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South-South labour migration and the impact of the informal China-Ghana gold rush 2008–13

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Abstract: This paper examines irregular South-South migration from China to Ghana, and the role it has played in transforming livelihoods and broader developmental landscapes. It looks at the entry from the mid-2000s of approximately 50,000 Chinese migrants into the small-scale gold mining sector. They were mainly from Shanglin County, an area of alluvial gold mining. In Ghana, they formed mutually beneficial relationships with local miners, both legal and illegal, introducing machinery that substantially intensified gold production. However, the legal status of Chinese miners was particularly problematic as, by law, small-scale mining is restricted to Ghanaian citizens. In mid-2013 President Mahama established a military task force, which resulted in the deportation of many Chinese miners. This paper examines the experiences of undocumented Chinese migrants and Ghanaian miners. Findings are that this short-lived phenomenon has had long-lasting effects and significant consequences for Ghanaian and Chinese actors, as well as transforming economic, political, and physical landscapes in Ghana.

Keywords: Ghana, China, gold rush, small-scale mining, corruption, South-South migration

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1 Introduction

From the mid-2000s to 2013, approximately 50,000 irregular Chinese migrants entered Ghana to engage in small-scale gold mining. These migrants overwhelmingly hailed from Shanglin County, Guangxi Zhuang Autonomous Region—an area with a tradition of alluvial gold mining, and also a nationally designated ‘poverty-stricken county’ (*pinkun xian*) that is home to the Zhuang ethnic minority group. Upon arriving to Ghana, the Chinese miners introduced new machinery and technology that have dramatically increased the production of gold, at the cost of serious environmental degradation.

The arrival of the Chinese miners was controversial, not least for reasons related to their legal status. According to the *Minerals and Mining Act 2006* (Act 703, Section 83a), artisanal and small-scale mining (ASM) is reserved for Ghanaian citizens (Parliament of the Republic of Ghana 2006). Thus, it is illegal for any foreign nationals to engage in small-scale mining operations. Until recently, Ghanaian miners could apply for a 25-acre land concession and a license from the Minerals Commission allowing them to mine. However, much of the small-scale mining undertaken by Ghanaians is unregistered, and therefore unlawful. Such illicit mining is known colloquially as *galamsey*. In Ghana, Chinese miners found ways to integrate themselves into the widespread illicit gold mining sector (Crawford and Botchwey 2016; Hilson et al. 2014; Teschner 2012).

Many of the Chinese miners formed mutually-beneficial relationships with local people and stimulated local markets. However, their presence also caused conflict in places, notably where disputes occurred between local artisanal miners and Chinese miners over access to communal mining sites, at times turned over to Chinese miners by some locals, with the connivance of chiefs and other public officials. In particular, the Chinese miners have been accused of displacing and outcompeting local alluvial gold miners, feeding into widespread corruption, and stealing Ghanaian wealth through gold smuggling (Abid et al. 2013). For a number of years, it seemed as though the government was simply ignoring the phenomenon. However, in May 2013, media pressure eventually forced former President Mahama to establish a military-style task force. This resulted in the arrest and deportation of many foreign miners—most of whom were Chinese—with many more departing ‘voluntarily’ to escape the crackdown (Kaiman and Hirsch 2013; Loubere and Crawford 2017; Tschakert 2016).

In the wake of the 2013 task force, the numbers of Chinese miners in the country has reduced. However, the consequences of this intense (and actually ongoing) episode have been significant and transformative. The mechanization and intensification of Ghana’s small-scale alluvial mining sector—mainly due to the new technologies introduced by the Chinese miners—has irreversibly changed the way alluvial mining is undertaken in the country, and in many cases it can no longer be described as artisanal. Intensified mining has also resulted in widespread environmental destruction of land and water bodies. The serious nature of this can be seen in the Ghanaian government’s controversial decision to declare a moratorium on all small-scale mining—both legal and illegal—for 6 months starting in April 2017, extended for a further 3 months in November, and backed-up by a second military task force (Operation Vanguard).¹ At the time of writing (January 2018), no official statement had been issued to lift the ban, while the military crackdown had reportedly led to the arrests of more than 500 miners and the seizure of mining equipment.

¹ Awaih (1 August 2017), see <https://www.graphic.com.gh/news/general-news/operation-vanguard-launched-to-wipe-out-galamsey.html>

This paper examines this phenomenon of irregular South-South migration into Ghana's informal alluvial mining sector. It addresses the following question: what impact does mass migration of this kind have on the livelihoods of informal miners (both Chinese and Ghanaian), as well as on wider economic, environmental, and political landscapes in Ghana? The paper is divided into five sections. The following section provides a review of key literature on Chinese migration to, and mining in, Africa. The third section focuses on the recent example of irregular migration of Chinese miners to Ghana to undertake small-scale alluvial gold mining. The fourth section explores some of the implications of this migration event for both Chinese and Ghanaian miners, and the wider consequences in Ghana. Finally, the conclusion argues that the impact and effects of this intense phenomenon have been significant and long lasting—not only for the actors involved, but also for the ASM sector and for economic, political, and physical landscapes in Ghana more broadly. It concludes by identifying conceptual and empirical gaps that remain for future research.

The paper is based on fieldwork undertaken in both Ghana and China. In Ghana, interviews were conducted in mid-2014 with officials and small-scale miners in and around Dunkwa-on-Offin, the municipal capital of the Upper Denkyira East Municipality in the Central Region of Ghana, where there was reportedly a sizable number of Chinese miners before the 2013 task force. Interviews were also conducted with key informants in Accra. In China, interviews were undertaken in mid-2017 with returned miners and their families, as well as with local officials and mining-related businesses in Shanglin County, Guangxi Zhuang Autonomous Region.

2 South-South migration from China to Africa

Chinese migration to Africa has become a significant economic and political issue, both globally and on the African continent (Brautigam 2009; Broadman 2007; Cardenal and Araujo 2014; Mohan and Tan-Mullins 2009). However, detailed and systematic research on the extent and nature of this mass migration—or on its developmental impact—is limited. As Chee-Beng Tan notes in the *Routledge Handbook of the Chinese Diaspora*: ‘There have been rather few academic studies on the Chinese in Africa’ (Tan 2013: 6). Indeed, the data on the number of Chinese migrants in Africa remain speculative and estimates vary considerably. While there is consensus that the Chinese population in Africa has ‘increased rapidly in recent years’ (Li 2013: 62–64), there is still significant ‘paucity’ of data on Chinese migrant flows to Africa, particularly with regard to the types and numbers of migrants (Mohan and Tan-Mullins 2009: 591).

