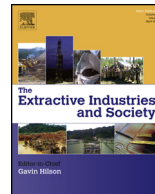




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Original Article

Asian investment at artisanal and small-scale mines in rural Cameroon

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ABSTRACT

A new model of small-scale mineral exploitation is being driven by Asian investors in East Cameroon and may be representative of trends elsewhere in Africa. The mines employ nationals of Asian countries and create small Asian communities in remote areas. There is evidence of widespread failure to comply with national mining regulations and few benefits are flowing either to the national government or to local communities. If existing government regulations were enforced, this form of mining could improve livelihoods and living conditions in remote areas. Without good governance it risks facilitating enclaves of uncontrolled resource exploitation.

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1. Introduction

Africa has about 30% of the planet's mineral reserves, most of which are unexploited. The potential for further discovery and exploitation is immense (Hilson, 2002b). Africa already produces several important minerals, including 40% of the world's gold, 60% of its cobalt and 90% of platinum group metals (Janneh and Ping, 2011; Kogre and Afilaka, 1988; Taylor et al., 2009).

Artisanal and small scale mining (ASM) has been widespread throughout the world for over 2000 years (Hilson, 2002a), and today features heavily in the rural economy of many developing countries (Hentschel et al., 2003; Hilson, 2002a). There are diverse definitions of different types of ASM (Drechsler, 2001). Definitions are shaped by stakeholders' perspectives and vary from country to country. The term 'artisanal mining' is widely used as a label for very labour-intensive activities without mechanization (Aryee et al., 2003; Hentschel et al., 2002). In this paper, we use the term 'small-scale mining' as a label for larger operations which feature more mechanized extraction techniques. However, many authors

use the terms 'artisanal mining' and 'small-scale mining' interchangeably (Hentschel et al., 2003; Janneh and Ping, 2011).

The ASM sector provides a livelihood for millions of people throughout the world (Siegel and Veiga, 2009). In the case of sub-Saharan Africa, at least two million people are directly employed in ASM, and an additional 10 million more people depend on the sector for their survival (Chupezi et al., 2009a; Hilson, 2009; Janneh and Ping, 2011; Schure et al., 2011a). The majority of the region's artisanal miners are engaged in the extraction of gold but there are also significant 'pockets' of people exploiting deposits of alluvial gemstones and diamonds (Hilson and Banchirigah, 2009).

Mineral industries will be major determinants of economic growth in the coming decades (Broadman and Isik, 2007; Çakır and Kabundi, 2013; Taylor et al., 2009; Weng et al., 2013). Foreign investment in industrial mineral extraction is expanding rapidly and new countries are joining the ex-colonial regimes involved in extractive industries (Hajzler, 2012). Australia, the United States, Canada, Brazil, Russia, India, Middle East and East Asian countries, notably China, are now active in this sector.

The expansion of capital investment in industrial mineral extraction in sub-Saharan Africa tends to be concentrated in privately secured enclaves awarded as concessions by host governments. Several countries in the region are now experiencing mining and/or oil extraction 'booms' but in many cases, with little or no economic benefits flowing to wider society (Ferguson, 2006).

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Large-scale, internationally funded operations are illustrative examples of these 'extraction enclaves' (Ease, 2011; Ferguson, 2005). Foreign-owned and operated extractive industries in theory benefit countries through fees and royalties but many of these benefits are captured by elites, which gives rise to these 'extractive enclaves' (Ferguson, 2005; Reno, 1999). Often, resource-rich areas of sub-Saharan Africa are secured, policed and governed through private means in a selective fashion within multi-national networks (Ackah-Baidoo, 2012; Le Billon, 2001).

The expansion of Chinese investment in industrial mineral extraction in sub-Saharan Africa often follows the same model as that of large-scale industrial investments from Western countries. Major investments are being made by central and provincial state-owned enterprises in the resource sector alongside investments in rural infrastructure and urban construction. Private sector investment is occurring alongside this, albeit mainly in small-scale manufacturing and services industries (Gu, 2009; Kaplinsky and Morris, 2009): the majority of Chinese private firms now operating in sub-Saharan Africa are small and medium enterprises (Gu, 2011). To date, in the context of sub-Saharan Africa, most scholarly attention has focused on the performance of China's large-scale state-owned enterprises. Very little analysis has been devoted to the region's Chinese-financed small scale private enterprises.

High demand and high prices for minerals in global markets and the vast potential for mineral production in sub-Saharan Africa are increasing exploitation pressures at all scales (Humphreys, 2010). The economic, social and environmental impacts of large-scale mining are certainly well-documented (Edwards et al., 2013; Mtegha et al., 2012). There are also numerous studies of the localized social and environmental impacts of ASM activities in the region (Hilson, 2002a; Spiegel, 2009b). However, the broader developmental and demographic impacts of the recent explosive growth of small and intermediate scale mining are, by comparison, under-investigated. In this paper, we focus on these smaller private operations that are not the product of government to government negotiations, and which largely escape national and international level scrutiny of their development impacts.

