



Review article

Planning for artisanal and small-scale mining during EIA: Exploring the potential



A. Morrison-Saunders^{a,b,*}, M.P. McHenry^c, J.A. Wessels^a, A. Rita Sequeira^b, H. Mtegha^d, D. Doepel^e

^a Research Unit for Environmental Science and Management, North West University, South Africa

^b Environmental and Conservation Science, School of Veterinary and Life Sciences, Murdoch University, Australia

^c School of Engineering & Information Technology, Murdoch University, Australia

^d School of Mining Engineering, University of Witwatersrand, South Africa

^e Africa Research Group, Murdoch University, Australia

ARTICLE INFO

Article history:

Received 6 February 2015

Received in revised form 4 August 2015

Available online 12 August 2015

Keywords:

Artisanal and small-scale mining (ASM)
Environmental Impact Assessment (EIA)
Mine closure
South Africa

ABSTRACT

This review considers the potential to better plan for artisanal and small-scale mining (ASM) during the Environmental Impact Assessment (EIA) phase of new major mine developments. We contrast and contextualise the parallel development of comprehensive mine closure regulation in South Africa with the resultant lack of progress in actual rehabilitation of its large and growing negative mining legacy. We discuss socio-economic conditions around the mine and the current tendency/ flaw in governance that ignores the extensive ASM activities that exist. The ramifications of omitting the known large cumulative impact of ASM compromises efforts to undertake large-scale mine closure effectively both in theory and practice. This leaves some large-scale mine rehabilitation and closure plans unachievable due to cessation attracting ASM activity, consequently 're-opening' the mine. We discuss the EIA process as an existing legal mechanism to generate wider consultation for post-mine ASM activity options, and to formally recognise and incorporate ASM as a known impact to plan for. Governance obligations for mining companies and policymakers should directly cater for ASM, with the focus directed towards mitigating negative consequences and maximising local socio-economic development benefits that the sector can create, managed through EIA processes.

© 2015 Elsevier Ltd. All rights reserved.

Contents

1. Introduction	813
2. Not acknowledging ASM complexities literally 'undermines' the concept of mine closure	814
3. Policies and legislation applicable to mine closure planning in South Africa	815
4. Existing governance direction for government and companies	817
4.1. The Constitution of the Republic of South Africa	817
4.2. The Companies Act 71 of 2008 and the King Report on Corporate Governance	817
4.3. Future and present corporate governance and government responsibility	817
5. Conclusion	818
Acknowledgements	818
References	818

1. Introduction

The responsibilities of the South African Government in relation to mine closure was insinuatingly summarised by Swart (2003) as follows: the 'guardian' of the environment; to act as a responsible mechanism to serve the public and taxpayer's interest; to ensure a

* Corresponding author.

E-mail address: a.morrison-saunders@murdoch.edu.au (A. Morrison-Saunders)

safe and healthy environment that is not detrimental to the health and well-being of citizens; to promote sustainable development; the final inheritor of remaining problems and mine legacies; and the regulator of the mining industry. Despite these responsibilities, there are approximately 6000 abandoned, derelict, and ownerless mines in South Africa, including known hazardous sites such as former asbestos sites (Auditor-General South Africa (AGSA), 2009; *Mining Minerals and Sustainable Development (MMSD)*, 2002; *Sustainable Development Through Mining (SDTM)*, 2013; Wyngaart, 2012).

All countries in the eastern and southern regions of Africa require some form of Environmental Impact Assessment (EIA) to be carried out for major projects prior to their commencement. The impacts relevant covered by EIA include “[a]ny change, potential or actual, to the physical, natural, social, cultural and economic environment resulting from the business activity or proposal” (*United Nations Development Programme*, 2012, p viii). Some EIAs are common at the mining/infrastructure project level, while others are useful as regional-wide tools at higher levels. While individual artisanal and small-scale mining (ASM) activities are by definition not a major development undertakings, cumulatively they can be significant. The existing EIA legal framework provides an opportunity for incorporating ASM activities into both impact mitigation and also local development strategies for new major developments. As ASM largely falls outside of conventional government policies, plans, and programmes, EIA can be used as a platform for securing meaningful long-term commitment and responsibilities among various stakeholders to consider ASM. Such a move would be consistent with Mineral Resources for Africa’s Development consensus statement arising from the African Development Forum VIII (*Eighth African Development Forum (ADF-VIII)*, 2012) to extend significant support to ASM in recognition of the role these miners play in socio-economic development in rural communities. For certain minerals and ore bodies, ASM can and should be given the opportunity to extract the resource and be given the same levels of support from government with regard to safely achieving development outcomes as large-scale miners. Outside of the need for safety and environmental considerations, ASM provides many benefits and by its very nature, does not take the form of enclave structures: the smaller scale of operations removes the asymmetry and economic disconnect inherent with large-scale miners and the local and regional communities.

