Charting Sustainable Resource Development: ESG Perspectives in the DRC Mining Sector

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In the face of escalating climate change concerns and the global push for greener technology, the Democratic Republic of Congo (DRC) emerges as a pivotal player in the transition to a sustainable future. Renowned as a leading producer of cobalt and the second-largest producer of copper globally, the DRC boasts a wealth of mineral resources. With partially estimated unexploited resources valued at $24 billion, the country continues to attract investors. However, alongside the promise of economic prosperity, the mining sector in the DRC also confronts significant environmental and social challenges, underscoring the importance of integrating Environmental, Social, and Governance (ESG) principles throughout the entire mining lifecycle. This review delves into the state of resource development in the DRC, examining the process of acquiring mining licenses, assessing the social and environmental impacts of mining activities, exploring recent advancements in remediation engineering, and outlining some recommendations. The DRC Mining Cadaster data reveals a significant number of 567 exploitation permits, 1729 research permits, and 631 other mining titles valid as of 2022, reflecting the country's substantial mining activity. With copper, cobalt, and zinc dominating exports, the mining sector plays a crucial role in the country's economy, contributing over 70% to Gross Domestic Product (GDP). However, this economic prosperity comes with environmental and social costs, including soil degradation, CO_2 emissions, and social issues such as city relocation and conflicts. It is indicated a notable absence of robust ESG policies applicable across the mining sector in the DRC. While some major mining operations adhere to comprehensive ESG standards, the overall landscape suggests that significant gaps and challenges persist. Therefore, innovative approaches such as advanced remote sensing or genomic approaches for heavy metal remediation are highly recommended for vigilant monitoring. This study highlighting the urgent need for concerted efforts towards sustainable resource development in the DRC.