

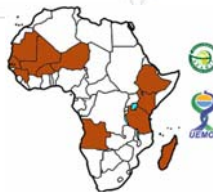


African Mining Observatory (AMO)

An Initiative to Support a Sustainable Management of Mineral Resources in Africa

*G. Récoché & A. Chamaret
in collaboration with the SIGAfrique partners*

SDIMI 2007
Milos



Géosciences pour une Terre durable

brgm

Needs for tools to support a sustainable management of mineral resources in Africa

> Mineral resources – at the forefront of societal concerns

- **Worldwide demand is rising**
 - Foreseeable difficulties in supply
 - Renewed mineral exploration
- **Arrival of sustainable development**
 - stakeholders involved and the need for information
- **Negative image of the mining industry**
 - Economic, environmental and, societal impacts induce controversies
- **Reaction of the mining sector and funding bodies**
 - Drawing up of guidelines, tools and regulations at different scales (MMSD, EIR, GRI,...)

> Coveted Africa

- Major mining potential... development potential
- NIMBY.....



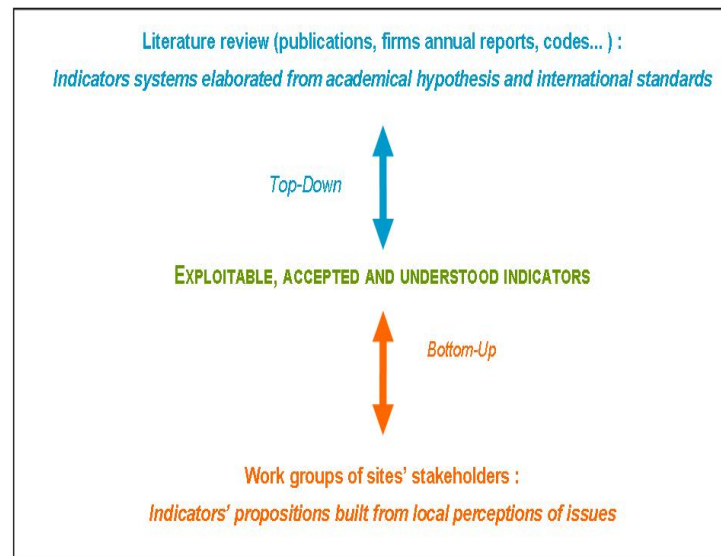
**Sustainable Development Indicators
& the Mineral Industry in Africa**



Sustainable Development Indicators (SDI) and the Mineral Industry: BRGM's approach

> Philosophy and objectives

- State-of-the-art assessment
- Top-down / Bottom-up approach
- Defining methodologies and tools
- Field studies in Africa (pilot sites)
- Developing decision-making tools
- Provide “governance maps”
- Regional to continental scales



> Example of Research Programs and actions on SDI

- **African Mining Observatory** (SIGAfrica Network – this presentation)
- **The Mineral Industry and Sustainable Development Indicators** (A. Chamaret & G. Récoché - see presentation on Tuesday C4)
- **Burkina Faso Georesources and Society** (BF-GS)
- **Post mining and society** (AREDIE project)

Diversity of the Mineral Industry



- > The diversity of the mineral industry is such that all general reasoning must be re-assessed according to the specific segment of activity: the social, technical, economic and environmental impacts are highly diversified. Alluvial gold diggings, sand and gravel extraction, and porphyry copper mining are examples of such segments.



- > The concerns of an SME operating a sand quarry are not the same as those of a multinational investing in a porphyry copper mine!

African Mining Observatory:

'Management is impossible without knowledge'

> SDI are vital for:

- drawing up policies and sector actions;
- identifying risks and keeping them under control;
- defining and implementing sustainable development actions;
- negotiations between stakeholders;
- improving mining performance;
- making the most of sustainable benefits

> SIGAfrique Network

To respond to this need, and relying on BRGM's R&D work in the field of Sustainable Development Indicators applicable to the Mineral Industry, the **SIGAfrique Network project** proposed, in November 2004, that the participating partners develop a joint decision-aid tool entitled the "**Observatoire Minier Africain**" (**OMA: African Mining Observatory**) and, to this end, develop a system of indicators to be integrated within the SIGAfrique database.



SIGAfrique network - Project Management

> BRGM coordination backed up by:

- **CIFEG** (International Center for Training and Exchanges in the Geosciences),
- **SEAMIC** (Southern and Eastern African Mineral Centre)
- **WAEMU** (West African Economic and Monetary Union)
- **Partners:** Angola, Burkina Faso, Ethiopia, Guinea, Kenya, Madagascar, Mali, Mauritania, Mozambique, Niger, Uganda, Senegal, Tanzania.
- **www.sigafrique.net**



African Mining Observatory - Project Management

> Participative method within working groups

- Experts/participants from the **13 SIGAfrique partners**
- 3 mains **workshops** (5 days long)
 - **Burkina Faso** (Ouagadougou, WAEMU, November 2004)
 - **Tanzania** (Dar es Salaam, SEAMIC, November 2004)
 - **France** (Orléans, CIFEG, June 2005)

Workshop Methodology

- > Reflect on the concept of sustainable development applied to the extractive industry in Africa;
- > Assess the position of mineral resources and the attendant issues at stake with regard to the African continent;
- > Introduce the principles of drawing up indicators and look at international initiatives concerning indicators of sustainable development;
- > Define and clarify the outline and objectives of the new decision-aid tool represented by OMA by pooling the different national back experiences;
- > Work on drawing up **Sustainable Development Indicators (SDI)** applicable to the mining industry in Africa based on establishing a common list of candidate data;
- > Reflect on the means and scales of using the SIGAfrique information system to both collect and use the information required for OMA to operate.

