Sand mining in Africa: value chains, sustainability dilemmas, and key lessons for extractive industries

Abstract

This literature review study examines Africa's sand mining and trade flows to highlight critical lessons for sustainable extractives. Despite sustaining global material demand, Africa's weak sand mining and trade regulatory frameworks have produced unsustainable outcomes. Findings revealed that although 94.2 % of Africa's natural sands (US$134.6 million) are exported to sixteen countries, 71.9 % is re-imported (US$14.7 million), reducing economic gains. Rising demand has intensified livelihood and environmental tradeoffs, including social injustice, elite capture, and conflicts, driven by the privatization of sand-rich zones. Sand mining often yields unfavorable economic returns, unequal benefit-sharing, carbon footprints, fragile livelihoods, and ecosystem losses. Findings revealed that Africa's sand resource endowment alone cannot guarantee sustainable development outcomes, unless proactive governance strategies are developed. Six starting points are proposed to guide sustainability transitions, including (i) recognize sand as a finite resource, (ii) develop inventories, (iii) establish multi-level reporting, (iv) apply resource-nexus perspectives, (v) promote circularity, and (vi) integrate systems thinking. Findings reveal that sustainability transformations in sand mining and value chains require accounting and governance frameworks rooted in transparency, equity, and justice.