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Shaping the Future of the Mining Workforce: Challenges and Opportunities for Young Geoscientists in Tanzania

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The global mining industry is undergoing rapid transformation driven by technological advancement, evolving environmental standards, and shifting workforce demographics. In developing countries such as Tanzania, these changes present both opportunities and challenges for emerging geoscientists. This study explores the preparedness of young professionals to meet the demands of the modern mining sector, with a focus on skills development, technological adaptability, and inclusivity.

A key challenge identified is the gap between traditional geological training and the increasing demand for digital competencies such as Geographic Information Systems (GIS), remote sensing, and data analysis. Additionally, limited access to industry exposure and mentorship programs constrains the professional growth of early-career geologists. The study also highlights the importance of promoting gender diversity and creating inclusive environments to strengthen workforce sustainability.

Opportunities exist in integrating modern technologies into university curricula, fostering partnerships between academic institutions and mining companies, and expanding capacity-building initiatives. By aligning education with industry needs and supporting young professionals, Tanzania can develop a resilient and future-ready mining workforce.

This research contributes to ongoing discussions within the Society of Economic Geologists on building a skilled, diverse, and adaptable workforce capable of sustaining the mining industry in a rapidly evolving global context.