2. Artisanal and small-scale mining in sub-Saharan Africa: an overview

The ASM sector is widely believed to be comprised of poverty-driven activities, typically in the poorest and most remote rural areas of a country and often populated by poorly educated groups with few employment alternatives (Drechsler, 2001; Hilson and Potter, 2005; Mohammed Banchirigah, 2006; Okoh and Hilson, 2011). In sub-Saharan Africa, ASM is an important contributor to rural economies (Jennings, 1999; United Nations Economic Commission for Africa, 2003). As noted, it provides millions of jobs as well as supplements the incomes of poor subsistence farmers (Hentschel et al., 2002; Hilson, 2009; Schure et al., 2011b).

The distribution and extent of ASM in sub-Saharan Africa was radically changed as a result of actions taken by International Financial Institutions to tackle economic problems during the 1980s. Amongst the measures taken, Structural Adjustment Programmes had particularly significant impacts on the sector (Weissman, 1990). These financial packages were awarded on the condition that policy reforms were made to encourage foreign direct investment in large-scale industrial activities, including mining.

Structural adjustment has induced significant unemployment in a number of sectors and incoming industrial mining investments have done little to offset this, providing few jobs for unskilled local people. Many have therefore moved into illegal artisanal mining to supplement their incomes. This phenomenon is fairly well-documented in a number of countries in sub-Saharan Africa,

including Zimbabwe, Ghana, Tanzania, Senegal, Mozambique and other mineral rich countries (Drechsler, 2001; Hilson and Potter, 2005; Mohammed Banchirigah, 2006; Weissman, 1990).

Cameroon has experienced two phases of structural adjustment (International Monetary Fund, 1998; Razafindramanana, 2002). Its first Structural Adjustment Programme was implemented in 1988 but was considered to have been 'weak' and did little to halt economic decline (Tchoungui et al., 1995). The second Structural Adjustment Programme was designed to restore aggregate macroeconomic balances as well as to reduce poverty through the redeployment of resources towards priority sectors and requirements. Specific measures were implemented for the energy and natural resources sector. As part of the programme, government revised the law for the oil sector's fiscal regime in an attempt to promote exploration and production of both oil and offshore natural gas. A new mining code was promulgated in April 2001 as part of the programme (International Monetary Fund, 1998; Razafindramanana, 2002). The new mining legislation recognizes the importance of ASM and provides special incentives for operators. Mining operations at all scales, from very simple activities involving the artisanal exploitation of gold and diamonds to major industrial iron ore, bauxite and diamond extraction projects, therefore, are all destined to expand rapidly in coming years (Nting, 2009).

In sub-Saharan Africa, the ASM sector is strongly interlinked with smallholder agriculture. At present, agriculture accounts for and estimated 60% of all employment in the region, and is the main economic activity in most of its countries (Hilson and Garforth, 2012). The linkages between farming and ASM are well-documented in sub-Saharan Africa (Fisher et al., 2009; Hilson and Garforth, 2012; Okoh and Hilson, 2011; United Nations Economic Commission for Africa, 2003). For example, in Sierra Leone, which is endowed with rich mineral resources despite scoring poorly on the Human Development Index (Malik and Jespersen, 2014), it was observed in the mid-1970s, that diamond mining and farming activities 'dovetailed': that the former occurred in the dry season whilst the latter prevailed during the rainy season. The commonly held view was that artisanal mining had detrimental effects on Sierra Leone's rural economy by attracting young men away from farming (Maconachie and Binns, 2007). But Maconachie, who returned to the mining areas worked during the 1970s, concluded that reports that diamond mining adversely impacting farming had been exaggerated (Maconachie, 2009). Here, the synergistic development of farming and artisanal mining has helped to rebuild the rural economy since the conclusion of the country's civil war (Fanthorpe and Maconachie, 2010; Maconachie, 2009).

