Exploration and Management of Raw Materials in (South) Africa

Anchoring Resources Sustainably, Sinking the Boat, Or Missing It?

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Problem Statement:

- The required GLOBAL switch to renewable energy sources predicts a sharp rise in mining activities due to increased demand.
- Electric cars, hydrogen motors, batteries, wind and solar farms - all made of non-renewable materials
- Rising population numbers add an extra level of pressure..
- The demand of Europe and the US alone cannot be met without securing the majority share of the required raw materials from elsewhere...
- That “elsewhere” will include African countries blessed with these natural primary resources.
- That “elsewhere” includes African countries marred by war over conflict minerals, wide-spread nepotism/corruption, abject poverty, labour abuse and a massive EH&S pollution problem already- caused by unsound practices in primary AND secondary mining activities...

And does that mean that the role of Africa as a future key supplier of CRMs and Non-CRMS will forfeit its own CE born growth opportunities?
First Level Problem Solving:
Slow down primary resource extraction rates..

- Put on a Lid
- Change the Money Dynamics
- Follow the Butterfly...
- Change the Core Business
- Dig deeper
Second Level Considerations: Converting the Social Contract to SD Contract

- “Less Bad” is not “Good”..
- Be a good neighbour- don’t play dirty to get hosted
- “Think Systems”, map the landscape
- No man (or mine) is an island
- Optimise the available REAL “human capital”
- Fully exploit beneficiation opportunities from by-products
- Leave only footprints.......Mine Closure
Can the SDLO Make a Better Business BENEFIT CASE?

WHO, WHAT, WHERE, WHEN, AND HOW type questions:

- Who are ALL the stakeholders for which the “Benefit Case” needs to be made?
- Where is the scope/boundaries?
- Who owns the land, works on it and lives on it?
- What Benefit? Profit maximization or social enterprise? Something in-between?
- What would the key features of an SDLO compliant mining venture look like?
- Who would drive the required aspects of an SDLO compliant mining venture?
- When is there sufficiently done to have a “Benefit Case”
- How can its real impact be assessed and verified?
Initiatives under way....

Anglo American: FutureSmart Mining™

- A world where our mines are integrated, automated, carbon-neutral, and waterless.
- Low cost, scalable mining with a reduced, sustainable environmental footprint.
- Contributing positively to our host communities and society as a whole.

Characteristics:
- Global, National, Local targets
- Milestones & Timelines
- Some SDG alignments
- Foundations Based
- Value Pillars Based:
  - safety,
  - environment,
  - social,
  - people,
  - production,
  - cost/margin and,
  - and returns/financial.
Ambitious Goals ahead....

<table>
<thead>
<tr>
<th>OUR GLOBAL SUSTAINABILITY PILLARS</th>
<th>GLOBAL STRETCH GOALS</th>
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</thead>
<tbody>
<tr>
<td>TRUSTED CORPORATE LEADER</td>
<td><strong>Accountability</strong></td>
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<td></td>
<td>Our vision is to transform the relationship between mines and communities, and wider society</td>
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<tr>
<td>THRIVING COMMUNITIES</td>
<td><strong>Ethical value chains</strong></td>
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<td>Our vision is to be a part of a value chain that supports and reinforces positive human rights and sustainability outcomes</td>
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<td>HEALTHY ENVIRONMENT</td>
<td><strong>Policy advocacy</strong></td>
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<td>Our vision is to take a lead on issues that affect our business in a way that is collaborative and aimed at society’s wider goals</td>
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<td></td>
<td><strong>Education</strong></td>
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<td></td>
<td>Our vision is for all children in host communities to have access to excellent education and training</td>
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<td></td>
<td><strong>Health and well-being</strong></td>
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<tr>
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<td>Our vision is for the SDG targets for health to be achieved in all our host communities</td>
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<td><strong>Livelihoods</strong></td>
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<td>Our vision is shared, sustainable prosperity in our host communities</td>
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<td><strong>Biodiversity</strong></td>
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<td>Our vision is to deliver net positive impact (NPI) across Anglo American through implementing the mitigation hierarchy and investment in biodiversity stewardship</td>
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<td><strong>Climate change</strong></td>
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<td>Our vision is to operate carbon neutral mines</td>
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<td><strong>Water</strong></td>
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<td>Our vision is to operate waterless mines in water scarce catchments</td>
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</tbody>
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First trends emerging....

- SMME investment support
- Procurement policies pushing local supply chains
- 5 offsite jobs for 1 miner job target- development of REAL human capital
- Platinum mines- research for alternative mining of secondary metals (platinum in catalysts)
- Future positioning within a transitioning economy model- BEHIND closed doors
- SDLO seems not (yet) to be talk of the (mining) town...
- South African mines in lead position for Africa?
Verification and Certification of Action

- How can its real impact be assessed and verified?
- Proof of IMPACT (https://www.proofofimpact.com/)
- Key Performance Indicators
- Transparency of Success through Blockchain Evaluation
- Opportunity for Investors in “Ethical Mining” ventures?
- Verified proof of positive social impact - no space for non-quantitative “feel-good” practices
Child Survival
Impact Marketplace Use-Case

**DESCRIPTION:** Proof of Impact is partnering with Cordaid and Minbuza to reduce costs and maximize impact delivery of health outputs that directly support Child Survival in Ethiopia and SDG3.

**IMPACT DESIGN:**
- **Impact Data:** Skilled deliveries, antenatal care (≥16 weeks), ANC visits, postnatal care, cesarean sections, referred hospital delivery
- **Proof Points:**
  1. Vaccination proof
  2. Assisted delivery proof
  3. Timestamp of delivery
  4. Geotag of hospital
  5. Unique identifier
- **Verification:** Audited data in beta phase

**IMPACT MARKETPLACE FLOW:**
1. **Funding**
   Minbuza commits capital on the POI Marketplace to fund baby health outputs
2. **Impact Data**
   Cordaid provides impact data related to healthy births
3. **Validation**
   Proof points are gathered, and sufficiently prove the intervention occurred
4. **Impact Event**
   The impact event is delivered in a transaction, releasing funds from Minbuza to Cordaid to pay on impact
5. **Impact Portfolio**
   Impact events and attribution are now part of Minbuza’s portfolio

**PARTNERS:**
- **Implementer:** Cordaid
- **Funder:** Minbuza

**IMPACT GOALS:**
Goal 3: Promote healthy lives and well-being for all
- **3.1 Reduce global maternal mortality rate**
  - 3.1.1 Maternal mortality rate
  - 3.1.2 Births attended by skilled health personnel
- **3.2 Preventable Deaths of Young Children**
  - 3.2.1 Under-5 mortality rate
  - 3.2.2 Neonatal mortality rate

Minbuza can view their total impact portfolio using real-time analytics dashboards of impact event activity.

https://medium.com/proofofimpact/proof-of-impact-white-paper-1d1b795d7c24
South Africa’s Highlights and Key Findings:

South Africa's "Secure Minerals for Energy Supply Options" Debate