



TO PROTECT AND PRESERVE

Vedanta Zinc International's Gamsberg Project in the Northern Cape represents a significant opportunity to grow the local economy and create jobs while remaining committed to a long-term plan to preserve the ecologically sensitive region.

As we are committed to leaving a positive legacy, all of our processes must reflect best practice with respect to sustainability and environmental rehabilitation.

Preserve, protect, restore and rehabilitate – the four key words that guide the environmental planning of any mining project. And none more so than in the environmentally sensitive and fragile Northern Cape.

The Succulent Karoo Biome is unique, even for a country such as South Africa, which is renowned for its floral diversity. The biome is home to at least 6,000 species of plants that have evolved over millennia to survive the desert's aridity, many of them rare and, until our environmentalists started on the area, some of which had been previously unrecorded.

The Bushmanland Centre of Endemism is smaller but is also a site where 397 unique succulents exist, among them 16 that are endemic and four that are restricted to a small space.

We were faced with a major challenge of how to develop the Gamsberg Project without damaging the fragile site and developing it in such a way that, when mining ends, the area can be restored.

Our environmental specialists worked closely with a wide range of specialists to design and implement a process to ensure the necessary protection, preservation and ultimate restoration.

We at Vedanta understand our responsibilities and are aware that we are part of a greater community. The fundamentals of our approach are to avoid, minimise, remedy and offset any changes that have occurred due to our activities.



**80,000 plants and
360,000 seeds**
collected and moved to
Karoo Desert National
Botanical Garden

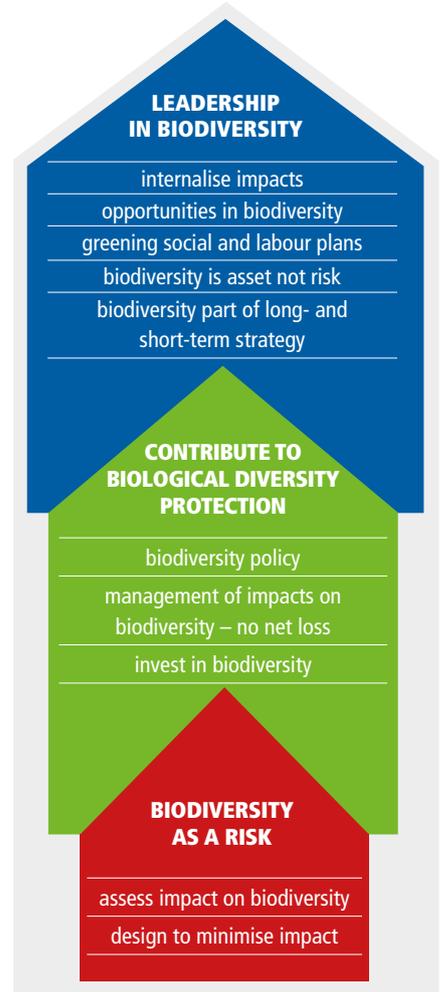
Our approach to business is holistic and sustainable.

We enlisted advice from a range of environmental organisations, local and international, such as the International Union for Conservation of Nature (IUCN)- one of the world's oldest and most respected environmental groups.

Our foundation was in balancing the siting of Gamsberg's open pit, the waste dump and the processing plant with protecting the fabulous floral kingdom on which they would be positioned. They had to be situated so that they would not affect particularly sensitive areas.

The start came with a thorough evaluation of the area's plants followed by the removal of entire plants and their seeds to specially designed nurseries and research institutions. With this thorough understanding, our skilled environmental specialists could proceed with the collection of plants. Some 80,000 plants and 360,000 seeds have been collected and moved to the specialised facilities of the Karoo Desert National Botanical Garden. The objective is that, once mining has ended and the area's surface is restored, it can be replanted with the endemic species that were removed from the site, saved and protected. The area's fauna presented a different challenge. We were determined that animals should not move into our working areas where they might be threatened. Areas that are particularly sensitive have been fenced off, while our operations have been designed to limit and minimise any direct effects on the entire region.

Our waste dump and tailings storage facility have been designed to prevent unnecessary atmospheric pollution, and to ensure that run-off is prevented. Our operations and their effects are tightly contained, including by using a closed-circuit water system.