In the Democratic Republic of Congo, similar synergies between farming in artisanal mining have emerged, as market liberalization has reduced the profits of smallholding considerably (Hilson and Garforth, 2012). Here, artisanal mining has become an important supplementary economic activity to alleviate rural poverty. Specifically, it has helped rural families pursue higher-quality education for their children and improved access to postsecondary studies for adults (Chachage, 1995; Fisher et al., 2009; Okoh and Hilson, 2011). Neighbouring Tanzania, which is endowed with abundant minerals including gold, diamonds, iron ore, nickel, cobalt and tanzanite, is also experiencing such diversification at its major gold mining sites, including Geita, Musoma, Tarime, Chunya and Mpanda (A.G.N, 2006; Fisher, 2008; Mwaipopo et al., 2004). In Geita, artisanal mining has a long history as a complementary source of income for smallholders, as well as providing markets for their produce (A.G.N, 2006). A similar 'branching out' of livelihoods has been observed in Mozambique and Zimbabwe, where the income rural inhabitants obtain from artisanal mining enables them to purchase fertilizer. Here, at least 500,000 people are

engaged in informal or unlicensed artisanal mining as their principle economic activity although many of them continue to cultivate subsistence crops (Banchirigah and Hilson, 2010; Spiegel, 2009a).

Cameroon, the focus of this paper, has significant mineral resources and bauxite, cement and petroleum are already exploited at industrial scales (Newman, 2011; Nting, 2009). The country launched an ambitious mineral exploration campaign in the 1970s, which identified major resources of gold, diamonds, iron, bauxite, uranium, cobalt and nickel (Nodem et al., 2012). But despite these discoveries, mining continues to be an underdeveloped sector in the country, contributing less than 1% of GDP annually. Economic incentives are now in place and a competitive environment has been created to encourage private investments in mineral exploration and extraction activity, with the aim of bolstering the sector. In general, there is less evidence of strong interactions between mining and agriculture in Cameroon, although Weng et al. (2013) have postulated that mining infrastructure will stimulate agricultural expansion in forest areas.

Artisanal and small-scale gold mining has been widespread in Cameroon since the 19th Century. The first published reference made to gold production in Southeast Cameroon was in 1934, and detailed local alluvial workings (Suh et al., 2006). Gold and diamonds have been exploited in the north and east from alluvial deposits for several decades (Forton et al., 2012). Annual gold production is in the range of 1500–2000 kilograms, and diamond production is estimated at 12,000 carats (Bermúdez-Lugo, 2004; Fortona et al., 2012; Newman, 2010; The IDL Group, 2010).

The mining sector is governed by Law n°001-2001 of April 16, 2001, and its application decree n°2002/648/PM of March 26, 2002 (Mertens et al., 2012). This mining code states that all of Cameroon's mineral resources belong to the Government, and that prospecting, exploration and development of all mineral deposits are to be regulated by permit (Newman, 2012). It defines artisanal mining as “any mining activity consisting in extracting and concentrating mineral substances by means of manual and less mechanized methods and techniques”.

Artisanal exploitation is restricted to areas of less than one hectare and depths of less than 30 m (Tetsopgang et al., 2007). The Ministry of Industry, Mines and Technological Development was given responsibility for the issuance of mineral exploration licenses since 2010. According to subsequent amendments, “Small mines” are now a new category of activity, defined as “Any permanent small-scale mining project based on proven existence of a deposit, using standard rules, semi-industrial or industrial processes and whose annual production does not exceed a certain tonnage of the marketable product (mineral ore, concentrate or metal) as set for each substance by regulation”. Between 2010 and 2012, 167 mining research permits were granted which might lead to either small-scale or industrial scale operations. Some 280 artisanal mining permits and 180 quarrying permits were also granted, the rate of issuance of permits is increasing (CIMEC, 2013).

In 2003, the Government of Cameroon established a Support and Promotion Framework for Mining Activities, the *Cellule d'Appui et de Promotion de l'Artisanat Minier* (CAPAM), the aim of which was to assist and promote artisanal and small scale mining (Chupezzi et al., 2009b). Since 2007, CAPAM has implemented policies to encourage mine mechanization. It, along with state, technical and financial partners, domestic and foreign, is working to increase the contribution of mining to the national budget while providing benefits for poor rural communities. However, it appears that initially CAPAM treated “small mines” as “artisanal mines”, and it was only in 2010 that the regulation was adopted that clarified the differences between the two. This ambiguity, however, paved the way for foreign companies to operate small-scale mines “legally”.

While CAPAM now engages with these companies, governance is still weak (Chupezzi et al., 2009b).

There has been a recent expansion of privately operated small-scale mining in Eastern Cameroon, especially in Bétaré-Oya, Batouri, Yokadouma and Garoua Boulai (Tetsopgang et al., 2007). These operations are mechanized and use modern extraction technology, characteristics which do not strictly correspond to descriptions of either artisanal mining or “small mines”, as provided in the law.

