SARW
Southern Africa Resource Watch

SADC Mineral Sector Harmonisation Project
SARW research project

# SADC AMV Alignment and Harmonisation Report

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## Abbreviations

| | |
|---|---|
| $ or US$ | United States dollar |
| /an | Per annum |
| /t | Per (metric) ton |

| | |
|---|---|
| Al | Aluminium |
| AMV | Africa Mining Vision |
| Anglo | Anglo American Corporation |
| an | annum (year) |
| APT | Additional profits tax (similar to RRT) |
| BC | Bushveld Complex |
| BEE | Black Economic Empowerment (RSA) |
| BFS | Bankable Feasibility Study |
| Bn | Billion (Giga) |
| BoP | Balance of Payments |
| CAGR | Compound Annual Growth Rate |
| Capex | Capital expenditure |
| CCGT | Combined cycle gas turbine |
| CCR | Continuous cast rod |
| CIF | Cost insurance freight (price includes all charges up to named destination port) |
| CMV | Country Mining Vision |
| Co | Cobalt |
| CoC | Centre of Competence |
| Cr | Chromium |
| Cu | Copper |
| DMS | Dense media separation |
| Fe | Iron |
| FOB | Free on board (price includes costs up to named port of departure) |
| Forex | Foreign exchange |
| G | Giga – billion ($10^9$) |
| GDP | Gross Domestic Product |
| GFCF | Gross Fixed Capital Formation |
| GJ/t | Giga Joules per tonne |
| HC | Hydrocarbons (oil & gas) |
| HDI | Human Development Index (UN) |
| HEP | Hydro-electric Power |
| IDC | Industrial Development Corporation (RSA) |
| IFC | International Finance Corporation |
| IMF | International Monetary Fund |
| IP | Intellectual property |
| IPAP | Industrial Policy Action Plan (RSA) |
| Kg or kg | Kilogram |
| koz | Kilo (1000) troy ounces |
| LDC | Least Developed Country |
| LME | London Metals Exchange |
| M | Mega – million (mn) |
| $m^2$ | Square metre |
| Mn | Manganese |
| mn | Million/s |
| Mt | Million tonnes |
| Mt | Mega (million) metric tons |
| MVC | Mineral Value Chain |
| MW | Mega (million) watt |
| NIC | Newly Industrialising Country |
| OEM | original equipment manufacturer |
| Opex | Operating expenditure |
| Oz | Australia |
| oz | Troy ounce (31.1034768 gram) |
| pa | per annum |
| Pb | Lead |

| | |
|---|---|
| PFS | Pre-Feasibility Study |
| PGM | Platinum group metal (Pt, Pd, Rh, Ru, Ir, Os) |
| PPP | Public-Private Partnership |
| Pt | Platinum |
| R or ZAR | South African Rand |
| RDI | Research, Development & Innovation |
| RMC | Regional Member Country (SADC) |
| RMV | Regional Mining Vision |
| ROI | Return on investment |
| ROW | Rest of the world |
| RRT | Resource rent tax |
| SA or RSA | South Africa |
| SARB | South African Reserve Bank |
| Semis | Semi-fabricated product |
| SEZ | Special Economic Zone |
| SMC | State Mining Company |
| SOC | State-owned Company |
| STEM | science, technology, engineering and mathematics |
| T or t | Metric ton |
| Ti | Titanium |
| Tpa or tpy | Metric tons per annum/year |
| US$ or USD | US dollar |
| VA | Value added or value addition |
| VCF | Venture Capital Fund |
| WB | World Bank |
| Zn | Zinc |

# Introduction

This report was commissioned by The Open Society Initiative of Southern Africa (OSISA) and its SARW (Southern African Resource Watch) affiliate through the Natural Resource Governance initiative on "The harmonisation of Mining Policies, Legislation and Regulations in Southern Africa". This falls under their 2015–2018 Strategy[1] GOAL 5: "Regional and continental initiatives", namely that "OSISA will work with the Africa Mining Development Centre (AMDC) to support the popularisation and domestication of the AU's African Mining Vision (AMV) in Southern Africa, as well as work with the Economic Commission of Africa (ECA) regional office based in Zambia to support the implementation of the SADC Mining Harmonisation policy."[2]

The first phase entailed the commissioning of eight SADC mining regime alignment country studies (Madagascar, Zambia, Malawi, Mozambique, Zimbabwe, Namibia, South Africa and Lesotho – contained in the appendices) which looked at the extent to which the eight mining sector policies, legislation and regulatory frameworks conform to the SADC Harmonisation Framework and the African Mining Vision (AMV). Through this project, OSISA will analyse mining sector policies, legislation and regulatory frameworks of selected Southern African Development Community (SADC) member States to identify similarities, differences, innovations and best practices for peer-learning. The project aims to update the SADC mining policy harmonisation framework and align it to the continental aspirations expressed in the Africa Mining Vision (AMV).

The goal of the country level studies "is to consolidate national mining sector policies, legal and regulatory frameworks in the SADC member States and align them to the Africa Mining Vision.

Other objectives include:

- To update the SADC mining harmonisation policy framework in line with the Africa Mining Vision through identifying areas requiring further adjustment;
- To compare national mining policies, legal and regulatory frameworks with the SADC mining harmonisation framework and identify areas for national action;
- To collect and collate updated information on national mining policies, legislations and regulations as a resource for policy-makers;
- To stimulate a regional debate on regional policy harmonisation, reginal integration and international norms and standards in the minerals sector."[3]

The country level research tasks include assessing the degree of alignment with the AMV, particularly with respect to the following areas:

a) "Types of Mineral Asset Disposal (Leasing)
b) Fiscal linkages
c) Forward linkages (beneficiation)
d) Backward linkages (local content): Progressive normalisation of ownership
e) Backward (Upstream) Linkages:
    - Capital goods: Machinery, plant, equipment etc.

[1] "OSISA Strategy 2015–2018, Executive summary", www.osisa.org/sites/default/files/osisa_strategy_executive_summary.pdf
[2] "OSISA Strategy 2015–2018, Executive summary", pVI
[3] OSISA 2015, Country Studies TOR for "The harmonisation of Mining Policies, Legislation and Regulations in Southern Africa", November 2015

- Consumables: Explosives, drilling steel, parts, grinding media, chemicals etc.
- Services: Labour, analytical, financial, security, ICT, etc….

f) Knowledge linkages (skills and technology development, RDI, geo-survey)
g) Equitable cleaner and cheaper energy strategies
h) Key issues for the harmonisation of the Spatial Linkages
   - Regional infrastructure (power, transport, water, ICT, et al)
   - Development/resource corridors (SDIs)
   - Local Economic Development"[4]

This report attempts to provide an overarching perspective on SADC RMC[5] AMV alignment and a high-level assessment of alignment from the country studies (contained in APPENDIX XX matrix "AMV alignment from the 8 country studies"

The report first looks at the AMV, then summarises the main SADC mineral development strategies including the SADC Protocol on Mining, the Mining Strategic Plan (MSP), the Regional Indicative Regional Indicative Strategic Development Plan (RISDP), the Harmonisation of Mining Policies, Standards, Legislative and Regulatory Framework in Southern Africa, the Industrial Development Policy Framework (IDPF) and the recent Industrialisation Strategy and Roadmap.

The report briefly looks at the regional economy and the SADC minerals landscape, before discussing some of the implications of the AMV on mineral regimes in the SADC, as well as challenges to SADC mineral sector linkages development (up-, down- & sidestream).

The key regional mineral value chains are discussed in some detail (minerals for manufacturing, agriculture, power, and infrastructure as well as potential producer power). Finally, eighteen regional AMV-aligned regional minerals development strategies are suggested, as well as harmonised SADC producer power strategies.

The appendices comprise 1) AMV – Mineral Regime Alignment Checklist, 2) RMC - AMV Alignment Extracted from the nine Country Reports, 3) Select Recommendations from the Country Reports relating to the AMV Alignment Elements, and the nine Country Reports

## The AMV (Africa Mining Vision)

In 2007 the AU[6], AfDB[7] and UNECA[8] convened a "Big Table" on "Managing Africa's Natural Resources for Growth and Poverty Reduction" where the seminal importance of establishing the critical natural resources "linkages" clusters (backward and forward linkages industries) was highlighted[9].

[4] OSISA 2015, Country Studies TOR for "The Harmonisation of Mining Policies, Legislation and Regulations in Southern Africa", November 2015
[5] RMC: Regional Member Country (SADC)
[6] AU African Union
[7] AfDB African Development Bank
[8] United Nations Economic Commission for Africa
[9] See Jourdan, P.P. "The Challenge of Effective Management of Natural Resources for Growth and Poverty Reduction in Africa" The 2007 Big Table, AU/UNECA/AfDB: Addis Ababa, February 2007;

Subsequently, in 2008, the AUC[10] commissioned a study on a "*Plan of Action for African Acceleration of Industrialisation- Promoting Resource-Based Industrialisation: A Way Forward"*[11] which formed a base document for a "technical taskforce", convened with UNECA, to work on a draft new "Africa Mining Vision" (AMV) in preparation for the "First AU Conference of Ministers Responsible for Mineral Resources Development". It was adopted by African Union (AU) Heads of State and Government in 2009.

The AMV is based on several other African documents on the maximisation of the developmental impacts of mineral resources exploitation, including:

- The Summary Report of the 2007 "Big Table" on "Managing Africa's Natural Resources for Growth and Poverty Reduction"
- The Johannesburg Political Declaration and Plan of Implementation - chapter 46 and paragraphs (f and g) of chapter 62 (Sustainable development for Africa) - of the World Summit on Sustainable Development (WSSD);
- Durban Declaration (1997)
- The Yaoundé Vision on Artisanal and Small-scale Mining,
- The Africa Mining Partnership's Sustainable Development Charter and Mining Policy Framework,
- The SADC Framework and Implementation Plan for Harmonisation of Mining Policies, Standards, Legislative and Regulatory Frameworks,
- UEMOA's Common Mining Policy and "Code Miniere Communautaire",
- The Review Africa's Mining Regimes by the ISG[12], convened by the AUC and UNECA.

The AMV aims to achieve "transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development" (see box) through the realisation of the seminal mineral linkages opportunities:

- Forward: "Down-stream linkages into mineral beneficiation and manufacturing";
- Backward: "Up-stream linkages into mining capital goods, consumables & services industries";
- Physical & Knowledge Infrastructure: "Side-stream linkages into infrastructure (power, logistics; communications, water) and skills & technology development (HRD and R&D)";
- PPPs & CPPP[13]s: "Mutually beneficial partnerships between the state, the private sector, civil society, local communities and other stakeholders; and
- Geo-knowledge: "A comprehensive knowledge of its mineral endowment." (see box)

[10] AUC Africa Union Commission

[11] See Jourdan, Paul, 2008: "Plan of Action for African Acceleration of Industrialisation- Promoting Resource-Based Industrialisation: A Way Forward", paper prepared for the African Union (AU) Commission, Addis, August 2008.

[12] ISG International Study Group

[13] CPPP Community- Public-Private-Partnership

## Africa Mining Vision:

**"Transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development"**

This shared vision will comprise:

- A knowledge-driven African mining sector that catalyses & contributes to the broad-based growth & development of, and is fully integrated into, a single African market through:
  - Down-stream linkages into mineral beneficiation and manufacturing;
  - Up-stream linkages into mining capital goods, consumables & services industries;
  - Side-stream linkages into infrastructure (power, logistics; communications, water) and skills & technology development (HRD and R&D);
  - Mutually beneficial partnerships between the state, the private sector, civil society, local communities and other stakeholders; and
  - A comprehensive knowledge of its mineral endowment.
- A sustainable and well-governed mining sector that effectively garners and deploys resource rents and that is safe, healthy, gender & ethnically inclusive, environmentally friendly, socially responsible and appreciated by surrounding communities;
- A mining sector that has become a key component of a diversified, vibrant and globally competitive industrialising African economy;
- A mining sector that has helped establish a competitive African infrastructure platform, through the maximisation of its propulsive local & regional economic linkages;
- A mining sector that optimises and husbands Africa's finite mineral resource endowments and that is diversified, incorporating both high value metals and lower value industrial minerals at both commercial and small-scale levels;
- A mining sector that harness the potential of artisanal and small-scale mining to stimulate local/national entrepreneurship, improve livelihoods and advance integrated rural social and economic development; and
- A mining sector that is a major player in vibrant and competitive national, continental and

Through establishing the linkages industries and industrial clusters, African states will embark on a resource-based development and industrialisation process that will gradually diversify their economies, with decreasing importance of their resources *comparative* advantage and an increasing relative importance of a skills-based *competitive* advantage

The key elements to an AMV, that uses mineral resources to catalyse broad-based growth and development need to be, from looking at successful resource-based development strategies elsewhere, the maximisation of the concomitant opportunities offered by a mineral resource endowment, particularly the "deepening" of the resources sector through the optimisation of linkages into the local economy. The principal opportunities which could emanate from resource endowment are:

1. Fiscal Linkages (resource rents): The use of resource differential and windfall rents to improve the basic physical and knowledge infrastructure of the nation through investment in physical infrastructure and social & human infrastructure.
2. Spatial Linkages:
   - Physical infrastructure: The collateral use of infrastructure developed through resources development to open up other resource potential (such as agriculture, forestry and tourism[14]), to access zones of economic potential with lower returns (e.g. agriculture) that cannot support their own requisite infrastructure.

14In most African states tourism potential is based on natural resources such as fauna, flora and geomorphology (beaches, mountains, etc.), rather than man-made attractions.

- LED and CSI: The upliftment of local mining communities and the establishment of sustainable economic activities that will endure beyond the inevitable resource exhaustion (mine closure)

3. Knowledge Linkages (R&D and HRD): Resources exploitation technologies generally need adaptation to local conditions (e.g. climate, mineralogy, terrain), which provide opportunities for the development of niche technological competencies in the resource inputs sector. This sector tends to be knowledge-intensive and accordingly needs "priming" through investment in resources HRD and R&D. However, several studies have shown that it has the capacity to later "reinvent" itself outside the resources sector through the lateral migration of technological competencies to produce new products for other (non-resource) markets.
4. Forward Linkages (downstream value addition): The use of the locational advantage (CIF-FOB) of producing crude resources to establish resource-processing industries (beneficiation) that could then provide the feedstock for manufacturing and industrialisation.
5. Backward Linkages (upstream value-addition): The use of the relatively large resources sector market, particularly at a REC level, to develop the resource supply/inputs sector (capital goods, consumables, services).

The AMV recognises several critical constraints and success factors for realising the vision, namely:

- Lack of development-oriented mining policy frameworks and skills to provide direction to the sector;
- The Capture and effective deployment of resource rents (fiscal linkages) including the avoidance of the "resource curse" (rent subversion) and Dutch Disease (currency appreciation)
- Collateral use of resource infrastructure is curtailed through the lack of feeder infrastructure and the failure to build in third party access at non-discriminatory tariffs
- Lack of downstream value addition due to the non-availability of other critical inputs, besides the crude resources, necessary for competitive beneficiation, the high entry barriers (economies of scale) of many beneficiation processes, the global corporate beneficiation strategies of the TNCs[15], monopoly pricing (import parity price[16]) of key intermediates and lack of supportive policies.
- Failure to establish upstream (supplier) industries due to the centralised purchasing strategies of most resource extraction TNCs, the lack of a domestic business sector with the requisite capacity and access to capital to take up these opportunities and the lack of local human resources and technological expertise to establish these, industries
- Failure to promote technology/product development due to limited investment in HRD and R&D by the state and the resources companies (TNCs) which generally centralise their R&D in their home bases

[15] TNC Trans National Corporation

16 Import Parity Price (IPP) is the alternative imported price of the resource (CIF) in a particular country

*Most of these are governance failures to stipulate the facilitation of these linkages in the concession contracts or mining licenses, and they are symptomatic of the skills deficiency within governments as well as the power of the mining companies, developed countries and their multilateral institutions to influence African minerals policies and legislation.*

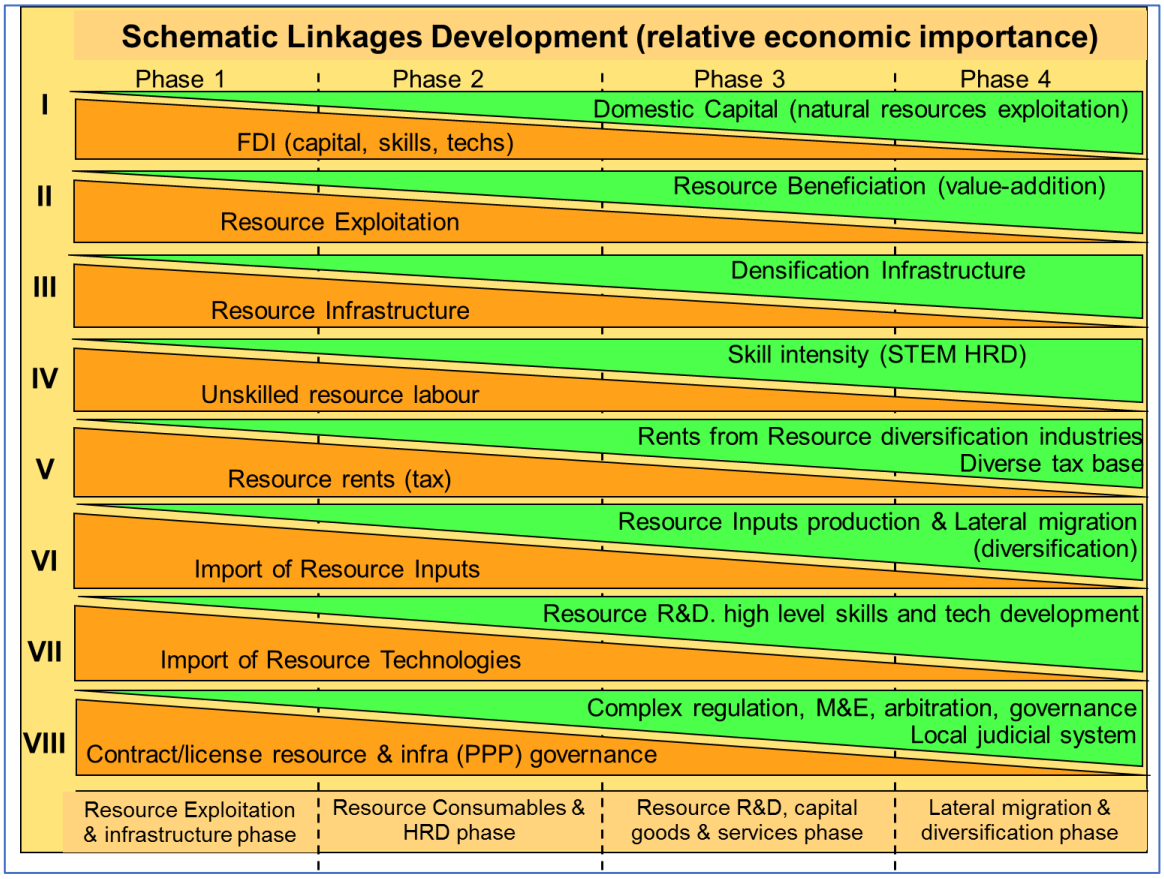
Some of the critical mining license (concession contract) elements critical to the realisation of the AMV include:

- Optimal capture of resource rents;
- Equitable share of the resource rents;
- Self-adjusting fiscal regime which adjusts to price movements (e.g. a RRT[17])
- Third-party access to the resource at non-discriminatory tariffs;
- The development of the local resource supplier/inputs sector through the use of flexible local purchase milestones (local content mechanisms);
- Flexible value-addition (beneficiation) milestones & incentives
- Competitive pricing of resource outputs/products in the domestic market
- Annual expenditure on HRD and R&D,
- Employment indigenisation milestones,
- Deeper regional policy harmonisation and integration, and
- Auditing and SHE[18] standards.

A schematic phasing of a resource-based development strategy is presented in Figure 1, which displays the decreasing importance of resource exploitation as the resource linkages are developed as well as decreasing imports of mining inputs and technologies accompanied by an increase in inputs production and minerals RDI and technology development.

[17] RRT: Resource Rent Tax
[18] SHE Safety, Health & Environment

***Figure 1: Schematic resource-based industrialisation phasing.***




*Source: Adapted from AMV 2009*

A SADC resource-based industrialisation strategy would typically go through similar phases of industrialisation, with decreasing importance of its resources *comparative* advantage and an increasing relative importance of a skills-based *competitive* advantage. The pace of this evolution would differ from country to country.

At the present moment, all SADC RMCs can be positioned on this continuum, though most would still be in Phases I or II, while RSA would probably be positioned somewhere between Phase II and III (though slipping back) and Zimbabwe has possibly slipped from Phase II–III to I–II.

Finally, the AMV presents a framework for action over 20-50 years and concludes that "Africa will only achieve its ultimate goal of industrialisation and development by acting collectively", as RECs rather than RMCs, and in this regard the realisation of the minerals backward linkages are a critical element of the SADC MVCs for industrialisation.

# SADC Mineral Development Strategies

## SADC Protocol on Mining

The SADC Protocol on Mining which came into effect in February 2000 forms the basis for SADC Secretariat's work programme on mining and seeks to strengthen the role of the sector in socio-economic development.

The Protocol's central tenets are to harmonise and align mining policies, administrative and regulatory frameworks; share human and technological capacities; and promote private sector investment especially through improved availability of economic information.

The Mining Protocol's aims are broadly consistent with the Africa Mining Vision (AMV), adopted by African Union (AU) Heads of State and Government in 2009, in that the goals of both the Vision and the Protocol seek to link minerals exploitation to Africa's sustainable development and industrialisation.

## SADC Mining Strategic Plan (MSP)

In August 2001, the SADC Mining Ministers approved the Mining Strategic Plan, (SADC, 2001). The Plan spells out how the Mining Protocol would be implemented to realize the SADC agenda. The Plan covers seven areas, namely:

1. Mining protocol - dealing with issues of institutional framework, policy harmonisation, capacity and funding;
2. Information and geology – dealing with efficient information generation and dissemination;
3. Mining, marketing and mineral processing – dealing with promotion of investment in the sector;
4. Small-scale mining – dealing with supporting the development of the sub-sector in the region;
5. Human resource development and technology – dealing with development of skills and technology base;
6. Environmental protection – dealing with environmental standards and initiatives; and,
7. Gender mainstreaming in the mining sector – facilitating the active involvement of women in the sector.