The few existing detailed investigations into Chinese migration to Africa point to the diversity that exists within and between Chinese migrant communities across the continent (French 2014). Researchers illustrate that ‘new immigrants’ comprise ‘all kinds of people’ (Mohan and Tan-Mullins 2009: 591). Chinese communities in Africa include official migrants connected to Chinese state-related projects (e.g. in construction); however, there are increasingly large numbers of independent and largely unregulated migrants, which has resulted in a ‘cleavage between official channels and more informal ones’ (Mohan and Tan-Mullins 2009: 589). While it is widely acknowledged that this type of irregular migration from China to Africa has increased substantially in recent years, it has not been well-documented or recorded and remains an under-researched field of study (Kaplinsky and Morris 2009: 558). Nevertheless, despite this lack of detailed information, or the fact that the increasing presence of Chinese migrants in informal sectors in African countries has, in some cases, created employment for low-skilled African workers, research has shown that the growing number of Chinese nationals in Africa has, in some instances, led to growing resentment and opposition (Abid et al. 2013; Ajakaiye and Kaplinsky 2009; Tschakert 2016; Wang and Elliot 2014).

In the case of Ghana specifically, there are late 19th century records of the British colonial government bringing indentured Chinese labourers to the former Gold Coast (now Ghana), including a small group of 16 Chinese miners and technicians brought to work in the gold mines in 1897 (Li 2012: 74–75). After independence in 1957, a relatively small Chinese business community established itself in Ghana, mainly investing and working in the catering and casino industries, as well as in small-scale agriculture (Cook et al. 2016). In the 21st century, the number of Chinese non-resident migrant workers in Ghana has increased, particularly in association with large-scale government-to-government infrastructure projects, such as road construction, the Bui dam, and football stadiums constructed for the 2008 Africa Cup of Nations tournament. This type of regular migration—tied to official construction projects—is usually short-term, and the number of Chinese citizens entering Ghana through this route has remained relatively small. Barry Sautman and Yan Hairong (2007) estimated that there were approximately 6,000 Chinese migrants in Ghana in 2004, yet numbers have increased substantially since then, primarily due to the large number of irregular migrants. According to the Ghanaian Immigration Service, there were about 18,300 arrivals of Chinese citizens in 2012 and 20,300 in 2013. It is believed that many of these entrants were related to the small-scale mining boom discussed in this paper, and such official figures do not include those miners who entered Ghana illegally through porous borders, especially from Togo where Chinese nationals have visa-on-arrival access.²

3 From Shanglin county to Ghana and back again

From the mid-2000s onwards, small numbers of foreign miners started coming to Ghana to engage in artisanal gold mining. The hike in gold prices in 2008 prompted a rush of foreign miners into the country, predominantly from China. By 2013, at the height of this gold rush, Chinese news outlets estimated that around 50,000 miners had come to Ghana from China (Kane 2013; Lu 2017)—a figure that has been substantiated in interviews with returned miners and local officials in Shanglin county.³ The vast majority of Chinese miners in Ghana hail from Shanglin County in the Guangxi Zhuang Autonomous Region, and came to be known in Ghana as the ‘Shanglin Gang’. Shanglin, whose population is primarily ethnically Zhuang (a minority group), has a long historical tradition of gold mining. Throughout the 1980s, residents of Shanglin engaged in gold mining locally and developed their own specialist alluvial mining machinery, such as trommels (i.e. wash plants), crushing machines (*changfa*), as well as water platforms, pumps, and suction equipment to assist in dredging for river gold. In the 1990s, they migrated domestically to engage in small-scale mining in the northern border areas of Xinjiang and Heilongjiang, bringing their large machines with them by train. This resulted in conflicts with locals in the mining areas, prompting a governmental response making it more difficult for the miners to operate in other parts of China. With this tightening of regulations, the Shanglin miners looked outward and began searching for mining opportunities in other countries.⁴ From the mid-2000s, stories of people ‘striking it rich’ in Ghana resulted in a steady—and then rapid—exodus of Shanglin miners to the country, where they reportedly established over 2,000 mining operations (He 2013).

On arrival in Ghana, the majority of the Shanglin miners started mining in the rural areas surrounding Kumasi, Obuasi, and Takoradi, compensating land owners—including traditional chiefs—with usage fees. Officials from local government and other government agencies

² Personal correspondence.

³ Interviews with returned miners and officials, Shanglin County, Guangxi, 15 and 18 August 2017.

⁴ Interviews with returned miners, Shanglin County, Guangxi, 16 August 2017.

demanded payments to ‘turn a blind eye’ to their activities or, in the case of immigration officials, for the provision of (false) work permits (Song 2013).⁵ Mining activities have generally been financed by individuals or small groups of Chinese nationals. Investors then employ workers from China who are promised a fixed monthly wage, plus a small percentage of the gold income, as well as local Ghanaians who are paid at a much lower daily rate than the Chinese workers. At the height of the gold rush, huge sums of money were being sent from Ghana to China from sales of gold—with estimates indicating the amount outstripped the Ghanaian governmental revenue (He 2013; Song 2013).

Prior to the arrival of the Chinese miners, artisanal gold mining in Ghana had used traditional and rudimentary methods—relying mainly on pick, shovel, and bowl. Shanglin miners changed this through the introduction of technology and machinery (Crawford et al. 2015: 12). This equipment had largely been developed in Shanglin County, and there are currently three companies producing the mining machinery locally for sale worldwide, with the primary customer base being Shanglin miners in other countries. The machines are a substantial investment, usually costing approximately one million yuan (US\$150,000), and an additional 20,000 yuan (US\$3,000) for shipment to Ghana. Chinese miners also brought considerable amounts of capital to pay for living expenses, rent, and bribes to officials and local elites. Most of this money is pooled by investor groups consisting of close family and friends. It comprises both savings and money borrowed from financial institutions and/or loan sharks in Shanglin County, which puts considerable pressure on the miners to successfully find gold.⁶ This combination of new technology, capital, and pressure to produce resulted in a huge intensification of production—both in collaboration with Ghanaian licensed, small-scale concession-holders, and on unlicensed land obtained from chiefs and other landowners.

While collaboration between Chinese and Ghanaian miners resulted in mutual benefits and boosted local economies (as discussed below), the involvement of the Shanglin miners was also controversial for several reasons. First, and at a fundamental level, alluvial mining undertaken by Chinese miners in Ghana is illegal. As noted above, this type of small-scale mining is restricted to Ghanaian citizens by law (Parliament of the Republic of Ghana 2006). Thus, *all* foreign miners and many unregistered Ghanaian artisanal miners—the so-called *galamsey*—have been operating illicitly. Second, the scale of environmental degradation of both land and water bodies intensified due to the mining practices. The introduction of machinery to facilitate mining in rivers is not only illegal, but has severely polluted many of the country’s waterways. This has had serious adverse consequences for the provision of potable water and the aquatic eco-system more broadly (CSIR - Water Research Institute 2013). Third, while sales of gold from small-scale mining to the Precious Minerals Marketing Company (PMMC)—the official government gold buying and exporting agency—increased substantially at this time, there have been accusations of gold being smuggled out of the country by Chinese miners (Crawford and Botchwey 2016). However, interviews with returned miners in Shanglin has not directly supported this allegation. Rather, miners state that they sold gold to informal middlemen in Ghana, many of whom are also Chinese citizens—mainly from Zhejiang and Fujian Provinces—who then provide cash and/or transfer funds directly to bank accounts in China.⁷ Fourth, while this phenomenon of migrant Chinese miners was mostly characterized by collaboration with locals, there were also instances of conflict resulting in injuries and even death. Chinese miners sometimes were the victims of robberies, and have responded by

⁵ Interviews with a Chinese journalist and a Chinese businessman who are primarily based in Ghana, Nanning City, 22 August 2017.