3. Methods

We studied the recent expansion of small-scale mining in the valley of the Lom River in the vicinity of the town of Bétaré-Oya. The area has extensive gold-bearing gravel layers of economic importance. The Bétaré-Oya district is situated in Eastern Cameroon, 950 km northeast of Yaoundé and 160 km from Bertoua, the capital of the Eastern Province. The region is a plateau of around 900 m in height, covered by savannah vegetation (Tetsopgang et al., 2007). Gold mineralization was discovered in the 1980s by members of the Cameroon Geological Survey and the Bureau de Recherches Géologiques et Minières (B.R.G.M.) during stream sediment and soil geochemical surveys (Freyssinet et al., 1989). The deposits lie along the Lom River between 5°36'32 to 5°45'34 and E 14°00'21 to E 14°06'09. Fig. 1 shows the main gold mining sites in this area.

The area has a multi-ethnic population originating from different regions of Cameroon and other countries in Central Africa. The main economic activity here is small-scale trade. Farming is limited to local subsistence needs, and almost all households in the area are active in mining. The local term for traditional artisanal mining is “Ngéré”.

Recently, there has been a rapid increase in small-scale mining by companies from several other countries, especially China. The companies operate with artisanal mining permits, even though they do not meet the criteria for such activity, as outlined in the Mining Code 2001. They have higher capital investment and operate at larger scales and greater depths than those authorized for local artisanal miners. They often sub-lease a series of contiguous artisanal mining permits from artisanal leaseholders. Companies import machinery to operate the mines and share gold production with the artisanal operators with whom they lease the permits (Nodem et al., 2012; Tetsopgang et al., 2007). Small communities of foreign miners are establishing themselves in the area to work these mines with very little government oversight.

We identified our study sites from the list of small-scale mining companies maintained by CAPAM (CAPAM, 2012). In December 2012 we visited eight of the 21 listed mining companies, selected on the basis of their location, age and accessibility. We conducted 20 interviews with key informants from the eight mining companies both at and around the mine sites, and also in their offices, in the capital Yaoundé. We sought information on their business models, financial arrangements, employees, gold production, marketing, tax issues and their perceptions of the potential future development of gold mining in Cameroon.

All interviewees were people who played important roles in strategic decision-making or the daily management of mines. Eight of the interviewees were site managers who dealt with relations between their companies and government. The remaining 12 respondents held staff positions in the companies (chairman, geologists, departmental directors, etc.). Of the 20 interviews, 15 were conducted in Mandarin and those for Korean and Cameroonian companies in English. Chinese transcripts were translated into English for analysis.

In December 2013, we revisited the area to conduct follow-up interviews with mine operatives, officials and local people. We

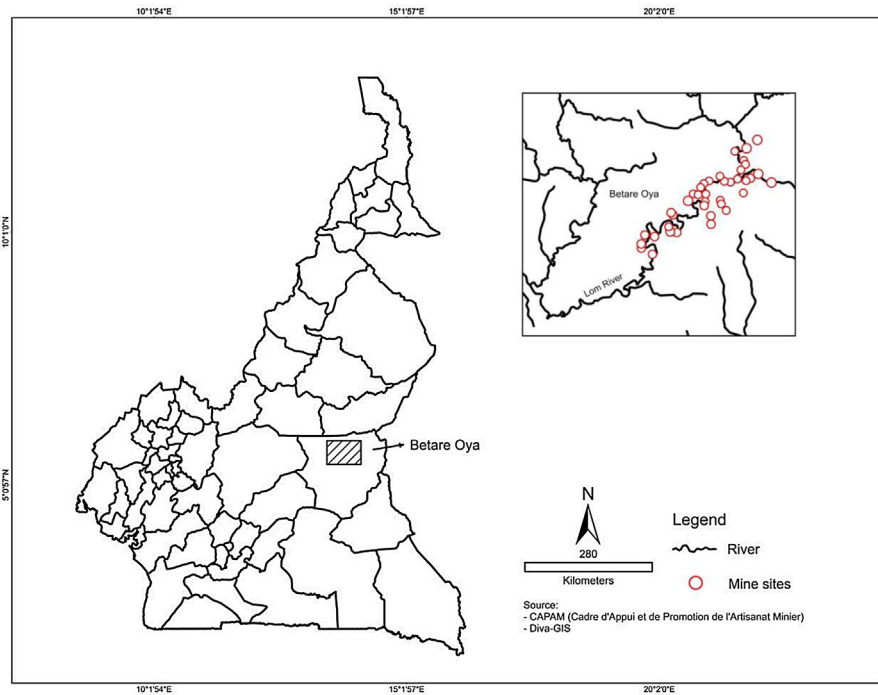


Fig. 1. Cameroon showing location of Betare Oya and inset mines along the Lom River.

observed an increase in the number of companies, many of them operated by Chinese miners who had moved from Ghana, where the government had placed restrictions on small-scale mining activities (Hilson et al., 2014). According to the Ministry of Mines and Technological Development in the provincial capital of Bertoua, there are 30 small-scale mines in the area, 15 of which are Chinese-operated.