The SADC Mining Strategic Plan is the operational instrument of the Mining Protocol, aimed at achieving the protocol's objectives each of which is associated with sub-objectives and a prioritized list of actions in the form of an implementation plan.

## SADC Regional Indicative Strategic Development Plan (RISDP)

The RISDP (approved by 2003 Summit) is a 15 year framework that sets the policies, strategies, and priorities for achieving the long-term goals of SADC for deeper regional integration and poverty eradication. The last Summit in August 2015 approved the revised RISDP (2015-2020) which prioritised the sequencing of targeted outputs on Industrial Development and Trade Liberalisation in order to ensure that, at the current stage of integration in SADC, industrialisation is prioritised".

The RISDP proposes that SADC should, amongst other things, focus on the implementation of the Strategy, development and implementation of regional value chain and value addition strategies in selected priority sectors, and the implementation of the Protocol on Mining.

## Harmonisation of Mining Policies, Standards, Legislative and Regulatory Framework in Southern Africa

The Harmonisation Implementation Plan was published by UNECA and SADC in 2004[19] and has 9 areas of harmonisation in the regional minerals industry:

1. Mineral Policies

[19] UNECA & SADC 2004, "Harmonisation of Mining Policies, Standards, Legislative and Regulatory Frameworks in Southern Africa", Addis and Gaborone, December. ECA/SA/TPub/Mining/2004/03

2. Political, Economic and Social Environment
3. General Investment Environment
4. Mining Fiscal Environment
5. Minerals Administration and Development Systems
6. Artisanal and Small-Scale Mining (ASM)
7. Research and Development (R&D)
8. Human Resources and Skills Development
9. Gender

The harmonisation framework has seven themes, each with its own action points:

1. **Policy, Regulations and Administration**: the aim is to adopt similar objectives for national mining policies and align administration procedures in the mining sector;
2. **Geological and Mining Information Systems**: the objective is to standardise geological data as well as increase the availability of geological information to stimulate investment in the SADC mineral industry;
3. **Human Resources and Institutional Capacities**: this seeks to improve the quality and quantity of available skills, and standardise qualifications as a basis for the free movement of skills in the region;
4. **Safety, Health and Environment (SHE)**: focuses on developing and implementing a common set of health, safety and environmental standards across the SADC mining industry;
5. **Investment promotion**: aims at institutionalising SADC-wide mining investment forums, providing investment related information and targeting infrastructure development in potential mining areas.
6. **Value Addition, Innovation and Research and Development**: this aims to promote downstream value creation through the assembly of information on tariffs and market opportunities and developing a system of innovation to increase the competitiveness of SADC mineral value chains;
7. **Artisanal and Small-Scale Mining**: targets upgrading the knowledge and skills of small-scale and artisanal miners as well as providing information and services to address their traditional lack of access to such services.

The harmonisation plan is partly aligned to the AMV (& CMV), but fails to fully target the huge upstream (mining inputs) opportunities that would require REC policy harmonisation on local-regional content in order to be fully realised (regional economies of scale), though it does mention "cluster" development (see Milestones table below). It also appears to not include regional harmonisation on the intra-regional development of skills formation capacity, particularly STEM skills, and intra-regional protocols on the usage of such capacity. Likewise RDI capacity and usage.

Although it mentions the concept of an APT (additional profits tax) it does not recommend a common RRT (resource rent tax) that could be used to facilitate up- and downstream linkages through an RRT-VA offset mechanism (see CMV).

In general, the harmonisation strategy focuses more on the movement towards alignment of policies/instruments to avoid a "race to the bottom", rather than regional mineral resource-based development strategies. However, given that it predates the AMV by several years, this is understandable, but underlines the need to revisit the harmonisation initiative.

The table below gives the envisaged harmonisation milestones, but these time-frames have clearly not been achieved, even in a small part. The RMCs have continued to develop mining policy, strategy, law and regulations with almost no consideration of the regional framework. This failure is due to a variety of reasons, including a lack of RMC awareness of the importance of regional alignment, petty nationalism, lack of

capacity in government, dictates on mining law by creditors (e.g. Bretton Woods Institutions) and the capture of national minerals policy/law by TNCs and local elites.

***Table 1: Milestones Standardization and Policy Alignment in the SADC Minerals Industry***

| AREAS OF HARMONIZATION | MAJOR COMPONENTS | TIME FRAME FOR ACHIEVEMENT OF HARMONIZATION | | |
|---|---|---|---|---|
| | | IMMEDIATE-TERM (Up to 2 years) | SHORT TERM (2-5 years) | MEDIUM TERM (5 to 10 years) |
| STANDARDIZATION | Technical and Engineering requirements | | ◆ | |
| | Geology | ◆ | | |
| | Health and safety | ◆ | | |
| | Skills, training and Qualifications | | ◆ | |
| | Environmental Regulations | | ◆ | |
| | Social Obligations and Regulations | | | ◆ |
| | Mineral Valuation standards | ◆ | | |
| POLICY ALIGNMENT | Exploration and Mining licensing | | ◆ | |
| | Land rights and tenure | | | ◆ |
| | Mining Fiscal regime | | ◆ | |
| | Minerals Marketing | | ◆ | |
| | Minerals Processing and Value Addition | | | ◆ |
| | Minerals Cluster Development | ◆ | | |
| | Environmental Requirements | ◆ | | |
| | Social Obligations and Regulations | | ◆ | |
| | Institutional Framework | ◆ | | |
| | Infrastructure for minerals development (energy, transport, water) | | | ◆ |
| | Artisanal Mining | | ◆ | |
| | Small Scale Mining | | ◆ | |
| | Gender Parity | | ◆ | |
| | Labour Policies | | | ◆ |
| | Cross-border movement of minerals skills | | | ◆ |
| | Cross-border movement of capital, minerals, goods and services | | | ◆ |
| | Investment Regulations | ◆ | | |
| | Economic and Political Framework | | | ◆ |
| | Customs and tariffs Harmonization | | | ◆ |
| | Product Security | ◆ | | |

## SADC Industrial Development Policy Framework (IDPF)

The SADC adopted an Industrial Development Policy Framework (IDPF) in November 2012 that aims to enhance regional cooperation in industrial development. It seeks to promote the development of an integrated industrial base through the exploitation of regional synergies in value-added production and the enhancement of export competitiveness. The Implementation Action Matrix at the end of the SADC IDPF constitutes the SADC Work Programme on Industrial Development for the period 2013-2018. "The overall objective of the SADC IDPF is to promote activities that support and improve local and regional industrial

development through, for example, mineral beneficiation and value addition. This study focusses on mineral beneficiation in the IDPF in "Key Intervention Area 1- Developing Sector specific strategies"[20]:

i. "Profile the mineral beneficiation sector, to identify regional development potential as well as bottlenecks and constraints to regional value chain development;
ii. Identify key interventions to promote development of specific regional value chains starting with the three priority sectors using a broader participatory and evidenced-based approach;
iii. Identify strategic instruments which can be used by member states to promote mineral beneficiation sector development in selected value chains."[21]

## SADC Industrialisation Strategy and Roadmap

The focus on mineral value chains (MVCs) was reinforced in the SADC Industrialisation Strategy and Roadmap: "Leveraging the Region's Diverse Resources for Sustainable Economic and Social Development through Beneficiation and Value Addition". Using the abundant and diverse regional resources (especially agriculture and mining) to accelerate industrialisation through beneficiation and value addition. This strategy brings the regional agenda closer alignment with the AMV which target the realisation of the crucial mining linkages (up-, down- and sidestream) which make up the MVCs.

The SADC Industrialisation Strategy and Roadmap has 10 qualitative strategic goals which are fully aligned with the Regional MVCs Development Strategy. Table 2 includes the upstream (backward) linkages and the sidestream linkages alignment:

***Table 2: SADC Industrialisation Strategy Qualitative Objectives & MVCs***

| **SADC Industrialisation Strategy Qualitative Objectives** | **SADC MVC Development Strategy Alignment** | | |
|---|---|---|---|
| | Upstream (inputs into mining & processing) | Downstream (feedstocks into regional economy) | Sidestream (HRD/RDI & physical infrastructure) |
| i) Achieve a major socio-economic transformation at the national and regional levels. | Medium | High | High |
| ii) Accelerate the growth momentum and enhancing the comparative and competitive advantage of the economies of the region. | Medium to High | High | High |
| iii) Diversify and broaden the industrial base and interdependences. | High | Medium to High | Medium to High |
| v) Enhance the productive capacity, productivity and competitiveness of SADC economies. | High | Medium to High | High |
| vi) Provide a framework for technological and industrial Catch-up, export diversification, natural resources beneficiation, enhanced value-addition and increased regional trade and employment generation. | High | Very High | Very High |
| viii) Develop viable regional value chains capable of interacting with global value chains and identify areas where the SADC region can have the greatest success in capturing high opportunities based on present and future strengths and capabilities. | High | Very High | High |
| ix) Build a collaborative but challenging strategic partnership between governments, the private sector, civil society and development partners as a compact for industrialization. | Medium-High | Medium-High | High |
| x) Ultimately, build firm and enduring foundations for a modernized SADC economy." | Very High | High | Very High |
| SADC Industrialisation Strategy and Roadmap 2015-2063" April 2015, Harare Summit, p3 | | | |

[20] SADC IDPF 2012 p26
[21] SADC IDPF 2012 p26

*Source: Derived from SADC Industrialisation Strategy 2015*

The development of the knowledge linkages (STEM skills & RDI) is a seminal prerequisite for developing the knowledge-intensive backward linkages, particularly capital goods (engineer intensive). The realisation of the backward linkages is arguably the most important of all of the mineral linkages as they have numerous multipliers, lateral migration (into other sectors) and can outlive the resources. However, they are critically dependent on RDI capacity and high level STEM skills. Consequently upstream and sidestream should be read together in Table 2.

The scope of mineral beneficiation and value addition is often misconceived as being restricted downstream value addition (from exploration, through mining, concentration, smelting/refining, semis, components, subassembly to final fabricated product). However, Figure 2: Mining & Mineral Processing: Main Actors, includes the main key actors undertaking the value addition processes under "specific participants", metal production, as well as many of the inputs suppliers (capital goods, consumables, services) including transport and storage. "Promoting production (backward and forward) and horizontal linkages, both within the extractive industries and with related industries, is a key factor in ensuring that mineral resources exploitation would serve long term development goals in host countries. This requires a set of policy and regulatory actions that are best suited to maximizing the benefits to commodity–dependent developing countries (CDDC) along the entire value chain."[22]

*"Linkages foster learning processes and increases the local value added in the host country economy. Ultimately, these linkages will positively contribute to domestic productive capacities through the development of human capital, skill and technology. The channels for this development to occur include training of personnel, and the construction of relevant education and vocational structures as well as local R&D institutions."* [1]

[22] UNCTAD 2012, p33

***Figure 2: Mining & Mineral Processing: Main Actors and Participants***

| STAGE | Main actors | ACTIVITY | Specific participants |
|---|---|---|---|
| **EXTRACTIVE** | Integrated (major) companies<br>National & local companies<br>Independent producers (junior)<br>Service providers companies<br><br>Government agencies<br>Local communities<br>Professional and non<br><br>governmental organizations<br>Financing & other services | **Exploration** | Geological and geophysical surveys and analysis services<br>Exploration equipment suppliers<br><br>Engineering projects consulting<br><br>Exploration and drilling services<br><br>Government geological information providers |
| | | **Development** | Engineering services<br>Production equipment suppliers<br>Construction of mine facilities (e.g. roads, building, water)<br>Environmental and market analysis specialists<br><br>Drilling services |
| | | **Mining** | Equipment and spare parts suppliers<br>Mining operation services<br>Engineering projects consulting<br>On field services providers (admin., technicians, others)<br>Environmental specialists |
| **PROCESSING** | Integrated (major) companies<br>National & local companies<br>Independent refiners<br>Service providers companies<br>Local communities<br>Government agencies<br>Financing & other services<br>Non government organizations | **Processing** | Equipment suppliers<br><br>Maintenance services<br><br>Engineering and procurement services<br>Chemical products providers |
| | | **Refining** | Refining equipment suppliers<br>Metallurgical analysis<br>Environmental specialists<br>Engineering and procurement services<br><br>Chemical products providers |
| | | **Value addition** | Design services<br><br>Market analysis<br>Engineering and procurement services<br>Industrial marketing services |
| **TRANSPORT** | Integrated (major) companies<br>National & local companies<br><br>Shipping companies<br>Trading companies/brokers<br>Government agencies<br>Financing & other services | **Transport &**<br><br>**Storage** | Quality certification companies<br><br>Ship-owners<br><br>Charterers<br>Brokers<br>Port operators/ authorities<br>Insurers<br>Ship maintenance services |

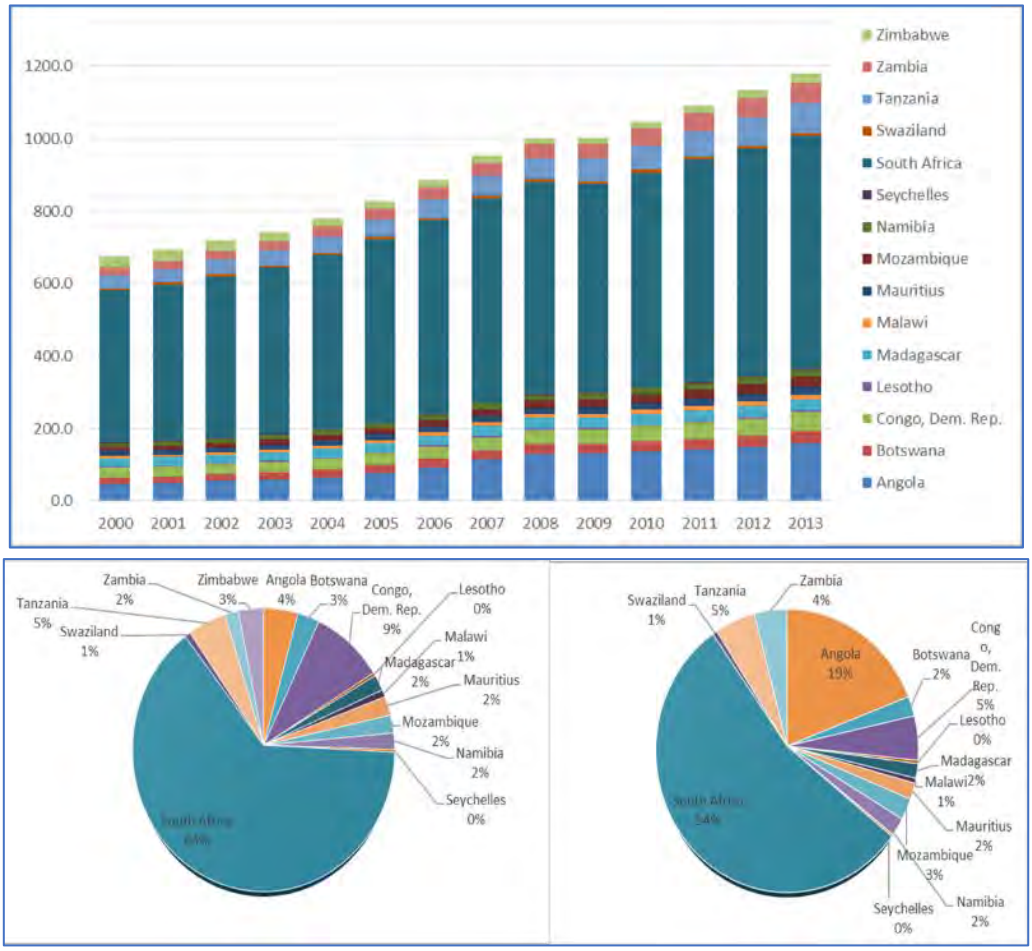
*Source: UNCTAD 2012*

## SADC Economy

The combined SADC GDP at PPP[23] is over one trillion US$ (Figure 3). Over half is from the RSA (54% in 2013), but its share has fallen by 16% since 2000 (64%).

[23] PPP: Purchase Power Parity

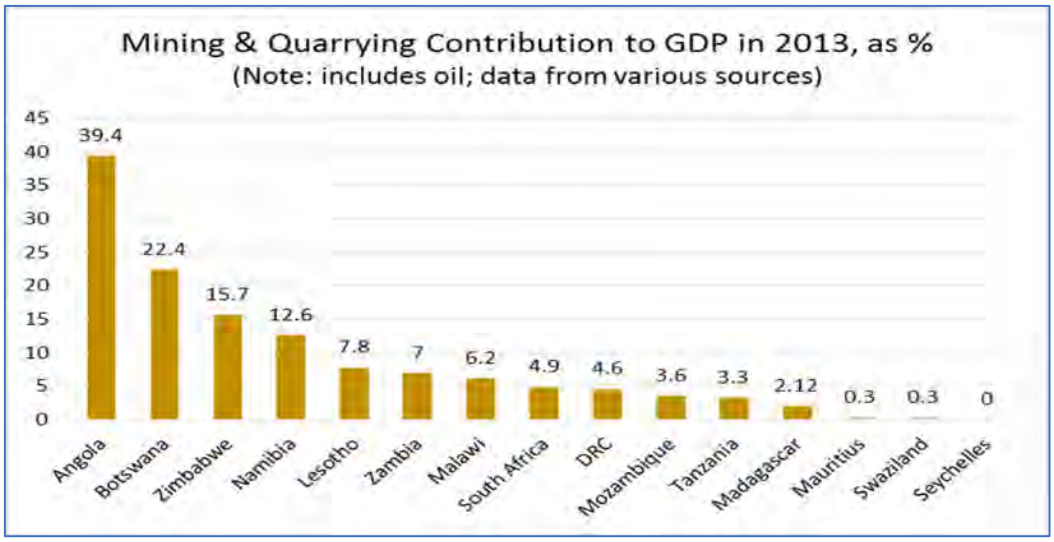
***Figure 3: SADC GDP, PPP - constant 2011 international $ (billions)***




*PPP: Purchase Power Parity, Source: extracted from IMF database*

Minerals extraction accounts for over 10% of GDP in four RMCs (Angola, Botswana, Zimbabwe and Namibia).

***Figure 4: SADC: Minerals % GDP***

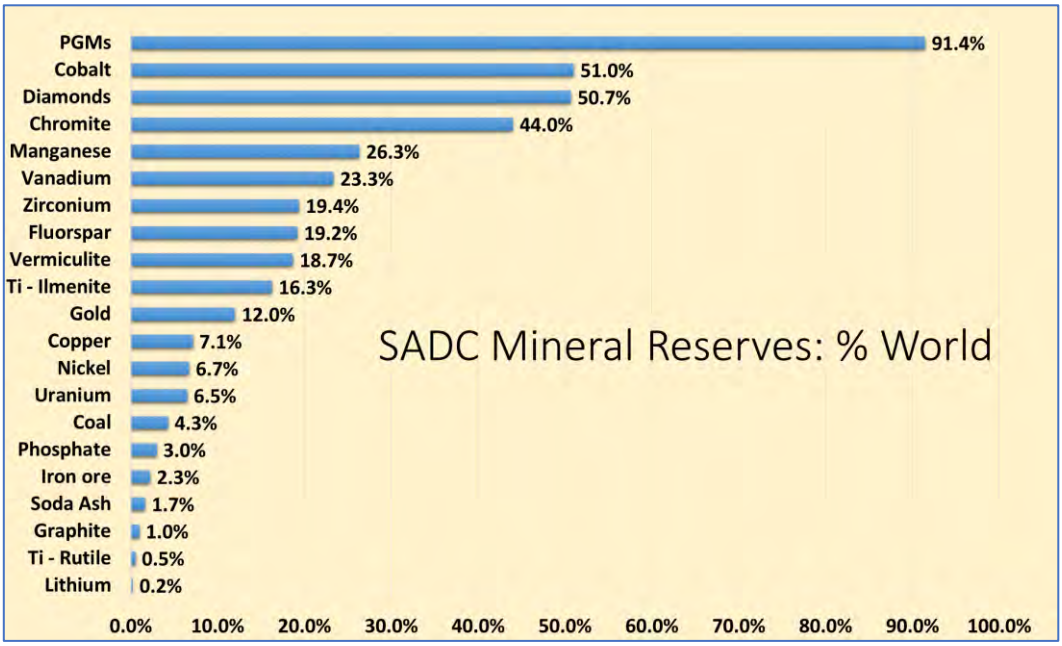



## The SADC Minerals Landscape

The SADC region has abundant mineral resources, both higher value minerals (precious metals and minerals) and the more important ferrous, base and industrial minerals necessary for domestic/regional development

(feedstocks into manufacturing, infrastructure, agriculture and other sectors). Its mineral reserves, in terms of global reserves, are led by the PGMs over 90% (SA and Zimbabwe), cobalt over 50% (DRC and Zambia), diamonds over 50% (Botswana, DRC, SA, Angola, Namibia, et al) and chromite at over 40% (SA and Zimbabwe). However, the region also has significant reserves of manganese, vanadium, zirconium, fluorspar, titanium, gold, copper, nickel, uranium and natural gas, as well as huge resources of iron ore, coal, manganese, and titanium.

