

Exploring the Environmental Injustice in Myanmar: The Impacts of Rare-earth Mining on Ecosystems and Local Livelihoods in the Kachin-China Borderland

Min Myat Aung

Abstract

Rare earth elements are essential for global technological development and the green transition toward a low-carbon society. However, the extraction of these minerals has inflicted profound injustice upon the natural environment and local community of its origin. Destructive mining practices trigger severe socioecological devastation and disrupt traditional ecological knowledge, leaving spatial and temporal persistent adverse impacts on the environment. With the objective of examining these socioecological impacts to foster a responsible mining industry in the Inthaungpa area of the Kachin-China borderland, this study applies the transitional environmental justice framework anchored in three core tenets: distributive, participatory and restorative justice. Supplemented by a systematic desk review, qualitative interviews were conducted with the 21 key informants, including affected community members, NGO staff, field practitioners, experts and local officials. The study reveals that conflict-driven rare earth mining has degraded the critical socioecological interconnectedness essential for the flourishing of local ecosystems and upland communities. This crisis is compounded by pro forma monitoring, ineffective redress mechanisms, and superficial public participation that marginalize local voices. These systemic failures highlight the weakness of rebel environmental governance and drive the displacement of traditional, sustainable livelihoods into hazardous, insufficient alternatives. These mining-induced ecological disasters deliver a profound temporal injustice, characterized by decades-persistent contamination of soil, water and biodiversity. Consequently, source communities face a stark spatial injustice, seeing their self-sufficient livelihoods replaced by precarious, temporary economic dependency, while downstream actors along the supply chain enjoy the economic and technical benefits of rare earth elements. These deep socioecological interconnections, alongside persistent temporal and spatial injustices, advocate for expanding these paradigms within the transitional environmental justice framework. Ultimately, accountability must be enforced throughout the entire rare earth value chain, extending far beyond local actors.