REFERENCE SHEET

Critical Minerals, Climate, and the Environment

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WHAT ARE CRITICAL MINERALS?

Critical minerals are defined as minerals essential to the economic or national security of the United States and that are vulnerable to supply chain disruption. Among the most important of these is a set of minerals vital to renewable energy technologies (also known as "energy transition minerals" or "green energy minerals").

Mining almost always causes environmental degradation. Forests are cut down to extract mineral deposits. Rivers and lakes are polluted by mining byproducts. Soils are contaminated and eroded. Biodiversity loss and habitat destruction can be rampant. Such environmental impacts have adverse consequences for local communities, such as polluted water or food sources. In addition, although the net climate advantage of clean energy is still high, extraction of critical minerals often causes higher greenhouse gas (GHG) emissions as compared to other minerals.

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ENVIRONMENTAL CONSIDERATIONS FOR CRITICAL MINERALS

USAID can work with governments, companies, communities, and civil society to help mitigate these impacts. Here are some interventions that can help.

	DEVELOPMENT ISSUES	PROGRAMMING OPPORTUNITIES
ENVIRONMENT AND SOCIAL IMPACT ASSESSMENTS (ESIAS)	EESIAs are important mechanisms for understanding, avoiding, and mitigating damages from mining. However, they aren't always participatory, thorough, or transparent.	• Build capacity for better implementation of ESIAs to mitigate potential damages from mining • Support communities, governments, and civil society to participate in monitoring ESIA processes to increase accountability
GHG EMISSIONS	Significant GHG emissions are caused by energy-intensive mining and processing activities, including from smelters, refineries, and deforestation.	• Advance decarbonization of mining operations to reduce GHG emissions • Support efforts to share best practices related to decarbonization in mineral extraction and processing methods and technologies
BIODIVERSITY	Biodiversity loss and habitat destruction occur during the extraction of a wide range of minerals, including in protected areas and areas of high biodiversity.	• Support the implementation of high-quality ESIAs to identify potentially impacted endangered species • Develop procedures and build capacity to monitor mitigation efforts, including consulting local communities • Build capacity to improve governance, formalization, and regulation of artisanal and small-scale mining

"There are significant concerns about environmental degradation and human rights abuses associated with [critical] minerals and renewable energy technology supply chains."

– USAID Climate Strategy 2022-2030

	DEVELOPMENT ISSUES	PROGRAMMING OPPORTUNITIES
CIRCULAR ECONOMY	Recycling metals will play an important role in reducing impacts from green energy. Informal waste collection could increase, exposing workers to toxic materials in waste dumps.	• Support integration of local recycling into global efforts to establish or strengthen local recycling markets • Organize waste-pickers into micro-enterprises with strong worker protections
WATER QUALITY AND MANAGEMENT	Mining can contaminate water for human consumption and agriculture. Mining companies may propose deep-sea tailings disposal. And some mining requires high water usage, often in drought-prone areas.	• Provide technical assistance for water management in stressed areas • Engage with communities for monitoring and compliance, such as testing heavy metal levels in drinking water • Work with companies, governments and community stakeholders to facilitate sustainable and equitable water resource governance and management
MINE CLOSURE	Mine ownership often changes during long mining project cycles, which creates issues with responsible mine closure. For example, there are often insufficient resources and a lack of accountability for restoration and rehabilitation.	• Build capacity of local governments on mine closure oversight • Support preventive measures for artisanal and small-scale mining like encouraging more efficient mining techniques to facilitate post-mining rehabilitation • Support mechanisms to finance land reclamation

LEARN MORE

For more information about critical minerals visit: www.land-links.org/issue/critical-minerals

To discuss support for minerals programming, connect with the LRG team at landmatters@usaid.gov

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