***Figure 5: SADC Mineral Reserves- % World***



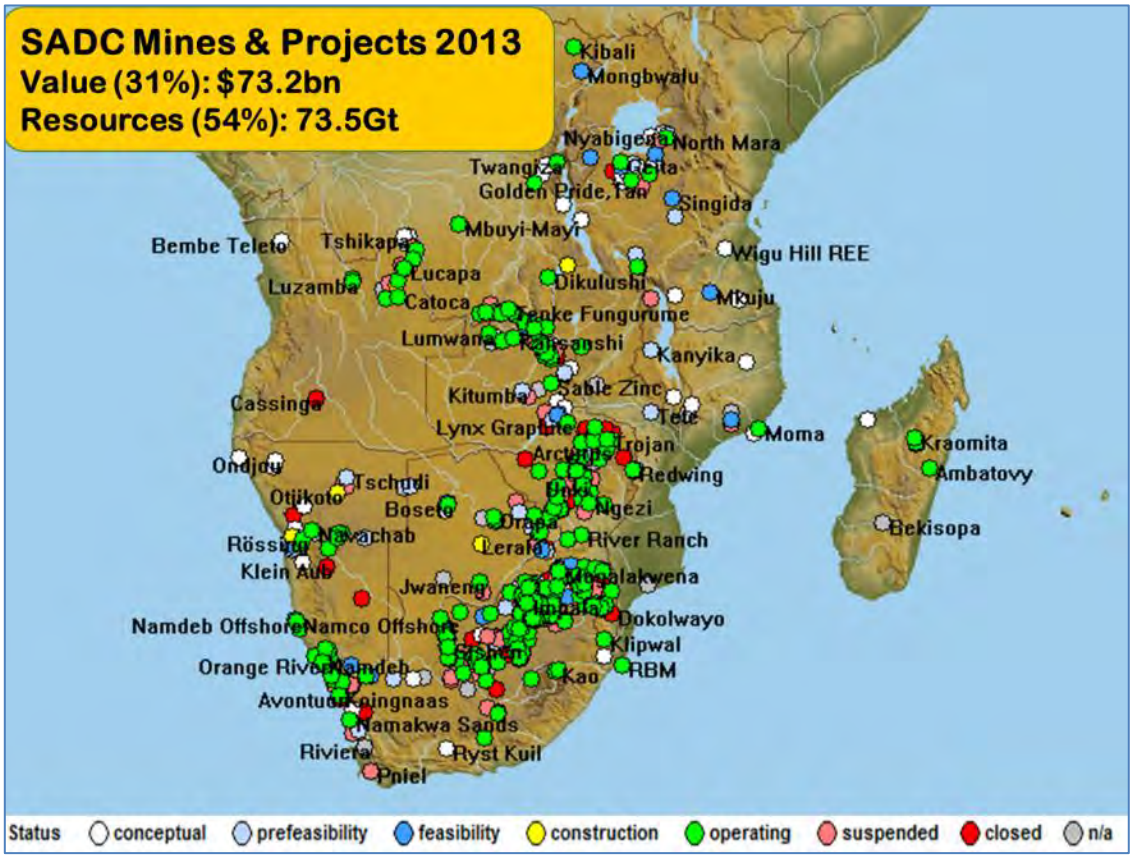

*Source: USGS, MCS, 2014/5*

The states with the widest range of mineral resources are South Africa and Zimbabwe, but this could reflect their higher level of geo-survey coverage (systematic geological mapping) rather than the inherent resource base (unidentified as yet). The SADC has ample resources of almost all industrial minerals important for feedstocks for local growth and development. However, due to the low value-to-mass of many of these, they are in general consumed relatively close to source (high relative logistics costs) and consequently are unlikely candidates for intra-regional MVC strategies (e.g. aggregate, limestone, et al).

In terms of global mineral production in 2013, the SADC led in PGMs (>60%), cobalt (58%), diamonds (56%), chromium (44%) and manganese ore (21%). It also has significant production of several other minerals, particularly those vital for local/regional development, including iron ore, copper, limestone/cement, phosphates, coal, oil and natural gas (for nitrogen, petrochemicals, power, liquid fuels, reductants, et al).

In 2013 there were 367 operating mines in the SADC region (Figure 6), excluding ASM, of which 47 had expansion plans or expansions under construction, mainly concentrated in South Africa (58%), Zimbabwe (14%), Zambia (7%) and DRC (7%).

*Figure 6: SADC Mining Projects in 2013 ($73bn-$230bn)*




*Note: Only 31% of the projects have values ($73bn), so the total value could be ~$230bn*
*Source: Derived from RMD. Copyright: SNL Metals & Mining, Stockholm, 2015*

Of importance is that in 2013 there were 339 mineral development "projects" at various stages of development including 194 conceptual projects, 48 at prefeasibility stage, 45 at feasibility stage, 14 under construction, 30 suspended projects with restart-up plans and 7 closed mines with plans to reopen. This robust project pipeline will underpin the continued future growth in the sector, if the bulk are realised, and offer further opportunities for MVC development.

The SADC operating mines and projects provide a major opportunity (market) for the SADC mining and mineral processing inputs sector (upstream MVC). In this regard, using tonnage of ore produced (ex-coal) as a proxy for inputs demand, the SADC offers a larger mining inputs market than the EU and China combined! Yet mining capital goods are dominated by imports, particularly from the EU. The backward mineral linkages are the most important to realise (particularly capital goods) as they have numerous multipliers, lateral migration (into other sectors) and can outlive the resources. However, they are critically dependent on RDI capacity and high level STEM skills.

## The Implications of the AMV on Mineral Regimes in the SADC

AMV alignment includes numerous elements relating to the mineral regimes of RMCs. However these can be grouped into the following 15 areas of policy, law and regulations:

1. Mining Policy
2. Optimisation of all linkages through mineral asset price discovery
3. Fiscal Linkages
4. Downstream (forward) Linkages

5. Upstream (backward) Linkages
6. Knowledge (sidestream) Linkages
7. Spatial (infrastructure-sidestream) Linkages
8. State Mining Company (SMC)
9. ASM
10. Partnerships
11. Corporate Social Responsibility/CSI
12. Environment
13. Health & Safety
14. EPA/BITS/WTO Constraints
15. Regional Integration (SADC)

Pertinent questions for an RMC endeavouring to align are presented in Appendix 1 on page 44, for each of the above 15 areas.

The SARW harmonisation and alignment initiative selected nine case studies, namely:

1. DRC
2. Lesotho
3. Madagascar
4. Malawi
5. Mozambique
6. Namibia
7. South Africa
8. Zambia
9. Zimbabwe

However, the AMV alignment matrix in Appendix 2, covers eight, with Lesotho in a separate table as there was very little alignment coverage in the report. In addition, Appendix 3 contains select recommendations from the Country Reports, where available.

Mineral extraction is currently or potentially of economic importance in all of these RMCs (Figure 4). Although, overall, the legal AMV alignment of the nine is low to medium, several have developed or are developing new National Minerals Policies (Zimbabwe, Mozambique and Lesotho) that are generally fairly well aligned with the AMV and will hopefully move from new policies, to new laws and regulations.

On the crucial aspect of resources rents capture and deployment into other forms of capital (human and physical infrastructure) for intergenerational equity, the only states with a RRT are Mozambique, Zimbabwe (APT, only for Special Mining Leases) and Zambia (variable profit tax on return on sales >8%). South Africa has a progressive royalty based on return on sales which is a very mild form of a RRT. Return on sales is a poor proxy for return on investment and has its origins in the RSA gold mining formula tax.

All of the selected states have a FIFA (first-in-first assessed) system that could permit valuable known mineral assets to be leased for nothing without obtaining fair value (public tender), but the Malawi Mines and Minerals Bill includes a provision for a mineral tenement tendering process (Sections 55 to 57), which will allow for price discovery in the future.

None of the RMCs place any requirements on mineral rights holders to add value to products, except, indirectly, in Zambia and DRC which have an export tax on copper concentrate to encourage local smelting

and refining, and Zimbabwe is attempting to ensure the smelting and refining of PGM concentrates (BMR[24] and PMR[25]). However, all of the countries have power constraints, which makes the imposition of downstream beneficiation obligations problematic, particularly for pyrometallurgical processes. Consequently a regional power generation and transmission strategy would enhance the scope for downstream linkages, given the huge HEP potential of the Congo River (~150GW, DRC) and the large gas reserves in the Rovuma Basin (>100TCF, Mozambique & Tanzania)

None of the states has obligatory local content targets. SA has BEE[26] procurement obligations but these effectively undermine local content through BEE firms "fronting" for foreign imports. Except for South Africa, most of the RMCs have very small mining inputs markets (Figure 9), limiting upstream linkages development (scale economies) and underlining the importance of harmonised regional-local content strategies to take advantage of the huge regional market (larger than the EU).

Equally important is the fact that HRD obligations are generally weak or non-existent (1% payroll skills levy in SA and Zimbabwe) though SA has a corporate spend obligation of 5% of payroll under its BEE Mining Charter. None of the states has a local RDI spend obligation, but SA has 150% tax allowance for R&D expenditure and local geochemical analyses targets in their Charter.

The Country Studies are contained in the Appendices at the end of the report.

## SADC Linkages Development (up-, down- & sidestream) Challenges

The main challenges to regional linkages (MVCs) development and AMV alignment and the relative importance of regionally harmonised strategies are presented in Table 3:

***Table 3: Challenges and Regional Harmonisation Importance***

| Challenge | Regional Harmonisation Importance |
|---|---|
| **Monopoly/oligopoly pricing (IPP ) of metals and intermediate feedstocks for downstream value addition, due to lack of competition (in turn due to constrained RMC markets);** | High: Need the larger regional market to facilitate competition (rivalry) particularly for mineral-based feedstocks with high entry barriers (e-o-s[27]). Need SADC-wide competition regulation. |
| **Serious energy constraints in almost all RMCs (especially SA, Zambia, DRC and Zimbabwe);** | High: low-cost sustainable (low carbon) resources are concentrated in but a few RMCs (HEP: DRC, gas: Mozambique, Tanzania & Angola), requiring a regionally harmonised energy strategy |
| **Poor transport infrastructure (high logistics costs, especially land-locked RMCs);** | High: Key transport infrastructure is often shared by several RMCs (particularly landlocked RMCs) requiring regional infrastructure (road/rail and ports) and seamless movement (protocols). |
| **Intra-regional metals/intermediates and mining inputs tariff barriers (TBs) and non-tariff barriers (NTBs);** | TBs: Medium<br>NTBs: High. Goods are commonly held up for weeks at intra-regional border posts. |
| **Poor minerals technology (RDI) capacity (almost no R&D is done in the region outside** | High: RDI is seminal for realising the up- and downstream linkages. Need regional harmonisation of RDI mining license |

[24] BMR: Base metals refinery
[25] PMR: Precious metals refinery
[26] BEE: Black Economic Empowerment. See SA Country Report
[27] e-o-s: economies-of-scale

| | |
|---|---|
| **of SA, where it has dramatically contracted over the last two decades);** | obligations (3% of VA?), RDI capacity development and intra-SADC usage |
| **Inadequate STEM skills formation (well below demand across the region, including SA);** | High: STEM skills are crucial for realising the up- and downstream linkages. Need regional harmonisation of HRD mining license obligations (5% of payroll), RDI capacity development and intra-SADC usage |
| **Constrained access to finance (both capex & opex, though this tends to vary from country to country);** | High: The SADC region as a whole has almost no limitations to accessing finance, but there are serious limitations in some RMCs. |
| **Lack of incentives/disincentives to add value (local content and beneficiation instruments are non-existent or weak);** | Medium: Incentives are RMC specific and require harmonisation. |
| **Water constraints (especially Namibia, Botswana and SA);** | Medium: the SADC as a whole uses only 12% of its available water, but this tends to be concentrated in the northern RMCs, leaving the southern RMCs with significant constraints. Need a harmonised regional water supply strategy |
| **Weak mining regimes and weak governance of existing mining laws, resulting in poor MVC development and low capture of mineral rents;** | High: Need harmonisation with a regional AMV-aligned minerals regime that maximises the linkages. Need region oversight of select harmonised instruments, particularly rent capture (transfer pricing: IFFs[28] |
| **Lack of alignment with AMV/CMV of most RMC mining regimes, especially regarding linkages and conditionalities in mineral rights/licenses;** | High: Need harmonisation of aligned regimes |
| **Lack of reinvestment of mineral surpluses into other forms of capital, aggravated by a massive leakage of mineral rents through illicit financial flows (IFFs);** | High: Need regional harmonisation of mineral rent capture, oversight and reinvestment mechanisms, to ensure intergenerational equity. |
| **Sub-economic market sizes of RMCs to achieve economies of scale for many backward and forward linkages industries;** | High: Need harmonised regional common market to realise linkages (scale economies). |
| **Prevailing RMC "self-sufficiency" doctrines, policies and strategies, due to a failure to appreciate the significant advantages of regional strategies for the successful development of MVCs and a fear of one RMC benefiting more than others;** | High: Self-sufficiency will result in meagre, sub-optimal outcomes, even if the policies are harmonised (but not regionalised) |
| **Lack of regional strategies/instruments to address "variable geometry" (RMCs at different stages of development);** | High: The fear of asymmetric benefits from regional harmonisation is blocking movement to regional integration. Need harmonised regional compensation (equalisation) mechanisms |
| **Lack of coherent regional MVC development strategies (under development).** | High: The SADC is developing regional MVC development strategies, which, if implemented, could result in a high level of AMV alignment |

## Key Regional Mineral Value Chains Requiring Harmonised Strategies

SADC produces over 100 minerals/metals and compounds but only a few are key to regional growth, development and industrialisation, which would require harmonised regional strategies. The most import important key regional MVCs that underpin local and regional economic growth, development and

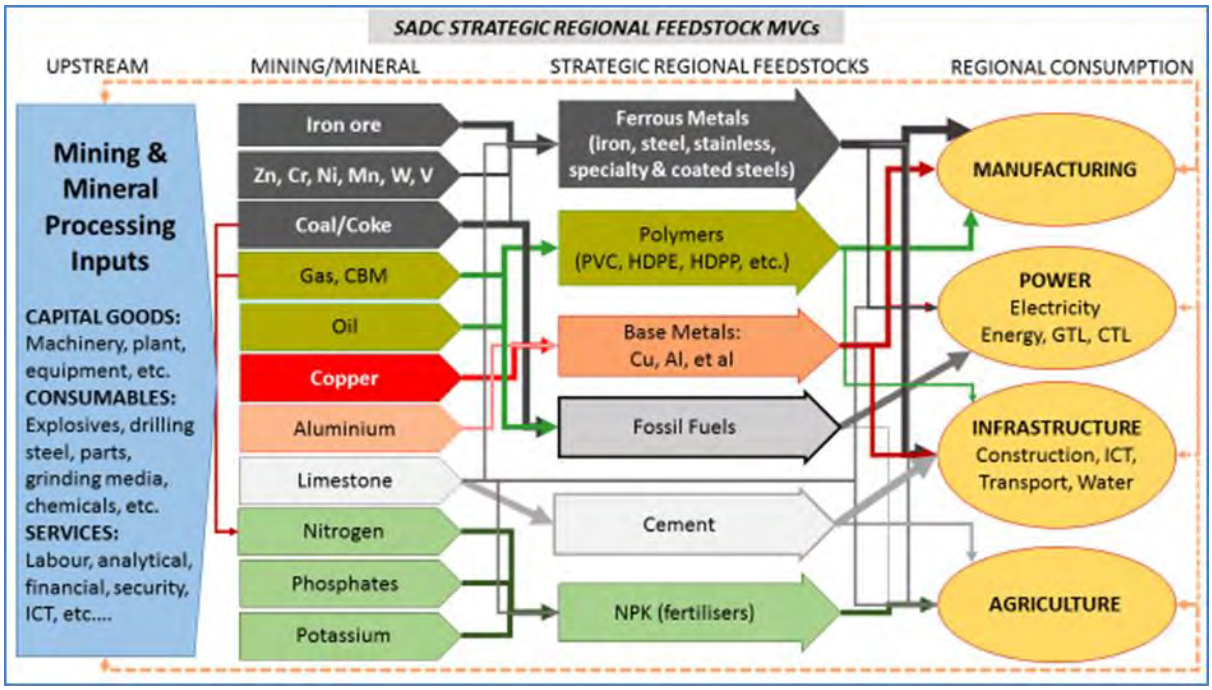
[28] IFF: Illicit Financial Flows

industrialisation are focussed on (strategic mineral feedstocks), as well as minerals where the SADC has potential producer power that could be used to stabilise prices and leverage the mineral linkages:

| Sector | Regional Strategic Mineral Feedstocks |
|---|---|
| **Manufacturing:** | Steel, polymers (from coal & hydrocarbons), base metals (Cu, Al) |
| **Energy (electricity):** | Oil, coal, natural gas (and CBM, shale gas), limestone (emissions, S removal) |
| **Infrastructure:** | Steel, copper, cement (from limestone, gypsum, coal, clay/fly-ash) |
| **Agriculture:** | Nitrogen (from coal, gas), phosphate, potassium, conditioners (e.g. limestone) |
| **Producer power:** | Where the SADC has potential producer power, there could be increased downstream (beneficiation) potential: e.g. PGMs, diamonds, cobalt |

The main strategic regional value chains are schematically presented in Figure 7 and include a select group of eleven key minerals for local and regional development requiring regionally harmonised strategies.

***Figure 7: SADC Strategic Regional Feedstock MVCs***




The manufacturing sector has the greatest potential for rapid job creation and its most important mineral-based inputs are steel/alloys (from iron ore and coking coal), polymers (from HCs[29], coal) and base metals (particularly Cu & Al). Globally, steel and polymers are by far and away the most important feedstocks into economic activity, at about 1500Mtpa and 300Mtpa respectively, compared to less than 200Mtpa for all other metals combined.

Ferrous MVCs: Regional iron ore reserves are about 6Gt, but resources could be >60Gt. Production is 60-70Mtpa and exports run at 50-60Mtpa (almost all RSA). SADC carbon steel production is 6-8Mtpa and regional demand (consumption) is 8-11Mtpa with the difference made up by imports ($2.7bn in 2014). Crude steel exports run at 2-3Mtpa and value-added steel (in products) exports are 0.8-1Mtpa (almost entirely RSA). Theoretical SADC steelmaking capacity is around 11Mtpa, but three the major plants (HS&V and AMSA in SA

[29] HCs: Hydrocarbons

and Zisco) are in financial difficulties and obsolete capacity is likely to be closed. Only SA and Zimbabwe have primary integrated iron/steel plants[30], but this steel is supplied into the regional market at high import parity prices (IPP), stunting downstream economic activity. There are several projects for new integrated steel plants, including SA (Masorini), Zambia (Kafue) and Tanzania (Liganga). There are numerous scrap-based steel mini-mills in the region, mainly in RSA, but also in Zambia, Angola and Mozambique. The region exports 1.5-2Mtpa of steel scrap that could feed additional mini-mills. Regional steel consumption is mainly into the construction (infrastructure) and manufacturing sectors.

Ferrous- stainless steel MVC: There is only one stainless steel plant in the region (SA, Columbus) which produces 400-700ktpa (50% austenitic), mainly for export. The raw materials for stainless steel are chromium (FeCr) and nickel or manganese. The region has huge reserves and production of chromium and manganese and moderate reserves and production of nickel. SADC stainless steel consumption is 200-300ktpa mainly into the manufacturing (auto: RSA) and construction sectors. Imports run at 50-100ktpa.

Polymers (plastics) are the second most important global feedstock into manufacturing at around 300Mtpa. The SADC has ample feedstocks for the production of polymers: oil (Angola, DRC), gas (Mozambique, Tanzania and Angola), coal (RSA, Botswana, Mozambique, Zimbabwe, et al). SADC polymer production is predominantly from coal/gas (RSA, Sasol, ~1.2Mtpa monomer). The SADC plastics industry, ex-RSA, is still nascent despite widespread appropriate feedstock resources[31]. Over half SADC polymer consumption is into packaging (55-60%), followed by construction, electrical (insulation) and automotive/transport (RSA). About 20% of regional plastic production is from plastic waste (recycling). The major polymers consumed are polyethylene (30-40%), polypropylene (25-30%), PVC (15-20%) and PET (5-10%).

Base Metals: The most important base metal feedstocks into manufacturing (and infrastructure) are copper and aluminium. Most nickel and zinc production goes into the ferrous MVC (stainless steel and galvanised steel) and 95% of lead goes into Pb-acid batteries (auto) which are recycled. SADC copper production is ~2Mtpa (mainly DRC and Zambia) and exports of copper scrap are $400-$600mn/an. Although the SADC has no bauxite mines it produces ~1.3Mtpa of aluminium from imported alumina and local electricity (RSA & Mozambique). Exports of aluminium scrap are $50-$100mn/an. SADC copper consumption is mainly in the electrical (>60%) and construction sectors and aluminium consumption is mainly into the construction and electrical sectors. Imports of copper semis and articles are $250-$300mn/an and of aluminium $900-$1000mn/an, indicating import replacement potential, particularly for aluminium articles (~$500mn/an: Al structures and cables).

Energy minerals (fossil fuels): Adequate, reliable and low-cost energy is critical to the development of the SADC region, particularly for electrification and the mineral forward linkage industries (beneficiation). The main minerals used in power generation are coal, gas and oil.

Coal: SADC has about 40Gt of coal reserves and >100Gt of resources. It produces over 300Mtpa of ROM coal (95% RSA) and exports about 70-80Mtpa (>90% SA). It consumes about 250-270Mtpa of coal mainly into electricity and CTL[32] (Sasol, ~60Mtpa of coal into ~125kbbl/d of liquid fuels). About three-quarters of SADC electricity is generated from coal, around 5% from oil (liquid fuels) and 3% from gas. SA is completing several

[30] Zisco is not currently operating
[31] Monomer production constrained by limited RMC markets.
[32] CTL: coal-to-liquids

major coal fired power stations (Medupi & Kusile ~10GW) which should bring the SAPP[33] into surplus by 2017 and smaller power stations are planned in Tanzania (Songwe) and Zambia (Maamba). Much of the SADC's coal resources are "stranded" in the interior without the requisite infrastructure for exports. In general the coal to power and petrochemicals MVC is well-developed in SA, but not in the other RMCs[34].

Gas: SADC has huge gas resources (>150TCF) in the Rovuma basin (Mozambique and Tanzania) and smaller resources in Angola (~8TCF), Namibia and SA. However the only production is from Angola (~260mnGj/an LNG, plus propane, butane and condensate) for overseas export and the Pande-Temane field (Mozambique). Mozambique exports ~180mnGj/an to Sasol in SA (GTL) and Tanzania has built a 32" pipeline from Mtwara to Dar es Salaam. There are several gas power stations (CCGT) under construction, in RSA (Sasol, Eskom, et al), Tanzania and Mozambique (Ressano Garcia). The SADC also has significant shale gas potential (RSA, Botswana, Zimbabwe, et al; >50TCF) that still needs to be assessed. Gas offers a lower carbon emission alternative for regional power generation (50% coal) and as a feedstock for polymer production.

Oil: SADC's oil reserves are ~10Gbbl, confined to Angola (95%) and DRC. The only oil production is from Angola (~1.8mnbbl/d) and small amounts from the DRC and RSA. All of the crude is exported (mainly to US and China) except for a small supply into the Luanda refinery (56kbbl/d) and Cabinda refinery (16kbbl/d) for the local market. The total SADC refining capacity is about 600kbbl/d (90% RSA), plus ~125kbbl/d from Sasol (CTL, GTL). SADC imports about 450kbbl/d (97% SA) of refined products (RSA 34%, Angola 20%), indicating a large refining capacity shortfall. A new 200kbbl/d refinery is reportedly under construction in Lobito (Angola)[35], but this would still leave an apparent SADC shortfall of >200kbbl/d.

