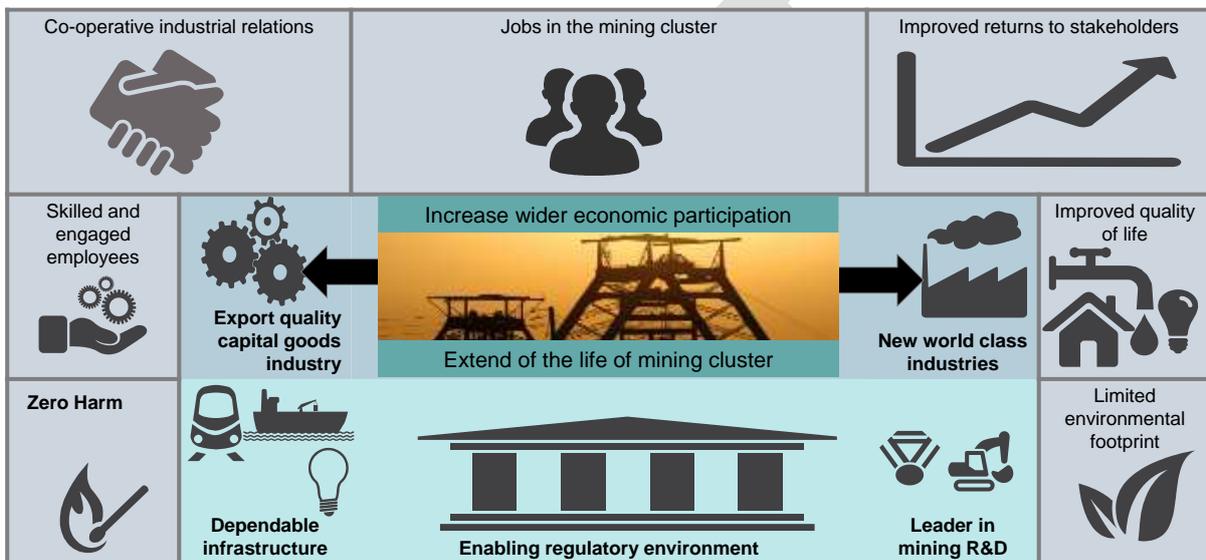


# DRAFT

## Mining Phakisa: Jobs Retention & Creation

### The Mining Phakisa Aspirations



### 1 Problem statement

Mining: Old and high-cost extraction methods, technologies and systems limit the extractable resources, the life of existing mines and the viability of new mines and shafts and are inherently dangerous for workers. Huge resources are “sterilised” using current mining systems and technologies. In addition, SA’s mineral downstream (beneficiation) industries are nascent or increasingly uncompetitive and being displaced by imports (e.g. steels).

Modernisation: the development and adoption of new mining systems and technologies offers a way to dramatically increase jobs and OHS by:

1. Extending the life of current mines: job retention: ~200k jobs in gold & platinum;
2. Realising currently “sterilised” resources and through new mining projects: ~100k jobs in gold, platinum and other mining;
3. Building the SA mining & processing supply-chain to:
  - a. Displace current imports of mining capital goods (~R30bnper annum): ~60k jobs in manufacturing and services over 1-10y

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- b. Provide the capital goods and systems for new mining systems/techs: ~30k jobs in manufacturing and services over 3-12y
- c. Export of the new systems/techs to SADC (~equal to the SA market), Africa and beyond: ~30k jobs in manufacturing and services over 3-12y
4. The development of downstream (beneficiation) manufacturing: ~? Jobs, TBD
5. The development of new job creation projects in other sectors (agriculture & processing) using mining land and water: ~10k? jobs

The Mining Phakisa gave rise to the formation of a PPP of government, the miners (Minerals Council), the suppliers, technology providers (HEIs, Science Councils) and Labour, which has created the Mandela Mining Precinct ((MMP) and its Technology Hub (SAMERDI<sup>1</sup>) and supply-chain development initiative. SAMERDI has committed funding of R300mn over 3 years from government and industry. However, further interventions are needed (see 2 KEY INTERVENTIONS REQUIRED below).