4. Results

4.1. Profiles of mining companies

Table 1 presents the profiles of the eight small-scale mining companies studied in 2012. Korea 1 and 2 were established in 2006 and in 2009, respectively. China 1 commenced operation in the middle of 2011. China 2 started in 2011, and is only working with dredging barges on the river; China 3 and China 4 both began their activities in 2012; Cameroon 1 started in 2011; and Cameroon 2 is a more recent (2012) development, and smaller, with only 9 workers.

4.1.1. The Korean companies

Korea 1 is owned by a publicly listed mineral company. The company is involved in the importation, processing and sale of gold, diamonds, and sapphires in South Korea. In Cameroon, they own not only gold mining concessions but also diamond mines in

the South-East. They have a head office in the capital Yaoundé. The company was the first to invest in heavy mining equipment. The parent company of Korea 2 is a partnership between two Korean entrepreneurs who are based in Korea but often travel to the mine sites.

4.1.2. The Chinese companies

The parent company of China 1 is a trading company based in Beijing. It is principally an export and import business with only limited involvement in mining. This company is engaged in both open pit mining and dredging, and has invested more capital than other Chinese companies. The parent company of China 2 is a privately owned resource recycling company based in France. The chairman invests in mining in several African countries. China 3 is a typical Chinese family business with a parent company based in Gabon. It is also involved in timber, shipping, and mineral trade between China and Africa. China 4 is a joint venture between a private Chinese company and a Chinese government-owned enterprise.

4.1.3. The Cameroonian companies

Both of the Cameroonian companies are privately owned and began operations in 2011. Cameroon 2 is a small company which has only a 9 ha mining concession. We were unable to visit other companies operating in the area. The CAPAM records show that the origins of these companies can be traced to Cameroon (7) Spain (1),

Table 1
Profiles of eight small-scale gold mining companies studied.

Ownership	Start year	Ownership	Capital (US dollar)	Methods	Stage
Korea 1	2006	Private	5 million	Open pit	Exploitation
Korea 2	2009	Private	4 million	Open pit	Exploitation
Cameroon 1	2011	Private	2 million	Open pit	Exploitation
Cameroon 2	2012	Private	1 million	Open pit	Exploitation
China 1	2011	Private	2.5 million	Open pit/Dredging	Exploitation
China 2	2011	Private	1.5 million	Dredging	Exploitation
China 3	2012	Private	2 million	Open pit	Exploration/Exploitation
China 4	2012	Joint venture	0.9 million	Dredging	Exploration/Exploitation

France (1), and Lebanon (1). There are other small companies but whose country of origin we could not determine and which are not on the CAPAM list.

4.2. Regulatory framework for small-scale gold mines

The Mining Code 2001 defined “artisanal mines” as “all exploitation whose activities consist in extraction and concentration of mineral substances using manual and less mechanized methods and processes” (CAPAM, 2012). Furthermore, the Mining Code states that permits for artisanal mining can only be issued to Cameroonian nationals by the appropriate territory authority for a renewable two-year period (Mertens et al., 2012). In 2010, the Government of Cameroon added “small mines” as a new category in the Mining Code. It is unclear when the new laws actually entered into force. In this study, all of the companies surveyed conform to the definition of “small mines” yet all operate under artisanal mine permits. This contravenes both the definition of artisanal mines and the requirement in the 2001 Mining Code that “artisanal permits” can only be issued to Cameroonian nationals. The reality is that the companies work in partnership with the artisanal miners, through whom they have informal access arrangements or in some case, formal leases.

Many African countries have diverse regulations for artisanal mining and use different definitions for “artisanal” and “small-scale”. These different classifications are based on criteria such as manpower, equipment type and operating time (Garrett, 2007; Hentschel et al., 2003). In many cases, the procedures for obtaining a small-scale mining permit are costly, inefficient and tedious, and numerous criteria must be met before final approval can be sought from government authorities (Aryee et al., 2003; Hilson, 2001).

In Cameroon, applicants must complete several application forms and pay for permits before, legally, they can mine. Often, these formal requirements discourage people from applying for permits altogether and leads them to work illegally. They typically collaborate with government authorities, signing an “Advanced Technical Financial Partner” with CAPAM, and sharing a limited proportion of profits with foreign investors. Although this collaboration model is recognized by the Cameroon government as a “win-win” for all stakeholders, the requirement that these companies should be regulated by CAPAM as “technical financial partners” appears not to be met. The expatriates appear not to have negotiated with the original artisanal permit holders; rather, on behalf of permit holders, the government agency MINIMIDT (Ministry of Industry, Mines and Technological Development) typically signs an agreement with small mine investors.