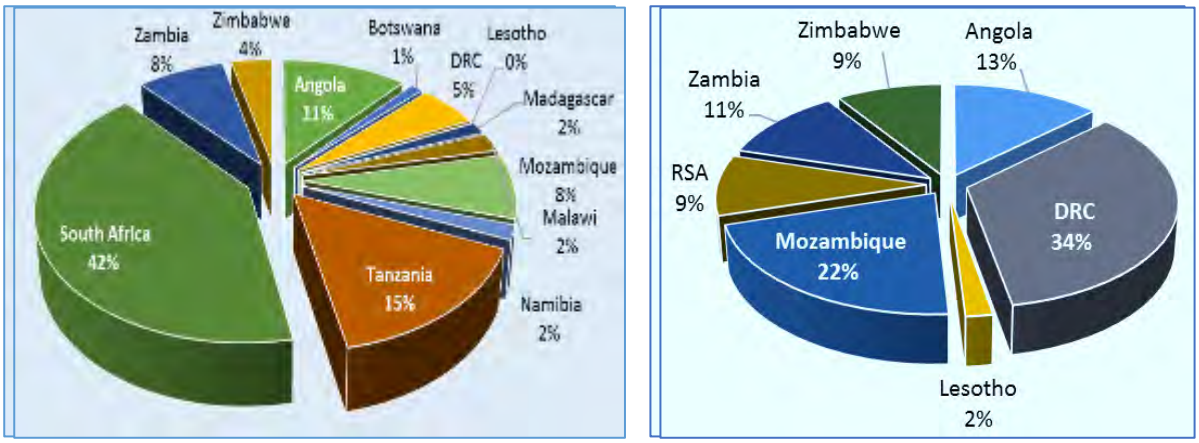
Cement (limestone, coal, gypsum) is a critical input into regional infrastructure. SADC limestone resources are diverse and large (more than adequate) and cement production is about 39Mtpa (27Mtpa at 70% capacity, including clinker grinding plants. SADC integrated plants' capacity is ~32.3Mtpa, grinding plants ~6.7Mtpa (total 39Mtpa) and about 11Mtpa of capacity is planned or under development. RSA accounts for 42% of capacity followed by Tanzania (15%) and Angola (11%). However, planned capacity (11Mtpa) is located in DRC (34%), Mozambique (22%), Angola (13%), Zambia (11%), RSA (9%) and Zimbabwe (9%), see Figure 8. The structure of the industry is changing rapidly due to new entrants such as Dangote (now the largest in SADC) and Chinese JVs with local capital. Imports are 7.5Mtpa of which, by value, 35% are from SADC (intra-regional trade) and 65% are from the rest of the world (mainly from Pakistan and China). Overall, given the planned new plants and plants under construction, SADC cement supply should be able to satisfy regional demand in the medium term. Due to its relatively low value-to-mass, cement lends itself to price abuse within the plant/s transport economics "catchment" and for the same reason the scope for regional plants is limited. Ideally plants should be located in all the consuming areas, but economies-of-scale require plants >2Mtpa. Consequently it is critical to reduce the cost of intra-regional logistics, in order to supply cost-effective cement across the region.

[33] Southern African Power Pool

[34] Botswana (Coal Petroleum) has announced a 20kbbl/d CTL plant. www.petroleumafrica.com, 28-10-2015

[35] In June 2015 Sonangol announced that the refinery would be built in Soyo and in July 2015 a consortium led by iGPM announced a 400kbbl/d refinery in Ambriz with a 40% Sonangol share, but reportedly denied by Sonangol. www.macauhub.com.mo

***Figure 8: SADC Cement Capacity (39Mtpa) and Planned Capacity (11Mtpa) 2014***




*Sources: Maxwell-Cook 2014, Edwards P. 2014[36], Dangote Cement 2015, CemNet.com 2014, allAfrica.com 2015, et al*

The SADC construction industry could be a major job creator and growth in the construction industry has obvious implications for growth in the regional cement industry. Cement is a vital feedstock for infrastructure provision and the region has ample undeveloped resources of cement minerals (limestone/dolomite, gypsum, coal, clay and fly-ash). Nevertheless cement imports from outside the SADC are ~4-5Mtpa and a common outer tariff would assist. However the SADC needs mechanisms to combat cement over-pricing ("logistics catchment" and collusion) to ensure that cement is supplied into the local/regional market at the lowest possible prices (EPP).

Minerals for Agriculture (NPK): Most of the soils in the region are nutrient deficient. Across the region soils are continuously cropped without sufficient nutrient replenishment, leading to a continuing decline in soil fertility. The two main limiting nutrients are nitrogen and phosphorus.[37] There are several carbonatite and other apatite deposits in the region (e.g. RSA, Zimbabwe, Mozambique, Angola, Tanzania, et al) and as well as numerous guano deposits, which could satisfy regional requirements for phosphates. Nitrogen is a critical input into agriculture and jobs in agriculture and agro-processing. Nitrogen is mainly obtained through coal gasification (RSA) and the electrolysis of water (Zimbabwe) but the huge regional natural gas resources probably offer a more cost efficient nitrogenous fertiliser feedstock and a major plant (1.3Mtpa) is planned in Tanzania using gas (Rovuma Basin).

SADC consumption of N fertilisers is 700-800kt (nutrient tons), P fertilisers ~300ktpa and K fertilisers ~200ktpa (total ~1.7M nutrient tons) and hardly increased from 2003 to 2012. The region is a net NPK importer despite significant RSA N&P production and exports. The over-pricing (IPP) of fertilisers is a critical problem for SADC agriculture. There is no potash (K) production in the SADC, however there is potential in the DRC (old workings), Botswana (Sua Pan) and elsewhere[38]. Like cement, intra-regional fertiliser trade within SADC is constrained by high internal land transportation costs and coastal freight costs, requiring harmonised streamlining.

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[36] Edwards P. 2014 "The cement industries of southern Africa", Global Cement Magazine, 11 Dec 2014, www.globalcement.com

[37] Van Straaten, Peter 2002 "Rocks for Crops: Agrominerals of Sub-Saharan Africa", University of Guelph (www.uoguelph.ca/~geology/rocks_for_crops/)

[38] SA as a huge sub-economic phlogopite resource (Phalaborwa) containing K.

PGMs: Platinum is the only metal where southern Africa has over 90% of world resources (RSA & Zimbabwe) and which also has relative supply and demand inelasticity. In 2014 the SADC produced 75% of Pt, 37% of Pd and 84% of Rh. However, the bulk of the region's PGM production is beneficiated in the developed countries into catalysts and jewellery. In order for the SADC region to use this potential producer power to realise the backward and forward linkages opportunities (MVC), it requires harmonised marketing strategies for its PGM assets.

Diamonds: The SADC hosts over half of the world's diamond reserves (Botswana, RSA, Namibia, Angola, DRC, Zimbabwe, et al) and 56% of gem production in 2014. Accordingly a harmonised regional SADC marketing body may be able to use producer power to negotiate the location of more of the diamonds MVC in the region.

Cobalt: The SADC has 56% of global cobalt reserves (DRC, Zambia, et al) and 57% of 2014 production. Consequently given constrained supply and strong demand (Li-Co batteries) the SADC could have potential producer power to leverage Co MVC development, provided the key RMCs (DRC & Zambia) agree on a harmonised marketing/export strategy.

Other potential producer power candidates: Both manganese and chromium were considered, but SADC's share of resources and production, as well as supply-demand inelasticities, were not considered to be adequate for realistic producer power realisation.

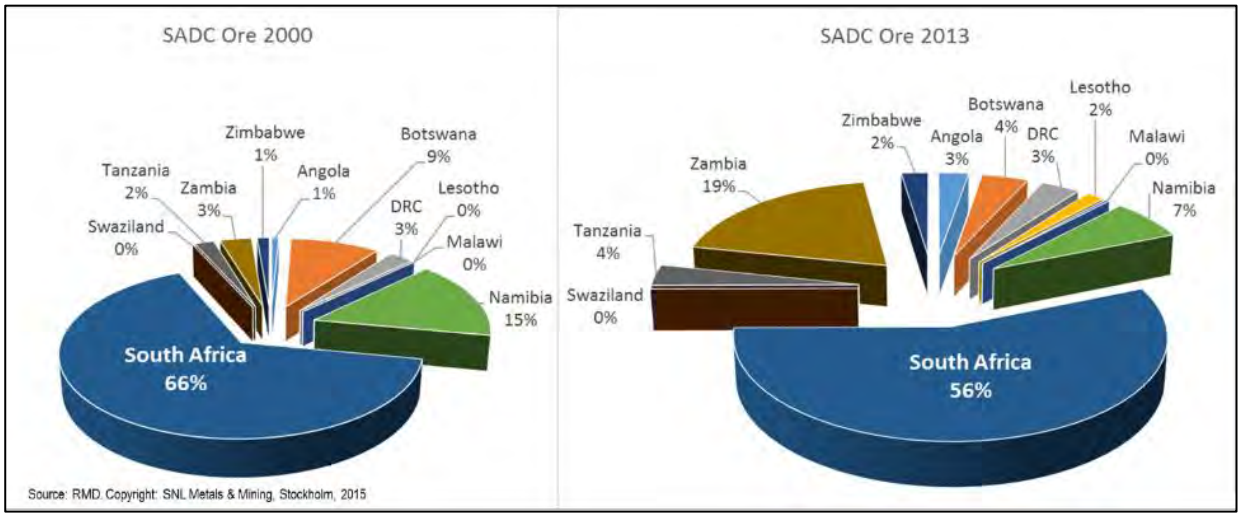
Mining and Mineral Processing Inputs (capital goods, consumables and services): These are by and large common to all MVCs. The SADC (ex-RSA) backward linkages are weak, except for services in some RMCs, but services are the least important. The RSA inputs sector used to be relatively strong but is increasingly being displaced by imports, since the exit (re-listings) and/or break-up of the major SA Mining Houses post 1994. SADC imports of select mining inputs HS codes[39] in 2014 was over US$4bn, into RSA (43%), Angola (22%[40]), Zambia (9%), Namibia (6%), Tanzania (6%) and DRC (5%). Nearly 20% of these imports came from RSA (into SADC, ex-RSA). By value SADC mining projects (ex-coal) were worth about $100bn in 2013 (Figure 9) and are dominated by SA (48%) followed by the DRC (14%), Namibia (11%) and Zambia (10%), which gives an indication of the regional mining inputs market demand. South Africa's share of ore output (ex-coal) has decreased by 15% from 2000 to 2012 (Figure 9).

[39] Many mining inputs HS codes are also used in other sectors (e.g. valves, tubing, motors, etc.), so it is difficult to extract mining specific trade data.

[40] High due to the crossover of many mining and HC capital goods (used in both sectors)

***Figure 9: SADC Ore Production 2000 (349Mt) & 2013 (426Mt), ex-coal***

*(rough proxy for mining inputs relative market size)*




*Source: Derived from RMD. Copyright: SNL Metals & Mining, Stockholm, 2015*

Using ore production as a good proxy for inputs relative demand (opex), the SADC market (ex-coal) in 2013 was 56% RSA, 19% Zambia, 7% Namibia, 4% Botswana & Tanzania and 3% DRC & Angola. The SADC mining inputs opportunity is huge (74% of Africa)[41], with a potential market larger than the EU or China. The largest global market is Latin America (35%), followed by North America (15%), CIS (12%) and Africa (10%)[42].

## Select Harmonised Regional Strategies

All of the AMV crucial mineral sector linkages opportunities would be significantly enhanced if the region operated as a single minerals economy to achieve cost-competitive scale economies, particularly for inputs and mineral-based intermediates/semis into other sectors. However, although deepening the mineral linkages is a win-win exercise (import displacements: no RMC losers), some RMCs may benefit relatively more than others, particularly given the SADC's extreme "variable geometry" (where some RMCs are much more developed than others). Consequently, any move towards regional harmonisation to realise the significant opportunities offered by the much larger market and larger resources base, would need to incorporate mechanisms to neutralise, or at least ameliorate, the advantage of the more developed RMCs. A selection of regional strategies, where the whole is often greater than the sum of the parts, could include:

### Alignment with AMV/CMV: harmonised policy should be the first step

The SADC RMCs need to assert their ownership of national mineral assets through ensuring that all mining licenses carry mineral value addition requirements such as beneficiation milestones: %VA above metal/alloy/base state, minimum corporate spend on HRD and RDI, minimum local-regional content, competitive pricing for local/regional downstream beneficiators, state rights to a reasonable portion of production at equitable prices and that all known mineral assets are put out to tender to maximise the fiscal take, the up-, down- and side-stream linkages, infrastructure linkages, as well as the development of indigenous capital. In addition all RMCs should consider the introduction of a resource rent tax (RRT) that

[41] Using ore production as a mining inputs demand proxy.
[42] Using ore production as a mining inputs demand proxy.

gives the RMC a fair share of unearned/exceptional returns (greater than RMC investment hurdle rate) and could be used for MVC development through a RRT-VA offset system.

## Five harmonised strategies to both realise the regional opportunities and cater for "variable geometry":

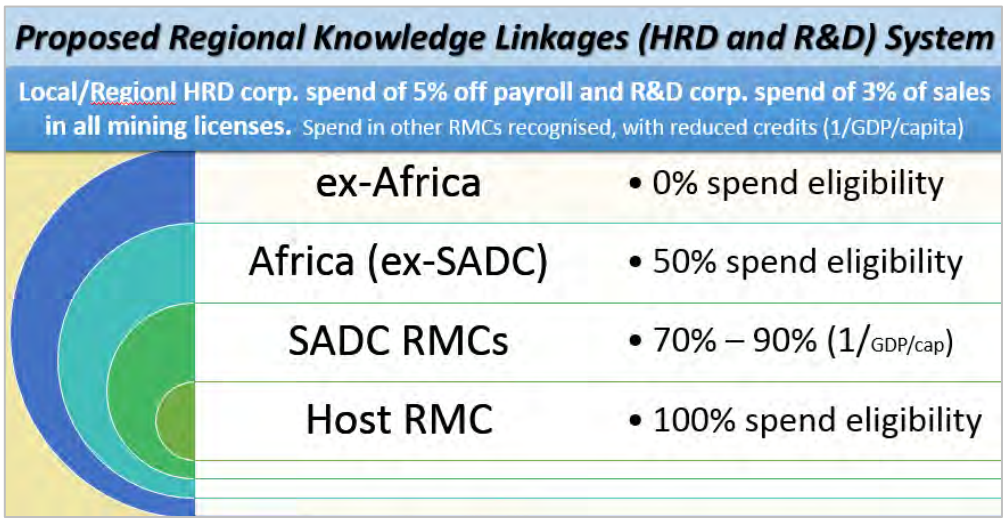
Five interdependent proposals to realise the advantages/opportunities of the regional context, whilst assisting less developed RMCs to participate, are:

1. Harmonised regional STEMS Skills development and RDI strategy to credit skills development spend in other RMCs, but discounted at the inverse of the relative wealth of the RMC (1/GDP per capita);
2. Harmonised regional-local content recognition at the inverse of the relative wealth of the RMC (1/GDP per capita);
3. Harmonised common outer tariffs for mining inputs and key mineral feedstocks (intermediates & semis);
4. Regional venture capital fund (VCF) for mining inputs and key feedstocks, with benefits inversely proportional to RMC GDP/capita;
5. Regional logistics compensation scheme, for cost greater than the SADC average cost/ton-km.

### 1. Harmonised STEM skills development and RDI obligations

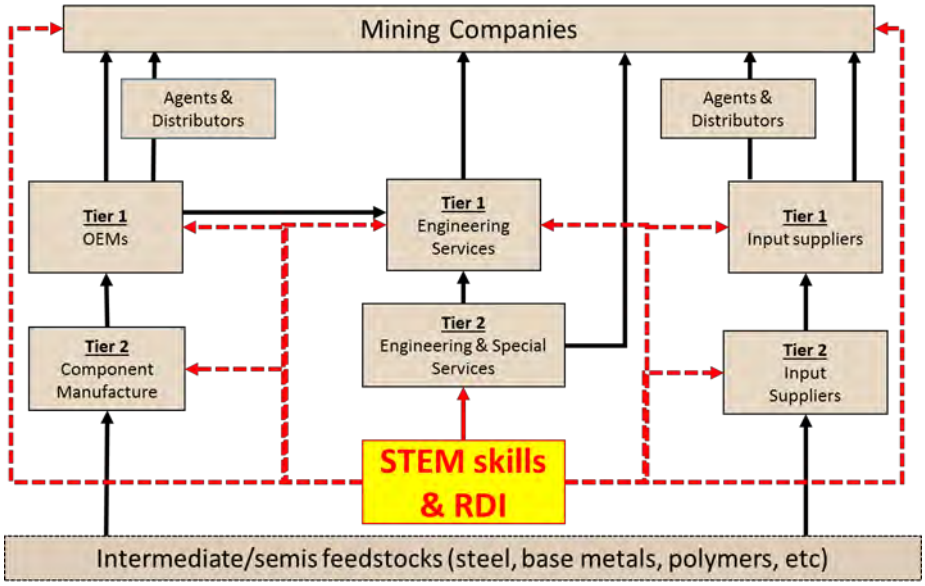
STEM skills and RDI are essential for the development of both the up- and downstream linkages. Consequently all mining licences should include a harmonised obligation to spend at least 5% of payroll on STEM skills development in-country/region and at least 2% of sales on RDI in-country/region. Regional spend on STEM skilling and RDI should also be recognised at a rate inversely proportional to the RMC's GDP/capita (from 50% to 90 % eligibility, Table 4). Spend on STEM skilling or RDI in the host RMC would count 100% towards the 5% of payroll or 2% sales obligations, but spend in another RMC, for example Botswana, would count 59% towards the 5% payroll 2% sales obligations (Table 4). In addition, the SADC should designate new regional "Centres of Competence" (CoC) for development of STEM skilling and RDI that could have a higher regional eligibility for recoginition in the 5% payroll spend. Finally, a harmonised system of skilling entities (unversities, colleges, et al) *twinning* should be introduced whereby the stronger entities would twin with weaker entities (CoC) in other RMCs to steadily uplift their capacity/capability. The eligibility of the stronger institutions for the regional 5% payroll spend recognition (Table 4) should be dependent on them having twinning arangements with designated weaker institutions (CoCs) in other RMCs.

***Figure 10: Proposed Harmonised Regional HRD and R&D Linkages***



RDI and STEM skill are critical to developing the regional mining inputs sector, to the realisation of problematic (complex) resources and to lowering the costs of mining/processing. The SADC region needs to develop technology roadmaps for all of the strategic feedstock value chains, to identify technology constraints and opportunities for local manufacture and exports, to enhance local content (and jobs) and to optimise the SADC's particular resources endowments. All mining legislation should be harmonised to cater for corporate local spend on RDI (>2% of sales) and on STEM skills (>5% of payroll) with discounted credits for regional expenditures on RDI and STEM skills, particularly into emergent regional Centres of Competence.

***Figure 11: Mining Inputs STEM Skills & RDI***



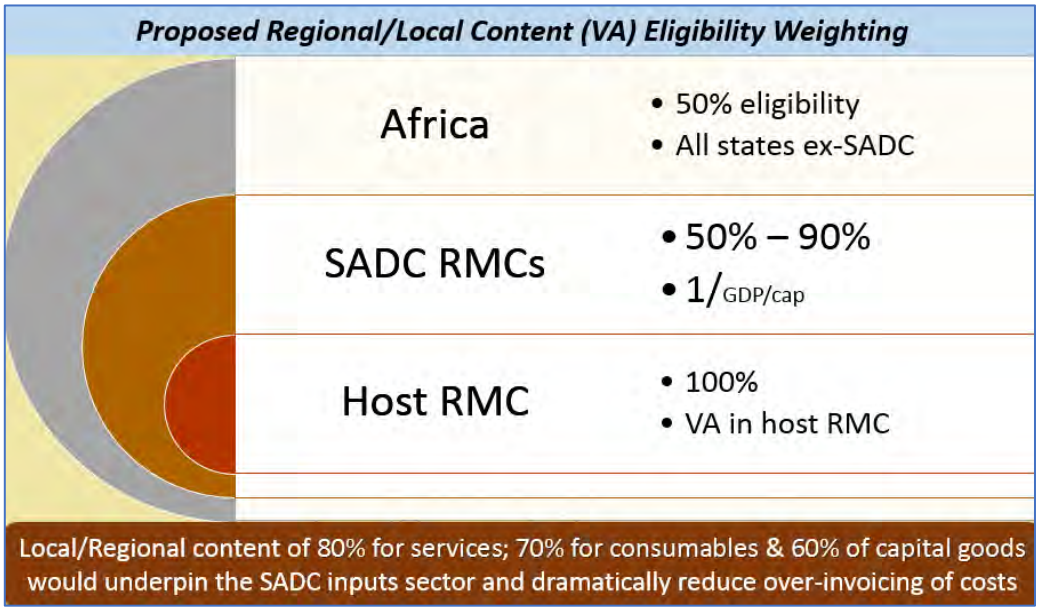

## 2. Harmonised local-regional content obligations

The region offers a significant market for mining inputs (capital goods, consumables and services), larger than EU and >70% of Africa. However in order to take advantage of this huge opportunity, the regional market needs to be realised (common outer mining inputs tariffs) and harmonised local/regional content requirements need to be incorporated into RMC mining laws and licenses. Regional content could be credited as local content at a discounted rate inversely proportional to the supplying RMC GDP/capita. If regional supply is in play, albeit discounted, then harmonised regional-local content targets could be elevated to 80% for services, 70% for consumables and 60% for capital goods. This would need to go together with a regional mining inputs VCF (as a window in a "Regional SADC MVCs Development VCF") and mining inputs would need to be included in a SADC MVCs Logistics Equalisation Scheme, in order to contain industrial polarisation (bambazonke).

Harmonised regional credits[43] (discounted by GDP/capita, see Table 4) need to be recognised in mining license requirements/obligations in order to maximise the regional economies of scale. If other RMCs were recognised for local (regional) content from 50% to 90% of the VA (inversely proportional to GDP/capita) in the product supplied, then, for example, mining supplies from Zambia to any other SADC RMC would count 83% (Table 4) towards the local-regional content targets/obligations in the RMC supplied. Likewise South African VA would count for 61% and Malawian 90% (Table 4).