Proposals to meet the challenges:

1. Improvement of current mining: Identify and/or develop new mining technologies & machinery and approaches/systems to increase the viability of current mining (using existing mining development configurations).
2. Modernised Mining: Identify and/or develop new mining systems/techs to realise currently unviable resources.
3. Supply-chain: Support and enhance SA mining capital goods firms and associated service providers (capabilities and capacity) to both displace the huge imports and to supply the new machinery & equipment and systems for modernised mining, as well as to create high quality manufacturing and ICT jobs.
4. Beneficiation: Supporting the development of downstream manufacturers through the structuring of win – win relationships that involve (on a case by case basis) the provision of feed-stock, specialised skills, facilities and finance.
5. New job creation projects in agriculture & processing: Supporting/facilitation job-creating projects that utilise excess land owned by mines and water supply from mining operations towards enhanced food security.

## 2 KEY INTERVENTIONS REQUIRED

There are 3 crucial further interventions to complete the Mining Phakisa's potential employment impacts:

- A. **Establish a "Test Mine"** to test, prove and enhance the efficacy of technologies and systems coming out of SAMERDI and other players (suppliers, miners, et al) in order to ensure acceptance by the miners and seamless application: ~R10mn capex and R50mn opex per annum over 5 years.
- B. **Establish a Minerals Supply-chain Enhancement Office (MSEO)** in the MMP to coordinate the building of the SA supply-chain companies to upgrade, retool and

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<sup>1</sup> SA Minerals Extraction Research & Development Initiative

reconfigure their operations to meet the new challenge, to ensure seamless articulation between the SAMERDI technology work-streams and the supply-chain firms and to optimise the use of existing support schemes (eg. TLIU, Sector Innovation Fund, NIPP, CSDP, CSP, SPII, THRIP, TIA, et al) and financing (IDC, DTI, NEF, financial sector); In order to upgrade and enhance the SA minerals supply-chain firms and clusters to be able to displace imports, produce the products/systems for the new mining solutions and to increase exports: ~R5mn per annum over 5 years.

- C. **Establish Mining & Processing Capital Goods OHS Investment Scheme (M&PCGO-IS)** under the dti incentives, to build the minerals supply-chain through the provision of investment support to mining & processing capital goods (M&PCG) manufacturers, to components manufacturers and tooling firms, as well as support for M&PCG prototype development to meet the new challenge for safer and cost-effective mining & processing capital goods. The scheme is already configured but lacks funding: ~R80mn per annum over 5 years.
- D. **Establish a Mining Agri-Fund (MAF)** to realise the new job creation projects in agriculture & processing using mining land and water: ~R10mn per annum over 5 years.

### 3 Jobs impact

The impact of the proposal on employment: The 3 interventions (A, B & C, above) are crucial for the success of the overall Phakisa initiatives, which are expected to have a jobs impact of:

- i. 200k jobs retention in current mining over 20 years
- ii. 100k jobs in new mining over 20 years
- iii. 120k jobs in the minerals supply-chains (import displacement, new mining and exports)
- iv. 10k jobs in agriculture and processing over 5 years

Requirements to ensure a positive impact on employment:

- 1. The resourcing of A, B, C & D (above) as well as,
- 2. Improved coordination between the government players (DMR, DTI, DST, DPME, Treasury, et al), the miners (Minerals Council and non-members), labour, the supply-chain clusters and the MMP.