⁶ Interviews with mining machinery company and returned miners, Shanglin County, Guangxi, 15-16 August 2017.

⁷ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

arming themselves with firearms, such as shotguns (Hirsch 2013). Returned miners in Shanglin acknowledged that all mining groups had multiple guns—often up to five guns per group of 10 miners—which were used primarily as deterrence and for hunting. Rather shockingly, they also stated that these weapons were often purchased directly from the police, and for an extra fee even come with an ‘official’ registration certificate, giving the transaction the illusion of legality.⁸

Initially the Ghanaian government was slow to act in the face of this illegality, despite the situation being described as ‘out of control’ and characterized by a ‘culture of impunity’ by a senior official.⁹ However, increasingly adverse coverage by the Ghanaian media, with a particular focus on local conflicts and environmental destruction, ultimately pushed the Government of Ghana into action (Abid et al. 2013). In May 2013, former President Mahama acknowledged that ‘we have a problem’ and established an Inter-Ministerial task force aimed at combatting illegal small-scale mining. The President was careful to include all illegal mining activities in the task force’s remit; however, the sub-text was clear—this was a measure aimed at foreign miners, especially Chinese nationals. The task force took on the form of a military operation jointly administered by the army and police. It resulted in the deportation of 4,592 Chinese nationals, as well as smaller numbers of citizens of Niger, Togo, and Russia (Modern Ghana 2013; Tschakert 2016). Many more Chinese miners also voluntarily left the country in the face of the crackdown (He 2013).¹⁰

The number of Chinese miners in Ghana has reduced since this first crackdown, but Chinese involvement in small-scale mining has not ceased. Instead, it has become more concealed. Some miners have moved into more remote areas where they are less likely to be discovered (Quartey 2013), while others put their machines in storage, waiting for the political climate to cool before returning to mining in collaboration with their Ghanaian partners.¹¹ Some other Chinese nationals made the transition from direct mining to involvement in mining-related businesses, for instance the hire of machinery or hidden ownership in small-scale concessions that were fronted by Ghanaians. At the time of writing in January 2018, the issue of illicit Chinese involvement in small-scale mining has remained in the media headlines following a moratorium from 1 April 2017 on all ASM operations, legal and illegal, backed by a military crackdown on illegal miners imposed by the new government under President Akufo-Addo (Jamasmie 2017). While the foreign involvement in ASM is considerably less than it was before the first crackdown in June 2013, the continued presence of Chinese miners has led to media coverage, with strained diplomatic exchanges between the Ghanaian Minister of Information, Mustapha Hamid, and the Chinese Ambassador to Ghana.¹² As with the crackdown in 2013, Chinese miners in Ghana are currently maintaining a low profile and waiting for the political winds to change direction again.¹³ It is clear, therefore, that although the intense period of China-Ghana irregular migration associated with small-scale mining has reduced, it remains ongoing, and continues to have significant implications

⁸ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

⁹ Interview with senior official from Environmental Protection Agency, Accra, 9 April 2014.

¹⁰ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

¹¹ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

¹² Andoh (10 May 2017), see <https://www.graphic.com.gh/news/general-news/call-chinese-illegal-miners-to-order-hamid-tells-chinese-ambassador.html>. Media reports have also included the arrest and detention of a Chinese woman allegedly involved prominently in the small-scale mining industry, inclusive of allegations of sexual blackmail against high-ranking Ghanaian politicians and officials (<http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Trading-sex-for-galamsey-536488>) (GhanaWeb 10 May 2017).

¹³ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

for the livelihoods of those involved—both in Ghana and China—as well as on the physical, economic, and political landscapes.

4 The impact of the Chinese gold rush on livelihoods and landscapes

The implications of this relatively short intense migration episode for the people and places involved are numerous and wide-ranging. In this section, we examine the impact that this gold rush has had on the practice of ASM in Ghana; on the physical landscape through environmental degradation; on the economy at the macro-level, as well as at micro-levels for Chinese and Ghanaian miners and their families; and finally, on governance in Ghana, including the impact on the legitimacy and authority of the state.

4.1 Mechanization and intensification of small-scale mining

Upon arriving to Ghana, the Shanglin miners introduced new types of mechanized mining technology and techniques. This transformed ASM into a capital-intensive activity, resulting in scaled-up production and expanded operations in new areas. Mechanization has allowed huge swathes of land—which would have taken years to mine using traditional methods—to be mined in just weeks. This intensification of small-scale alluvial mining is a transformation that will not be reversed. It can be said with confidence that small-scale gold mining in Ghana has changed irrevocably, and in many instances can no longer be described as artisanal.

Although the transformation of the Ghanaian small-scale mining sector would have undoubtedly occurred regardless of foreign involvement, the Chinese gold rush expedited this transformation (Armah et al. 2013; Crawford et al. 2015). Indeed, the machinery now used in Ghana is mostly produced in Shanglin County. The Chinese mining equipment has sometimes been targeted by the crackdowns, with cases of the authorities destroying the equipment when discovered. However, due to their high value, most of the Chinese-produced machinery has been hidden and protected during the crackdown periods. While most of the machines are owned and operated by Chinese miners—with the Ghanaian employees undertaking most of the unskilled heavy labour—there are examples of Ghanaians utilizing machinery left behind by Chinese miners, and even learning how to carry out repairs.¹⁴

4.2 Small-scale mining becomes big business (for some)

One consequence of the intensification of alluvial mining production through mechanization is that the economic rewards are now much greater for those involved—i.e. concession holders, Chinese miners, and *galamsey* operators. One common type of mining operation that continued after the initial crackdowns involves concession holders sub-leasing their land to Chinese miners and splitting the value of the gold production—usually 15 per cent to the concession holder(s) and 85 per cent to the Chinese miners who are effectively doing all the mining.¹⁵ Concession holders reported that a 15-per cent stake can often amount to an income of 15,000 to 25,000 Ghana cedis per week (approximately US\$4,000 to US\$6,500).¹⁶ These findings indicate that the Chinese miners

¹⁴ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

¹⁵ Interviews with small-scale concession holders, Upper Denkyira East Municipality, Ghana, 26 July 2014 and 29 July 2014.

