

# IM4DC

# Action Research Report

## SUMMARY

**Researchers:**  
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**School/ Centre:**  
Centre for Social Responsibility in Mining, Centre for Mined Land Rehabilitation

**University/ Institutions:**  
Sustainable Minerals Institute, The University of Queensland

**Key themes:**  
Governance and Regulation  
Community and Environmental Sustainability

**Key countries:**  
Sierra Leone

**Completion:**  
March 2012

**Research aims:**  
This report details the findings of a rapid field assessment of five industrial and three artisanal mining sites in Sierra Leone. The assessment was conducted to identify and prioritise issues in support of mine rehabilitation and mine closure planning. The assessment team included the authors and representatives of the Environmental Protection Agency Sierra Leone, the Ministry of Mineral Resources, and the Ministry of Land, Country Planning and the Environment.

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## Mine Site Rehabilitation in Sierra Leone: A Rapid Appraisal of Selected Sites

The main findings of the field assessment were:

- Mine rehabilitation and mine closure planning requires greater prioritisation at all of the mining sites visited.
- There was evidence of activities at each site to address mine rehabilitation and mine closure planning. Mine closure plans are required as a condition of mining and some sites had prepared draft or operational plans.
- The active use of detailed closure plans was not witnessed. A number of sites with rehabilitation plans could not readily provide copies on request.
- Progressive rehabilitation of disturbed mining land following mining was not widely practiced. There is a large rehabilitation burden, that requires prioritised attention at a minority of sites.
- Only a minority of sites have high-risk waste streams or process chemicals that require careful attention; the soil substrates at many sites are capable of supporting revegetation; and the climate in Sierra Leone is broadly favourable for successful revegetation. Widespread burning practices present challenges to revegetation.
- There is significant scope for a widening of the species used by mine sites for revegetation. 'Economic' species, dominated by cashew and oil palm, make up the majority at the sites visited.
- Nurseries were not common at the sites visited, with plants sourced from a variety of off-site locations including government nurseries. The EPA should establish timelines for setting up site nurseries.
- A number of sites are staffed by very experienced long-term Sierra Leonean staff who are responsible for rehabilitation and have significant historical knowledge and practical skills. The relatively high turnover of expatriate staff at other sites poses a risk to the retention of knowledge about rehabilitation.
- There is a need to undertake experimentation of species and substrates at the majority of sites – particularly during phases of the operation where active rehabilitation cannot yet be established for operational reasons.
- Progressive rehabilitation creates an opportunity for the demonstration of successful rehabilitation and signoff by the EPA. The EPA should develop success criteria in consultation with sites.
- Community involvement in decision-making or development of mine closure and rehabilitation plans was not widespread.
- There is a need for the government to prioritise the development of an environmental bonding system to provide financial surety to the government for rehabilitation where companies do not fulfil obligations.
- A number of programs have demonstrated that reclamation of artisanal diamond mining fields to productive agriculture is possible using limited financial and technical assistance. However, there are significant social and institutional challenges.
- Government administrative fees collected from artisanal miners for the purposes of reclamation could be used to undertake demonstration projects, involving the end users of the land to generate ownership.
- Alternatively, consideration should be given to the replacement of the fee with an environmental bond that is provided back to artisanal miners once post-mining pits have been refilled and re-contoured.