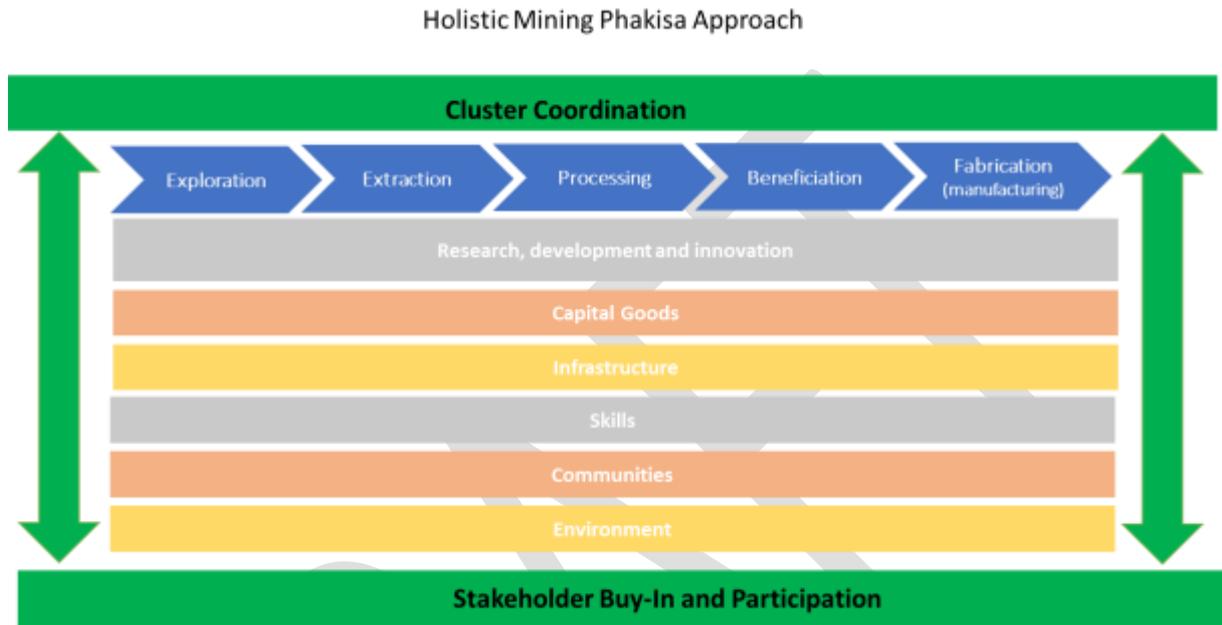
Other anticipated benefits from the proposal:

The development of a world-class minerals sector supplier cluster could position SA as a key exporter to the growing African minerals sector, as SA's resources (demand) are depleted, and, in the longer term, this cluster could migrate to the production of capital goods, parts and services for other sectors, beyond mining. The National Development Plan (NDP) notes that *"South Africa could be a global leader in manufactured goods and services for the mining industry, where it has substantial know-how. This would make an important contribution to industrialisation in a global niche market"* (p42). (By 2030) *"Successful promotion of supplier industries to the mining industry have spin-offs in supplying global*