¹⁶ Interviews with small-scale concession holders, Upper Denkyira East Municipality, Ghana, 26 July 2014 and 29 July 2014.

and their local partners have, up until now, managed to find a grey zone allowing them to circumvent the law restricting small-scale alluvial mining to Ghanaian citizens. However, despite being semi-institutionalized at the local level through partnerships with local people, the Chinese miners can never be completely legitimate due to the nativist legislation mentioned above, and because the Chinese miners enter Ghana on tourist visas (which they often overstay) that do not legally allow for employment.

There are undoubtedly substantial risks involved for the Chinese miners in their Ghanaian operations, and the initial investment is capital-intensive. However, it is evident that the Chinese mining operations can be extremely profitable. In a 2014 interview, one Chinese national in Ghana with business clients who were Chinese miners stated that ‘in four to five years, a lot of Chinese millionaires, even billionaires, were produced, continuing on to say that they ‘had worked very hard’.¹⁷ Chinese media reports have also continuously confirmed the large sums that Chinese miners made in the Ghana small-scale alluvial mining sector. For instance, the *21st Century Business Herald*—a Chinese business daily newspaper—reported on the riches made by certain miners from Shanglin, revealing earnings of US\$500 million, and referencing stories of gold bars sent to China as gifts and the purchasing of Ferraris (Ghanaweb 17 May 2013). While interviews with returned miners in Shanglin contradict the claims of gold being smuggled out of Ghana, some miners certainly earned substantial sums, which was then transferred to accounts in Shanglin County. Indeed, the previously cited report referenced one local bank source as stating that in May and June 2011 alone, more than one billion yuan (approximately US\$150 million) was wired into Shanglin from abroad. In our interviews, officials in Shanglin also estimated that in the peak years over 10 billion yuan (approximately US\$1.5 billion) flowed through the county’s financial institutions each year.¹⁸ The interviews with returned miners also suggested that in the best of times 100,000 yuan could be made in gross profit *daily* (approximately US\$15,000), per small-scale mining operation of about eight Chinese miners.¹⁹ Although the media stories of lavish spending by Chinese miners are often exaggerated or untypical, there is no doubt that substantial sums of money were involved in this migration episode, and that fortunes were quickly made by at least some of the Shanglin miners.

However, small-scale mining was not a lucrative business for everyone. While a relatively small number of Chinese and Ghanaian miners have earned huge sums, not everyone has been successful, and many have even lost out from the gold rush. For instance, inequalities amongst Ghanaians involved in small-scale mining have increased substantially. This includes a gendered dimension, as women, children, and many young people are left to extract the ‘scraps’ or remnants left after mechanized alluvial gold mining. This involves re-washing the gravel that remains in heaps of ‘tailings’ at pits that have been abandoned after intensive mining with the Chinese machinery.²⁰

The benefits have also not accrued equally amongst the Chinese. From interviews with returned miners, it appears that those who arrived early (before 2008), were often able to invest in their own equipment and find productive concessions. These miners were thus able to quickly enrich themselves. This group often transferred funds back to China for investment in large urban areas rather than in Shanglin itself—e.g. the buying of property in Nanning, Shanghai, Beijing, and other

¹⁷ Interview with Chinese national, resident in Ghana, Accra, 12 January 2015.

¹⁸ Interviews with local officials, Shanglin County, Guangxi, 15 August 2017.

¹⁹ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

²⁰ Women’s focus group discussion, Buabenso, Upper Denkyira East Municipality, 29 July 2014.

burgeoning real estate markets. They also invested in scaling-up their mining activities in Ghana and other countries in West Africa, such as Cameroon. However, the Chinese miners who went later as wage labourers, rather than investors, were not able to earn such large sums of money. Often these miners attempted to save up for investment in their own machinery as soon as possible. Unfortunately for many of them, they were only able to invest just before the 2013 crackdown. This left many Chinese miners with large debts and no ability to repay without continuing to mine.²¹ Indeed, such first-hand accounts confirm reports of less fortunate Chinese miners, especially those that had arrived shortly before the crackdown in mid-2013: they had not gained sufficient income from gold to repay loans or to afford a flight home, and hence were forced to flee into remoter parts of ‘the bush’ to continue mining in what had become a hostile context (Quarterm 2013).

4.3 Environmental degradation (for all)

Environmental degradation has long been associated with small-scale alluvial mining. This is particularly the case with *galamsey* activities, given the fact that they are illicit in nature making it difficult to affix accountability for any damage caused (Armah et al. 2013; Tschakert 2016). There are particular concerns arising around the destruction of farm lands, streams and rivers being diverted for mining purposes, as well as surface and ground water pollution through the usage of hazardous chemicals—particularly cyanide and mercury for processing gold (CSIR - Water Research Institute 2013). Mechanization has intensified the degradation of both land and water bodies in areas of alluvial mining. Farmland in particular has been extensively destroyed during the scramble to acquire land for small-scale mining from 2008 onwards. Loss of farmland has affected both cash crop (such as cocoa) and food crop production, resulting in adverse effect for both food security and foreign currency earnings (Crawford and Botchwey 2017: 12). On legal concessions, local licensed miners have the responsibility for land reclamation and clean-up, yet respondents in both Ghana and China suggested that license holders would take money from Chinese partners for reclamation purposes, but did not follow through on their legal obligations after mining was complete.²²

While the destruction of farmland has undoubtedly caused serious problems, the destruction of river systems has emerged as a new, and potentially catastrophic form of environmental degradation. Ghana’s waterways have been ravaged by the introduction by Chinese miners of techniques and technology allowing for direct mining within rivers, despite the fact that it is illegal to do so. After the crackdowns, Ghanaian miners have continued this practice using Chinese machinery to dredge the riverbed and process the excavated alluvial material for gold, often with mercury. In interviews, Chinese miners pointed to the fact that very little mercury is actually used and that the disruption to waterways can be easily remedied after mining is complete—thus claiming that their practices are less polluting than large mining companies.²³ However, these individual perspectives probably fail to consider the combined impact of tens of thousands of miners across the country. Indeed, plenty of evidence is available to demonstrate that the gold rush has resulted in severe river pollution—notably the Pra river and its tributaries such as the Offin, which have high levels of water turbidity that causes harm to aquatic ecosystems resulting in loss of aquatic life and more contaminated drinking water. Treatment to make such water potable becomes more difficult and costly (CSIR - Water Research Institute 2013). In 2013, Daniel Mishio—the chairman of Ghana’s national security commission for lands and natural resources—

²¹ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

²² Interview with Assembly member for Pokukrom, Upper Denkyira East Municipal Assembly, 27 July 2014.