There is a troubling lack of clarity between the government’s formal mining code and CAPAM production contracts. Cameroon works within the framework of the Extractive Industries Transparency Initiative (EITI) but the transparency rules are reserved for big international companies and do not appear to apply to small mines. “Small mines” cannot legally operate under artisanal licences, since Articles 9 and 24 of the Mining Code 2001 state that artisanal mining is exclusively reserved for Cameroonian nationals. Many local people claimed, during interviews, that mining has failed to promote local development and has been managed with questionable legality (Nodem et al., 2012). The diversity in mineral marketing arrangements, acknowledged by the companies, underscores the lack of observance of the regulations.

4.3. Employee profiles

Both foreign and national workers in these companies have technical roles. They prospect for gold deposits and operate machinery such as excavators and bulldozers. International employees are also responsible for human resource and financial

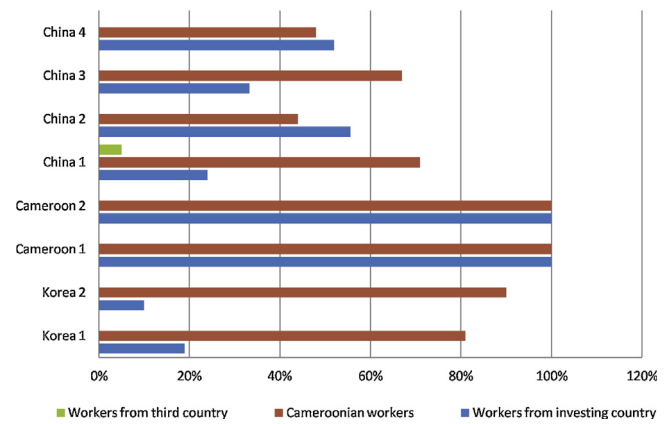


Fig. 2. Nationalities of workers in companies studied.

management and consultation with local government. Some Cameroonian workers have received training in machine operation, basic geology and gold extraction skills.

China 1 employs 84 workers and is the largest of the eight companies surveyed. It also employs a small number of workers from Pakistan. Korea 1, Korea 2 and China 1 employ more workers than the other five companies. All workers in the Cameroonian companies originate from Cameroon. Fig. 2 shows the origin of the workers in the different companies.

All Korean and Chinese companies employ workers from their own countries; these people have higher salaries than Cameroonians. Company managers explained in interviews that expatriate workers experience difficult living conditions and health problems and that for these reasons, using local employees is preferable. However, the reality is that workers from the companies’ country of origin are still used even for unskilled tasks.

Apart from the two Cameroonian companies, the Korean companies have the largest proportion of local employees (Fig. 3). Korea 1 has 40 local staff, all of whom have basic training. China 1 employs 60 Cameroonians with relatively higher investment but only 25% of these workers have received any training. China 3 is a typical Chinese family business which has only recently started operating in Bétaré-Oya and has not trained any local workers. China 3 has been operating in Gabon for several years and many of their Chinese workers have already worked elsewhere in Africa. China 4 has only recently started mining and therefore has fewer local workers and has provided less training.

Very few of the expatriates speak English, French or any local languages. They depend upon Cameroonian interpreters for their limited interactions with local people. We encountered several

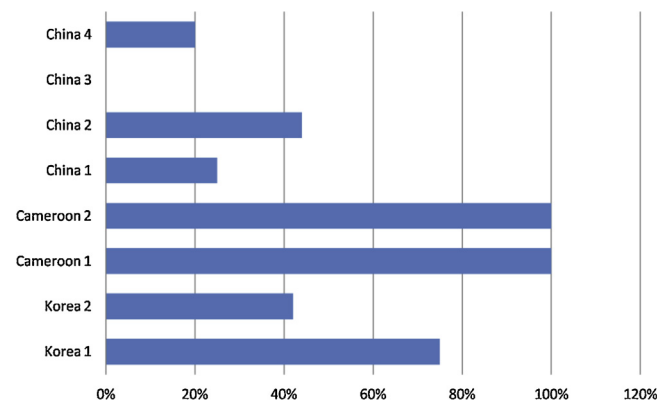


Fig. 3. Percentage of trained local people on staff.

Cameroonians with a working knowledge of Mandarin apparently acquired through working in the field and learned from their Chinese colleagues. Several Chinese workers had experience in other African countries, notably Gabon and Ghana. The Chinese workers have two-year working visas obtained for them by the Chinese managers of the companies. They are able to renew these visas and many of the workers have operated in Africa for several years.

In Bétaré-Oya, mining investors have created limited employment opportunities for local people. Compared to the traditional artisanal miners operating purely manually, engaged in activities which provide more employment opportunities, foreign investors operate with mechanical equipment, which is less labour-intensive than manual exploitation. Most of those employed from local communities work as drivers, excavator operators, guardians and occasionally, as geology technicians. The small-scale companies, being mechanized because of culture and language differences, prefer employing workers from their home countries, such as China.