The purpose of this paper is to consider the potential for ASM to be planned and provided for as an extension of EIA activity. We start by considering some of the complexities of ASM before turning our attention to the mining and EIA regulatory arrangements in South Africa and the potential to integrate ASM planning and controls into EIA.

2. Not acknowledging ASM complexities literally ‘undermines’ the concept of mine closure

The ASM sector can be characterised along the spectrum of a complexity of largely illegal and unstructured activities occurring in impoverished remote areas (Hein and Funyufunyu, 2014; Labonne, 2014; Nhlengetwa and Hein, 2014). Governments, officials, and the media present and/or vilify ASM: that it poses serious problems for national sovereignty; generates pollution; and is responsible for numerous deaths linked to mining, illegal trade and cartel activity, and associated violence (Hilson and McQuilken, 2014; Nhlengetwa and Hein, 2014; Thornton, 2014). Due to its perceived illegality individuals involved in ASM activities are known to be mercilessly exploited and sometimes killed by police, government representatives and criminal organisations (Nyame and Grant, 2014; Thornton, 2014).

In reality ASM can be both poverty-driven and entrepreneurial, with a ready market for produce. It can be a legitimate means for reducing hardship, serving major political, economic and

demographic functions in rural societies (Hein and Funyufunyu, 2014; Hilson and McQuilken, 2014; Labonne, 2014; Thornton, 2014). The influence of unemployment or low wages on the growth of ASM activity has been well-documented (Nhlengetwa and Hein, 2014); yet the sector remains marginalised in policy (Hilson and McQuilken, 2014; Labonne, 2014), despite central governments often making windfall returns and valuable foreign exchange from activities. At the same time, local institutions and governments, which are more exposed to poverty and social deprivation, rarely receive financial returns from ASM unless specific legislation exists such as revenue sharing (Labonne, 2014). Some non-community-based ASM activities operate outside of traditional and governmental legal control, in addition to customary law where wealth is shared with local custodians (Nhlengetwa and Hein, 2014). However, from a governance perspective, it is inappropriate to isolate ASM from mainstream development policies and to simply assert that it occurs outside of the law (Labonne, 2014; Thornton, 2014). While the labour intensity, tools, and processes of ASM have changed very little for hundreds of years, the level of technical knowledge of many operators is now highly advanced, with the sector remaining widespread despite the advent of large-scale mining (Hein and Funyufunyu, 2014; Hilson and McQuilken, 2014; Thornton, 2014).

Compared to large-scale mining, the ecological footprint of an individual ASM site is small, as ore is generally visually sorted from the soil and transported for further processing (Thornton, 2014). However, the widespread nature of the sector and the cumulative impact of numerous operators can pose substantial risk. To date, insufficient research and policy development has been afforded ASM activity; a sustained effort to quantify the (positive and negative) impacts of these linkages to national economies and local environments, therefore, is a key imperative. This knowledge can, in turn, inform policymakers and those responsible for national resource allocation. If ASM operators can be incentivised to integrate into the formal economy, earnings from their activities can be used to ‘scale up’ activities (e.g. finding cheaper, safer and user-friendly means to produce and process minerals). This would improve the security of tenure and provide more appropriate governance to enable the sector to operate, save, invest, and advance in a similar manner to large operations, and also aim to buffer the often inflated living costs in ASM-intensive locations (Hilson and McQuilken, 2014; Labonne, 2014).

We suggest that it may be possible to integrate ASM into key legislative processes and other large-scale mine rehabilitation and closure plans, facilitated by the EIA process. In terms of mine closure, it is known that large-scale mine abandonment and/or a lack of mine decommissioning can enable small-scale miners to have easier access to some minerals (Nhlengetwa and Hein, 2014). The parallel existence of governance for mine closure and the occurrence and indirect impact of ASM activities may explain why rehabilitation and closure has not always been implemented for large-scale mining operations in South Africa, despite the world-class legislation¹. Nonetheless, it is clear that implementation of major policies and legislation in South Africa would benefit from recognising that ASM is a known impact in many regions. Successful rehabilitation or closure of large-scale mining operations that delivers socially and environmentally responsible outcomes may warrant inclusion of ASM in governance arrangements. We further examine these issues, with special emphasis on

¹ The authors clarify that when management personnel in a large mining operation are not incentivised to understand and integrate ASM communities in the region within post-mine planning, the perception of the ASM illegality and apparent lawlessness will unlikely engender enthusiasm for implementing ‘best practice’ mine closure and rehabilitation.

Download English Version:

<https://daneshyari.com/en/article/1047558>

Download Persian Version:

<https://daneshyari.com/article/1047558>

[Daneshyari.com](https://daneshyari.com)