²³ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

was quoted as saying that, ‘In certain areas, people don't even get clean drinking water, and in some areas you can see that most of the forest cover has been destroyed. This poses a very big danger to our future’ (Hirsch 2013). In the years following the first crackdown, illegal mining has continued to contribute to the pollution of Ghanaian rivers, and in March 2017 the Ghana Water Company warned that the country would soon have to begin importing water for consumption if illegal mining activities were not curbed (cited in Abdulai 2017, 1). This was a key reason for the Government’s moratorium on all small-scale mining for six months from 1 April 2017.

4.4 Economic impact

The economic impacts of the Chinese gold rush in Ghana have been significant and varied, given the substantial amounts—and unequal distribution—of capital and resources involved. Since the beginning of the gold rush, the contribution of gold production from the small-scale sector to the Ghanaian economy has increased substantially—a direct result of the mechanized production introduced by Chinese miners. Official figures (see Table 1) reveal that the small-scale sector has grown rapidly and extensively in the last decade, particularly from 2010 onwards. The volume of gold from small-scale mining increased seven-fold from 225,411 ounces in 2005 to 1,576,478 ounces in 2013, and also the percentage of total gold production from small-scale mining (in comparison with large-scale mining) has increased from 7.4 per cent in 1995 to 15.2 per cent in 2008, and further to a remarkable 36 per cent in 2013 (Minerals Commission Ghana 2014).

Table 1: Total Gold Production in Ghana

Year	Large Scale Producers (oz)	Small Scale Producers (oz)	Total Ghana Production (oz)	ASM contribution to total gold production (%)
2005	1,913,534	225,411	2,138,945	11
2006	2,090,721	247,063	2,337,784	11
2007	2,239,696	388,594	2,628,290	15
2008	2,378,012	418,943	2,796,955	15
2009	2,564,095	555,737	3,119,832	18
2010	2,624,391	767,196	3,391,587	23
2011	2,697,661	978,611	3,676,272	27
2012	2,856,243	1,481,670	4,337,913	34
2013	2,820,419	1,576,478	4,396,897	36
2014	2,685,399	1,484,793	4,170,192	36

Note: (2014 figures were provisional)

Source: Authors' calculations based on information from Minerals Commission Ghana 2014

Gold is one of Ghana’s main export earners, and the increase in official production clearly has beneficial implications for the government revenue. However, this is tempered by the allegations that significant quantities of gold have been illicitly smuggled out of the country. Indeed, in both the media and public discourse, the Chinese miners have been depicted as stealing the country’s wealth (Loubere and Crawford 2017). While the miners themselves have denied smuggling, saying instead that all gold was sold to middlemen in Ghana, it is unclear how the middlemen—most of whom are Chinese or Indian—convert the gold into financial capital. It may be the case, therefore, that allegations of smuggling are true—at least to a certain extent—as suggested in interviews with Ghanaian small-scale miners (Crawford et al. 2015).

At a micro level, although the most significant economic benefits go to the successful informal miners themselves, benefits can also be distributed more widely through cash injections into the

local economy. During the gold rush, local business people did well from the soaring demands for fuel, food, and rental accommodation. According to one ASM association member, 'local businesses were booming, especially sales of fruits, vegetables, and general food items; locals employed to operate mining machines [by Chinese miners] were paid better wages than those working for local small-scale miners.'²⁴ In his words, 'the town was hot, very busy' and local people 'had money in their pockets'.²⁵ Research has revealed that local traders were upset when the task force chased away the Chinese miners, resulting in a decline in sales.²⁶ This confirmed the study by Liu (2014), who undertook interviews in Dunkwa at the time of the first crackdown in June 2013. Local respondents reported loss of employment—for instance as cooks or laundry women at mining sites—and significant declines in business income. Some local traders even stated: 'we want them [the Chinese miners] to come back' (Liu 2013: 14).²⁷ The Chinese miners have also seen themselves as facilitating the economic transformation of 'backward' areas of Ghana, saying things like: 'before there was nothing' and that the Chinese presence has 'changed and improved the situation of the local people a lot... they wanted us there because they can earn money too.'²⁸

However, economic booms are also characterized by the emergence of losers. Local people who were not able to benefit from the mining have suffered from the rising cost of living, notably food prices and rents, driven up by the high demand. At the height of the boom, basic goods became scarce or unavailable, such as vegetables and meat, reportedly bought up en masse by Chinese miners and taken to their encampments.²⁹ In addition, shortages of diesel became a common phenomenon in Dunkwa due to the high demand for fuel to run the excavators. The high risks involved in gold mining have also left many Chinese miners in difficult situations. Those miners who were unable to find gold, or who were unlucky enough to invest large amounts of capital just before the crackdown, have found themselves laden with high-interest debt from loan sharks. This puts both them and their families back in China in very tenuous situations.³⁰

Further negative effects were due to the switch in land use from farming to mining, with a detrimental impact on agricultural production. This also contributed to rising food prices and reduced availability of locally produced food, with people from outlying villages now more dependent on buying food from markets in Dunkwa (necessitating wage incomes), and less reliant on subsistence production.³¹ The loss of farmland is a significant long-term negative effect, as

²⁴ Interview with journalist, 23 July 2014; with former small-scale miner, 23 July 2014; with ASM association member, 26 July 2014, all Upper Denkyira East Municipality.

²⁵ Interview with licensed small-scale miner and member of the ASM association, Upper Denkyira East Municipality, 26 July 2014.

²⁶ Interviews with local radio journalist, 23 July 2014; with former small-scale miner, 23 July 2014; with ASM association member, 26 July 2014, all Upper Denkyira East Municipality.

²⁷ Liu (2013: 14) reports a worker at a filling (gas) station in Dunkwa as stating that sales were '30-40 thousand litres per day when the Chinese were here; but now after the clamp down, the business dropped sharply to only 1 thousand litres per day'. Additionally, one female market trader is reported as stating emotionally: 'You Chinese people come back to Ghana! Chinese people come back to Ghana! Chinese is job and money! After Chinese were gone, my life is getting tougher. In the past I could earn 200 cedis working for Chinese, but now I have nothing. If you Chinese do not come back, we are going to march to the government to ask for your coming back' (2013: 15).

²⁸ Interviews with returned miners, Shanglin County, Guangxi, 18 and 19 August 2017.

²⁹ Interview with Municipal Assembly official, Upper Denkyira East Municipality 28 July 2014.

³⁰ Interviews with the families of non-miners, Shanglin County, Guangxi, 17 August 2017.

³¹ Interview with municipal education director, Upper Denkyira East Municipality 25 July 2014.

good agricultural land has been destroyed and is no longer fit for cultivation after being sold by local land owners to Chinese miners for short-term financial gain.³²

Therefore, the economic impact has been experienced differently by different economic and social groups, with economic hardship being experienced by those who did not share in the gold boom, either directly or indirectly, including both relatively poor and better-off professional people. Additionally, the Chinese miners themselves experienced the gold rush in a variety of ways, with some profiting immensely, while others found themselves worse off than they were at the outset. This points to a complex and fluid socioeconomic landscape emerging around the Chinese gold rush in Ghana.

