The Extractive Industries and Society 2 (2015) 434–444

Contents lists available at ScienceDirect

The Extractive Industries and Society

journal homepage: www.elsevier.com/locate/exis

Original Article

Comparative development benefits from small and large scale mines in North Sulawesi, Indonesia

James Douglas Langston [a,*], Muhammad I. Lubis [a,b], Jeffrey A. Sayer [a], Chris Margules [a,c], Agni Klintuni Boedhihartono [a], Paul H.G.M. Dirks [d,e,f]

[a] Centre for Tropical Environmental and Sustainability Science, College of Marine & Environmental Sciences, James Cook University, Cairns, QLD 4870, Australia
[b] Center for Environmental Research (PPLH), Bogor Agricultural University, Darmaga Campus, Bogor 16680, Indonesia
[c] Research Center for Climate Change, University of Indonesia, Depok, Indonesia
[d] Economic Geology Research Centre, College of Science Technology and Engineering, James Cook University, Townsville, Australia
[e] Department of Earth & Oceans, College of Science, Technology and Engineering, James Cook University, Townsville, Australia
[f] College of Science, Technology and Engineering, Division of Tropical Environments and Societies Cairns, James Cook University, Townsville, Australia

ARTICLE INFO

Article history:
Received 8 August 2014
Received in revised form 26 February 2015
Available online 4 April 2015

Keywords:
Livelihoods
Gold mining
Small scale mining
Indonesia
Large scale mining

ABSTRACT

We assess the opportunities and threats posed by small and large-scale mining in Eastern Indonesia. Here, both activities coexist in one landscape: in the Bitung and North Minahasa Districts of North Sulawesi. Each is associated with different development pathways. Both scales of mining have been controversial and are criticized for their environmental and socio-economic impacts. Small-scale mining contributes more to the local economy encouraging local entrepreneurship but yields a lower total financial return. Large-scale mining provides better job security and safer working conditions for employees, but any benefits of capital transformation do not accrue locally. Policy should focus on the formalization of small-scale mining and pay closer attention to the impact of large-scale mining on local communities. The governance of both scales of mining would benefit from a 'landscapes approach' to negotiating conservation and development trade-offs.

1. Introduction

Mining can be an important driver of economic growth in many developing countries. There is growing consensus, however, that society must manage mining to catalyze broad-based economic development whilst simultaneously achieving maximum social and economic benefits (United Nations, 2012). Yet concerns remain about negative environmental and social impacts (Harvey, 2013; Wan, 2014). A UN task force is in the process of assessing mining's developmental impacts, both positive and negative, from which indicators may be developed for inclusion in the upcoming sustainable development goals (SDG's) (The Mining Working Group 2014). This task force stresses the need to focus on issues of sustainability, equity, governance, and poverty alleviation. However, the industry is not homogenous and this range of issues requires implementation of a suite of different policy approaches depending on the political, social, economic, and environmental context (Intergovernmental Forum on Mining, 2013).

Many studies have analyzed how large-scale mining and artisanal and small-scale mining (ASM) affect people, their institutions and their environments (Tschakert, 2009; Hilson, 2012). In North Sulawesi, as elsewhere, large-scale mines are criticized for their negative environmental impacts and are portrayed as contributing to corruption and weak governance (Jennings, 1999; Tambang, 2010). Artisanal and small-scale mines (ASM) are criticized for their poor health and safety records and their contribution to pollution (Aspinall, 2001; Limbong et al., 2003). Here we use ASM loosely as a label for rudimentary mineral extraction and processing activities, feature manual labour, and are often characterized by hazardous working conditions with frequent negative human and environmental health impacts (Hilson, 2002).

Although previous studies provide an overview of economic, environmental, and other social impacts, few compare and contrast local outcomes of the two scales of mining within a single landscape. This paper helps to bridge this gap by examining the contribution of large-scale mining and ASM industries to

* Corresponding author. Tel.: +61 432258549.
E-mail address: james.langston@my.jcu.edu.au (J.D. Langston).

http://dx.doi.org/10.1016/j.exis.2015.02.007
2214-790X/

sustainable development in the Bitung and North Minahasa Districts of the North Sulawesi Province, Indonesia. Development is moving east in Indonesia, and the default business models pertaining in the west pose a threat to the finer scale of cultural and biological diversity characteristic of the east (Margules et al., In Press). We studied the landscape around a large-scale gold mine, and a cluster of small-scale mines in a single landscape (Sayer et al., 2013). International corporate backing funds the large-scale mine. The small-scale mines utilize much simpler technologies sponsored by local businessmen. We analyze the contribution made by the different mining types to development and consider how policy makers can better address development in the context of mining to achieve more sustainable outcomes. For this, we compared the mining types to determine their impacts on local communities, their sustainability and their impacts on equity and governance. We provide results to support a conclusion that decision makers should approach the governance and management of small-scale mining and large-scale mining based on evidence that is locally contextual and just. According to our study, landscape approaches offer ways to address these challenges. One conclusion challenging the status quo is that Indonesian small-scale mining brings sustainable prosperity to local people and yet is unjustly marginalized in policy processes, in comparison to large-scale mining. Another conclusion in need of further exploration is that both models might sensibly co-exist and can contribute in different ways to achieving sustainable development goals. Indonesia is a relatively young country still in the process of determining land rights and governance arrangements. Its regulatory frameworks, therefore, should address the needs and opportunities provided by all scales of mining.