MUTUALLY BENEFICIAL PARTNERSHIP WITH INTERNATIONAL UNION FOR CONSERVATION OF NATURE

OBJECTIVES

With >1,200 government and NGO members and ~11,000 volunteer experts in 160 countries:

- develop mutually beneficial partnership to proactively address mining impacts of biodiversity
- guide Vedanta in biodiversity management with international knowledge/expertise
- capacity building and empowerment of local NGOs/institutions in biodiversity management
- facilitate Black Mountain Mining becoming a long-term regional partner in promoting sustainability

PROJECTS TO BE UNDERTAKEN

- Biodiversity assessments in consultation with stakeholders for "no net loss" impact of mining
- SWOT analysis
- Review biodiversity action plans
- Implement biodiversity offset scheme and monitor performance of biodiversity offsets
- Publish biodiversity performance reports annually (separately or as part of integrated sustainability reporting)
- Review and verify biodiversity performance and, as needed, secure independent expert verification
- Biodiversity and livelihood enhancement: implement suitable projects with potential for regional biodiversity and livelihood enhancement



The value of an environmental audit was underscored by the **discovery of a plant, *Anacampseros retusa***, and it is not beyond the bounds of possibility that others might be discovered as our environmental work progresses.

MITIGATION HIERARCHY

AVOID



- Alternative location and design of infrastructure
- Pit design – set back zone from ecologically sensitive area
- Moved waste dump locations to avoid damaging sensitive flora
- Adjusted siting of processing facilities and access roads

MINIMISE



- Fencing, demarcation and access control of sensitive areas
- HDPE lining installed on tailings storage facility
- Separate waste rock according to leachability characteristics

REMEDY



- Translocation of sensitive species to be used in concurrent rehabilitation of Gamsberg
- ~77,252 plants of various species
- Supervised by horticulturalist and regional botanical specialist
- Continuous health monitoring of plants to avoid stress and death

OFFSET



- No net loss objective for residual impacts
- Identification and securing of properties nearby with similar biodiversity features
- ~40,000ha identified as a potential offset area, of which approximately 15,000ha have been secured
- Management of offset properties
- IUCN's independent review panel to monitor progress



MILESTONES ACHIEVED

- Capex reduced by US\$200 million to US\$400 million mainly on engineering improvements and renegotiations
- **Biodiversity: plant harvesting completed (~85 000 plants translocated to nursery)**
- First blast at project site: 27 July 2015
- More than 17Mt mine waste excavated
- Major contracts placed
- Pre-start mining contractor, fuel, explosives and other infrastructure procured
- Engineering, procurement and construction services contract awarded

Black Mountain Mining (BMM) comprises the Deeps and Swartberg shafts, and the Gamsberg Project in South Africa's Northern Cape province.

We are working in harmony with our natural environment.

We are not simply working on environmental projects that will ensure proper rehabilitation and restoration when mining terminates. A further part of our environmental commitment is directed towards enhancing the greater environment with biodiversity offset agreements. These have been designed in conjunction with the Northern Cape Department of Environment & Nature Conservation, and have involved the acquisition of land that might otherwise have been adversely affected by human activity, and ensuring that it is converted into untouched natural habitats for flora and fauna. We see our environmental commitments as extending well beyond the boundaries of our operations.

Our environmental commitments enjoy the wholehearted support of our people, particularly those working on site. Their commitment has been shown by the manner in which they have designed and are working on our project – a manner that incorporates best environmental practices as well as those that are best financially and technically.



Vedanta Zinc International (VZI), based in Johannesburg, South Africa, is a grouping of zinc assets located in South Africa, Namibia and Ireland, owned by India-based Vedanta Limited, a listed subsidiary of Vedanta Resources plc. Operations include Black Mountain Mining (comprising the Deeps and Swartberg shafts, and the Gamsberg Project in South Africa's Northern Cape province), Skorpion Zinc Mine and Refinery in the Karas region of Namibia and the Lisheen Mine in Ireland (in active closure).

CONTACT US

Vedanta Zinc International
+27 11 685 3973

www.vedanta-zincinternational.com