4.5 Political impact

Where was the state in this context and what does this episode tell us about the Ghanaian state more generally? This is a particularly pertinent question given the degree of illegality involved. Initially, the government appeared slow to respond to the sudden scramble for the country's mineral resources by local and foreign miners alike. However, by 2012 and 2013 the gold rush started to become a political issue, with the situation being described as 'out of control' and characterized by 'a culture of impunity' by a senior environmental official.³³ The state's inaction became the target of an increasingly critical media, with stories about local conflicts and environmental destruction finding their way to the headlines of major news outlets. This despair over governmental lack of action is typified in an early 2013 *Daily Graphic* article—the country's most established newspaper. Donning the headline 'Deal with illegal miners now', the author states: 'As we look on in helpless amazement, foreigners continue to degrade our lands and pollute our water bodies' (Frimpong 2013).

However, despite this perception of a state missing in action, our research reveals that the Ghanaian state was both active and present—just not effective from a regulatory perspective. Undoubtedly, a number of authorities failed in their responsibilities— including immigration officials, the Minerals Commission, regional and local governments, and the police. Yet, Ghana is not a failed state or even a weak state, as is evidenced by the ongoing crackdowns through the military style operations undertaken by the Inter-Ministerial task force. So why has such pervasive institutional failure occurred at different levels of government? It would seem that the endemic nature of corruption is the main explanatory factor, with politicians and government officials at different levels colluding in the illegal mining activities in a variety of ways. This happened explicitly, with officials taking bribes to 'turn a blind eye', and thus sharing in the benefits of unlawful practices. And it also happened more subtly, with officials of different ministries unlawfully providing formal permits (for a price) that placed the Chinese miners in legal grey zones—e.g. the Chinese miners would be issued work permits by Ghanaian authorities that were not valid according to national law. In interviews, miners said that this created a confusing and precarious situation, as they felt recognized by some parts of the state but not others. To make the situation more complicated, the Chinese miners felt that they often had good working relationships with local elites and the police. One interviewee even told us that the Chinese miners in one area would visit the police station to turn themselves in monthly for breaking the law, and then pay the fine for their transgression.³⁴

³² Interview with small business operator, Wasa Akropong, Western region, 2 April 2014.

³³ Interview with senior official at Environmental Protection Agency, Accra, 9 April 2014.

³⁴ Interviews with returned miners, Shanglin County, Guangxi, 16-21 August 2017.

Allegations of corruption amongst Ghanaian state officials and traditional authorities was a recurring theme in interviews in Ghana. For instance, one Chinese resident in Ghana with first-hand experience interacting with Chinese miners stated that after the task force the Chinese miners were ‘no longer *protected* by the [Ghanaian] government’.³⁵ This is strongly suggestive of a corrupt relationship between the Chinese miners and government officials who are charged with upholding the law. In other words, foreign miners have been protected to a certain extent—at least by some governmental actors—and were thus able to carry out unlawful and highly profitable activities as long as they continue to make financial contributions to their patrons. This interviewee further alleged that that ‘money talks’, and that Chinese miners had made payments to officials at both the top and bottom levels of government, with the latter also expected to channel money to their superiors. He alleged that ‘many people were involved’, including politicians and officials from key government agencies.³⁶

While allegations of corruption against government officials in Ghana or elsewhere is not exactly a surprising finding, the degree of the collusion by those tasked with regulating the small-scale mining sector precisely during the time of the sector’s unprecedented growth is disturbing, and tells us much about the operation of the Ghanaian state. It tarnishes the image of Ghana as a model of democratic governance for Africa, and indicates that political and administrative power is being used—at least by some—as a means of private enrichment rather than public service.

5 Conclusion

This paper has looked at a remarkable phenomenon, the South-South migration from China to West Africa of tens of thousands of irregular migrants to work illicitly in informal small-scale alluvial gold mining in Ghana since 2004, and particularly during the boom years of exceptionally high gold prices from 2010 to 2013. While much South-South migration is from poorer to relatively wealthier countries, for instance Ethiopia to South Africa or Nepal to Malaysia, this was an example of migration from upper-middle income China to lower middle-income Ghana—driven by access to valuable mineral resources. It is notable, however, that this migration flow, as an irregular one, involved predominantly working-class miners from an ethnic minority group in a relatively poor region of China. Although there are parallels with previous historical episodes of long-distance migration from China to the United States and Australia during gold rushes from the 1850s to 1870s, this contemporary episode was facilitated by features of globalization, such as relatively cheap air travel, the ability to ship large machinery around the world, and rapid, cheap telecommunications by which information about opportunities to make money can be quickly spread by ‘word of mouth’ (Reilly 2016). It also stemmed from the Chinese Government’s regulation of internal migration and domestic mining, which encouraged external migration.

The paper has explored the question of what impact mass migration of this kind has on the livelihoods of both Chinese and Ghanaian informal miners, as well as on wider economic, environmental, and political landscapes in Ghana. We conclude that the impact has been significant in a number of dimensions. With mechanization and intensification of production, small-scale gold mining in Ghana has changed irrevocably, and Ghanaian miners now use the machinery and techniques initially introduced by the Chinese miners from Shanglin County.

³⁵ Interview with Chinese citizen resident in Ghana, Accra, 12 January 2015.

³⁶ Interview with Chinese citizen resident in Ghana, 12 January 2015. He stated that those officials *not* benefiting ‘became crazy as there was so much money involved’, which in his view was a key reason for the eventual crackdown by President Mahama.

Despite the small-scale mining being long neglected by the government in favour of large-scale production by transnational mining corporations (Hilson et al. 2014), the proportion of gold produced from small-scale mining has soared to one-third of the country's total output through mechanized production. Economic opportunities for those directly involved are significant, even since the decline of gold prices from its high point of almost US\$2,000 per ounce in 2013. Those Ghanaians at the apex of small-scale gold mining can now earn large amounts of money from mechanized mining, and the income of those employed by the Chinese was higher than from most other types of unskilled labour. For these local actors at least, small-scale mining has moved beyond being a poverty-related activity. It is also evident, however, that there is increased stratification within the small-scale mining industry in Ghana, with the women and children at the bottom of the hierarchy having to eke out a living from the heaps of 'tailings' left over after intensive mining has been completed.