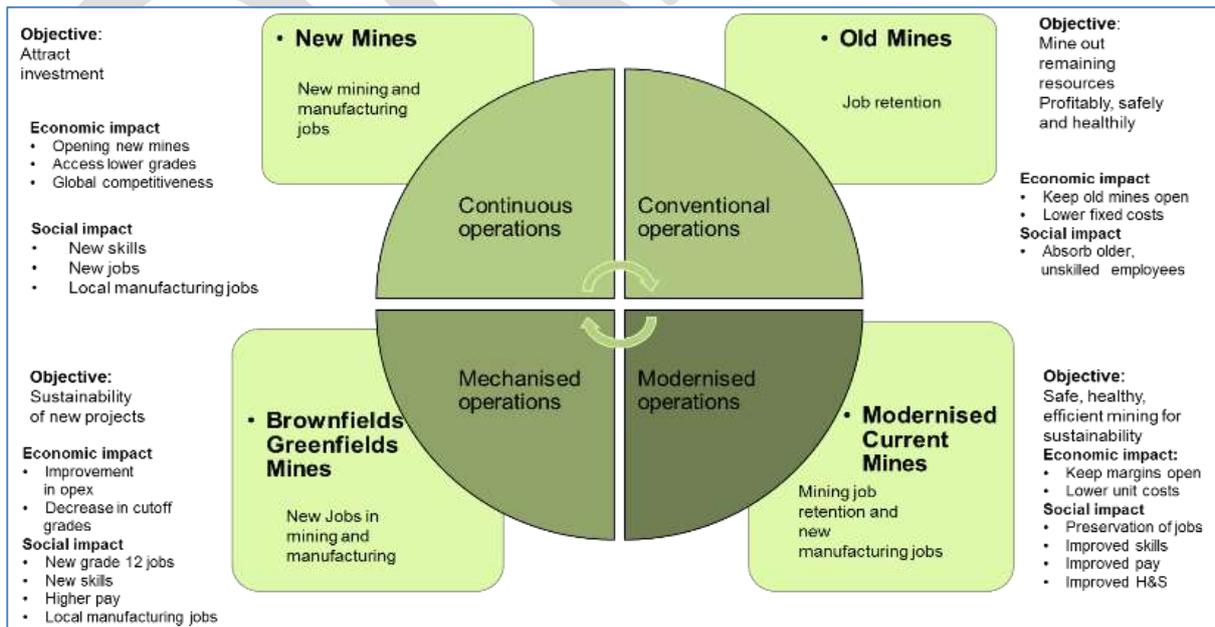
mining projects and also lateral linkages into other uses, such as water purification, electronics, and robotics” (p123) and the need to “Develop, deepen and enhance linkages with other sections of the economy. This includes: linkages with both manufacturers of inputs (capital goods and consumables) and suppliers of mining-related services” (p147).

## 4 Theory of change

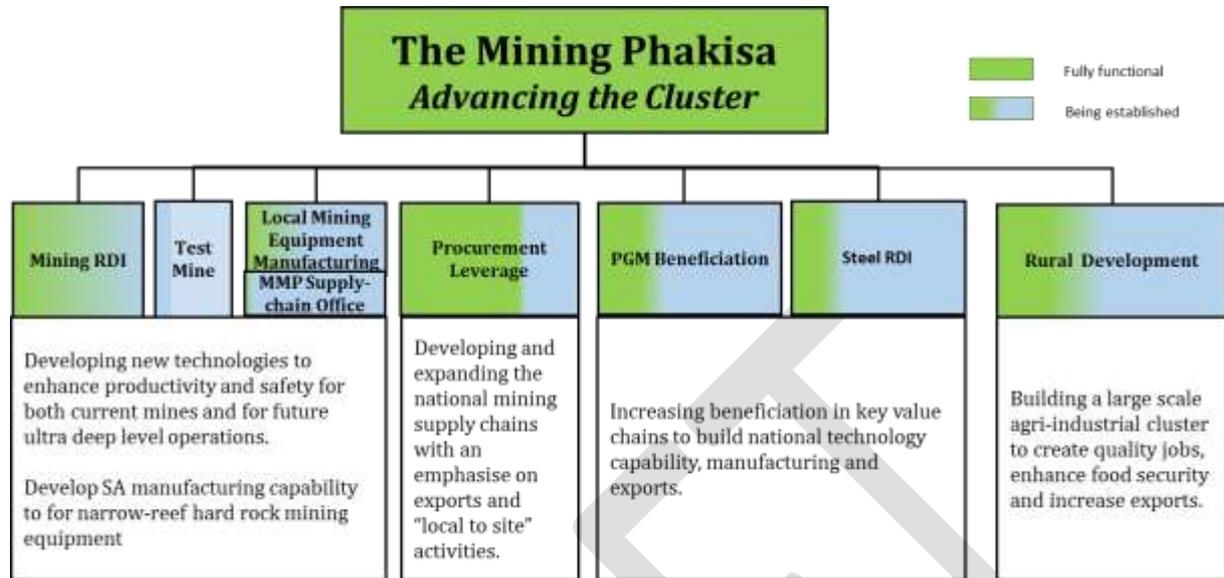
How the proposal would work:



