



Mining as the leading cause of land degradation and ecosystem loss in Kenya

In rural economies, land is the basis for most livelihoods where informal mining, agriculture, and logging coexist as part of a multifunctional working landscape. Mining is often deeply entrenched in the cultural traditions of informal, artisanal, and small-scale mining (ASM) communities. The mining sector represents the emerging rural economy that provides livelihoods for millions of women, men, boys, and girls worldwide. Roughly 20 million people work in artisan and small-scale mining of gold, accounting for 45% of all ASM activity.

In Sub-Saharan Africa, the environmental and social legacies from gold mining have become heavy burdens for rural communities and ecosystems. For nearly a century, the adverse impacts of abandoned mines on human and ecosystem health have been poorly addressed or ignored by governments. Evidence confirms the importance of ASM of gold and other commodities as an essential livelihood for millions of Africans; yet many miners lack the skills, knowledge, and incentives to rehabilitate degraded lands. In many ways, informality of the ASM sector limits its potential for progress, and due to limited capital investment, the sector lacks the financial and human resources to conduct formal exploration, mine rehabilitation and closure, or post-closure planning.

In Western Kenya, continuous and unsustainable use of land for mining, agriculture, livestock production, and fuelwood harvest are undermining conservation and rehabilitation efforts, especially where ASM, or low-tech, labor-intensive mineral processing and extraction is taking place. Based on these concerns, Migori County Artisanal Miners Cooperative (MICA) with support from the GEF Small Grants Programme of UNDP, has started making steps to reverse this regrettable trend of land degradation in the county. MICA has identified remediation of ASGM sites as a

mechanism for ecosystems restoration over the long-term. The cooperative has established a well-functioning tree/plant nursery that produces identified tree/plant species for degraded sites' restoration and for phytoremediation (absorption of harmful chemicals through plants). Currently, the cooperative has planted 11,630 tree seedlings in four sites that were identified during the rehabilitation needs assessment exercise: Gori maria site in Kabobo village, Apoyo and Kakula sites in Mikei village and Copper hill in Macalder village. The seedling survival rate is 82%.

To ensure ecosystem restoration, MICA is promoting the planting of bamboo seedlings to help absorb heavy metals from the ground and clean up the surrounding environment in the targeted areas of Kabobo, Mikei and Osiri areas in Migori County. The rationale is that bamboo is resilient to cyanide exposure, a chemical used to process tailings. MICA members have agreed to dig trenches and line these with bamboo, as a fast-growing grass species to mitigate cyanide from reaching surface waters used by animals and local people.

These measures are geared towards the protection and restoration of the degraded mine sites. The strategy applied was selected for its economic and ecological efficiency, known as 'applied nucleation' i.e. establishing small patches of shrubs and/or trees to serve as focal areas for recovery. It is a new strategy that uses principles of colonization of non-forested landscapes by woody vegetation to restore forest cover overtime. As such, MICA has embraced this approach to start the process of landscape rehabilitation at the pilot scale and aims to add new species of native trees and grasses. This work is undertaken in collaboration with the county government of Migori and with the Kenya Environment Forest Research Institute (KEFRI) as a strategic partner, providing technical support. The funds availed by the GEF Small Grants Programme (GEF/SGP) for implementation of the project have had a transformative impact on the thinking of land-use and have facilitated practical actions that contribute to sustainable land management and restoration at mines sites.