Equally, it is clear that some Chinese miners, themselves from a relatively poor minority ethnic group, have amassed considerable fortunes in a short space of time before returning home to Shanglin County. However, there are also significant inequalities in the labour relations within the small-scale mining groups, dependent on the relative positions as owner or labourer. Amongst the Chinese miners, while the mining groups are often described as collaborative efforts of 'partners' investing together (He 2013), hierarchical structures have also been observed, with individuals or small groups hiring wage labourers from China (Song 2013). This also points to the fact that individual Chinese miners have benefited in Ghana in significantly different ways—with some even being exploited. For instance, in some cases when gold is not discovered, the Chinese employers (i.e. owners of the equipment) have refused to pay the salaries of the Chinese employees.³⁷ These findings mirror research on small-scale mining *within* China—for instance Lu and Lora-Wainwright's (2014) study in Hunan Province—which found that livelihood benefits are highly differentiated, with wealthier investors who began mining earlier profiting at a much higher rate than more marginalized individuals entering at later times. Future research should focus carefully on the cleavages and power differentials that exist within and across groups of Chinese miners, and examine the differentiated impact that the Ghanaian gold rush has had on their livelihoods and the welfare of their households back in China.

Environmental degradation is undoubtedly a serious consequence of unregulated mining. The anti-*galamsey* narrative of government and the media about illegal mining in Ghana has always included criticism of adverse environmental consequences, notably mercury seepage into rivers and streams, with a more nuanced view offered by academic researchers (for instance, Hilson et al 2007; Nyame and Grant 2014: 82). However, the scale of these consequences is now much greater with mechanized and intensified production, resulting in much larger areas of land degradation and the severe pollution of water bodies. It is indeed the case that Chinese miners introduced mechanized production, including the equipment to mine (illegally) in rivers, but such techniques have subsequently been adopted and practiced by Ghanaian miners. The absence of government action in the face of such illegal mining in rivers, both prior to 2013 and post-task force (Crawford and Botchwey 2017), has led to the current crisis where the severe pollution of arterial rivers is now perceived by the Ghana Water Company as threatening future household water supplies. These environmental impacts require further in-depth study to understand how the changes in the physical landscape from intensified mining have impacted on local people's lives and livelihoods more generally.

³⁷ Interviews with returned miners, Shanglin County, Guangxi, 16 August 2017.

While it appeared that the state was largely absent during this dramatic period of mass illicit foreign incursion into small-scale mining, our findings are that both the state and traditional authorities were present and active during this episode—but mainly in a corrupt and self-enriching manner. The abuse by many state officials, politicians, and traditional chiefs of their positions of power and authority for purposes of private wealth accumulation is the key factor that accounts for why illicit and illegal activities involving Chinese and other foreign miners continued unchallenged for so long. Indeed, we found that Chinese miners were actually protected by state officials and politicians, at least until the time of the initial crackdown, when former President Mahama was finally pressured into taking action.

The military-style task force in mid-2013 slowed down this episode of South-South irregular migration with the arrest and deportation of over 4,500 Chinese miners, and the voluntary repatriation of many others. That said, the impacts and consequences continue to this day, not least the irreversible mechanization and intensification of small-scale gold mining in Ghana, and the accompanying escalation of environmental destruction, most notably to water bodies. This has led to the current crisis with President Akufo-Addo imposing a six-month moratorium on all small-scale mining from 1st April 2017, extended for a further three months, and backed up by a further military crackdown on illegal mining. This crisis has again included a focus on continued Chinese involvement in small-scale mining in Ghana, including the arrest of a small number of Chinese suspects and scandalous allegations about their involvement with high-ranking politicians (GhanaWeb 10 May 2017).

This paper has focussed on analysing this migration phenomenon as experienced in Ghana, including interviews with Chinese residents in Ghana and the perspectives of returned Chinese miners and their families back in Shanglin. However, further research is needed in order to analyse in more detail the segmentation and differentiated outcomes for individuals within the Chinese mining groups, and to better understand the complex ways that this episode has impacted upon the sending area in China. Further research is also required in Ghana, not least because Chinese involvement in small-scale mining did not end in mid-2013, but has continued in different and more discrete ways. Some Chinese miners have re-invented themselves as entrepreneurs, and hire out the machinery and equipment for small-scale mining, while others have continued to finance mining activities fronted by Ghanaians. Others bide their time, waiting for the political winds to change with their machinery in storage, while in some areas the Chinese miners continue to operate, relatively unperturbed.

Building on this research, further fieldwork in both Ghana and Shanglin County in China will aim to provide a critical examination of South-South labour migration and the complex web of relationships that connect peripheral rural China with the margins of Ghana. Such research is aimed at shedding light on ‘the processes implicit within global capitalism that prompt large numbers of precarious and marginal people to move from one place to another—and sometimes back again—in search of more secure livelihoods’ (Loubere and Crawford 2017: 121), as well as the accompanying patterns of resource extraction, accumulation, exploitation, and inequality within and between the people involved in both places.

References

- Abid, R.Z., S.A. Manan, and Z.A. Amir (2013). "Those Nation Wreckers Are Suffering from Inferiority Complex": The Depiction of Chinese Miners in the Ghanaian Press'. *International Journal of Society, Culture & Language*, 1(2): 34-49.
- Abdulai, A.G. (2017). 'The Galamsey Menace in Ghana: A Political Problem Requiring Political Solutions'. Policy Brief No.5, June 2017. Accra: University of Ghana Business School.
- Andoh, D. (10 May 2017). "Call Chinese Illegal Miners to Order" – Hamid Tells Chinese Ambassador'. *Daily Graphic*, Accessed at: <https://www.graphic.com.gh/news/general-news/call-chinese-illegal-miners-to-order-hamid-tells-chinese-ambassador.html>
- Ajakaiye, O., and R. Kaplinsky (2009). 'China in Africa: A Relationship in Transition'. *The European Journal of Development Research*, 21(4): 479-84.
- Armah, F.A., I.N. Luginaah, J. Taabazuing, and J.O. Odoi (2013). 'Artisanal Gold Mining and Surface Water Pollution in Ghana: Have the Foreign Invaders Come to Stay?' *Environmental Justice*, 6(3): 94-102.
- Awiah, D.M. (1 August 2017). "Operation Vanguard' Launched to Wipe Out Galamsey'. *Daily Graphic*, Accessed at: <https://www.graphic.com.gh/news/general-news/operation-vanguard-launched-to-wipe-out-galamsey.html>
- Brautigam, D. (2009). *The Dragon's Gift: The Real Story of China in Africa*. Oxford and New York: Oxford University Press.
- Broadman, H.G. (2007). *Africa's Silk Road: China and India's New Economic Frontier*. Washington D.C.: World Bank.
- Cardenal, J.P., and H. Araujo (2014). *China's Silent Army: The Pioneers, Traders, Fixers and Workers Who Are Remaking the World in Beijing's Image*. London: Penguin.
- Cook, S., J.X. Lu, H. Tugendhat, and D. Alemu (2016). 'Chinese Migrants in Africa: Facts and Fictions from the Agri-Food Sector in Ethiopia and Ghana'. *World Development*, 81: 61-70.
- Crawford, G., C. Agyeyomah, G. Botchwey, and A. Mba (2015). 'The Impact of Chinese Involvement in Small-Scale Gold Mining in Ghana'. Research Report. London: International Growth Centre, LSE.
- Crawford, G., and G. Botchwey (2016). 'Foreign Involvement in Small-Scale Gold Mining in Ghana and Its Impact on Resource Fairness'. In M. Pichler, C. Staritz, K. Küblböck, C. Plank, W. Raza, and F.R. Peyré (eds.), *Fairness and Justice in Natural Resource Politics*. London and New York: Routledge.
- Crawford, G., and G. Botchwey (2017). 'Conflict, Collusion and Corruption in Small-Scale Gold Mining: Chinese Miners and the State in Ghana'. *Commonwealth & Comparative Politics*: [dx.doi.org/10.1080/14662043.2017.1283479](https://doi.org/10.1080/14662043.2017.1283479)
- CSIR - Water Research Institute (2013). 'Impact of Small-Scale Mining on the Water Resources of the Pra River Basin'. Accra: CSIR.
- French, H.W. (2014). *China's Second Continent: How a Million Migrants Are Building a New Empire in Africa*. New York: Alfred A. Knopf.
- Frimpong, E.D. (15 March 2013). 'Deal with Illegal Miners Now'. *Daily Graphic*, Accessed at: <http://www.graphic.com.gh/editorials/deal-with-illegal-miners-now.html>.

