

## **Sustainable Mining Development with Best Management Practices**

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The mineral industry in India is an important contributor to the Country's GDP and foreign trade and also a significant source of employment generation. The industry is distributed almost all across the country and has operations in some of the remotest areas, where it has also serves as a sole source of infrastructure development.

Geological evidence suggests that India is richly endowed with mineral resources. Explanations have established over 20,000 known mineral deposits. India produces 89 mineral, out of which four are fuels, 11 metallic, 52 non-metallic, 3 atomic and 23 minor minerals. The mining leases occupy about 0.7 % million hectares, which is 0.21% of the total land mass of the Country. The Indian economy depends to a great extent on the value of the minerals produced, as these represent a major portion of raw materials for the nation's industrial activities. India is the third largest producer of coal in the world and one of the World's leading producers of bauxite, iron ore and zinc ore.

India's major mineral reserves lie under its richest forests and in the watersheds of its key rivers- these lands are also the homes of India's poorest people, its tribals. The three tribal dominated States of Jharkhand, Odisha and Chattisgarh are the most productive mineral bearing States and account for about 70% of India's coal reserves, 80% of its high grade iron ore, 60% of its bauxite and almost all its chromite reservoir. Forest cover in these States is far higher than the natural average of the top 50 mineral-producing districts in the country, almost half are tribal where average forest cover is 28% much more than the natural average of about 21% An estimated 1.66 lakh ha of forest land has been diverted for mining in the country. A large part of the country's mineral bearing areas are in the grip of nexalism. 40% of the mineral- rich districts in the top six mineral producing States are affected by thenaxalmovement whichis opposing the lopsided development that mining brings in.

Indiscriminate and unplanned mining causes irreversible damage and deterioration of natural resources. Mining activities affect surrounding i.e. air, water, soil, land, biological diversity etc. apart from the society. The environmental, social and economic impacts of mining activities may have short-term as well as long-term implications. Guidelines for taking necessary precautions before, during and after mining operations are laid down to ensure sustainable development. The role of mining in sustainable development is one issue that decision makers and resource managers have wrestled with

for decades. Mining is one of those activities that really connect issues relating to people, development, and the environment. The negative impact of mining on health, land, water, air, plants and animals, and other aspects of society can be reduced by careful planning and implementation of mining activities. It is essential to strike a balance between mineral developments on the one hand and the restoration of the environment on the other.

Increasing globalization of the mining industry has led to changing public attitudes regarding the costs and benefits of mineral extraction and an increase in public pressure to minimize the environmental and social costs associated with mineral development. When the environmental impacts of mining operations are not properly managed and mitigated, it is often too costly to restore mined lands to beneficial use once mineral deposits have been exhausted, leading to a net reduction in available land. It is therefore essential that the Indian minerals industry follows the principles of sustainable development by using methods and practices that minimize the release of contaminants to water, air and soil, preserve and restore lands for future use, and manage displaced populations.

Mining is a vital segment of the Indian economy. Appropriate systems have been put in place to ensure sustainable growth of the sector, which include formulation of procedures for scientific prospecting and mining and development of a mechanism of prior environmental and forest clearances for mining projects. Our endeavor is to protect the health and safety of mine workers and the surroundings, as well as to safeguard the interests of indigenous people through rehabilitation and resettlement packages. Efforts are also under way to mainstream the artisanal and small-scale mining sector in order to promote equity in the mining industry. The issues of scientific closure and reclamation of the abandoned mine sites and the exhausting ones are being taken on top priority by various policy instruments. Sustainable Development Framework (SDF) as formulated under the Natural Mineral Policy 2008 is in place to promote sustainable mining.