[43] Where imports from other RMCs are recognised as local/regional content for mining license targets/milestones, but at a discounted rate, inversely proportional to GDP/capita, from, for e.g., 50% - 90% of the VA (see Table 4)

***Figure 12: Proposed Harmonised Regional Local Content Linkages***




*A harmonised regional-local content strategy is the only way to fully realise the huge SADC mining inputs economic opportunities*

### 3. Common inputs and key feedstocks (intermediates/semis) outer import tariffs regime

In this regard it is interesting to note that the EU economic integration was preceded by a regional agreement on steel and coal in 1951 (ECSA – European Coal & Steel Agreement) before moving to more comprehensive economic integration. The SADC should assess a putative SADC Strategic Mineral Feedstocks Agreement (strategy) to ensure that the region can access these critical feedstocks at competitive/developmental prices. A key element of the strategy should be a SADC mineral feedstocks (minerals/metals, scrap and intermediates/semis) common market with common outer tariffs to realise the regional market economies of scale, but the strategy would need to incorporate equitable regional integration through concrete instruments that cater for the weaker regional economies (variable geometry) and industrial polarisation (where the benefits of integration mainly accrue to the stronger economies, termed "bambazonke"[44] in southern Africa).

A common outer tariff regime for mining inputs and key mineral feedstocks would need to be complemented with "Time-bound Infant Industry Protection": This harmonised instrument would permit any RMC to impose a tariff of up to 10% on intermediates, semis and inputs imports from other RMCs for up to 7 years on new

[44] In southern Africa industrial polarisation is sometimes termed "bambazonke" (to take everything) referring to Salisbury (Harare) in the short-lived CAF (Central African Federation): the settler/colonial economic integration of Northern Rhodesia (Zambia), Southern Rhodesia (Zimbabwe) and Nyasaland (Malawi).

projects[45] that conform to the regional strategy, to ameliorate the extra costs for new plants (capex servicing, workforce training, et al). The size of the permitted tariff could be inversely proportional to the RMCs GDP/capita (0% to 10%). Such a RMC infant industry tariff would be added to the outer, SADC, tariffs on the intermediates/ semis concerned for extra-SADC imports.

### 4. Regional SADC MVCs Development VCF:

This facility would be for PFS funding (0-75%), debt funding (0-75%) and equity (0-40%), depending on the GDP/capita of the participating RMC, with a 20% multiplier for indigenous-owned (>50%) investment projects. The Venture Capital Fund (VCF) could be established as a PPP between the SADC participating RMC governments and the private sector (mineral producers, suppliers and beneficiators/consumers) and capitalised by the SADC mining companies, RMCs proportional to their GDP normalised by their GDP/capita and a portion of the common SADC outer intermediates & semis and inputs tariffs (5-10%, see below), as well as regional DFIs (IDC, NDC, BDC, NDB, et al), regional pension funds, international DFIs (AfDB, IFC, et al) and development funds/banks.

***Table 4: SADC Relative Wealth Ratios for Local-Regional Content & VCF (2013 GDP/cap)***

| RMC | GDP/cap (2013 kUS$) | Relative Wealth 0-100% | Relative Wealth 0-75% | Relative Wealth 0%-40% | Relative Wealth 50%-90% |
|---|---|---|---|---|---|
| **Angola** | 5783 | 40% | 30% | 16% | 66% |
| **Botswana** | 7315 | 23% | 18% | 9% | 59% |
| **DRC** | 484 | 97% | 73% | 39% | 89% |
| **Lesotho** | 1126 | 90% | 68% | 36% | 86% |
| **Madagascar** | 463 | 97% | 73% | 39% | 89% |
| **Malawi** | 226 | **100%** | **75%** | **40%** | **90%** |
| **Mauritius** | 9478 | **0%** | **0%** | **0%** | **50%** |
| **Mozambique** | 605 | 96% | 72% | 38% | 88% |
| **Namibia** | 5693 | 41% | 31% | 16% | 66% |
| **South Africa** | 6886 | 28% | 21% | 11% | 61% |
| **Swaziland** | 3034 | 70% | 52% | 28% | 78% |
| **Tanzania** | 913 | 93% | 69% | 37% | 87% |
| **Zambia** | 1845 | 83% | 62% | 33% | 83% |
| **Zimbabwe** | 953 | 92% | 69% | 37% | 87% |
| **Seychelles*** | 16186 | 0% | 0% | 0% | 50% |

*Note: Seychelles excluded from weighting: GDP/cap outlier and no mining or minerals VA sector

Under such a system a mining inputs project or minerals beneficiation project in, say, Zimbabwe would be eligible to receive 69% of the PFS cost from the VCF, the VCF could take up 37% of the equity and provide 69% of the debt funding. However, if the project was >50% owned by indigenous Zimbabweans (+20%), VCF PFS funding would be 83%, VCF equity 44% and debt funding 83% (see Table 4).

[45] Trade Remedy Measures (TRM), enable a WTO member country to protect its domestic industry (i) against unfair trade, (ii) increased imports, and (iii) to provide additional protection to its new or infant industry to pursue economic development. www.dawn.com/news/140342/wto-rules-for-protection-of-industry

### 5. SADC MVCs Logistics Equalisation Scheme:

Regional mineral-based intermediates and semis producers (products with >90% regional VA) and inputs manufacturers (>65% regional VA[46]) that incur higher logistics costs in penetrating the regional downstream intermediates and semis markets and inputs markets could be partly compensated through a harmonised SADC scheme for inter-RMC logistics costs in excess of the weighted average regional unit logistics costs (cost/t-km), funded through a harmonised nominal regional sales levy (<1%) on all intermediates & semis and inputs sold in the SADC (including imports from outside the region) and/or through the common outer metals/ intermediates/ semis and inputs tariffs.

If the weighted average intra-SADC logistics cost for manufactures was 4USc/t-km and, for example, Namibia's intra-SADC weighted average logistics cost was 4.5USc/t-km, it could get compensation of 0.5USc/t-km for exports to other RMCs of mineral-based intermediates or semis and mineral sector inputs containing >65% Namibian and regional VA. This scheme would progressively become redundant as the SADC improves its logistics infrastructure and cost/ton-km gradually coalesce.

## Harmonised RMC Government Local Spend Conditions:

The SADC RMCs are a major consumer (directly and through state and SOC contracts) of strategic mineral feedstocks, particularly for national infrastructure (construction & power: steel, cement, base metals). All RMCs and their SOCs[47] could introduce local spend minimums in all of their state and SOC purchases and contracts. The RSA has a local spend system ("designations" under the Preferential Procurement Policy Framework Act: PPPFA) in operation which may be of use other RMCs (particularly on pitfalls). However, the SA system does not include regionally sourced goods. Similar to the local-regional content strategy, the SADC could consider recognising regional spend in local spend obligations, at a discounted rate inversely proportional to RMC GDP/capita, in order to increase demand (regional market) and production economies-of-scale.

## Scrap metal exports:

The SADC is currently a massive net scrap metal exporter and it is suggested that scrap metal (ferrous & base) be considered a strategic regional resource that needs to be conserved for local/regional value addition, through the harmonised prohibition of exports out of the SADC. This would have the effect of creating a local (regional) clearing price, well below international scrap prices, consequently enhancing the viability of existing and future metal semis and final product plants in the region. Such a SADC-wide ban would need to be complemented by the harmonised removal of all intra-regional trade restrictions (tariffs, NTBs, et al) on scrap metals.

## Mining Rents (RRT-VA Offset):

One of the recommendations in the CMV, is that RMCs should introduce a Resource Rent Tax (RRT) on returns on investment in excess of the national "normal" return on investment (ROI). Such a RRT could trigger in once the miner has achieved a ROI greater than the RMC investment hurdle rate and be set at 50%. Once a RRT is in place, a simple formula (ratio) that rewards local minerals value addition by reducing the RRT 50% rate could be formulated to encourage the miners to facilitate up- and downstream beneficiation. Such an RRT-

[46] >65% regional VA to contain the relabelling of extra-SADC imports
[47] SOC: State Owned Company

VA formula would need to be MVC specific and could be configured to approach fiscal neutrality (the RRT revenues foregone could roughly equate to the new revenues from the up/downstream MVC industries).

### State Mineral Rights- MVC development through Competitive Tender:

SADC RMCs should consider amending their mining laws to make the granting of any strategic mineral feedstock exploration (prospecting) right/license dependent on a declaration from their Geological Survey Department/ Division/ Office stating that the ground applied for has no known mineral deposits that could viably be put out for public tender. All known mineral assets should be put out to tender to maximise the developmental impact. The bid value addition (linkages development) commitments could then be a key bid evaluation element, in addition to state revenue (tax rate).

*Open tender (price discovery) is the best method of determining the maximum linkages realisation that any particular mineral deposit could viably sustain*

### Mining Lease/License Local Pricing Clause:

A mining lease could contain a harmonised clause on "Conditions on disposal of Minerals and/or Products Derived from Mining" that stipulates export parity pricing (EPP) for domestic and regional sales for further value addition (min 20% VA[48]) and that on-obligates the customer to also sell to local and regional beneficiators at a competitive price (EPP).

### New Players to Facilitate Competition and EPP:

The most effective method of achieving competitive mineral feedstock prices (EPP) is to facilitate vibrant competition across the range of MVC intermediate and semis products, through the establishment of new players (beneficiators) across the region. A regional key feedstocks (metals/intermediates/semis) and inputs customs union would increase rivalry (competition) due to the much larger market (than individual RMCs) permitting more producers at the requisite economies-of-scale, resulting in lower prices to downstream regional manufacturing and other industries and their expansion.

### State Access to Strategic Minerals Resources:

A mining lease for any RMC designated "strategic mineral" could be made conditional on state access to at least 20%[49] of the delineated resources. The state could reserve the right to purchase such percentage of production a price reflecting a reasonable return on investment (ROI = RMC hurdle rate or Treasury Long-bond plus 7%). The state would further reserve the right to cede this purchase price right to a third party that undertakes to add value of at least 30%[50] to the mineral/s in the RMC or SADC.

### State Utility Tariffs to Support Value Addition:

State infrastructure tariffs (e.g. energy, transport) should be used to encourage downstream beneficiation through setting tariffs inversely proportional to value addition. Given the intra-regional nature of

[48] >20% VA to avoid arbitrage by unscrupulous traders

[49] 20% of production at cost plus reasonable return is unlikely to impact on the feasibility (attractiveness) of a new mining investment.

[50] ≥30% VA in-country/region to eliminate arbitrage (traders connected to government who may be able to obtain the ceded right at the concessionary price)

infrastructure (rai/road/port, energy, water, et al), this would be best achieved through harmonised regional policies. For example, if the rail tariff for pig iron is currently 3USc/t-km then the tariff for steel (200-300% the value of iron units) should be lower according to a sliding scale based on percentage value addition. This may require increasing the tariffs on crude ores/concentrates in order to maintain rail profitability.

### Regional Power Strategies:

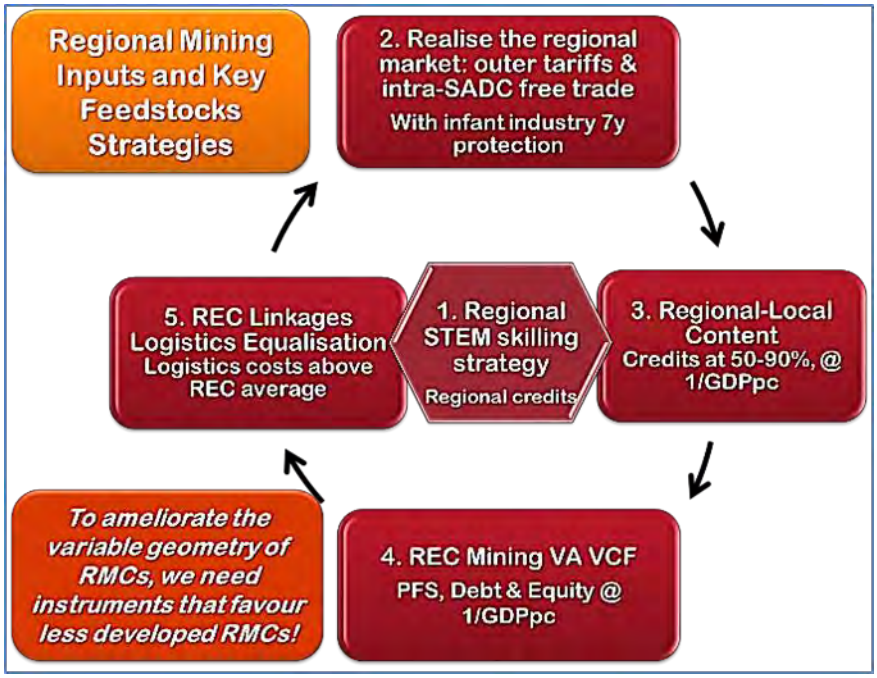
The first steps of minerals value chain are often energy intensive (smelting/refining) which is currently severely constrained by SADC's power shortages and escalating tariffs. In this regard SADC's huge natural gas resources (>200TCF: Mozambique, Tanzania, Angola) and the reportedly large shale gas resources (>50TCF: RSA, Botswana, Zimbabwe) should be rapidly assessed and a regional strategy formulated for the production of lower cost and lower carbon emissions power (e.g. CCGT). In addition, consideration should be given to developing the low cost and sustainable hydro-power (HEP) potential of the Congo River Basin (DRC), estimated at over 100GW (the HEP potential of Grand Inga Dam alone is ~40GW) to underpin the development of the regional MVCs in particular and regional economic development in general.

*Harmonised regional power generation and transmission (inter-connection) strategies are key to leveraging the latent mineral linkages development opportunities.*

### Variable Geometry Constraints to Harmonised Regional Strategies

In all of the suggested interventions the constraint of "variable geometry" (RMCs a different stages of development) be tackled head-on through the design of harmonised regional instruments that favour less developed RMCs (benefit inversely proportional to GDP/capita) and through other interventions in less developed areas of the SADC.

***Figure 13: Five Harmonised Interdependent Schemes for Growing Mineral Linkages***



## Harmonised SADC Producer power strategies

The SADC has clear latent producer power in PGMs, diamonds and cobalt, given their share of world resources and production and relative supply and demand elasticities, but there is not a strong case for chromium or manganese. The realisation of the latent producer power for the development of these three MVCs needs to be pursued through harmonised strategies.

The realisation of this potential producer power through the joint or collaborative marketing (export) of these commodities would increase market share and allow for the leveraging of value adding activities into the region including: (a) stabilisation of prices through approaching market equilibrium (matching supply with demand) which would give greater certainty to consumers (applications), on secure and stable supplies and prices, and consequently facilitate an increase in demand; and (b) leveraging the development of the three MVCs, particularly the downstream (forward) linkages (beneficiation before export) and the side-stream knowledge linkages (HRD and RDI).

Joint or collaborative marketing (export control) is a prerequisite for the realisation of regional producer power and could be approached in several ways:

a. Ideally through the formation of a SADC mineral export body or export bodies that are given the authority to export by the participating RMCs. This could go together with a common trade tariffs on the mineral products to facilitate downstream MVC development. The body/bodies would use its/their control of supply to leverage regional MVC development from customers. Under this scenario the export body would maintain the buffer stockpile, financed by a small marketing levy or by the RMCs, pro rata to production;
b. Through the configuration of a single-channel export mechanism, where the RMCs confer the right to export to the producers collectively on condition that they subscribe to the MVC development plans, for each mineral, that include market stabilisation (including maintenance of a stockpile), downstream value addition, sidestream HRD/RDI and other MVC development initiatives;
c. Through the establishment of a regional two-tier trading system where the first trading round is reserved for consumers that have achieved a minimum quantum of local (regional) value addition or it could be by invitation, as per the diamond “sights” system, to companies that have subscribed to the MVC development plan. The second trade would be open, on payment of a trading levy, for the remaining quantity/quality of mineral on offer. Under this scenario the participating RMCs would have to finance the buffer stockpile, possibly through the tier-2 levy.
d. Through the formation of national RMC marketing/export authorities (as per the MMCZ in Zimbabwe) for the three minerals. The RMC marketing bodies would then develop a common regional marketing plan based on a shared marketing database and supply the world market in concert, in a manner that leverages the realisation of a common MVC development plan, and each RMC would maintain their own stockpile (pro rata) to stabilise supply. This is the most cumbersome, complicated and risky option and the least likely to succeed in realising regional MVC development.
e. Various combinations of the above four strategies could also be configured.
f. In all of the scenarios the costs and benefits (downstream & sidestream linkages) of collaborative marketing could be shared equitably according to each RMCs regional share of supply/production, but a benefit multiplier for less developed RMCs could be considered, based on the extent to which the RMC’s GDP/capita is below the SADC average.
g. The incorporation of other, ex-SADC, appropriate producers into the SADC marketing mechanisms could significantly enhance producer power and MVC development. In this regard collaboration with Russia, on PGMs and diamonds marketing and MVC development, and Cuba, on cobalt marketing and MVC development, could be explored.

### Harmonised Regional marketing- Metal Loans:

The establishment of regional marketing mechanisms could go together with metal loans for the high unit value minerals (diamonds and PGMs) where the cost of working capital is a significant component in the competitiveness of local downstream industries. In this regard the RMCs could consider making PGM and diamond holdings part of the liquidity requirements for their commercial banking sectors and the holding of these minerals as component of the national reserves of their central banks. This could also assist with the maintenance of a stockpile for these minerals for price stabilisation: the central bank could release the PGM/diamond holdings (and purchase other assets) during demand surges.

### Regional marketing- Push-back:

The realisation of this latent producer power will almost inevitably be opposed by the OECD consuming states that are accustomed to reaping the bulk of the benefits from the SADC's mineral resources, especially the EU and US. The EU Raw Materials Strategy clearly underlines their intention to maintain the neo-colonial status quo. These countries are likely to try and weaken or restrict any SADC producer bodies by "bribing" RMCs using "aid" and market access (as the EU are doing with their highly restrictive EPAs). Consequently, for SADC to realise the huge opportunities presented by its mineral resources endowment and latent producer power, the participating RMCs will need a high degree of determination, resilience, fastidiousness and commitment to the upliftment of their peoples.

## Conclusion

The harmonisation of SADC mining strategies to effectively realise the regional industrial opportunities, whilst catering for "variable geometry" could provide the platform for enhanced mineral linkages realisation, industrial growth and equitable development across the sub-continent, within the framework of a "Regional Mining Vision" (RMV).

Finally it is proposed that "Harmonised Regional Mineral Value Chain Development Strategies" be formulated for each key group (ferrous, base metals, fertiliser minerals, construction minerals, energy minerals and producer power minerals), based on a selection of these recommendations, that RMCs find useful, and that the Strategies are unpacked into an Action Plans with time-lines and deliverables. A harmonised regional mining policy specifying the above strategies as critical parameters should be the starting point in levelling the environment in the region. All RMCs would work towards alignment with the regional policy framework through appropriate domestic actions, within an RMV framework. The regional policy (RMV) would complement the harmonisation framework and the two would be key components in the implementation of the Mining Protocol.

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# Appendix 1: AMV – Mineral Regime Alignment Checklist

## 1. Mining Policy

- Does the country have a mining policy aligned to the AMV?
- Is the policy aligned to other national and regional development policies?
- Was the policy development process fully participatory?

## 2. Optimisation of all linkages through mineral asset price discovery

- Are known state mineral assets (resources) disposed of for free under a FIFA[51] regime?
- Is there a verification mechanism in the law to determine if an exploration licence application includes known state assets (resources)?
- Are known mineral assets put out to public tender against linkages realisation commitments (fiscal, up-, down- & side-stream)?
- Are lapsed/abandoned mineral rights put out to tender?
- Are discoveries made by the state geological survey department/entity put out to tender?
- Is there an indigenous advantage in the tender system?

## 3. Fiscal Linkages

Note: The seminal mineral fiscal regime can usually be found in:

a) The Mining Law
b) The Income Tax Law
c) A Mining Tax/Royalties Law
d) Combinations of these three

See checklist in AMV "Step by Step Guide" p18

- Is there a progressive tax instrument on profitability rather than profit such as an APT[52] or RRT[53], to capture unearned excessive returns on investment (ROI)? Note that a State "free carry" after a reasonable ROI, is equivalent to a RRT as is a PSA[54] after a ROI threshold.
- Is there a tax – back/forward linkages offset? The RRT could be reduced against increased local content (backward) and/or increased downstream beneficiation (see CMV).
- Are taxes/fees/levies/royalties that add to costs (and sterilise resources) minimised?
- Are tax/royalties linked to stage of VA[55] (lower on higher VA)?
- Is there adequate legal coverage of transfer mis/pricing (over- & under-invoicing)?
- Is there special tax treatment of FDI from tax havens?
- Do tax instruments facilitate indigenous mining capital?
- Are there withholding taxes on offshore transfer of dividends, interest or payment for services?
- Are foreign HQ expenses capped/limited?

[51] FIFA first-in-first-assessed, "free mining" or "claim" regime
[52] APT additional profits tax
[53] RRT resource rent tax
[54] PSA production sharing agreement
[55] VA value addition

- Is the RMC a member of EITI and KPC or other regional and international governance mechanisms?

## 4. Downstream (forward) Linkages

- Is there a minimum value addition (beneficiation) in the Law and mining licence?
- Are there VA targets/milestones in the Law and mining license?
- Are there domestic competitive pricing (EPP[56]) conditions in the mining law for sales for local consumption/VA?
- Are there export tariffs on crude (ore, concentrate) mineral exports?
- Does the state have the right to market its mineral assets in Law or license?
- Are there funding instruments (through DFIs?) for downstream investors?

## 5. Upstream (backward) Linkages

- Are there local content targets/milestones in the Law and mining licence?
- Are there indigenous procurement targets/milestones in the Law and mining licence?
- Is local content based on domestic VA?
- Is regional (REC[57]) content recognised (does it count at all towards local content) in the Law and mining licence?
- Are there funding instruments (through DFIs?) for upstream investors?

## 6. Knowledge (sidestream) Linkages

- Is there a national skills levy (% payroll)?
- Is there a minimum (% payroll) company spend on HRD/skilling in-country in Law and mining license?
- Is there a minimum (% VA or sales) company spend on R&D (RDI) in-country in the Law and mining licence?
- Are there tax allowances for HRD/RDI spend in the Tax Law?
- Is regional (REC) HRD/RDI spend recognised (does it count at all towards local HRD/RDI targets)?

## 7. Spatial (infrastructure-sidestream) Linkages

- Are there fiscal incentives for mining companies to establish infrastructure (transport, power, water, ICT, et al)?
- Is all mining infrastructure open access (3rd party access) at none discriminatory tariffs?
- Are there incentives/obligations for infrastructure over-capacity (above the needs of the mine) for public use?
- Are there LED obligations in the Law and mining licence?

