

CONCEPT NOTE

ABANDONED MINES

Background

Abandoned mines from past operations exist in most mining regions of the world. Thousands of mines have stopped operating over the course of many centuries of mining. The global number of abandoned mines is not fully documented, but in areas like the United States, some inventories have been attempted and estimates of over 500,000 sites¹ have been suggested. There are many different interpretations of what constitutes an abandoned mine but for our purposes, we will use the United States Forest Service description of abandoned mines;

‘A mine is considered abandoned if there are no identifiable owners or operators for the facilities, or if the facilities have reverted to federal ownership.’

Different reasons exist for abandoning mines: mineral deposits are exhausted; production costs exceed mineral value (poor economics of the commodity make an operation unprofitable); mining difficulties; infrastructure problems like flooding and tunnel collapses. Abandoned mines can have serious impacts on surrounding areas if no preventive measures are put in place. This occurs when no regulations exist to govern the closure or when funds are not in place to cover the associated costs, including unscheduled premature closure resulting from bankruptcy. Abandoned mines as a result of bankruptcy represent a mine closure issue.

These mines may be a source of environmental contamination, including heavy metal and acid discharges that degrade surface and ground waters, or potential release of toxic and explosive gases. Abandoned mines can also be a physical safety hazard to humans and animal life, i.e. open shafts, underground openings (adits), subsidence, unstable tailings and waste rock deposits. Often, a responsible party for these mines is not identifiable. In most cases, there is either no clear documentation on the ownership of these mines or the owners are not financially able to rehabilitate the site.

The legacy of abandoned mines is attributed to a lack of knowledge and concern by the industry, governments and the public about the impending hazards, to the absence of environmental legislation and to incomplete scientific understanding of the impacts. However, over the past three decades public awareness, improvements to existing policy, legislation, practice and technology have been easing the legacy of abandoned mines. In certain parts of the world the ‘mining community’ has come to

¹ NB: in these inventories, a 'site' can refer to individual mine features.

realise that effective action to deal with the issue of abandoned mines is necessary to help smooth the future path of the industry.

This study will aim to address the environmental and socio-economic issues as well as the regulatory frameworks related to abandoned mines. The discussion of the issues will incorporate the views and concerns of different stakeholders, including governments that are responsible for abandoned mines when there is no identifiable owner, the mining industry, NGOs and the local community.

Objectives

The main objective of this working paper is to identify how abandoned mines can best be managed. This will involve estimating the global extent of the impacts, highlighting the financial issues and identifying ways of dealing with the legacy of abandoned mines. The working paper will also attempt to identify areas where further research and development are necessary and make recommendations on the management of abandoned mines.

Project Design

The study will consist of a summary of existing information on abandoned mines as they relate to the environmental, economic, community and governance aspects. Specifically the study will be composed of:

- An examination of the abandoned mines inventories developed by various groups across the world on the impact and magnitude of the abandoned mines problem. This will include an assessment of how these inventories are compiled and how this information is extrapolated.
- A evaluation of the physical, environmental and socio-economic issues associated with abandoned mines.
- A review of the legislation governing abandoned mines in both developed and developing regions and the financial implications. This will include an examination of the criteria used in prioritisation and ranking method for rehabilitation (e.g. the priority used by some abandoned mine land programmes in the USA). The implications of the 'polluter pays principle' application to abandoned mines and the roles of the different stakeholders i.e. government, industry and the civil society will be examined.
- An examination of the potential end use of abandoned mines including environmental and social liabilities when waste from abandoned mines is reprocessed. This will involve identifying the key issues to be taken into consideration when a company acquires an abandoned mine or when small-scale miners move in to re-mine the deposit or re-work the waste i.e. the economic, social and environmental impacts of such projects and whether there is legislation in place to guide the stakeholders.

A small committee of experts representing the broad topics under consideration will work with the project manager and research fellows in giving guidance to the development of the information summaries and their final presentation. A workshop will be convened in July 2001 to review the draft working paper and identify information gaps.

Expected Results

Among the results expected from this project are:

- Summaries of inventories, environmental and socio-economic impacts of abandoned mines.
- A summary of the lessons learned by the parties that have been reclaiming some of the abandoned mines especially in the developed regions where more reclamation efforts exist. Understanding how these best relate to the mining industry's efforts towards sustainable development contributions.
- Identification of information gaps and research needs related to abandoned mines
- Recommendations on how to best manage abandoned mines and guidance on the ranking and prioritisation for rehabilitation.