

India Mining Summit 2017

Business Session-II: Technologies and other concerns

SDGs and the Mining Sector

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The Core SDG for Mining : SDG 12

Goal 12. Ensure sustainable consumption and production patterns:

- 12.1 Implement the 10-Year Framework of Programmes on **Sustainable Consumption and Production** Patterns
- 12.2 achieve the **sustainable management and efficient use** of natural resources
- 12.4 achieve the **environmentally sound management** of chemicals and all wastes throughout their life cycle,
- 12.5 substantially **reduce waste generation** through prevention, reduction, recycling and reuse
- 12.6 Encourage companies, especially large and transnational companies, to adopt **sustainable practices** and to **integrate sustainability information into their reporting cycle**
- 12.8 ensure that people everywhere have the relevant information and awareness for **sustainable development** and lifestyles in harmony with nature
- 12.a Support developing countries to **strengthen their scientific and technological capacity** to move towards more sustainable patterns of consumption and production

Mining impacts almost all SDGs

- The mining industry impacts **positively and negatively across the SDGs**, and the nature and quantum of the impact depends on **mining practices**.
- Mining can foster **economic development** by providing opportunities for decent employment, manufacturing, increased fiscal revenues, and infrastructure linkages.
- Many of the minerals produced by mining are also essential for many technologies (notably electronics), infrastructure creation , energy and agriculture production.
- Historically, however, mining has contributed to many of the challenges that the SDGs are trying to address – **environmental degradation**, displacement of populations, worsening economic and **social** inequality, armed conflicts, gender-based violence, corruption, increased risk for many health problems, and the violation of human rights.
- In recent decades, the industry has made **significant advances in mitigating and managing such impacts and risks**, by improving how companies manage their environmental and social impacts, protect the health of their workers, achieve energy efficiencies, report on financial flows, and respect and support human rights.

Mining and SDGs on Economic Development

- Mining can have a local, regional and national impact on economic development and growth that can be leveraged to build new infrastructure, new technologies and workforce opportunities. In major mining nations, it can function as an **engine of growth**.
- **SDG 2- Food security , improved nutrition and Sustainable agriculture:** Mining , can adversely impact availability of land and quality of soil for agriculture, affecting its sustainability and ability to ensure food and nutritional security. Post-Mine Closure planning can mitigate adverse impacts and even improve overall outcomes. Mining can also ensure production of phosphates and other “fertilizer minerals” necessary for agriculture
- **SDG8 – Decent Work and Economic Growth:** Mining can generate new economic opportunities for citizens and members of local communities, including jobs, training, and business development relating to mining operations, associated service providers, or new local economies linked to the mine.
- **SDG9 – Infrastructure, Innovation and Industrialization and SDG12 – Responsible Consumption and Production:** Mining can help drive economic development and diversification through direct and indirect economic benefits and by spurring the construction of new infrastructure for transport, communications, water and energy. Mining also provides materials critical for renewable technologies and the opportunity for companies to collaborate across the supply chain to minimize waste, and to reuse and recycle.

Mining and SDGs on Environmental Sustainability

- Mining activities typically cause impacts on the resource base and quality of land, water, the climate and the flora, fauna and people :
- **SDG6 – Clean Water and Sanitation, SDG 14: life under water; and SDG15 – Life on Land:** Mine development requires access to land and water, presenting significant adverse impacts on land and soils ,aquatic systems, water quantity and quality, air quality (dust, GHGs etc), floral and faunal biodiversity and ecological processes that can be *mitigated or avoided to some extent if efforts are made.*
- **SDG7 – Energy Access and Sustainability and SDG13 – Climate Action:** Mining activities are energy and emissions intensive; mining therefore adversely impacts the relevant SDGs; however mining enables the use of Technology Metals, Energy Critical Metals and Rare Earth Metals which have applications in energy efficiency and renewable energy generation presenting opportunities for greater efficiency as well as expanding access to energy. There is also scope for reduction in emissions and increased energy efficiency (and green energy) in mining operations.