The key focus areas are new mining and manufacturing jobs, job retention on old mines, jobs on greenfields and brownfields mines and job retention on modernised current mines, as indicated in the following diagram:



The Mining Phakisa and its MMP initiative is a holistic program to develop the mining cluster whilst securing and improving the livelihoods of all key stakeholders. Post the Phakisa, collaborative interventions have taken place to Advance the Cluster:



Outstanding interventions: Resourcing of A, B, C & D (above) as well as improved inter-governmental and private sector coordination and implementation.

Anticipated outputs:

- i. Increased longevity of current mines as well as new mining & processing projects;
- ii. Development of a world-class SA minerals cluster supply-chain (capital goods and services) and associated RDI capacity/capability;
- iii. Safer and higher quality jobs in mining and its supply-chains;
- iv. In the longer term, the migration of the supply-chain to provide capital goods and services to other sectors (beyond mining) in SA, the region and beyond.
- v. Collateral job creation in agriculture & processing using mine land and water provision.

Existing initiatives/experience: None of the 4 proposals (A, B, C & D) have been done previously.

## 5 Constituency participation in implementation

The Mining Phakisa and the MMP incorporate all key stakeholders: state, private sector, labour, academia and communities around discrete projects.

## 6 Benefits

What social/economic groups would benefit from the proposal directly and indirectly? Please use the following table, and do not list more than 5 groups. Please describe the benefits as precisely as possible.

Group	Job creation and retention	Other benefits	Time frame for success
Semi-skilled workers in unviable mines heading for closure/contraction	200k	10X multiplier	0-5y
Skilled miners (new mechanised mines)	100k	10X multiplier	5-10y
Skilled workers in the supply-chains (capital goods, consumables and services)	120k	10X multiplier	1-10y
Skilled and semi-skilled workers in downstream industries	TBD	10X multiplier	5-10y
Semi-skilled workers in agriculture & processing	10k	10X multiplier	2-5y

## 7 Cost and potential sources of funding

Social/economic groups impacted by implementing the proposal directly or indirectly:

Group	Anticipated impact costs	Potential sources of funding to mitigate the impacts	Time frame for impact
Communities impacted by potential new modernised mines	unknown	Mining company: Must be built into the mining and processing financial plan	2-30y
Sending communities of miners potentially displaced by modernisation	unknown	National and Provincial Government (e.g. Wild Coast SDI)	0-10y

## 8 Risks

The main risks that could prevent the proposal from achieving the anticipated outcomes:

- i. Lack of requisite resourcing;
- ii. Lack of coordination and prioritisation within and between the key players (state, private sector, labour and communities);
- iii. Collapse in key commodity ZAR prices (e.g. gold and platinum).

## 9 Risk mitigation

What should be done to mitigate the identified risks? Which stakeholder would be responsible for the risk mitigation activity?

- i. Lack of requisite resourcing: Government (Treasury through DST) and the private sector (Council) have already committed R100mn per annum for 3y and government (DST) have requested a 10y funding plan. Further, R300-625mn (Projects A-D, above) of funding is needed to ensure the overall delivery of jobs. If funding for further years is not forthcoming from the private sector the initiative will have to be pared down (by ~30%).
- ii. Lack of coordination and prioritisation within and between the key players: The elevation of the initiative to a National Presidential Priority Project with effective regular Inter-Ministerial Cluster oversight.
- iii. Collapse in key international commodity ZAR prices (e.g. gold and platinum): Decrease the cost of mining (Mining Phakisa outcomes) and the ability to withstand mineral price slumps.

## 10 Additional comments