

Presentation to JORNADAS IBEROAMERICANAS SOBRE CIERRE DE MINAS
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local : Santa Maria de La Rabida, Huelva,España

Planning for Closure & Sustainability Indicators

Can minerals development and metals production be undertaken without damaging the environment or undermining the socio-economic development opportunities of civil society; and, can the benefits of minerals and metals production and use be distributed amongst stakeholders equitably?

A key imperative is planning for closure from the outset and responsible closure implementation.

How can Sustainability Indicators help?

Outline

- Corporate Citizenship Unit/MERN research agenda - Planning for Closure and Sustainability Indicators
- Public Policy provides the framework but companies have the capacity, opportunity and responsibility to make the requisite changes in strategy to ensure responsible closure
- Research, community action and societal pressure can provide the impetus, arguments and tools to support business to make those changes to ensure responsible closure
- Sustainability Indicators can help to direct those changes, evaluate progress and communicate sustainable i.e. closure activities to stakeholders

Corporate Citizenship Unit/MERN

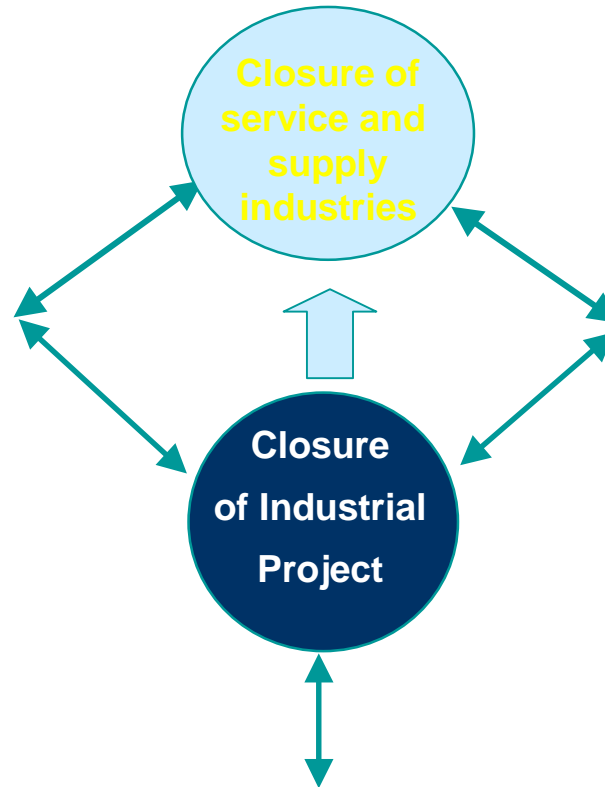
Interdisciplinary Research, Teaching And Consultancy

- 15 Researchers working within **collaborative programme of network research**
– links with 130 research institutions in 44 mineral producing countries
- **Multidisciplinary projects** (Public Policy, Corporate Strategy and CSR)
 - Environmental and Social Performance Indicators/Sustainability Indicators
 - Decommissioning, Waste Management/Utilisation and Planning for Closure
 - Tri-Sector Partnerships and Corporate Social Investment
 - Stakeholder consultation and social audit verification
- Expanding **PhD/Masters** programme with industrial sponsorship & **MBAs** with Corporate Social Responsibility options e.g. Placer Dome Inc/NGO Fellowship
- Short courses, TAGs, facilitation, mentoring, **consultancy**

Plant Closure Socio-Economic Effects

SOCIAL EFFECTS

- Lost social welfare benefits
- Lost political rights to organise
- Reduced education benefits
- Feeling of disempowerment
- Alcoholism, drug dependency
- Domestic violence
- Health and well-being
- Relocated populations
- Hazards associated with unsecured dumps/plant equipment



ECONOMIC EFFECTS

- Loss of value of home and land
- Reduced mobility to find new work
- Loss of income
- Loss of demand for skills
- Loss of demand for supplies
- Resource rent reductions limit potential to re-invest
- Reduced maintenance of transport and civil infrastructure