## 8. State Mining Company (SMC)

- Is there a state mining company?
- Is a SMC covered in the Minerals Law or in any other Law?
- Does the SMC have the rights for any minerals/mineral groups?
- Does the SMC get an automatic free-carry and/or paid up equity in any mining, what proportion?
- Does it have preferential access to state geological data?

[56] EPP export parity price

[57] REC Regional Economic Community (SADC, COMESA, EAC, ECOWAS, etc)

## 9. ASM

- Does ASM have its own mining regime?
- Does the ASM regime provide for systematic collaboration with MSMCs or LSMCs?
- Does ASM have its own fiscal regime?
- Does ASM have preferential access to mineralisation/geological areas?
- Does ASM have its own environmental compliance regime?
- Is the state legally obligated to support ASM?

## 10. Partnerships

- Is there a collaborative (PPP) advisory body in the Law (e.g. Mining Affairs Board in some countries, eg. Zimbabwe)?
- Does the minerals advisory body vet new applications for licenses?
- Are there other consultative/collaborative PPP forums in the Law?

## 11. Corporate Social Responsibility/CSI

- Is CSR/CSI covered in the Law?
- Is there a stipulated % profits/sales/other disbursement
- Are the beneficiaries local government or "traditional" communities?
- Are there legal penalties/remedies for non-compliance?
- Are community development agreements part of the licencing requirements?

## 12. Environment

- Is there an environmental compliance Law?
- Is there an environmental monitoring and compliance organisation?
- Are there legal penalties/remedies for non-compliance?
- Are ring-fenced rehabilitation closure funds covered in the Law?

## 13. Health & Safety

- Is there a mining H&S Law?
- Is there an H&S levy?

## 14. EPA/BITS/WTO Constraints

Is the state legally constrained in developing the mineral linkages by multilateral of bilateral trade or investment agreements?

## 15. Regional Integration (SADC)

Does the minerals regime enhance regional economic integration regarding:

- Alignment to regional commitments (including mining policy frameworks, protocols, etc)?
- The provision and pricing (tariffs) of infrastructure?
- Regional-local content?
- Regional-local downstream beneficiation?
- Regional knowledge linkages (HRD/RDI)?
- Regional funding of linkages investments?
- Regional geological surveys?

- Regional mining cadastre systems?
- Regional geological and mineral data systems (GIS)?
- Regional minerals marketing?
- Other?

# Appendix 2: RMC - AMV Alignment Extracted from the nine Country Reports

(Information for Lesotho appears in a separate table.)

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| **General** | The DRC's Mining Code of 2002 was aimed at boosting mining investment by means of an attractive tax system. Three hundred mining companies, 12 of which are listed on international stock exchanges, are now based in the country. However, government implementation in terms of monitoring, support and tax collection falls short of what is envisaged, largely due to capacity and funding constraints. The tax regime and its implementation, the means to negotiate favourable contracts (towards national development) and, broadly, industrialisation of the mining sector are seen as key problems in this report. | The Malagasy authorities have been implementing a massive institutional reform of the mining sector, materialized by the Program of Governorship of Mineral Resources (PRGM). By and large, the Government representatives agree with the main tenets of the harmonisation framework, as stated in the draft National Mining Policy, which intends to pursue the process of "modernization of the legal and fiscal framework" in order to harmonise it with the recommendations of the SADC Mining Protocol. | Since the signing of the SADC Protocol on Mining, mining has been prioritised as a key economic area (see Malawi Growth & Development Strategy (MGDS) I & II). Previously only ASM was targeted to contribute to sustainable pro-poor growth. More recent strategies and Mines and Minerals Policy (2013) indicate commitment to increase the contribution of mining to GDP and development. Recent rapid increase in mining activity: over past two financial years (2013/14 and 2014/15) 110 Exclusive Prospecting Licences and 25 Mining Licences were issued. | In general Mozambique Mining policies, legislations and regulations are consistent with regional and continental frameworks. The 2014 mining and petroleum laws prioritized accountability, transparency and revenue sharing. New main objectives of policy include (i) promoting local development and participation in the mining sector, (ii) imposing more stringent requirements on undertakings involved in mining operations, (iii) and expanding the scope of activities regulated under Mozambican mining legislation. | Namibia has an exhaustive mineral governance legal framework, which contains various aspects that could be regarded as a good fit with the harmonisation framework. The Mineral's Policy of 2002 is very reformist in content and contains all elements needed for Namibia to transform its structure of mineral resource ownership. In essence, all the elements elaborated on in the SADC Harmonisation Framework and the AMV in some way are addressed in the broad objectives of the Namibia Mineral's Policy of 2002. | The study finds that South Africa is somewhat aligned to the harmonisation framework, but lacks AMV alignment, particularly regarding the development of the crucial minerals sector linkages. The MPRDA brought SA closer to the requirements of the harmonisation framework with the transition from privately held mineral rights and establishing a broader access base. | (not from report) While there are broad legal and policy provisions in line with key elements in the AMV and SADC Protocol & harmonisation framework, there is still much work to be done in terms of developing these into regulations, and development of the capacity to implement existing and new regulations consistently. | The study finds that Zimbabwe may be said to be largely aligned to the harmonisation framework at the instrument/document level, and the views of the Zimbabwean government on regional harmonisation are positive, seeing potential benefits to the country and region. The draft policy reflects the values and strategies in the Africa Mining Vision. However, the report notes that the lack of political will on the part of Zimbabwean Government to finalize the two documents has significantly hampered actual implementation of harmonisation elements. |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| **Current process** | The DRC witnesses a slow progress in the appropriation and implementation of the harmonisation process. Factors slowing progress include, in the view of the report, the absence of follow-up on the vision at SADC level (including implementation of regional instruments relating to mining) and lack of political will from Congolese leaders. A new draft Mining Code which will significantly closer alignment with the AMV and SADC harmonisation process is before parliament. | Due to exclusion of Madagascar from both the SADC and African Union institutions and processes from 2009 - 2014 (presidential elections), Madagascar did not participate in the processes around the AMV, and ratified the SADC protocol on Mining only recently. A low level of awareness about those regional frameworks, even in government circles, has resulted. | There has been a recent drive to review the 1981 Mines and Minerals Act, to develop a draft National Artisanal and Small-Scale Mining Policy and to join the Extractive Industries Transparency Initiative (EITI). Draft Mines and Minerals Bill and a separate Tax Bill to be tabled in parliament during 2016. Many of the recent changes have been led by the Government's Malawi Mining Governance and Growth Support Project (MGGSP), primarily financed through a World Bank loan & grant from French government. | Mozambique is implementing the CMV and has domesticated the African Mining Vision in the new Mining and Petroleum law (August 2014).The legal, regulatory and contractual framework is mostly in place, up to- date and largely in line with international good practice; reforms are still ongoing & regulations being put in place to concretise new laws. | Recommendation: A piecemeal approach to mineral resource legal framework will not be sufficient to break the monopoly of the private ownership of mineral resources in Namibia. It is important to bring the State to the centre of Mineral Resource Management and that can be done by developing one solid legal framework that is inclusive of all the matters relating to structural transformation of the ownership of mineral resources and equity. The inclusion of secrecy clauses in various Mineral related legislations including the Minerals Act does not augur well for a democratic society. | The MPRDA (2002) has potentially provided for greater emphasis on both social and environmental considerations; however, the predominant focus with respect to implementation seems to be on ownership and too little on the downstream linkages. In November 2015 there was a Mining Phakisa involving all stakeholders in discussions to develop strategies for the mining sector. Many issues relating to the AMV were discussed but the report with its recommendations is not yet available. | | The two principal documents governing the sector, namely, the Zimbabwe Minerals Development Policy and the Mines and Minerals Act are in the process of being finalized. The former, which is now in a draft form, is a completely new policy document, while the latter is the old Act (1961) incorporating the most recent amendments. Study found that while government supports AMV, SADC Protocol and Harmonisation, the tenets of these documents are thrown in national documents in an unstructured manner. |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| **Currently relevant laws and policy documents etc.** | Constitution of the DRC (2006); Mining Code (2002)<br>Various decrees 2003-2013 are listed in report reference section. The report notes the absence of an explicit mining policy separate from the Mining Code.<br>A new draft Mining Code which will significantly closer alignment with the AMV and SADC harmonisation process is before parliament. | The following documents are mentioned but little or no detail provided.<br>Draft National Mining Policy<br>Loi sur les grands investissements miniers (LGIM)<br>Avant-projet de Loi portant code minier – Draft version 3 du 27/08/15 (National Mining Policy?)<br>MRSP 2014 (?)<br>2005 Mining Code | Mines and Minerals Act, 1981; Petroleum (Exploration and Production) Act, 1983; Environment Management Act, 1996; Mines and Minerals Policy, 2013; Draft National Artisanal and Small-Scale Mining Policy, 2014; Draft Mines and Minerals Bill, 2015 | A new Mineral Policy, new Mining Law and new Petroleum Law, have all been passed in 2014, in replacement of the Mining Law of 2002. | Vision 2030 (2004) is a framework document and envisages that the economy will be dominated by the manufacturing and services sectors by 2030. Namibia's mineral resources are to be strategically exploited and optimally beneficiated; the NDP4 2012/13-17 is a development plan aligned with Vision 2030. The New Equitable Economic Empowerment Framework (NEEF) is aimed at empowering previously disadvantaged Namibians towards economic transformation but has no legal basis for enforcement.<br>The Mineral (Prospecting and Mining) Act of 1992; The Minerals Policy of 2002; The Foreign Investment Act (1990); The Diamonds Act (1999); Minerals Development Fund Act (1996); Namibia Industrial Policy (NIP) 2012; Namibian Competition Act (Act no 2 of 2003) et al. | The Mineral and Petroleum Resources Development Act (MPRDA, 2002); The Diamonds Amendment Act (2005); The Precious Metals Act (2005); The South African Mining Charter of 2004. The MPRDA which is the key legislation governing the mining sector repealed the system of private mineral rights ineral and petroleum resources are the common heritage of the people of South Africa and the state acts as custodian thereof for the benefit of the people. | Zambian Mineral Resources Policy (2013)<br>Zambia Mines and Minerals Act (2015) | Draft Zimbabwe Minerals Development Policy<br>Mines and Minerals Act |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| **Optimisation of all linkages through mineral asset price discovery** | Mining and quarrying rights are distinguished. Mineral titles granted through application for the grant of a mineral title or by exception through competitive bidding. | Report provides no details on process through which mining licenses are granted. Requirements for mining licences to be granted limited to specified minimum investment amounts and providing the results of preliminary research. Prospecting licenses can be renewed as much as needed within the limits of the available mining quarries; half the perimeter to be returned up on upon each renewal. The State can undertake exploration and prospection to promote the valuation of the national mineral capital, without competing with private initiatives, and can hold up to 10% of the share capital of companies holding exploration permits. | Minerals and petroleum resources are vested in the President on behalf of the people of Malawi. As many resources are undiscovered/partially known, exploration and mining rights (mineral & petroleum) have been issued on a first-come, first-serve basis. The Mines and Minerals Policy does not specifically address mineral leasing approaches, but the Mines and Minerals Bill includes a provision for the mineral tenement tendering process (Sections 55 to 57). Early proposals in the Mines and Minerals Bill to include local equity participation options were scrapped following a review. | The mineral resources are all vested in State of Mozambique. The award of contracts and licenses is conducted through open, transparent processes. The licensing information is based on first come first serve and is run on digital and on line cadastre system. | The Minerals Act of 1992 does not provide for transparency in the mineral licensing process. To the contrary, the Act contains specific language that discourages it. Section 6 calls for the preservation of secrecy by the MME of all matters pertaining to compliance with the provisions of the Minerals Act. The Minerals Act currently also only requires information on the previous convictions of individuals applying for MEPLs and Mining Claims; corporations are entirely exempt from any background checks. | The MPRDA applies to both petroleum and mineral resources and sets out a range of rights and permits that can be obtained for exploration, prospecting and mining. Applications for a prospecting rights are processed and accepted in order of receipt; however, preference is given to historically disadvantaged persons which includes women. Areas covering known minerals deposits can be applied for under a prospecting right, consequently known assets are disposed of for free without any attempt at price discovery (fair value through public tender). Mining rights are granted provided applicants meet a range of criteria indicating they are able to sustainably operate and comply with health and safety, environmental and other requirements. | No information on the process of mining license allocation. The Mines and Mineral Act (2015) provides for the Minister (Mines) to prescribe the disposal of mineral output (e.g. auctioning or marketing (gemstones), as part of a price discovery mechanism to optimize returns to the country. | No system of auctioning mineral assets. All minerals are vested in the state (represented by the President). Lack of information on its mineral reserves and values prevents competitive bidding in awarding claims. This entails serious potential losses in contracts concluded. The application and allocation system is generally consistent with the requirements of the harmonisation framework, however miners have complained that the fee structure results in lack of exploration and resource sterilisation. There is geological information on minerals such as oil and gas that is in private foreign hands and is not known to government. The result is that the government is at information disadvantage especially at contract negotiations. |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| **Fiscal linkages** | Common law duties & taxes appply as well as those specific to mining sector (as per laws of 2004-2005 under the Mining Code of 2002):<br>fee on currency control; tax on the area of mining concession and on hydrocarbons; mining royalty; 1% royalty and remunerative tax paid to decentralised administrative entities (DAE) for public administration and services. Mining royalty varies: ferrous metals 0.5%, industrial minerals & hydrocarbons 1%, precious metals 2.5%, gemstones 4%. Import duties are set at a preferential rate while export duties are non existent. Overall regime is seen as strongly favouring investors, poorly administered and beset by corruption. DRC manifested its intention of investing in the ITIE transparency process since 17 March 2015 and has conformed to several of the exigencies to keep its conformity status to the ITIE. | 2002 tax law favourable to large scale mining projects resulted from 1990s revision to align with WB liberalisation policy. Total royalty rate of 2%. The corporate tax on profits is 20%, reduced to 10% if products are processed (beneficiated) in the country (corp. tax is 35% in the general tax regime). The mining tax is set at 1% of the produce sold for such projects. | Malawi's fiscal regime is located in the Mines and Minerals Act (1981) and Taxation Act (2006) and negotiated in mining development agreements (MDAs). A Tax Bill outlining a new, non-negotiable fiscal regime for mining & minerals is to be tabled in 2016. Mining agreements will not be granted in the future. Schedules for income tax and royalties are currently being reviewed but are not yet in the public domain; proposals from Adam Smith International study cover enhanced rules referring to debt equity, deductions & transfer pricing; advance pricing agreements; and resource rent tax. Current rates: royalty rate fixed by agreement but 10% on precious and s/p stones and 5% on other minerals indicated; RRT 10% on profits if rate of return surpasses 20%; CIT 30% Malawian, 35% foreign companies; import/custom/excise depends on item but capital goods zero | Tax on production is 3-10% for mining activity; 6% for gas; 10% for oil. Tax on the surface - not applicable to gas and oil and not defined in the table for mining in the report.<br>Law no. No. 13/2007 - Tax Benefits for an initial period of 5 years: free of duty customs, VAT and other taxes. (Seen as limiting incentives government can give?) The Code of Fiscal Benefits (Law no. 4/2009) does not apply to mining and petroleum activities. Recently capital gains tax of 32% has led to large windfall tax collections; divided opinion on how this should be allocated/invested. Mozambique is EITI compliant since 2011 and has already produced 4 reports for public disclosure. | The Foreign Investment Act (1990) offers foreign investors highly favourable conditions expressed in various incentives and allows 100% foreign ownership with the exception of natural resource rights. Mining companies excl. diamond and petroleum pay corporate tax of 32% (reduced from 37.5% in 2015), diamond mining companies are taxed at 55% and petroleum companies are at 35% (national general tax rate is 33%).<br>Mining royalties are levied in terms of the 1992 Minerals & Prospecting Act as a percentage of the market value of the minerals extracted: precious metals/base and rare metals at 2%, semi-precious stones/industrial metals/non- nuclear fuel minerals 2%, nuclear fuel minerals 3% and oil and gas at 5%.<br>Government has expressed concern that tax rates are relatively low.<br>Comment: Concern | At present the state obtains minimal resource rents through corporate tax and royalty instruments. Mining royalties are regulated by way of the Mineral and Petroleum Resources Royalty Act and rates are determined according to a formula which differentiates between the refined and unrefined conditions of the resources. Currently royalty rates for refined mineral resources can vary from 0.5% to a maximum of 5% and for unrefined resources, from 0.5% to a maximum of 7%. | Zambia mineral fiscal regime comprises of the following elements:<br>• A royalty: 9% of produced/recovered value for open cast operations; 6% for underground operations; 6% for industrial minerals.<br>• Corporate tax is set at 30% for all sectors;<br>• A variable profit tax of 15% which is imposed when taxable income exceeds 8% of gross sales ;<br>• Equity participation<br>• A withholding tax is set at 15% except for dividends<br>• There is 10% Property Transfer Tax on value of the mining assets applicable on the Transfer or Sale of Mining Rights<br>• Zambia imposes a 15% tax on the export of concentrates, as a way of discouraging the same, especially given that its installed smelter capacity meets the output of concentrates. | Some stakeholders (non-government) are in favour of the establishment of the Sovereign Wealth Fund (SWF) into which is paid receipts for government from local equity and mining taxes. However, there is great concern that such funds may be mismanaged. (Report discusses option of Sovereign Wealth Fund but does not detail the various tax rates.) |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| | | | rated; Import VAT 16.5%.<br><br>New Tax Bill: Malawi Revenue Authority to collect mining royalties and taxes in the sector, which should improve compliance. At present, no clear vehicle to promote saving and reinvestment of money from the extractive industries. Government is considering future investment vehicles for use of revenue. | | that public taxes collection capacity is insufficient to properly oversee the financial operations of (often foreign-controlled) mining companies. | | | |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
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| **Downstream (forward) linkages** | The Mining Code encourages but does not enforce or incentivise beneficiation of ores. Almost all the ores in the DRC are exported with no value added with copper from Katanga the exception. Low electricity supply, lack of technical expertise, lack of appropriate sustainable infrastructure, and the fragile sub-regional integration are obstacles to beneficiaiton within the country/region. | Corporate tax for mines reduced from 20% to 10% if products are processed (beneficiated) in the country. Limited beneficiation & linkages into manufacture to date; no concrete action to develop RDI to support increased beneficiation. | To date limited work was focused on ASM sector in value addition for gemstones. Neither the new Bill nor the current Act place any requirements on mineral rights holders to add value to products. Mines and Minerals Policy seeks to increase beneficiation through providing training, appropriate incentives, adopting mineral processing standards and cooperating with partners to facilitate access to soft loans. | No reference to specific policies, requirements. Value addition and linkages into other industries are the early stages of development. There is some gemstone cutting; limestone is used for clinker/cement production and cement is exported regionally; natural gas is used in power production, LNG in vehicles. Initiatives to expand beneficiation take the form of discrete government projects (Gemmological Institute, attempts to facilitate production of aluminium products for construction industry) and have so far met with limited success. | The Namibian Minerals Policy has the objective of 'promoting and encouraging maximum local beneficiation of mineral products to ensure that as many of the economic benefits as possible are retained in Namibia for the benefit of all its citizens'. Promotion of beneficiation began in 2000 and up to 10% of Namibia's diamonds by value are polished in Namibia. (NAMGEM, 100% subsidiary of NAMBDEB has a supply agreement with government.) Lack of clear models for beneficiation, sufficient scale, and availability of capital, technology and skills seen as constraints for beneficiation of other minerals. Stakeholders view linkages with rest of economy as weak. No reference to incentives towards/requirements for beneficiation. | The government has committed to the promotion of local beneficiation through the MPRDA; however, there are no conditions obliging a mineral right holder to beneficiate in the Act; rather the Minister "may" initiate or promote the beneficiation of minerals and petroleum resources in the Republic. An MPRDA Amendment Bill (2013) attempted to give the Minister the power to determine a percentage of mineral production that shall be offered to local beneficiators under developmental pricing conditions. The bill has been changed, challenged and delayed due to local business opposition, constiutionality and compliance with international trade agreements. The Precious Metals Act requires Ministerial authorisation to export precious minerals other than gold; however, this power is dramatically constrained by the new SA-EU EPA. Clause | Zambian Mineral Resources Policy (2015): To enhance the contribution of mining to the national economy, Government will (a) (e)ncourage mining cluster development to link the mining sector to the broader economy and (b) promote linkages between mining and agriculture, ...tourism,...and value adding processing industries. Government will promote and facilitate the development of downstream processing capacities for minerals by: d) Providing an appropriate legal and fiscal regime; e) Exploring opportunities to expand the local metallurgical plant capacity in the country: and f) Identifying market potential for national and regional consumption of value added products. Zambia imposes a 15% tax on the export of concentrates, as a way of discouraging the same, especially given that its installed | While most mines do engage in ore concentration only three operations proceed with further metallurgical/refining processes. Industry respondents recognised potential opportunities for beneficiation, but factors such as power costs and shortages, limited feeds and investment costs are limiting factors. The Platinum Producers Committee of the Chamber of Mines (PPC) is proposing a phased approach in contrast with the sudden jump government is aiming for. Government involvement has led to several failed projects (un/underutilised diamond cutting and polishing and training centres). Generally, mining in Zimbabwe is not an important direct source of input for other productive processes in the economy, given the technologies of production used in the rest of the economy. |

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| | | | | | | #8 in a mining right stipulates that "the Holder shall dispose of all minerals and/ or products derived from the exploitation of the mineral at competitive market prices which shall mean in all cases, non-discriminatory prices or non-export parity prices". The clause confuses EPP and non-EPP and has consequently proved to be ineffective in curbing IPP. | smelter capacity meets the output of concentrates. One of the three companies in copper value addition, ZAMEFA, was established in 1968 as a state enterprises and the state currently retains 25% ownership. | |