4.4. Marketing of mineral products

The CAPAM purchases gold and diamonds directly from local artisans, including small-scale mining companies in Bétaré-Oya (Nodem et al., 2012). The CAPAM agreement requires that 60% of the production value belongs to the operators and 30% goes to the Government of Cameroon. The remaining 10% is distributed to local authorities and artisans, and only 1.5% goes to the original local permit holders (CAPAM, 2012; Paul, 2012). However, our observations suggest that this distribution of benefits may not be respected.

Both of the Korean companies have their own marketing department based in Korea and all of their gold is exported directly to Korea. As China 1 is a partnership with Middle Eastern investors, its gold is exported directly to China and the Middle East. China 2 has an office in Yaoundé and has separate divisions dealing with gold production and trading but we could not determine the marketing pathway. China 3 states that it sells all of its products to the Government of Cameroon. China 4 has just commenced exploitation and has not yet produced any gold. The chairman of Cameroon 2 is based in the USA and gold is sold partly in Cameroon and partly there. All companies refine gold and sell it in bars of 5 kg or 10 kg.

There are countless examples of success stories on mineral marketing which the Government of Cameroon could draw on for inspiration. In Ghana, for example, the Precious Minerals and

Marketing Corporation was established specifically to buy minerals from artisanal miners and to sell them profitably in order to enhance foreign-exchange earnings from the sector. Since the legalization of small-scale mining in 1989, hundreds of millions of dollars in gold and diamonds have been collected from operators (Hilson, 2001). Similar developments have taken place in South Africa, where small-scale mining is defined as mining activity employing less than 50 people and with an annual turnover of less than 7.5 million Rand. At the artisanal level, access to market is unsystematic and haphazard without any central buying facilities. The Department of Trade and Industry has provided limited assistance to artisanal miners but most are unaware of the service (Dale, 1997; Mutemeri and Petersen, 2002).

In Cameroon, CAPAM is supposed to channel mineral resources within formal economic circuits in the same way as the Precious Minerals Marketing Corporation of Ghana. However, CAPAM provides great flexibility to any signatories of CAPAM contracts to market minerals extracted with artisanal mining permits. Although CAPAM stipulates a large number of regulations for small-scale mining companies, the legislation lacks detailed instructions concerning implementation. The regulations require that a permanent committee under the management of CAPAM should ensure that all mined gold is presented, weighed and registered. This committee appears to function only intermittently, if at all: the ability of CAPAM to fully regulate small-scale gold mining is limited.

4.5. Assessment of mining potential

Informants were asked to offer opinions on potential economic, environmental and social issues that would influence the future development of mining industries in Eastern Cameroon. The survey focussed on six potential issues which were ranked on a 1–5 scale. Fig. 4 shows that most respondents expect market conditions to improve. Officials interviewed from Korea 2 and China 3 considered mineral resource potential in Bétaré-Oya to be low but all other interviewed were more positive. They thought there were still significant unexploited gold reserves that would enable them to operate for the next five years. All respondents claimed their activities provide training, employment and other benefits for local people. They argued that they invested in improved local infrastructure such as bridges, roads, medical centres, and that they pay taxes to the local government.

However, those interviewed stated that conditions for new investments were unfavourable for a number of reasons. The first

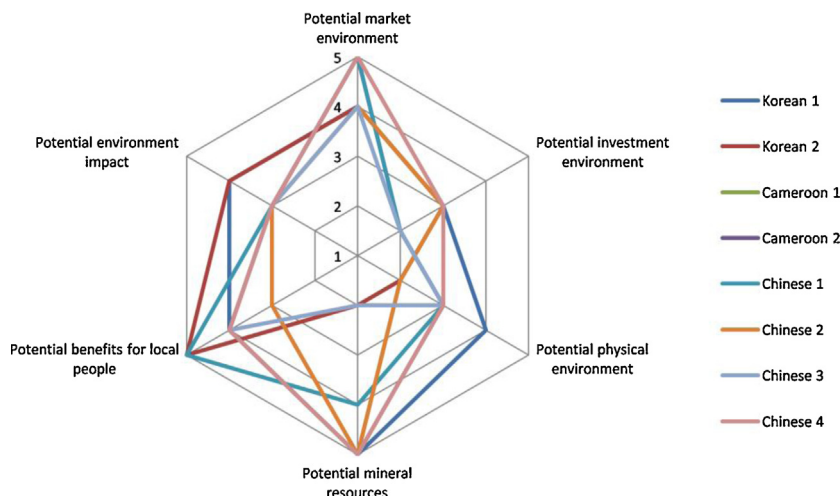


Fig. 4. Company perceptions of future potential of gold mining in East Cameroon.

