Need for capacity building in UNFC-based resource management in Africa

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Mapping Africa’s natural resources

Source: Al Jazeera
Updated: October 2016
Resource Endowments

- PGMs: South Africa, Zimbabwe
- Phosphate: South Africa, Ghana
- Gold: South Africa, Gabon
- Chromium: South Africa
- Manganese: South Africa
- Vanadium: South Africa
- Cobalt: Zambia, Congo, Morocco
- Diamonds: Guinea, Sierra Leone
- Aluminium: South Africa, Mauritania
- Coal: South Africa, Mauritania
- Iron ore: South Africa, Mauritania

% of World Production

% of World Reserves
Confronting the issues

- **Africa Mining Vision (AMV);** “transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development.”
  - AMV was adopted in February 2009 by the African Union Assembly of Heads of State and Government as the key continental framework to promote mineral resource based development and structural transformation on the continent using Africa's mineral resources sector as a tool for social and economic transformation.

- **Agenda 2063;** It is a strategic framework for the socio-economic transformation of the continent over the next 50 years. Its builds on, and seeks to accelerate the implementation of past and existing continental initiatives for growth and sustainable development.
  - Some of the past and current initiatives it builds on include: the Lagos Plan of Action, The Abuja Treaty, The Minimum Integration Programme, the Programme for Infrastructural Development in Africa (PIDA), the Comprehensive Africa Agricultural Development Programme (CAADP), The New partnership for Africa’s Development (NEPAD), Regional Plans and Programmes and National Plans. It is also built on national, regional, continental best practices in its formulation.

- **Agenda 2030;** This Agenda is a plan of action for people, planet and prosperity to achieve the 17 Sustainable Development Goals.
Mining Value Chain

**Exploration**
- Geologic mapping
- Prospecting

**Valuation**
- Drilling
- Sampling and Analysis
- Grade determination
- Mine Planning
- Social Environmental Assessment

**Mining**
- Management of Run of Mine
- Transportation of ore for beneficiation

**Beneficiation**
- Mineral processing
- Metal processing

**Marketing**
- Sales
- Revenue Management

Time Frame:
- Exploration <3 yrs
- Valuation <4 yrs
- Mining >15 yrs

[Image of mining value chain]
### Mining Value Chain

**THE $2 TRILLION MINING VALUE CHAIN**

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<thead>
<tr>
<th>Key-industry</th>
<th>Infrastructure &amp; urban dev.</th>
<th>Power &amp; electricity</th>
<th>Mobility</th>
<th>Manufacturing/machinery</th>
<th>Retail and consumer</th>
<th>Agriculture</th>
<th>Financial and investment</th>
<th>Other</th>
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<td>Mining</td>
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- **$ bn (value of mining & metals in key-industry)**
- **XX%**: Percentage of total production used for that metal

Source: BCG, WEF, MINING.com
Mining Value Chain

Source: ITTCC Presentation: Climate change the time for coherence, alignment and collaboration 27 June 2011
Challenges and Options

• The challenges vary along the entire mineral value chain: from
  – licensing and contracting, to auditing of production, revenue assessment and collection, accountability and transparency of the use and management of revenues, from environmental protection to mine closure and related issues

  – Regulatory framework largely favours attracting FDI with insufficient emphasis on transformation
  – Lack of technology and technical know-how as well as skills prevent development of local suppliers
  – Low consumption demand
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UNFC

- United Nations Framework Classification – aligned to African Mining Vision and Agenda 2063
- A unique continental system for the management of the whole mineral and energy value chain
- First-time real application of a system anywhere in the world that includes oil, gas, minerals and renewable energy
- First-time implementation of a code for transparent financial reporting, Pan-African Reporting Code (PARC)

A major driver to realize the 2030 Agenda for Sustainable Development
Harmonizes five CRITICAL areas

Total resource industry life-cycle

1. System-wide Policy framework aligned to SDGs and AMV
2. Government/Industry Resource management system
3. Economic Capital allocation
4. Business process New models
5. Operational Capability

Tailored to African situation

A single management framework to integrate policy, implementation, financial capital, business process and human capability.
AIMs for holistic value chain and industry lifecycle management

Removes fragmentation of industry life-cycle and integrates it to the value chain for structural transformation and global competitiveness in Africa.
Capacity Building options

One of the key pillars(4) of AMV is the need to build human and institutional capacities that support innovation, research and development

1. **Regulatory and Fiscal Framework** and Training: (i) preparing mining regulations; (ii) strengthening legal skills and negotiating capabilities; (iii) improving administration of the fiscal regime applicable to mining; (iv) building sustainable capacity in applied mining taxation and (v) providing continued training in mining law and environment.