Mining and SDGs on Social inclusion and equity

- Mining significantly impacts local communities; on the one hand bringing economic opportunities including employment, livelihoods and growth opportunities; but also challenges relating to reduction in availability and quality of local livelihood resource base and adverse impact on human rights and quality of life :
- – **SDG1 – End Poverty, SDG5 – Gender Equality and SDG10 – Reduced Inequalities:** Mining generates significant revenues through taxes, royalties and dividends for governments to invest in economic and social development, in addition to opportunities for jobs and business locally. Mining companies can take an inclusive approach by working with communities to understand the mines' actual and potential positive and negative impacts. Companies can also support participatory local decision-making processes regarding the mining operations, the equitable allocation of benefits and the resolution of grievances, and identify and expand opportunities to strengthen the voice and influence of marginalized groups, including women, to ensure that inequalities are reduced, rather than reinforced, by the economic opportunities a mine may bring.

Mining and SDGs on Social inclusion and equity

- **SDG 11- Inclusive, safe, resilient and sustainable cities and human settlements:** Mining provides the building materials necessary for the growth of cities and human settlements; the metals help provide the infrastructure and supporting services including energy and transportation. Modern materials , many of them based on metals improve resilience and adaptive capacity .
- **SDG16 – Peace, Justice and Strong Institutions:** Mining is often seen as increasing social conflict because of the perceived asymmetry of distribution of benefits from the extractive industry. Mining Industry can contribute to more peaceful societies and the rule of law by preventing and remedying company-community conflict, respecting human rights and the rights of vulnerable peoples, avoiding illicit transfers of funds to public officials or other persons, ensuring transparent reporting of revenue flows, and supporting the representative decision-making of citizens and communities in extractives development.

Goal 12. Ensure sustainable consumption and production patterns

- 12.1 Implement the 10-Year Framework of Programmes (10YFP of Rio 20+ in 2012) on Sustainable Consumption and Production(**SCP**) Patterns: Contributing to **resource efficiency and decoupling**
- 12.2 achieve the **sustainable management and efficient use** of natural resources
- 12.a Support developing countries to **strengthen their scientific and technological capacity** to move towards more sustainable patterns of consumption and production(**SCP**)
 - **Scientific Exploration, rational mineral concession policy**
 - **Scientific mining plans**
 - **Process R&D, beneficiation, recovery of low grades and minor metals**

Goal 12. Ensure sustainable consumption and production patterns

- 12.4 achieve the **environmentally sound management** of chemicals and all wastes throughout their life cycle
- 12.5 substantially **reduce waste generation** through prevention, reduction, recycling and reuse
 - **Mining waste and rejects; water management in mining**
 - **Mining plan, closure plan, land use within a Sustainable Development Framework(SDF)**

Goal 12. Ensure sustainable consumption and production patterns

- 12.6 Encourage companies, especially large and transnational companies, to adopt **sustainable practices** and to **integrate sustainability information into their reporting cycle**
- 12.8 ensure that people everywhere have the relevant information and awareness for **sustainable development (SD)** and lifestyles in harmony with nature
 - **Reporting Exploration results (e.g JORC)**
 - **Reporting within a Sustainable development framework(SDF), with full transparency on closure and post-closure plans**
 - **Partnering with local communities and local governments for SD**

WAY FORWARD

Reduce environmental impact of mining by greening the global primary metal sector:

- Incorporate “**sustainable development**” principles in all phases, at mine level, **regional** level and “**cumulative impact**” level
- Incentivise the use of best available technology (BAT) in **Mining Plans** for improving resource and energy use-efficiency and for reducing waste.
- Incentivise private investment **Process R&D** using venture capital

WAY FORWARD

Integrate mining closely with the economy at multiple levels:

- **Align exploration** and mining to maximise long-term efficient mineral production
- Increase **efficiency of interface** between mineral extraction and metal production to increase potential for manufacturing and jobs, as well as resource use efficiency
- Promote and incentivise **investments in R&D, scientific HR and in skilling** ; with rational segmentation between public and private investments

WAY FORWARD

Invest in improving social outcomes:

- Increase transparency by institutionalising systematic **public reporting** at all stages within an SD framework
- **Partner with local communities** for skilling and improving prospects for employment and entrepreneurship
- Effectively consult local communities during mine planning and **post-closure planning** and align post closure land use with community aspirations
- Partner with local government in **ensuring local area development** including sustainable management of the natural resource base and infrastructure provisioning.

Thank You

- The **International Resource Panel (IRP)** of the UNEP provides independent, scientific assessment on the sustainable use of natural resources.
- **The Energy and Resources Institute (TERI)** works on issues related to energy and sustainable development , including the SDGs.
- The presentation is partly based on the Reports and other work of the IRP and TERI.



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