2. The Indonesian development context

Comparative economic and geopolitical isolation has, until recently, protected Eastern Indonesia from some of the major investments in land-based industries that have transformed Sumatra, Kalimantan, and Java at great environmental and some social cost. Due to its relative isolation, Wallacea[1] has some of the highest levels of poverty in Indonesia. Scores on Millennium Development Goal indicators are low – the Human Development Index ranks Eastern Indonesia below Java and other Western Indonesian provinces. However, major spatial development plans issued by the central government, and continued economic growth is moving development east (Nurmandi and Purnomo, 2011). As the people of Eastern Indonesia anticipate this development push, they face great opportunity along with great risk: opportunities to raise living standards and increase prosperity, a prerequisite for the successful sustainable management of natural resources, and risks in the form of inequitable exploitation of natural resources, environmental degradation and marginalization of culturally diverse, but poorer groups of people (Margules et al., In Press).

Mining activities in Indonesia are currently governed under the 2009 Mining Law. This law regulates both local and foreign investors and was intended to increase the ease of doing business. In 2013, a new indigenization law was put in place that limits foreign ownership to 49% with the goal of increasing the benefits of mining for Indonesia. In 2014 another law came into effect, which requires all primary commodities, including raw minerals, to be processed within the country before export, a deliberate attempt to avert Dutch Disease, the tendency of resource booms to be detrimental to the manufacturing sector (Winzenried, 2014). These changes reflect the government's perception of the development opportunities presented by the growth of the large-scale mining sector. Large-scale mining contributes 12% to state GDP (Indonesia Mining Report 2013) and economists expect the value of the industry to grow at an annual average rate of 10.0% from 2012 levels, from an estimated US$93.4 billion to US$153 billion by 2017 (Indonesia Mining Report 2013).

Large and small-scale mining models contribute differently to economic development and as such they receive different socio-political treatment. In general, institutions and society prioritize large-scale mining and marginalize small-scale mining. In Indonesia, small-scale mines are often characterized as "illegal" (Spiegel, 2012a,b). However, some local authorities are beginning to subject ASM to oversight and regulation, a process termed "formalization" (Siegel and Veiga, 2009). The illegality stigma partly results from the failure to recognize poorer groups' resource rights (Spiegel, 2012a,b). Development agencies endorse neo-liberal forms of capital investment and in line with this, all levels of the Indonesian Government tend to welcome large-scale mining (World Bank, 2001; Deininger, 2003; Harvey, 2007; Indonesia Mining Report 2013). Large-scale mines are subject to much more national and international scrutiny, but are controversial because of the rent-seeking behaviour associated with them at higher levels of government (Sachs and Warner, 2001). Their sustainability has undergone progressive redefinition to the extent that use of the phrase "sustainable development" in the mining sector now refers primarily to their sustained economic performance (Negri, 1999; Kirsch, 2010). The industry brings financial benefits to investors and to government agencies but not necessarily to local people.

Attempts to remedy this are often made through Corporate Social Responsibility (CSR) programmes. However, CSR is often criticized for having done little to contribute to the betterment of local communities (Slack, 2012; Harvey, 2013). In the case of Eastern Indonesia, the flow of benefits is particularly problematic because the 'elite with expertise' designing such programmes are geographically far removed, based in the capital Jakarta, where they make decisions that are not necessarily best suited to conditions in the east. International development agencies justify their support of large-scale mining because of its potential contributions to downstream economic development (*i.e.* that locals will benefit). However, rhetoric and reality differ because capacity asymmetries at local scales result in unheard community voices. The formalization of ASM faces similar problems, but at more local scales (Ferguson, 2007; Spiegel, 2012a,b). Because of its local focus, ASM, alongside large-scale mining, might play an important role in reconciling the conservation and development trade-offs unique to Eastern Indonesia.

The irregularities and complexities found within Indonesia's ASM sector provide the context for this paper. A study of small-scale miners in Central Kalimantan showed that changing government structures, regulations, and policies have led to the marginalization of workers who are classed as 'illegal miners' (Spiegel, 2012a,b). Although many small-scale farmers hold 'People's Mining Licenses', political leaders and authorities describe 90% of small-scale mining in Indonesia as illegal (Aspinall, 2001). This stems partly from a disconnect between the centralized federal and highly decentralized local governance structures. Attitudes and beliefs held among ruling and wealthier classes demean the social standing of the informal mining sector and culture. This has been described as an imposition of structural violence against marginalized, 'poor' groups of people who are doing what they can to survive (Spiegel, 2012a,b). This group is not small, as conservative estimates suggest that there are 77,000 informal mines employing up to 500,000 people (Jennings, 1999). Previously, Indonesia's Central Bureau of Statistics determined that small-scale 'informal miners' outnumbered formal mine site employees by a factor of at least 10–1 (Spiegel, 2012a,b). These numbers are outdated and probably underestimate the current situation, as mining has grown rapidly over the last decade. District

[1] A label for Eastern Indonesia's islands.