2. **Institutional Strengthening and Resources Managements**: (i) operationalizing the roles and improve internal management procedures of key sector institutions; (ii) improving cadastre and mining title management services (iv) establishing and sustaining an environmental (v) up-grading and improving the geology database and (iv) reinforcing the technical capacities to assay and test minerals.

3. **Environmental Management** (i) establishing capacity for monitoring compliance with regulations by strengthening the relevant institutions; (ii) assisting in the preparation of specific environmental regulations and monitoring procedures in the mining sector; (iii) establishing a national environmental information system and database (EIS); (iv) designing and implementing a national environmental sensitization and awareness campaign; and (v) providing training in areas of environmental policy formulation, monitoring, and management.
OAGS

- OAGS was then launched on 02 February 2007 in Pretoria, South Africa as an initiative of the New Partnerships for Africa’s Development (NEPAD) through the African Mining Partnership (AMP)

- The mandate of the Organisation of African Geological Surveys (OAGS) is to foster and sustain geoscience programmes and excellence on the African continent in the quest for socio-economic development and poverty alleviation, with special reference to mineral resource assessment, sustainable land use and development, hazard mitigation and environmental protection.
FUNCTIONS OF AFRICAN GEOSURVEYS

Source: OAGS survey
OAGS/EGS Initiative

- PanAfGeo “Geological knowledge and skills in African Geological Surveys” is a Pan-African project designed by EuroGeoSurveys (EGS) and the Organisation of African Geological Surveys (OAGS) with the support of several partners, i.e. European Commission, African Union Commission, African Minerals Development Centre (AMDC) and Geological Society of Africa

- Geoscience Mapping, Mineral Resources Assessment, Artisanal & small scale mining, Environmental management of mines, Geohazards, Geoheritage, Geoinformation Management

- It is estimated that 1,200 participants will be trained over the next three years
Other Capacity Building Initiatives

• AMDC coordinated GMIS strategy programme

• Centers of Excellence for chemical analytical laboratories and related activities are being set up in the continent.
  - One of such centers named ‘The African Minerals and Geosciences Center (AMGC), Dar es Salaam, Tanzania.
PROFESSIONAL REPORTING

• MANY GEOSCIENTISTS
• (Estimated at above 60,000 since the 60s)
• AVAILABILITY OF TERTIARY INSTITUTIONS
• (Over 100 as at 2016) (W.A alone has 78)
• LITTLE COMPETENCY EXPERIENCE,
• LITTLE SPECIALISED EXPERTISE AND EXPOSURE ON SPECIFIC DEPOSITS
• Development of UNFC-AMREC- PARC system in line with AMV/SDGs - (work in progress) for effective and efficient management of mineral resources in Africa. This system will ensure that the sector is regulated based on global best practices)

• The competency framework for the continent as part of PARC will be robust in ensuring growth and sustainability in mineral industry in Africa.
If the **Competent Person** is estimating, or supervising the estimation of Ore Reserves, the relevant experience must be in the estimation, assessment, evaluation and economic extraction of Ore Reserves.

A Competent Person must have a minimum of five years’ experience working with the style of mineralisation or type of deposit under consideration and relevant to the activity which that person is undertaking.

For example:

- If the Competent Person is preparing a report on Exploration Results, the relevant experience must be in exploration.
- If the Competent Person is estimating, or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment and evaluation of Mineral Resources.
• **International Reciprocity of Competent Persons**

• In 2003 The Australian Securities Exchange (ASX) introduced a procedure for identifying ‘Recognised Professional Organisations’ as accredited organisations to which Competent Persons must belong for the purpose of preparing reports on Exploration Results, Mineral Resources and Ore Reserves for submission to the ASX (if they are not members of the AusIMM or AIG).
Need for a RPO for AMREC/PARC

• A Recognised Professional Organisation must:
  • be a self-regulatory organisation covering professionals in the mining and/or exploration industry;
  • admit members primarily on the basis of their academic qualifications and professional experience;
  • require compliance with the professional standards of competence and ethics established by the organisation anywhere in the World (not just within the home jurisdiction of the organisation); and
  • have disciplinary powers, including the power to suspend or expel a member for breaches of professional standards of competence or ethics anywhere in the World
• Harmonization of the UNFC/ CRRISCO CP for AMREC
• central Committee or a Bureau for AMREC
• Training manuals
• Continuous education
• Deliberate industrial attachments
• Political backing
Conclusion

Everything comes to us that belongs to us if we create the capacity to receive it.

Rabindranath Tagore
Thank You