Work framework



- 1 - Define the observatory's missions & objectives
- 2 - Identify targets
- 3 - Define fields of measure
- 4 - Choose objectives
- 5 - Identify variables
- 6 - Choose measurable parameters
- 7 - Select SD Indicators
- 8 - Validate selected indicators

1 - Missions & objectives of the Observatory

2 - Target identification

Stakeholders - Needs - Uses

Who is the Observatory for?

Who will use it and for what purpose?

Who will document it ?

What is its scope?

> Is it possible to define a charter ?

Definition of a common vision for the African Mining Observatory (AMO)

- Promote sustainable mining activities in order to improve socio-economic development of the country and reduce poverty;
- Support planning and decision making in the mining sectors of the participants countries;



- Asses the impacts of mining activities on economy, society and environment at local and national scales;
- Promote SIGAfrica data

3 - Define fields of measure

4 - Choose objectives

Domains - Goal

Which domains and fields should be studied?

What do we want to measure in these fields?

Which aim should we target?

Is it in accordance with SD principles and issues?

Are these objectives quantifiable?

Establish a statement

5 - Identify variables

6 - Choose measurable parameters

Variables - Sorting - Selection

Which variables (elements) should be selected in order to measure performance against the objectives?

Is it measurable and if so, how?

Is it relevant? Accessible? Exploitable?

Is it possible to set quantifiable objectives for each variable?

What is the application scale for the indicators
(local, regional, national, global)?

> Define a list of propositions to sort out



> Selected Variables

- 81 first priority
- 28 second priority

ECONOMY

15 indicators

Taxation, Salaries,
Market, Finance, Transport,
Production

ENVIRONMENT

28 indicators

Air, Biodiversity, Energy,
Management, Nuisance,
Products, Soil, Waste,
Water

GOVERNANCE

8 indicators

Communication,
Transparency,
Development, Social
stability

SOCIAL

30 indicators

Demography, Education,
Employment, Equipments,
Health, Infrastructure, Safety

> Environmental and social data are by far the most common

> Data from the social sphere are poorly defined in sustainability analyses and mining company reporting

DOMAIN	FIELDS	MEASURES	VARIABLE	EXAMPLES
ECONOMY	Taxation, Salaries, Markets, Finance, Transport, Production	Cost, Production, Profits, Investment, Revenues, Subcontracting, Taxes	15	Amount of produced ore/metal, Amount of exploration investment, Royalties
ENVIRONMENT	Air, Biodiversity, Energy, Management, Pollution, Products, Soil, Waste, Water	Gas emission, Flora, Fauna, Consumption, Skills, Safety, Quality, Post-mining, Qualification, Noise, Toxicity, Occupation, Rehabilitation, Quantity	28	Total amount of fuel consumption, Distance of the site from a protected area, Size of the concession area, Quantity of waste produced
SOCIAL	Demography, Education, Employment, Equipment, Health, Infrastructure, Safety	Migration, Resettlement, Schooling, Support, Skills, Parity, Employment, Communication, Provision, Sanitation, Health, Housing, Diseases, Working conditions	30	Number of inhabitants, Number of people attending a company's health centre, Number of working hours lost due to accidents per year, Budget allocated by a company for housing support
GOVERNANCE	Communication, Transparency, Development, Social stability	Environment, Trade Union, Local community, Supports, Security, Criminality, Representation	8	Number of meetings with local communities per year, Number of local firms created through company support, Type of on-site security force

Conclusions

> Difficulties

- choice of working scale (local, regional, national or company)
- data accessibility
- confidentiality (lack of regulations and lack of reporting)

> In Progress

- assessing the availability of these variables at the national scale of each country involved
- defining a more limited final selection

> Build up the database

- receive the collected data
- drawing up indicators that meet the observatory's analysis requirements

> Future of AMO linked to that of SIGAfrica Network

- AEGOS Project building in progress



THANKS TO

The AMO working group



EAST AFRICAN COUNTRIES

RAKOTONOMENJANAMARY VOLOLONA

(MADAGASCAR)

MALANGA JOSE (ANGOLA)

SHIFERAW AYELE MAMO (ETHIOPIA)

MINDE ANICET (TANZANIA)

KIMOMO SHADRACK (KENYA)

LUGGAYIZI ISSA (UGANDA)

ISSUFO ZAQUIR ABDUL KADIR (MOZAMBIQUE)

WEST AFRICAN CONTRIES

DIAKITE SIRIMAN (MALI)

TALEB AHMED OULD (MAURITANIA)

GONDA OUSMANE (NIGER)

MATHY JEAN TIMOTHEE (SENEGAL)

BAH NASSIROU (GUINEA)

COULIBALY FELIX (BURKINA FASO)



G. Récoché – Mineral Resources Division