BIO-GEOPHYSICAL EFFECTS

- Local effects on bio-geophysical bases of livelihood

Point of Entry

Sustainable Development - an intra-and inter-generational development process defined by sustained improvements in human health and well-being, quality of life and ecosystem health (8th MERN Research Workshop 1998)

Corporate strategy - the prime-mover in ensuring minerals and metals production and use contributes to, and does not detract from, these constituents of sustainable development (MERN Research 1991-2000)

Corporate social responsibility (CSR) - key to operationalising the strategic role of mining and metals companies in sustainable development

Implies responsible planning for closure strategy:

– **Sustainability Indicators can help define and communicate progress**

Key Advantages of Planning for Closure from the Outset

- Prevents Pollution
- Establishes effective environmental management strategy
- Facilitates ongoing social adjustment of local community and workforce
- Spreads costs and helps identify future benefits e.g. alternative economic land use

Sustainability Indicators: MERN Research Challenge

- To develop indicators that are meaningful, credible and relevant to different stakeholders and that are sensitive to varying perceptions and values
- To design an indicator development methodology that suggests strategic options, that is also an internal learning process, and that evaluates and communicates progress towards sustainable development according to meaningful, credible and relevant milestones
- To contribute to knowledge about corporate strategy and performance, and impact on workers and local communities

Sustainability Indicators and Planning for Closure

The following sets of indicators establish some of the issues that a pro-active closure strategy should address and relevant performance indicators

Global Sustainable Development Goals (Level I)

Social Sustainability

- Enhanced health, well-being and quality of life; social equity and human rights protection and promotion

Environmental Sustainability

- Environmental Protection and clean technology diffusion

Economic Sustainability

- Sustainable economic growth and enhanced intra- and inter-generational equity with respect to economic welfare

Sustainability Indicators Framework

Sustainable Development Goals (Level I)



Groups of Issues (Level II)



Issues (Level III)



Indicators (Level III)



Families of Indicators (Level II)



Goal-related Indicators (Level I)

Global



Group/Country



Site



Site



Group/Country



Global

Level I, II and III Issues/Indicators

Goal (Level I)

Social Sustainability -
Responsible Planning for Closure

Family/Group (Level II)

Social Legacy

Issue/Indicator (Level III)

Sustaining Local Community Development
and Education Programmes

Lasting Partnerships

Participatory Monitoring System

Level I, II and III Issues/Indicators

Goal (Level I)

Environmental Sustainability -

Responsible Planning for Closure

Family/Group (Level II)

Pollution Prevention/Containment

Issue/Indicator (Level III)

Mineral Recovery Process

Tailings Disposal Process

Monitoring Performance Plan

Mitigation Plan

Process & Storm Water Management System

Waste Rock Management System

Level I, II and III Issues/Indicators

Goal (Level I)

Environmental Sustainability -

Family/Group (Level II)

Responsible Planning for Closure

Issue/Indicator (Level III)

Reclamation

Quality of Baseline Data

Quality of Impact Assessment

Biodiversity Conservation

Site Reclamation

Revegetation

Level I, II and III Issues/Indicators

Goal (Level I)

Environmental Sustainability -
Responsible Planning for Closure

Family/Group (Level II)

Stewardship and Post-Mining Land Use

Issue/Indicator (Level III)

Overall Restoration of Land Area

New Habitats Created

Post Mining Land-Use Benefits

Level I, II and III Issues/Indicators

Goal (Level I)

Economic Sustainability -
Responsible Planning for Closure

Family/Group (Level II)

Economic Retrospect

Issue/Indicator (Level III)

Socio-Economic Benefits to Local
Communities

-Services

-Supplies

-Jobs

Summary: Pro-Active Planning for Closure

- Failure to plan
 - Summitville (US)
 - Wheal Jane (UK)
- Beneficial planning
 - McLaughlin (US)
- Need to study generic elements of poor and good practice to define recommendations for good closure planning
- *Environmental Policy in Mining: Corporate Strategy & Planning for Closure*, Warhurst A & Noronha L, CRC Press, 1999, ISBN 1-56670-365-4 - but data getting out of date. Need new research.