Mining at the crossroads: Sectoral diversification to ensure sustainability? (work in progress)

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Mining today: Growing challenges... and a legacy of impacts

- Global slump in commodity prices and demand leads to decline in productivity and employment in Mining.
- Decrease in productivity as a result of growing resource scarcity and increased local cost pressures.
- The growing policy and regulatory compliance and policy uncertainty.
- Uncertainty from labour unrest and resource nationalism.
- Growing legacy of socio-economic impacts. After the local decline of mineral resources, there is often local economic collapse and unemployment with a loss in land value and development potential.
Project origins and context

- SSRE team focus on Green economy Solutions.
- Background not mining- : resource economics, agricultural economics, life sciences and sustainability science
- Willem De Lange became involved Mining-Agriculture from coal mining pit lake evaluation in 2016

Bureau for Food and Agricultural Policy (BFAP) report highlighted
The impact of mining on Agriculture....
Mining and agriculture: nexus

Source: BFAP, 2012

SA = 122.3 m ha
Farmland = 15.8 m ha (12%)
Contain minerals = 22.5 m ha (18%) i.e. significant overlap
Conflict at the mining-agriculture nexus

- Mining is an extractive industry and is energy and water intensive, but is an important primary sector. as is Agriculture!
- “About 13.7% of the land in Mpumalanga is currently being mined, 40% has prospecting applications and 54% of the land has already been mined.
- Eskom has indicated that more coal mines are needed in Mpumalanga to meet the demand for energy in 2015…”
Solution for Mining-Agriculture conflicts?

From competition for resources to cooperation
From separate entities to a joint venture and...
Agro-Mining companies
Mining sectoral diversification

• Initial work explored the extent to which mining liabilities could be turned into agricultural assets and be used as a way to improve relationships between mining and agriculture to hopefully engage/solve South Africa’s mining legacy problem.

• However, we realised that far more fundamental institutional change in the Mining Industry is required... to diversify Mining companies to agriculture through sectoral integration within the same company

• Opinion piece is current under review at Extractive Industries and society:

**Mining at the crossroads: Sectoral diversification to safeguard sustainable mining?**
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**Abstract**
Green economic principles are paving the need for broadening the scope of planning and mining operations to incorporate diversification to other sectors as a formal part of the life cycle of mines. In this opinion piece we argue that sectoral integration of mining with other sectors holds the key to secure the long term sustainability of this sector. We explain this notion for the case for diversification to agriculture. It is hoped that this contribution ignites more debate on finding new ways to develop the complex relationships between sectors into mutual beneficial and cooperative coexistence based on true sectoral integration to improve the long term sustainability of economies.

**Keywords**
Sustainability, mining, integration, diversification, agriculture
Sectoral integration of agriculture in Mining

- Not aware of initiatives where **sectoral integration of agriculture as a diversification strategy** for mining in South Africa = novel?
- The idea is riddled with challenges, but seems promising if successful (i.e. making the pollution pays principle profitable for the polluter without creating perverse incentives).
- The initiative promotes cooperative and coexistence of mining and agriculture (not competition and exclusion)
- Based on true sectoral integration, the approach can improve the long term resilience and sustainability of economies.

Is possible to turn miners into farmers?
Current network in terms of project

- Currently limited capability and network in mining aside from CSIR mining technology expertise (Mining Precinct)
- Willem De Lange network lies in agriculture and resource economics
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……if you would like to network on Agriculture-Mining R&D

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<tr>
<th>Name</th>
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