, protected areas, important and irreplaceable habitats in C Plan, ridges, ecological corridors.

- Topographical and geotechnical constraints.
  * Steep slopes, unstable geotechnical conditions such as expansive soils, shallow water table, areas subject to flooding, dolomite, etc.

- Agricultural constraints.
  * Areas with high agricultural potential as identified in GAPA 3.
Lesedi Local Municipality
ENVIRONMENTAL MANAGEMENT FRAMEWORK
Ecological and Hydrological Constraints

Map 24

Gauteng
Ekurhuleni Metropolitan Municipality
Nkangala District Municipality

Legend:
- National Freeway / route
- Arterial route
- Main road
- Secondary road
- Other access
- Bush
- Railways
- Main rivers
- Local municipalities
- District municipalities
- Lesedi Local Municipality
- Ecological and Hydrological constraints
- Developed land - agricultural crops
- Rehabilitated agricultural lands
Lesedi Local Municipality
ENVIRONMENTAL MANAGEMENT FRAMEWORK
Agricultural constraints
LAND USE AND DEVELOPMENT CONTROL ZONES

- Topographical/Geotechnical constraints
- Agricultural constraints
- Ecological/Hydrological constraints
- No significant constraints
Low control zone.

Ecological/hydrological control zone.

Topographical/geotechnical control zone.

Ecological/hydrological and topographical/geotechnical control zone.

Agricultural control zone.

Ecological/hydrological and agricultural control zone.

Topographical/geotechnical and agricultural control zone.

Ecological, hydrological, topographical/geotechnical and agricultural control zone.
THE WAY FORWARD

- EMF approved by Lesedi Municipality.
- MEC approval awaited.
- EMF launch?
- Implementation Workshop?