

Mineral Landscapes: Connecting Geoscience to Stakeholders

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The minerals sector has made some steps in innovation such as dry stack tailings, modular plant design, and integrated sensors. Also, some multidisciplinary initiatives have been innovative in linking steps along the minerals value chain: these include mine-to-mill-to plant approaches, ore body knowledge, and geometallurgy. In many cases, these latter are allocated to specific teams, creating new silos rather than breaking them down. Major, transformative change in our industry is still lacking. We propose that truly transformative innovative is likely to come from outside the sector, and this requires new, transdisciplinary communication and knowledge-share frameworks. Transdisciplinary thinking across mineral resources is necessary as the world moves toward an environmentally impacting and geopolitically sensitive era of expanded minerals extraction. It further presents an opportunity for communication and sustainable development across the sector. The very nature of rocks, ores, minerals, and element deportment we take for granted as geoscientists, particularly with respect to environmental and social impacts throughout the mine life and after closure, is not well communicated to stakeholders. This creates barriers to effective best practice and sets up more silos, distrust and outsidership. Stakeholder input to sustainable practices, approaching ESG frameworks, also has important financial risk benefits to the sector as a whole and to companies in particular.