Mining and socio-environmental sustainability in Limpopo Biosphere reserves

By Karen Steenkamp

Department of Economic Development, Environment and Tourism
3rd most biological diverse country in the world
Limpopo Biosphere reserves
River status - Limpopo
South African Mining and Biodiversity Forum (SAMBF)

– Established in 2005 to promote cross sectoral interaction and co-operation aimed at improving biodiversity conservation and management in mining industry

– Development of best practice guideline which informed the development of Mainstreaming Biodiversity into Mining – A Guideline
The Mineral and Petroleum Resources Development Act (MPRDA) – governs all stages of the mining and petroleum production process in South Africa - grant regulatory authorisations for mining and mining-related activities. MPRDA “forms part of a complex and interlinking network of national legislation geared towards sustainable development and the protection of South Africa’s rich and diverse biological resources”
Managing mining’s impact on the environment, socio-economic conditions and cultural heritage

- Environmental management plan (EMP)
- Social and labour plan: is only required of a mining right application
- MPRDA Pollution Control and Waste Management Regulations
- Mine health and safety Act and Regulations
- Water Use authorisations: through the National Water Act (36 of 1998)
- Mine-water regulations (GN 704)
Balancing mechanisms...

- Public participation
- Environmental management principles set out in NEMA
- EIA regulations (18 June 2010) in terms of the National Environmental Management Act 107 of 1998
- Liability for any environmental damage, pollution, or ecological degradation
- No-go area
- Financial compensation – future generations?
Biodiversity Priority areas

• Mining is prohibited or restricted
Biodiversity Priority areas

• Mining is restricted
• Restrictions subject to assessment of optimal land-use
Mining potential Limpopo
Limpopo province mining contribution

- 41% of South Africa’s platinum group metals
- 50% of country’s coal reserves
- 90% red granite resources
- 40% of country’s diamond production
- Biggest Vermiculite mine in the world (Foskor)
Mining and biospheres
Mining in the Waterberg District

- Platinum – Bushveld complex, Mokopane and Northam
- Coal – Lephalale, 3rd biggest coal reserves in SA
- Iron ore – Thabazimbi
- Waterberg district municipality – EMF in place
CURRENT AND RECENT MINES IN WATERBERG DISTRICT MUNICIPALITY

Current and Recent Mines
1. The Oaks Mine
2. Grootgeluk
3. African red Granite
4. Bestaf Granite
5. Rosso Siena
6. Potgietersrust Platinum Ltd
7. Buffalo Fluorspar
8. Klipspringer Mine
9. Inca Lime
10. Kerkaw Lime
11. Syferfont
12. Rooiberg Stone
13. Palmietgat
14. Pienaarrivier
15. Thabazimbi Mine
16. Rhino
17. Northam
18. Zwartkop
19. RPM - Amendebult Section
20. RPM - Union Section
21. Stony Lime
22. Dwaalboom

Legend
- Dolerite Dykes
- Karoo Supergroup
- Waterberg & Soutpansberg
- Bushveld Complex
- Transvaal Supergroup
- Archean Granites & Gneisses
- Beit Bridge Complex

Map by Council for Geoscience, Limpopo Unit
Kruger to Canyons Biosphere
core zone of 923.770 hectares
buffer zone of 485.586 hectares
transition zone of 1.2 million hectares.
Mining in K2C in the Mopani District

- Antimony
- Copper
- Phosphate – Foskor, Phalaborwa
### Land-use activities inside biosphere core zone

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## Land-use activities – BR buffer zone

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The Vhembe Biosphere Reserve
Mining potential in Vhembe

- Beit bridge complex/ Limpopo Belt – iron, dolomite, diamonds, marble, graphite
- Tuli, Mopane, Tshipise and Pafuri coal fields
  De Beers Venetia diamond mine

Coal of Africa :
- Vele colliery
- Makhado project
- Greater Soutpansberg project
- Tshipise project (coal bed methane exploration)
Vegetation types within the VBR
Proposed conservation focal areas on the LEDET biodiversity conservation conservation map
Combined biodiversity scores from the VBR/Univen workshop
Actions to address challenges in the VBR

1) Revision of core and buffer areas in the VBR
2) Proposed buffer zone for the Mapungubwe National Park
3) Land-use guidelines
4) VBR position paper on mining
5) Negotiations with Coal of Africa
Mining potential around Mapungubwe
MoA between DEA, SANParks and Coal of Africa Limited – Sep 2011

• To secure the integrity of Mapungubwe Cultural Landscape World Heritage Site into the future through “comprehensive biodiversity offsets programmes, thereby optimising benefits to local communities”.

• SANBI developed national guidelines for biodiversity offsets which once completed will influence the activities in the area
Parties agree to:

• promote alliances in the management of natural and cultural resources
• ensure compliance with the provisions of the MoA
• encourage social, economic and other partnerships among stakeholders
• promote integrated planning, research, education, awareness and capacity building
• collaborate in formulating detailed biodiversity offsets programmes and implementation plans, and
• provide adequate financial, human and other resources for the effective implementation of the MoA
Parties agree to ...

• Ensure periodic review and updating of the biodiversity offsets programmes and implementation plans

• Ensure effective participation of other key stakeholders

• Develop means whereby local communities sustainably benefit from the use of natural and cultural resources occurring within the world heritage site
Proposed buffer zone
The Biodiversity offsets programme will be supported by:

• natural heritage conservation
• cultural heritage conservation
• tourism development
• water resource management
• comprehensive programmes and implementation plans
• wider stakeholder engagement
• environmental management committee
Mining and Socio-environmental sustainability?

- Role of provincial government – Social responsibility – water for future communities
- Role of district municipality – implement spatial development framework – service delivery
- Conflict – better stakeholder engagement through BRs
- Negotiation between all parties re. mining activity
- Water resources for future drinking water
VBR Position paper re. mining

• The VBR accepts that it is a requirement that all mines operate in compliance with the law and abide by the ICMM guidelines as regards impact mitigation and sustainable development.

• When considering any mining in the VBR cognizance **must** be taken of;
  – The broader macro implications of any individual mining application,
  – Respect for the environment, particularly to sensitive Core Areas, Buffer Zones and ecological corridors.
  – The need for off-set benefits to be allocated to broad-based stakeholder communities and groups to contribute towards socio-economic upliftment.
In summary:

• Mining is extractive – by definition NOT sustainable but...

• Mining CAN be a contributor to creating sustainable development opportunities within its zone of influence

• Best practice guidelines, protocols and ICMM guidance should be applied to achieve sustainable development
Obrigada
Ke a leboga
Thank you
Baie dankie

• I wish to thank the sponsor organisations, Vale, Government of Minas Gerais, PUC-Minas and UNESCO for covering my travel and accommodation costs