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| **Upstream (backward) linkages** | Mining goods and services predominantly supplied through importation. Current regulations do not enforce any measure of local employment or local content. Local suppliers tend to be overpriced and the skills gap limits potential for the development of indigenous upstream enterprises. | Little awareness that value addition (linkages) extends to local inputs and services into the mineral sector. | At present applicants for a mining licence must submit "a report on the goods and services required for the mining operations which can be obtained within Malawi and the applicant's proposals with respect to the procurement of those goods and services" and this must be deemed "satisfactory" in order to be granted a licence. There is no preference given at the national level for regional member countries in the provision of goods and services.<br>The Mines and Minerals Policy is relatively silent on backward linkages (the key failing of the policy) but the Mines and Minerals Bill expands the local content requirements for the applicants of medium- and large-scale mining licences. A goods and services procurement plan is required for both applicants, although medium-scale applicants can request exemption. A business development assistance plan (for | The ministry of Mines is having discussions on the need to establish quotas for the extractive sector's local content procurement which is also applicable to their subcontractors and the definition of Mozambican owned companies be clearly established (i.e. at least 50 % Mozambican ownership). These quotas should vary according to the types of products being purchased.<br>Currently limited local procurement, mainly local transport, accommodation, catering, security, and low skill workers (maintainers, drivers, cleaners, etc.). | Poor linkages, with most equipment and services sourced from other countries especially South Africa. Some services acquired from within the region could be provided by Namibian service providers. Recent pronouncements indicate that government plans to develop a procurement policy as advocated under NEEF to support local SMEs. | Mining and mineral processing are the key market for subsectors in the manufacturing industry and 80% of mining goods and services are sourced from local suppliers, but imports of high tech and lower end products are reducing local market share. When applying for a mining right there are no criteria (obligations) on up- and downstream value addition that the applicant is required to comply with. The Mining Charter Scorecard stipulates that a mineral rights holder should procure 40% of its capital goods, 70% of services and 50% of consumables from firms with 26% BEE equity. "Multinational suppliers" are excluded from this requirement, with only an obligation to allocate 0.5% of the procurement value to a "social fund". Together these requirements have a 15% weighting in the Mining Charter Scorecard, but the focus is on black ownership rather than local content. | Zambian Mineral Resources Policy (2015): Government will make provisions in the law to compel mining companies to give preference to Zambian products, local contractors and services and to employ and train. Indeed the Mines and Minerals Act (2015) provides for the preferential consumption of local goods and services by the local mining industry, to increase local content (further detail not provided). Zambia does not manufacture any mining equipment, and imports mainly from South Africa. The country does supply a limited amount of mining consumables such as explosives, and grinding media. Services (including specialised services for the mining industry e.g. labour, analytical, financial, security, ICT and maintenance) are mainly procured from local suppliers. (Note that local procurement decreased after privatisation.) | At the governance level there is need for government to build local procurement clauses in contracts, which needs capacity building of government negotiators. Upstream industries are skill-intensive, therefore, skills development should be government's priority in this area. There is need for facilitating acquisition of finance, for example through government guarantees, in order to address the financial constraints faced by local suppliers.<br>The mining sector procures a variety of goods and services locally such as some chemicals, fuels, lubricants, coal, certain oils, silica, chrome ores, coal, construction and civil engineering materials and services, some small equipment including ball mills, drilling equipment and explosives, protective clothing, blasting and mining services, transport, catering and management, plant maintenance and general hardware, et cetera. However, |

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| | | | mining inputs and other businesses, focused on local area) is required for large-scale mining licence applicants only, and a request for exemption is permitted if the plan can be justified as unnecessary, i.e. no qualified communities as defined by the Bill. The Bill's provisions for procurement require that preference be given to Malawian citizens with equal opportunities to Malawian woman-owned entities, provided suppliers or contractors offer competitive and comparable terms (price, quantity, quality, and delivery schedule) to non-Malawian contractors or suppliers. | | | | | major equipment and spares, gear boxes, motors, roof support, bearings, and a great number of various laboratory consumables are imported. |

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| **Knowledge (sidestream) linkages Geological information** | There are no reported regulations on the responisibilities of mining companies with respect to geological information. Government structures tasked with producing and distributing geological information (the Geological and Mineral Research Centre and the Directorate for Geology in the Ministry of Mines) do not have the necessary capacity or funds. The absence of reliable information on the country's mineral reserves and their value means that some AMV recommendations cannot be implemented effectively. | *Geological information:* Geological and metallogenic synthesis of Madagascar at 1:1,000,000 scale prepared World Bank funding & USGS support, completed in 2012. Three printed maps (geology, metallic substances, and industrial minerals) with interpretation plus numerical databases within a GIS (geographical information system). Aims to enable the Malagasy government authorities to promote private investment initiatives, which is one of the thematic areas of the Harmonisation Implementation Plan. information sharing at the regional and international level is given a high priority, as demonstrated in the planned actions (MRSP 2014: 11), which includes a large scale campaign of geological and geophysical mapping ; inventory of mineral deposits and updating of basic information; and availability and dissemination of data | MGGSP enabled the Government to finance an airborne geophysical survey; the results of which were launched on 20 August 2015. This is expected to see an increase in exploration work. At present Malawi remains underexplored, preventing the Government from using a competitive bidding approach as recommended in the AMV. Under the decentralised SADC model, where Zambia housed the mining unit, geological information sharing in the region was facilitated. In the absence of this, Malawi has shared less information. This will likely change with the introduction of a geo-data system (bidding currently ongoing for its development) and a cadastre in Malawi's Department of Mines and Geological Survey Department as it will enable systematic and accurate sharing of data. | 2002 – 2006 geological maps at a scale of 1: 250 000 were produced for the entire country; areas with greater economic potential mapped at 1: 50 000. Mozambique has a Mineral Information System (MIS), a GIS based platform with digital capabilities to: 1) Categorise, catalogue, digitise, unify and integrate the results from mineral exploration and mining projects, both from the Government and private sector, into a GIS environment under a single management system. 2) Import additional relevant datasets, including topography, geophysical data, geology, satellite imagery etc. 3) Create an accessible, user-friendly minerals information system. etc. (Report lists all geo information resources for Mozambique e.g. maps, explanations, satellite images etc.) | Namibia has a highly organised geo-database through the Geological Survey Division of Namibia within the MME, which captures information on Namibia's economic geology, engineering, environment, geophysics, geo-information etc. Namibia can share its many years of expertise in geological data collection, maintenance and analysis. | The mandate of the Council for Geoscience (CGS) to 'promote the search for, and exploitation of, any mineral in the Republic' and 'undertake research in the field of geoscience.' Any information in relation to the prospecting for and mining of mineral resources which is likely to be of use or benefit to the Republic must be brought to the attention of the Minister or more specifically lodged with the CGS. The CGS develops and maintains several databases for South Africa as well as the Africa Minerals Database which includes the International Metallogenic Map of Africa 1:5 000 000. Work done on compilation of the 1:2 500 000-scale SADC geological map is not complete. Greater investment into the level/quality of the resource potential data is urgently required to strengthen the position of government in | Zambian Mining Policy: (Government will) expedite geological mapping of the remaining unmapped parts of the country, through non-tax incentives aimed at attracting private companies to partner with Government for purposes of conducting geological mapping. Mines Act (2015): The Director Geological Survey shall undertake Geological mapping of Zambia, and provide data concerning the geological and mineral resources of Zambia, and assist members of the public in information concerning geological data. In reality, due to government funding constraints, virtually all ongoing mineral survey in Zambia is being undertaken by the private sector which is required to routinely report all mineral exploration findings. | Zimbabwe is seriously underexplored. About 60-65% of the country has been mapped but this is just reconnaissance mapping and does not translate to knowledge of quantity and value of the resources. The little known information on the various minerals is published in the form of bulletins, annals of the Zimbabwe Geological Survey and Mineral Resources Series. There are also more technical reports on specific areas in terms of occurrence of specific minerals, which however fall short of detailed evaluations. The geological maps are available at the Zimbabwe Geological Survey. There is also geological information on certain minerals such as oil and gas that is in private foreign hands and is not known to government. The government recently formed a Mineral Exploration (Promotion) Company with the purpose of |

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| | | through the National Geological Bureau. | | | | mining license negotations. | | enhancing the geological information position of government. However, the company has not been resourced There have been disparate efforts by different institutions to develop a wider minerals database including not only geological information, but also mining, mineral processing, economics and marketing information. These efforts have not succeeded due to lack of resources, coordination and active participation by the Ministry of Mines. There was also an attempt on a regional database in the 1990s at the Institute of Mining Research (IMR). |

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| **Knowledge (sidestream) linkages HRD & RDI** | The government limits itself to encouraging the mining industry in training and improving the skills of its professionals, without defining a clear and concrete strategy to achieve this aim notably by allocating a subsequent budget for research. | Skills: Draft National Mining Policy 'encourages' investment in skills development. Current situation: huge skills gap; training by mining companies dependent on own needs and goodwill.<br>RDI:<br>No concrete action to develop RDI to support increased beneficiation. | In the current 1981 Mines and Minerals Act, applicants for both mining and exclusive prospecting licences must include a statement on the their proposal for the employment and training of Malawian citizens that must be deemed adequate. (No detailed data available on actual implementation.) The Mines and Minerals Bill expands training and employment requirements for applicants of medium- and large-scale mining licences. There are no research provisions for licence holders and no stipulated percentage for revenue to be used in research. | Report identifies major skills gap after the mining industry developed very rapidly over a short period of time. Government and private sector have invested in upgrading/expanding skills development and research facilities but further investment is required. Currently private sector participation in local skills development and improvement of facilities is dependent on goodwill and not formalised as a requirement. No requirements of local RDI. | Namibia experiences a chronic skills shortage in particular in scientific fields.<br>Government encourages the mining sector to promote and support training for careers in mining through the provision of bursaries, in-house training and apprenticeships. The report cites 93.8 million spent by mining companies on skills development in 2014. While the Affirmative Action (Employment) Act stipulates HRD requirements, monitoring of implementation of the act is limited. The reports does not cite any specific legal requirements in terms of HRD for the mining industry.<br>The report notes recognition by government work permit requirements and procedures should be relaxed in order to bring in specialized instructors and trainers, who would train Namibians in the relevant fields.<br><br>RDI:<br>The Geological division | Skills: There is a shortage of engineers due to weak STEM skills pipeline as well as skills shortages for positions such as artisans and supervisors. The Skills Development Act (1998) provides a framework for skills development of those in employment and through learnerships, and provides funding through a levy-grant scheme (employers contribute 1% of payroll). Within the National Skills Accord, business has agreed to train 56% of the required 30 000 artisans and to train beyond their own needs in key skills areas. The Mining Charter Scorecard gives a weighting of 25% to the target of spending 5% of payroll on HRD (in addition to 1% skills levy).<br>RDI: Within SADC RDI is concentrated in SA, but since the exit and/or breakup of the SA Mining Houses in the 1990s, mining RDI is increasingly done with foreign transnationals (especially EU firms). | Zambian Mineral Resources Policy (2015): Government will make provisions in the law to compel mining companies to … employ and train Zambians.<br>Currently skills development by mining companies is voluntary. In 2012 three mining companies reported spending 5 million USD on outsourced training in addition to in-house and on the job training.<br>RDI<br>The current level of research and development going on in the Zambian mining industry is very limited. There is very little research and development interaction between the mining industry and local research institutions such as universities (*this is a reversal of the situation pre-privatisation of Zambian Consolidated Copper Mines and results from foreign ownership*.<br>Government research and innovation bodies including National Institute for Industrial | Skills:<br>Weaknesses in STEM education from school to tertiary institutions with exception of Zimbabwe School of Mines through the support from Government and the Chamber of Mines of Zimbabwe. Great shortage of geologists and engineers.<br>Government encourages industry participation in training and development programmes but does not provide fiscal incentives - seen as a key setback.<br>RDI<br>No evidence of in-country RDI by mining companies and IMR no longer has required skilled staff. Poor links between industry and academic community; little or no funding available for RDI in academic institutions or by mining inputs sectors.<br>No local RDI requirements from mining industry. |

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| | | | | | of the MME "encourages, promote and invests in" RDI for the mining sector in compliance with the Minerals Policy of 2002. | There is no legal obligation on mining companies to allocate spend to local RDI. Government RDI policies have failed to increase spending and are weakly linked to the mining and mineral processing sectors as engines of economic growth. | and Scientific Research (NISIR) do very little if any work in the area of mining. | |

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| **Spatial (infrastructure-sidestream) linkages** | Local populations may use roads constructed for mines but there is no legal obligation on mining companies to supply roads, energy or water to surrounding communities. Where this happens it is regarded as part of voluntary social and environmental responsibility. DRC is faced with significant energy difficulties. A shortage of available power; frequent power shut-offs since 2012; and lack of transparency in the management of the power shortage have resulted in heavy costs for mining companies. | Draft National Mining Policy 'encourages' infrastructure development by mining companies. QMM project contributed to creation of port facilities and electrification of Fort Dauphin. Madagascar poor level of transport and energy infrastructure is a constraint to mining development. | No reference to infrastructure linkage requirements in the report. LED - large companies need to submit plan for local business & supplier capacity development.<br><br>Malawi's Mines and Minerals Policy is oriented towards regional and international cooperation. Spatial Development Initiatives and the Southern African Power Pool (SAPP) are identified as key tools to spur on development of clusters across national borders and to trade power, respectively. | Infrastructure constraints has caused serious bottlenecks for mining development, and mining companies have been forced to invest in infrastructure to make their own projects viable. No reference to legal requirements in terms of infrastructure development. | Namibia is currently under-supplied with power but has plans for increasing capacity over the next few years. The road infrastructure is relatively good. A N$3bn expansion of Walvis Bay and a N$30bn port development to the north are already underway. In some cases mining companies have invested in infrastructure in the area of the mine, but there is no mention of legal requirements from the mining industry in terms of infrastructure. | Mining has contributed significantly to SA's infrastructure development over the past century. SA has the highest LPI in the region, though it is declining. There are no legal requirements related to infrastructure on mining rights holders. The MPRDA Amendment Bill (which has not been passed) requires that the Minister promotes spatial linkages through regulating the provision of mining infrastructure at non-discriminatory tariffs for other economic activities. | No policy or legal requirements for mining companies to contribute to physical infrastructure. While Zambia has a relatively good road infrastructure, rail infrastructure has not been reliable so that mining products are transported by road. There is a power shortfall despite connection to the SAPP (which itself faces an overall shortfall at present). The Nacala Road Corridor (SDI) is under development with assistance of the African Development Bank and may create opportunities for private sector investment in infrastructure. | Power, road and rail infrastructure has been deteriorating over the years, posing serious challenges to the effective development of the mining sector. The country is experiencing serious electricity shortages. Apparently no legal requirement for mining companies to invest in/share physical infrastructure. |

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| **State Mining Company (SMC)** | Until the 1990's, the State had greater direct participation in public mining companies which in turn significantly contributed to the State budget. The DRC's ining sector is now dominated by rapidly growing private sector activity. (It is not clear from the report whether any state ownership persists.) | No reference to an SMC in the report. All minerals and geological data and information also belong to the State, which can undertake exploration and prospection to promote the valuation of the national mineral capital, without competing with private initiatives. The State can hold up to 10% of the share capital of companies holding exploration permits. | No reference to a State Mining Company in the report.<br><br>State equity:<br>State participation is supported in the Bill, for the first time giving "the Government the right, but not the obligation, to acquire, directly or through a Government nominee, without cost, a free equity ownership interest of up to ten per cent (10%)" in a large-scale mining project. | No reference to a State Mining Company or state equity in the report. | Namibia established a 100% government owned mining company, Epangelo Mining PTY LTD, in 2008. According to the report this company is faring well and has the potential to be developed as a 'role model' for the implementation of value addition. | Former state mining and mineral feedstock supplying enterprises have been privatised (some shareholding remains in a small number). | | |

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| **ASM** | ASM accounts for 90% of mineral production and involves 2 million people; it is practiced by individuals and recognised cooperatives within artisanal exploitation zones. Zones are designated where industrial or sem-industrial exploitation of a deposit is not feasible. The conditions for closing of an artisanal exploitation zone and the issues related to this closure are covered in the Mining Code. Permits are issued to Congolese citizens only. Government has committed to provide business support and work towards formalisation of this sector (Poverty Reduction Strategy Paper). Currently government records and ability to monitor ASM is limited, favouring tax evasion. Different national and foreign armed groups have for about 15 year been financed with money from ASM, especially in the east of the DRC. | Mining sector currently 'dominated by' ASM which employed up to 500 000 in 2012. No mention of laws, regulations or support measures for this sector. | Draft National ASM Policy (2014) mentioned but report lacks details.<br>The Draft Mines and Minerals Bill more clearly defines mineral asset disposal for artisanal and small-scale miners.<br>The Malawi Poverty Reduction Strategy Paper (2002-2005) outlines support for ASM to promote sustainable pro-poor growth. Training of the ASM has been earmarked as an important activity but this has not been systematically rolled out. | "The new Mining Law significantly changes the validity of the mining permits/mining passes, especially those for ASM" - no detail provided.<br>There are an estimated 100,000 or more ASM miners with 1/3 of labour constituted by women and children (mostly in mining support activities).<br>ASM is widespread but there is no mention of specific regulations; currently the government does not have the institutional and HR resources to support or monitor this sector. | The Minerals Act of 1992 provides for the registration of small-scale mining claims, and a 'simplified' system for pegging and registration is aimed at promoting small-scale mining activities. The MME established the Namibia Small Miners Assistance Centre (NSMAC) in 1997 to provide geo-technical support to ASM. Small-scale mining is represented by two organisations on the both the Mineral Board and the Mineral Fund Board.<br>There are an estimated 2000 small scale miners according to the MME, mostly one-person operations digging for gemstones. About 80% of the small-scale mining activities are categorized as 'illegal' operations. Support for small-scale mining includes the Minerals Development Fund (MDF), while technical support is available through the relevant structures of MME.<br>There are small-scale mining support centers in place to assist | Small-scale mining (ASM ) is provided for by way of a mining permit for minerals that can be optimally mined in 2 years or less in a mining area of less than 5 hectares .<br>These permits are valid for 2 years and can be extended three times for one year. | Zambian Mining Policy: To develop the small-scale mining sub-sector Government will undertake the following measures:<br>a)Encourage the use of appropriate, affordable and safe-technology;<br>b)Collaborate with small-scale miners' association;<br>c) Disseminate information to raise awareness on occupational safety, health and environmental risks, and provide occupational health and safety guidelines for small-scale mining;<br>d) Improve the system of information flow the opportunities present and the regulations governing the sector.<br>The Zambian Mines Act (2015) provides for the granting of small scale and artisanal mining licenses and a small scale exploration license.<br>Allocation of Artisanal licence is reserved for a citizen, or a cooperative wholly composed of citizens. A Small Scale licence is reserved for citizen owned, citizen | |

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| | | | | | miners in the development and implementation of appropriate technology. Co-operatives offer an additional vehicle for securing funding for the development and application of technology to small-scale mining. Indications are that MME and the Ministry of Industrialisation are working towards establishing a gemstone evaluation hub in Karibib. | | influenced or citizen empowered company. | |

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| **Partnerships** | No reference to partnerships in the report. | No reference to partnerships in the report. | Although mining development agreements will be removed with the new Mines and Minerals Bill, this does not rule out the possibility for Government to enter public-private partnerships (PPPs) with mining companies especially in the areas of transport, infrastructure, and energy.<br>Malawi is encouraging PPPs especially in the energy sector, however, low feed-in tariffs are not attractive at present. | No reference to partnerships in the report. | Namdeb is a wholly owned subsidiary of Namdeb Holdings (Proprietary) Limited Holdings which is owned in equal shares (50:50) by the Government of the Republic of Namibia and De Beers (since 1994). Namdeb performs land-based prospecting (exploration), mining and rehabilitation operation and services for Namdeb Holdings. In 2011 De Beers Marine Namibia was also brought under Namdeb Holdings so that the state also has a 50% in the marine diamond operations. (Information sourced from the internet, not detailed in report.) | No reference to partnerships in the report. | The Zambian Mineral Resources Policy stats that Government will promote the development of at least one large scale mine in provinces with economical mineral deposits; and collaborate with large prospecting and mining associations. There are no specific provisions for promoting/developing PPPs or creating incentives for investment. | No reference to partnerships in the report. |

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| **CSR/CSI** | The Mining Code deals specifies that 20% of the mining royalty goes to the provincial goverment and 15% goes to the local city or territory. The Plan for the Environmental Management of the Project (PGEP) should according to the Mining Code include the establishment of economic and social development programmes and compensation for communities that are relocated, but these are not binding requirements. The Mining Code Amendment draft law deals with several issues relating to social responsibility including: definition of specifications on social responsibility; compensation of local populations; protection of pregnant women and infant children; and the contribution of mining companies to local, provincial and national job creation. | To date CSR seems to have been dependent on goodwill of mining companies. | The proposed Mines and Minerals Bill seeks to introduce Community Development Agreements (CDA) between companies and communities to regulate the relationship between the two parties. A holder of a large-scale mining licence will be required to expend no less than 0.45% of annual gross sales revenues on activities outlined in the CDA (Section 169), but there are no requirements specifically for activities to target women or children. | CSR mechanisms/requirements are apparently not formalised at present. "The mechanisms for funding social development are in a state of evolution. They need to be formalized and their application and management made more inclusive and transparent." | The Namibia mining and environmental law requires community consultations. The legal framework is progressive but implementation is weak, partly due to lack of capacity within communities. CSR is left to the devices of corporations and often done as a good will initiative. Some projects are effective while others are in the realm of PR exercises. | Within the Scorecard for the Broad-Based Socio-Economic Empowerment Charter for the Mining Industry, achievement of the following target has a 15% weighting: conduct ethnographic community consultative and collaborative processes to delineate community needs analysis and implement approved community projects. | Mines Act (2015): The Minister has power to make regulations for the participation by mining right and mineral processing licence holders in the development of local communities.<br>Section 4 provides for: Development of local communities in areas surrounding the mining area based on prioritisation of community needs, health and safety.<br>Section 3 refers to the (license) applicant's undertaking for the employment and training of citizens and promotion of local business development.<br>Mining Policy: A portion of mineral royalties is to be reserved for the development of businesses in mining communities. | |

