Contributions of minerals to economic development

The growth of minerals supply not only plays a vital role in enabling clean energy transitions, but also holds great promise to lift some of the world's poorest people out of poverty.

Failure to manage environmental and social impacts from minerals development will slow clean energy transitions

Mineral wealth can, if exploited responsibly, contribute to public revenue and provide economic livelihoods for many. However, if poorly managed, mineral development can lead to a myriad of negative consequences, including:

1- Significant greenhouse gas (GHG) emissions arising from energy-intensive mining and processing activities.
2- Environmental impacts, including biodiversity loss and social disruption due to land use change, water depletion and pollution, waste related contamination, and air pollution.
3- Social impacts stemming from corruption and misuse of government resources, fatalities and injuries to workers and members of the public, human rights abuses including child labour and unequal impacts on women and girls.
4- In addition, these risks may lead to supply disruption, which could slow the pace of clean energy transitions. It is therefore imperative for both

companies and governments to manage the environmental and social impacts of mineral production.

Companies have a clear business case to address these harms to reduce risk and maintain a social license to operate.

Consumers and investors are increasingly demanding that companies take these issues seriously.

Failure to respond to these social demands could not only undermine reputation, but also lead to difficulties in raising capital or even to legal liability.

Companies have increasingly implemented responsible practices over the years. The adoption of corporate responsibility policies and processes at company level and via industry-wide initiatives has led to improvements throughout mineral supply chains.

However, performance varies significantly among industry actors, with some segments showing limited effort and more progress being needed across the board. Challenges are more substantial where regulatory safeguards are inadequate, and where systemic issues such as labour informality, weak fiscal capacity and high inequalities are persistent, such as in artisanal and small-scale mining (ASM).

Governments play an important role in promoting improvements in environmental and social performance.

As supply chains become more global, international co-operation to apply appropriate standards will be critical to ensuring that the extraction and trade of minerals are carried out sustainably and responsibly, and that the supply of energy transition minerals remains uninterrupted.

In most countries, mineral deposits are public resources, and the government is charged with managing them in a manner that brings a public benefit.

As demand grows for energy transition minerals, so does the potential for these public resources to contribute to economic growth and deliver just outcomes for national governments, companies and communities.

Mineral development affects the local and regional environment in different ways. Related interactions must be managed carefully to mitigate negative impacts and reduce associated risks, including measures to address:

Land use change – This is the main source of direct and immediate impacts on people, biodiversity and ecosystems. It can result in the displacement of communities and the loss of habitats that are home to endangered species.

Water use – Mining generally requires large volumes of water for its operations. It can also be a source of water contamination, be it through acid mine drainage, wastewater discharge or the disposal of tailings.

Waste generation – Mineral development results in massive amounts of residues, both during extraction and after utilisation, some of which are hazardous to human health.

Mineral development also entails other environmental impacts, including air pollution from particulate matter (e.g. mine dust) and gaseous emissions, and noise pollution due to blasting and transporting activities.