concerned a new tax code which the Government of Cameroon was about to apply at the time of writing. It aims to increase tax levels on mining investors. Second, some individuals interviewed claimed that an increase in the number of investors was intensifying competition. Development of the Lom Pangar Hydropower Project (LPHP) in the lower reaches of the Lom River is a priority for the Government of Cameroon, as it will supply low-cost hydropower to the area. This dam will be located downstream from the Bétaré-Oya mines. It is expected to be completed in 2014 (Tumanjong, 2012; World Bank, 2012). Some gold mining sites with high mineral potential will undoubtedly be flooded with the construction of this dam. Effluent from the small-scale mines will flow into the dam. The dam will restrict access to a number of gold deposits in the Bétaré-Oya area.

Researchers have reported that mining activities have a host of negative environmental impacts, citing water pollution, habitat destruction, health impacts and threats to fisheries (Hinton et al., 2003; Vieira, 2006; Zwane et al., 2006). No information was available on mercury contamination, although local people insisted that water quality was deteriorating. Investors claim that no mercury is used to amalgamate gold but we were unable to verify this. Mercury was certainly used in the recent past and we did not observe any signs of alternative cyanide extraction systems. Extraction, therefore, likely still involves mercury, which is illegal. When questioned about environmental issues, officials interviewed from the companies argued that the taxes they pay to the government should fund environmental protection.

There is a proliferation of small-scale Asian-financed mines in Southeast Cameroon and in several other parts of the Congo Basin. Gold is predominantly mined by Chinese companies and both gold and diamonds are worked by Koreans. The miners are moving into areas where African artisanal miners have previously operated. Whereas most foreign nationals working in Africa are located in the larger cities or engaged in large-scale investment projects, the small-scale miners are driving a highly dispersed pattern of settlement in remote areas. In Bétaré-Oya, Asian nationals all worked in mines up until 2012 but in 2013 a Chinese operated restaurant was operating and some Asian nationals were beginning to cultivate market gardens.

5. Discussion and conclusion

This paper has described a new model of artisanal and small-scale gold mining in Cameroon. Small-scale gold mining is a new development in Cameroon but we have heard anecdotal reports of similar patterns of development in several other African countries. Only two of the eight companies surveyed in the study reported in this paper are operated by Cameroonians; the balance is managed by foreign owners, with Cameroonian involvement confined to unskilled or semi-skilled labour.

Small scale-mines differ from traditional artisanal mines operated by local communities. Expatriates working at small-scale mines cooperate closely with artisanal miners, and mine sites are located alongside areas secured through artisanal permits. Regulatory and legislative loopholes in the mining sector, poor governance and the potential for large profits are fuelling expansion of this new business model.

In this study, we found that the populations of Asian workers were poorly integrated into the local African communities. They live in enclaves, bring in supplies from outside and spend very little money on local produce. There is little social contact between expatriates and local people. This contributes to a situation where misunderstandings can arise and also limits the likelihood that mining activities will make significant contributions to local economies.

Small-scale mining operations are not inherently bad; they could contribute to economic growth and to local livelihood improvements. Since they are less mechanized and do not require the same levels of technically sophisticated workforces as large industrial operations they might be expected to provide more employment for local people and contribute more to local economies. But governance in remote rural areas has been characteristically bad Cameroon, which has affected the mining sector. Governance weaknesses render these remote African populations vulnerable to negative environmental and social impacts and the expanding small-scale mines are contributing little to any improvement in their livelihoods.

Mining could generate secondary activities and provide markets for agricultural products. Infrastructure built to access mines could encourage agricultural development. Local infrastructure should be built or improved and this should meet local development needs in sectors other than mining but again the investments in infrastructure are rudimentary. With the continuing arrival of more Asian miners the potential benefits are high for both increasing the level of economic activity and also for the transfer of technology to local workers. If existing regulations were respected, mining taxes would have to be paid, environmental issues would have to be addressed, the use of mercury would have to be halted, mined-over sites would have to be restored, and soil and water quality would have to be monitored. Some regulation of the movement, skills acquisition and duration of stay of foreign workers would be required. National regulations require that local staff is trained and insured and it is implicit that national workers should progressively take over much of the work on the ground. However, there is little evidence that this is happening.

During a return visit to Cameroon in December 2013, the number of mines and Chinese nationals had increased significantly. We anticipate that this trend will continue and that the proliferation of small-scale Asian investments in mining will result in an uncontrolled and dispersed pattern of development in remote rural areas of Africa. The potential for small-scale mining to provide benefits to local economies in remote areas will not be realized without significant improvements in the regulation of small-scale activities.

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