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| **Environment** | The following instruments are regulated since 2002: Environmental Impact Assessment (EIA) , plan for the environmental management of the project (PGEP) and the Attenuation and Rehabilitation Plan (ARP). The Mining Code Amendment draft law deals with several issues related to environmental responsibility including the ban of any mining activity in protected area; larger participation to the environmental impact assessment; and environmental instruction to the surrender of title. | Unique challenges arise from Madagascar's position as a global biodiversity hotspot in a context where the development of the mining sector has become a high national priority. In line with the Harmonisation Framework, the revised Mining Code together with the existing environmental legislation refer to mining international standards in terms of safety and security. Operations involving radioactive minerals are subject to a specific agreement with the Government. All investors must engage in an environmental programme or undertake an EIS, depending on the type of project. Based on the results, the National Office for the Environment delivers environmental permits and imposes Environmental Project Management Plans. | Environment Management Act (1996) stipulates the arrangement for Environmental Impact Assessments (EIA), the monitoring of Environmental Management Plans (EMPs), and pollution and other licences. However, inadequate monitoring and enforcement of EMPs are a key constraint for environmental protection in Malawi. The proposed Mines and Minerals Bill (2015) includes more stringent provisions for the rehabilitation and mine closure plan and finalisation, mineral waste management and financial assurance for medium- and large-scale mining licence holders.<br><br>Negative impact of much ASM mining recognised by draft National ASM Policy and lack of appropriate knowledge and training as well as inadequate monitoring and enforcement of standards identified as constraints. ASM training has not been | Relevant laws encompass limiting negative environmental impacts on biodiversity, natural environment and communities as well as technical safety rules. Depending on the scale and nature of operations, an Environmental Impact Plan (for artisanal mining and non-mechanised exploration) or an Environmental Impact Study is required. Mines may only be closed after running previously approved Mine Closure Plan and some mines are required to pay for a performance bond to cover the mine closure and landscape rehabilitation should the mine be abandoned or closed without proper procedures. | The Environmental Management Act (Act no 7 of 2007) provides relatively good protection for the environment, but implementation has not been efficient. The law requires that Environmental Assessments (EAs) be done for economic activities including mining and that records of EAs and that relevant documentation (e.g. compliance reports, bi-annual reports) be accessible to the public. Evaluating EAs as part of the licensing process and monitoring compliance with environmental regulations is the responsibility of the MET (Ministry of Environment and Tourism) and overlapping jurisdictions have caused inefficient implementation. There have been attempts to streamline the process and an Environmental Commissioner oversees the EA evaluation and monitoring processes. | An application for prospecting or mining rights and permits require an EIA and an environmental authorisation from the Ministry of Mineral Resources. Authorisations may be appealed against, to the Minister of Environmental Affairs. Permits/licenses must be obained for water use and air pollution. Directors of mine can be held personally liable for operating without EA or failing to comply with its requirements. The objectives of both the AMV and the framework for harmonisation are met by an extensive system of environmental regulation, but there are concerns about the role of the Department of Mineral Resources as both player and referee. | Section 80-87 of the Mines Act (2015) provides for mitigation of mining environmental, social and cultural impacts. Section 80: The environmental impact assessment process includes public participation. | Before any major development and production work can be commenced on the claim, the miner should submit a project prospectus to the Environmental Management Agency (EMA) detailing the proposed project components and the likely impacts of the project on the broad (physical, social, human and economic) environment. EMA will either allow the miner to proceed with works if the impacts are minor or request them to embark on a detailed Environmental Impact Assessment (EIA) if the likely impacts are deemed significant. These EIAs are produced on behalf of the miner by a consultant selected from a list registered with EMA. The EIA guidelines provided by government, while not making it mandatory to have mine closure plans, encourage the EIA documents to include them. A submission fee is charged by EMA. |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| | | | systematically rolled out. | | | | | |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| **Health & Safety** | Directorate of Mines is responsible for inspection and control of mines and quarries in terms of safety and hygiene. The report does not refer to specific regulations. | No reference to Health and Safety Regulations in the report (environmental safety - see "Environment") | | "All mining operations in Mozambique must be carried out (in compliance with) technical safety rules in accordance with specific regulations." | The Ministry of Labour was given the task as the umbrella organization for all matters concerning Occupational Health and Safety in terms of the Labour Act, Act No. 11 of 2007. The Act also makes provisions for workplace safety committees. While H&S regulations are in place, inspections are not carried out consistently due to limited staff in the Department of Labour. Health and safety is given little priority in the ASM sub-sector. | Mining right applicants have to show that they are able to comply with the Mine Health and Safety Act. The Scorecard for the Broad-Based Socio-Economic Empowerment Charter for the Mining Industry gave a 5% weighting to implementing a tripartite action plan on health and safety by 2014. | Zambia Mines Act (2015)<br>Section 80: In considering a licence application the Committee responsible for licence approval will consider proposals for mitigation for mining environmental impact, social cultural impact, and human safety. An environmental Protection Fund has been established for securing the compliance of the licence holder. | |
| **EPA/BITS/WTO Constraints** | No reference to international agreements in the report. | No reference to international agreements in the report. | | No reference to international agreements in the report. | No reference to international agreements in the report. | International trade agreements such as GATT and EPAs constrain proposed instruments designed to ensure sale of a portion of feedstock minerals at prices that will enable beneficiation (compared to current IPP). | | |

| AMV Alignment elements | DRC | Madagascar | Malawi | Mozambique | Namibia | South Africa | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|
| **Regional integration (SADC)** | The report notes limited implementation at of regional instruments that would facilitate regional integration/are envisaged in the SADC harmonisation. | | At present, Malawi faces a challenge in that coal produced in Mozambique and South Africa is cheaper than coal produced in Malawi, which is undercutting coal producers in Malawi, including those supplying the domestic market. This is an example of where SADC could be instrumental in ensuring member countries do not undercut domestic markets of other members, especially for countries that are newer to the industry.<br><br>Most interviewees believe common mineral-specific taxation instruments for the region can be useful, but only to the extent that they take variable geometry into account and do not make countries or the region uncompetitive. | | | The report emphasises that regional integration is slowed by concerns about potential negative impacts and will require instruments to deal with 'variable geometry' in the region and to limit industrial polarisation. | Mines act (2015): Mineral resources shall be explored and shall be developed ... in accordance with international conventions to which Zambia is a Party. | |

## Lesotho

| AMV Alignment elements | Lesotho |
|---|---|
| **General** | Existing legal frameworks in mines & minerals sector fragmented and outdated, limited in scope. Ministry of Mining established in 2012. An AMV compliant Minerals & Mining Policy has been developed (UNDP & UNECA support). Approved June 2015. |
| **Current process** | A high level workshop launched the Mining Legislative Process (June 2015, AMDC support); 2 stages: 1 = review and update the current legal and regulatory framework governing the mining sector to align it with new Policy. (*Not clear how far this process has progressed.)* 2 = draft new legislative and regulatory instruments as required. |
| **Currently relevant laws and policy documents etc.** | Mines and Minerals Act (2005); Mines and Minerals (Amendment) Act (2014); Mines Safety Act (1981); Precious Stones Order (1970); Precious Stones (Kimberly Process) Regulations (2003); Precious Stones (Diamonds Dealer's Licence Grant and Renewals) Regulations (2004).; Explosives Proclamation of 1959. |
| **Optimisation of all linkages through mineral asset price discovery** | There are no standardized parameters to guide negotiations for mining agreements. The report notes two problems stemming from the current lack of regulation and monitoring:<br>- foreign investors can take a disproportionate equity in mining projects;<br>- some diamond companies engage in "Trial mining" to extend their feasibility study phase, even though this is not provided for in the Mines and Minerals Act 2005. |
| **Fiscal linkages** | REPORT PROVIDES NO DETAILS ON RATES FOR DIVIDENDS, ROYALTIES, & TAXES.<br>The threshold of 20% equity for the state in diamond mines is considered too low by many local stakeholders. Ministry of Mining collects revenues including dividends, royalties and annual fees; Ministry of Finance collects taxes from mining companies. |
| **Downstream (forward) linkages** | Beneficiation is provided for in the Precious Stones Order of 1970 but according to the report no beneficiation takes place at present.<br>The law is outdated and currently being reviewed by the Ministry of Mining in order to establish a Board which will review applications for diamond cutting and polishing. |
| **Upstream (backward) linkages** | There are no existing regulations around local content and backward linkages. Small local market; lack of raw materials, technology and manufacturing capacity constrain growth of backward linkages. Currently most mining goods & services procured from SA - this level of integration also limits development of local industry. |
| **Knowledge (sidestream) linkages: Geological information** | Lesotho geochemical mapping project (Dept. of Geological Survey): on-going exploration for base metals using satellite imagery and remote sensing using satellite imagery to locate exploration areas, supported by SA Council for Geosciences. The aim is to develop a comprehensive geological information management system in Lesotho. |
| **Knowledge (sidestream) linkages<br>HRD & RDI** | No current requirements around HRD or RDI are mentioned in the report.<br>There is a serious shortage of requisite skills in the country. Mines recruit externally and at the same time develop programmes to train expatriates' local counterparts for their operations. |
| **Spatial (infrastructure-sidestream) linkages** | No current requirements around infrastructure development are mentioned in the report.<br>Poor road and energy infrastructure - only one diamond mine has access to grid electricity. Mining companies thus forced to provide some of their own infrastructure but there is no requirement to make such infrastructure available for public use. |
| **State Mining Company (SMC)** | No reference to a State Mining Company in the report. The State can hold up to 10% of the share capital of companies holding exploration permits. |
| **ASM** | No reference to ASM in the report. |
| **Partnerships** | No reference to partnerships in the report. |
| **CSI/CSR** | National CSR standards and policy guidelines that facilitate effective CSR interventions by mining companies among communities negatively affected by their activities are lacking in the country. |
| **Environment** | Existing regulations not detailed or summarised in the report. Institutions that regulate the mining industry in the country, namely Departments of Mines, Environment and Water Affairs lack requisite capacity to effectively undertake inspection and monitoring of mining activities to ensure compliance with laws. |
| **Health & Safety** | No reference to Health and Safety Regulations in the report. |
| **EPA/BITS/WTO Constraints** | No reference to international agreements in the report. |
| **Regional integration (SADC)** | New policy (June 2015) incorporates regional dimensions elaborated in the SADC Mining Protocol and the SADC Policy Harmonisation Framework and is aligned with the Africa Mining Vision (AMV). |

# Appendix 3: Select Recommendations from the Country Reports relating to the AMV Alignment Elements[58]

## 2. DRC recommendations

### General

Consistent and sufficient budgets should be allocated to the Ministry of Mines, Land Registry for Mines, Directorate for Mines, and environmental monitoring service for better implementation of mining administration.

### Currently relevant laws and policy documents etc.

The report recommends that a mining policy be put in place; the creation and role of such a policy for the forestry sector is stipulated in the Forestry Code and may serve as inspiration.

### Fiscal linkages

Stringent mechanisms are needed to control mining revenues and parliamentary involvement should ensure application towards the economic development of the nation. The report supports the new draft law before Parliament with innovations including: favourable import duties only to apply for first 6 years of operation; applying the pit-head value as tax base for mining royalty; increasing mining royalty rates (maximum at 6% for gemstones).

### Downstream (forward) linkages

Through implementation of law n° 14/011 of 17 June 2014 on the electricity sector, the energy gap should be reduced thereby making effective the clauses on the valuation of raw materials. These clauses are to be included in contracts signed with mining companies, strengthening the State's ability to negotiate contracts that support development.

### Upstream (backward) linkages

An industrialization policy based on local, national or sub-regional manufacturing of these inputs and the use of a local, national or sub-regional human resources is necessary to economic growth. This is dependent on the development of the required skills locally, nationally and at the SADC level.

[58] See

Appendix 1

### Knowldedge (sidestream) linkages: Geological information

A share of taxes on surface rights should to the Geological and Mineral Research Centre (GMRC). The report supports the goverment's initiative to create a National Institute for Geology to promote and identify the country's mineral resources and encourage an increase of exploration programmes. It supports government plans to put in place a Mining Fund capable of supporting geological and mineral research.

### Knowldedge (sidestream) linkages: HRD and RDI

The government of the DRC must create technical schools and centres of expertise in the domain of mining and related industries.

### ASM

Support for access to technology and technical, financial and managerial capacity building can encourage artisinal miners to constitute themselves into cooperatives.

The main challenge here is the promotion of the legalisation of the sector which is not under government control, supervision of artisanal exploiters and a taxation policy which is acceptable to them.

## 3. Madagascar recommendations

### Currently relevant laws and policy documents etc.

SADC could initiate the development of a model law on mining that could be used by Member States to align their legal and regulatory systems on mining with the harmonisation framework.

### Fiscal linkages

"Comment: Government closely follows WB prescriptions aiming to attract foreign investors. Civil society is strongly advocating for a revision of fiscal regime with higher tax and royalty rates and a National Trust Fund to benefit communities near mines and future generation.

Recommendation: Consensus at the regional level on an adequate fiscal structure and instruments will be critical to prevent a potential race to the bottom among SADC countries to attract investors. "

### Upstream (backward) linkages

"It is clear that the Malagasy Government still needs to take an additional step towards a strategic vision based on a sound value chain analysis for each mineral in the context of the trends in the regional and international markets, the comparison with reserves and exploitation costs in other SADC countries, so as to effectively contribute to moving away from the persistent extractive nature of African mining. Feasibility of beneficiation of Malagasy mining products in other RMCs should be investigated.

Just like forward linkages, upstream linkages into mining capital goods, consumables and services industries are still under-developed in Madagascar. As an example, a quick scan of the existing local companies specialised in mining equipment shows that there were only two (2) of them in 2014 , such that the majority of consumables and mining equipment are currently imported.

Another telling example of the issues arising from weak or inexistent backward linkages is the decision made in 2013-2014 by the Ambatovy project to stop procuring poultry from local producers and to import frozen chicken from Brazil instead. While the company justified its decision by the lower costs of the imported chicken, this decision wreaked havoc on the poultry production in the concerned region."

Knowledge (sidestream) linkages: Geological information

Strong partnerships are required at regional level between SADC countries to share existing education and training institutions on mining, as part of the promotion and strengthening of the harmonisation framework.

### Knowledge (sidestream) linkages: HRD & RDI

Strong partnerships are required at regional level between SADC countries to share existing education and training institutions on mining, as part of the promotion and strengthening of the harmonisation framework.

### Spatial (infrastructure-sidestream) linkages

These linkages should also be promoted on a regional (SADC) level through the Harmonisation Framework.

# 4. Malawi recommendations

### General

"Malawi has made significant progress in aligning its Mines and Minerals Policy with the SADC Protocol on Mining and Harmonisation Framework especially given the country's recent entrance into the mining sector. Prior to 1994, the government's position was that there were no non-renewable natural resources worth exploiting in Malawi, and only post 2005 did large-scale mining feature in the country's national vision and strategy documents as a key economic area.

The Implementation Plan of Malawi's Mines and Minerals Policy of 2013 emphasises the need to harmonise policies, standards and legislation, which includes redrafting legislation, as is currently happening, and including the mining sector in relevant protocols. The Policy was drafted based on the SADC Harmonisation Framework. A more recent study of the implementation of Malawi's Mines and Minerals Policy (Malunga and Phalira 2015) concludes "Malawi is striving to integrate its mineral development policy and operational systems with those of the SADC and the international market. The Mines and Minerals Policy (2013) has adopted the mining principles articulated in the SADC Mining Protocol" (28). However, greater coherence and a well-articulated strategy is required in the approach to linkages in particular.

Incentives for exploration companies are non-existent and some stakeholders argue these are important to attract new investors to Malawi."

### Downstream (forward) linkages

The cost of beneficiation, the required large scale of operations to add value, the proportion of necessary primary mined products for processing and the significant deficit of electricity make it unlikely that Malawi will be able to establish beneficiation facilities in the near to medium future.

### Upstream (backward) linkages

There is little differentiation between the different types of goods and services required by the mining sector in Malawi and no clear strategy for how local content can catalyse other industries that are not solely dependent on mining. All stakeholders view that local procurement is good in principle, but in practice, the cost, availability, reliability and quality of goods and services means that Malawi is generally less competitive than other countries in the region and internationally. At this stage, Malawi is not in a position to supply capital goods, most services, or many manufactured goods, but some services such as security and some goods such as food products are available.

### Regional Integration (SADC)

SADC can play a heightened role in addressing the so-called "race to the bottom", as countries compete using tax incentives, in particular, to attract investors. In addition, countries should be supported to address illicit financial flows with cross-border learning and harmonisation on auditing production, exports, imports and pricing.

Malawi could benefit from a regional feedstock strategy for ferrous and fossil fuels for infrastructure development including the production of energy.

## 5. Namibia recommendations

### Downstream (forward) linkages

"The NEEF could be the instrument thorough which aspects of how the linkages between the mining sector and the rest of the economic sectors shall be fostered are elaborated on.

The industrial policy lacks details on how mineral beneficiation shall be achieved. This is clearly a missing link as this is one of the most secure ways to ensure backward and forward linkages across the various sectors of the economy. Namibia therefore does not have a Mineral beneficiation strategy to guide its resource-based industrial development. It is therefore imperative that Namibia profiles the beneficiation of minerals in Namibia and adapts the mineral policy framework. Ultimately, the value add process is not just about the product once its extracted, but it start with geological information and all the processes in-between such as desktop studies, mapping, sampling, and drilling, pre-feasibilities, feasibilities and mining initiation."

### Upstream (backward) linkages

It is therefore important that Namibia develop practical regulations to regulate procurement process. Such regulation should be realistic enough to assess in realistic terms, what the country can supply in the most cost effective way (both financial and otherwise). And how procurement capacity of inputs such as lubricants, steel plates, industrial steel, bolts, fabricated parts, steel, protective clothing etc. could be developed progressively.

### State Mining Company (SMC)

But it is also true that Mining is a complex and expensive process consisting of many phases. Namibia has proven to be competent in the first phase (geological data collection and analysis) as well as the last phase (mining) and this is supported by a conducive political and economic environment, coupled with a long history of mining. But the country lack capacity in other crucial areas between minerals discovery and mining initiation. These crucial elements include: desktop studies, mapping, sampling, drilling, pre-feasibility studies, feasibility studies and mining initiation. In addition, the value addition process is complex and requires major financial investments.

### ASM

While mining claims and their registration are currently restricted to Namibian nationals, the process of registration of mining claims is centralized and this poses difficulties to small-scale miners who reside far from the capital. Decentralization of administrative and support services could help to ensure that more people especially those in mineral-rich areas formalise their operations. The provision of permits of short-term duration, as well as the inadequate monitoring of the small-scale mining sector, is an obvious weakness. The under-development of the mining claims system and increasing incidents of illegal mining are seen as threats to the mining sector, and as such need immediate attention.

There is a need to carry out a baseline assessment about the needs, challenges and aspirations of small scale miners (with specific attention to gender relations) to inform policy interventions.

# 6. South Africa Recommendations

### General

To optimise development and AMV alignment, state disposals (mineral assets) should be done through public tender for known mineral deposits, and through a FIFA system over unknown terrains. The Mining Charter should be strengthened to cater for local and regional content as well as a RDI and STEM skills minimum corporate spend. The MPRDA should be overhauled to facilitate linkages development and AMV alignment. A resource rent tax could be used to enhance the up- and downstream linkages through a RRT-VA offset mechanism. Backward linkages would be significantly enhanced by regional (SADC) integration but will require instruments to tackle “variable geometry”. The supply of key mineral-based feedstocks into the rest of the economy would also benefit from a regional approach but the instruments available are curtailed by First World agreements (WTO, EU EPAs).

### Optimisation of all linkages through mineral asset price discovery

The MPRDA requires a substantial overhaul so that state disposals of mineral assets are done through public tender to maximise the developmental impact of the resource's extraction, for known mineral deposits, and through a FIFA system (prospecting right) over unknown terrains.

### Fiscal linkages

The MPRDA needs reinforcement to facilitate seminal linkages development and AMV alignment and the Income Tax Act needs to cater for a resource rent tax that could be used to enhance the up- and downstream linkages through a RRT-VA offset mechanism, in addition to resource rent capture for investment into other forms of capital (infrastructure, skills and RDI) and inter-generational equity.

### Downstream (forward) linkages

South Africa's mineral exports generally display a significant price differential between domestic and export prices due to the widespread use of monopoly pricing (Import Parity Pricing- IPP) in the domestic market. This practice has arguably destroyed hundreds of thousands of potential job opportunities and requires decisive and urgent remedies.

### Upstream (backward) linkages

Augmenting the current BEE requirements within the Charter to include a "local value added" component in the procurement and RDI scorecards would significantly enhance the sustainability and competitiveness of the sector. Amending the Charter is likely to be administratively easier to manage and monitor compared to new DTI instruments and unlikely to be in contravention of the WTO and EU trade agreements.

### Knowldedge (sidestream) linkages: Geological information

Dramatically increased expenditure is required on basic geological mapping, to uncover unknown mineral assets, as well as for the categorisation of the whole country into areas of "known" resources (for competitive concessions), "unknown" (for "first-in-first-assessed" FIFA exploration licenses ) and partially-known (reserved for further work by the state to be able to categorise into either "known" or "unknown" resource areas). In this regard the Council for Geo-Sciences (CGS) could be mandated and adequately resourced to execute this seminal task, as well as to effectively monitor all extant exploration (prospecting) licenses to ensure that the concessionaires abide by their minimum work and investment programmes (under the "use it or lose it" principle).

### Knowledge (sidestream) linkages: HRD & RDI

The 5% HRD spend recommended in the Mining Charter should be improved by restricting the eligible spend to critical STEM skills and prioritised artisan training programmes only, and it should be made obligatory rather than counting towards scorecard point; HRD spend in excess of 5% of payroll would count towards scorecard points. Artisan programmes prioritised

for support should be aligned with those implemented under the National Tooling Initiative (Ntsimbi) by the Toolmaking Association of South Africa (TASA).

With regard to mine mechanisation or New Generation Mining, the seminal issue for SA and the SADC is to ensure that the jobs in manufacturing and services gained through mechanisation are created locally (do not leak to the EU, et al) which will in turn require a regional mining inputs (backward linkages) strategy including substantial skills development.

### Spatial (infrastructure-sidestream) linkages

Ensuring strategic mineral feedstocks security over the next decades requires a more efficient mineral infrastructure system (transport, power and water) so as to allow more cost effective alternate points of supply and reduce the very costly impact on roads. An effective regional feedstocks market is impeded by the fear of SA dominance by less developed member states. This needs to be overcome through the configuration of instruments to level the playing field (see details in report).

### State Mining Company (SMC)

Ensuring strategic mineral feedstocks security over the next decades requires that resources are reserved for State intervention to ensure adequate investment, supply, and linkages. This should have three dimensions to it – the State Mining Company, a Minerals Development Fund (financed by taxes on resource rents) and the overhaul of the mineral rights allocation system.

### Regional integration (SADC)

Strategies are needed to tackle regional “variable geometry” (differences in population, GDP, level of industrialisation etc.) in order to encourage equitable regional integration through concrete instruments that cater for the weaker regional economies and industrial polarisation where the benefits of integration mainly accrue to the stronger economies.