- GhanaWeb (10 May 2017). 'Fight Chinese Sex Blackmailers Now'. Accessed at: <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Fight-Chinese-sex-blackmailers-now-MP-536454>
- GhanaWeb (17 May 2013). 'Chinese Strike About \$500m Worth of Gold in Ghana With Secret Method'. Accessed at: <http://www.ghanaweb.com/GhanaHomePage/business/Chinese-strike-about-500m-worth-of-Gold-in-Ghana-with-secret-method-274243>
- He, H.F. (June 6 2013). 'Quest for Gold in African Mud'. *South China Morning Post*. Accessed at: <http://www.scmp.com/news/china/article/1254333/quest-gold-african-mud>
- Hilson, G., A. Hilson, and E. Adu-Darko (2014). 'Chinese Participation in Ghana's Informal Gold Mining Economy: Drivers, Implications and Clarifications'. *Journal of Rural Studies*, 34: 292-303.
- Hilson, G., C.J. Hilson, and S. Pardie (2007). 'Improving Awareness of Mercury Pollution in Small-Scale Gold Mining Communities: Challenges and Ways Forward in Rural Ghana'. *Environmental Research*, 103: 275-287.
- Hirsch, A. (April 23 2013). 'Influx of Chinese Goldminers Sparks Tensions in Ghana'. *The Guardian*. Accessed at: <https://www.theguardian.com/global-development/2013/apr/23/influx-chinese-goldminers-tensions-ghana>
- Jamasmie, C. (May 2 2017). 'Illegal Chinese Gold Miners Blamed for Pollution, Violence in Ghana'. *MINING.com*. Accessed at: <http://www.mining.com/illegal-chinese-gold-miners-blamed-pollution-violence-ghana/>
- Kaiman, J., and A. Hirsch (June 7 2013). 'Ghana Arrests 168 Chinese Nationals in Illegal Mining Crackdown'. *The Guardian*. Accessed at: <https://www.theguardian.com/world/2013/jun/06/ghana-arrests-chinese-illegal-miners>
- Kane, M. (August 23 2013). 'Ghana Takes Action Against Illegal Chinese Miners'. *Institute for Security Studies*. Accessed at: <https://issafrika.org/iss-today/ghana-takes-action-against-illegal-chinese-miners>.
- Kaplinsky, R., and M. Morris (2009). 'Chinese FDI in Sub-Saharan Africa: Engaging with Large Dragons'. *The European Journal of Development Research*, 21(4): 551-69.
- Li, A.S. (2013). 'China's Africa Policy and the Chinese Immigrants in Africa'. In C.B. Tan (ed.) *Routledge Handbook of the Chinese Diaspora*. London and New York: Routledge.
- Li, A.S. (2012). *A History of Overseas Chinese in Africa to 1911*. New York: Diasporic Africa Press
- Liu, S.N. (2014). 'Ghanaians' Perception of Chinese migrants in Ghana'. Unpublished mimeo.
- Loubere, N., and G. Crawford (2017). 'There and Back Again: Conceptualising the Chinese Gold Rush in Ghana'. In I. Franceschini, K. Lin, and N. Loubere (eds.) *Made in China Yearbook 2016: Disturbances in Heaven*. Canberra: ANU Press.
- Lu, J.X. (2017). 'A Chinese Empire in the Making? Questioning the Myths from the Agri-Food Sector in Ghana'. In I. Franceschini, K. Lin, and N. Loubere (eds.) *Made in China Yearbook 2016: Disturbances in Heaven*. Canberra: ANU Press.
- Lu, J.X., and A. Lora-Wainwright. (2014). 'Historicizing Sustainable Livelihoods: A Pathways Approach to Lead Mining in Rural Central China'. *World Development*, 62: 189-200.
- Minerals Commission, Ghana (2014). Untitled document provided by the Minerals Commission in Accra in April 2014 that is thought to be the small-scale mining section extracted from the annual report.

- Modern Ghana* (January 4 2013). 'Two Chinese Miners Shot Dead'. Accessed at: <https://www.modernghana.com/news/438172/two-chinese-miners-shot-dead.html>
- Mohan, G., and M. Tan-Mullins (2009). 'Chinese Migrants in Africa as New Agents of Development? An Analytical Framework'. *European Journal of Development Research*, 21(4): 588-605.
- Nyame, F.K., and J.A. Grant (2014). 'The Political Economy of Transitory Mining in Ghana: Understanding the Trajectories, Triumphs, and Tribulations of Artisanal and Small-Scale Operators'. *The Extractive Industries and Society*, 1: 75-85.
- Parliament of the Republic of Ghana (2006). *The Minerals and Mining ACT*. Vol. Act 703. Accessed at: <https://resourcegovernance.org/sites/default/files/Minerals%20and%20Mining%20Act%20703%20Ghana.pdf>
- Quartey, K. (October 11 2013). 'Ghana's Chinese Gold Rush'. *Foreign Policy in Focus*. Accessed at: <http://fpif.org/ghanas-chinese-gold-rush/>
- Reilly, J. (2016). 'Going Out and Texting Home: New Media and China's Citizens Abroad'. In J. deLisle, A. Goldstein, and G.B. Yang (eds.), *The Internet, Social Media, and a Changing China*. Philadelphia: University of Pennsylvania Press.
- Sautman, B., and H.R. Yan (2007). 'Friends and Interests: China's Distinctive Links with Africa'. *African Studies Review*, 50(3): 75-114.
- Song, S. (May 15 2013). 'A Modern-Day Gold Rush - How People Of One County In China Are Making Millions In Ghana'. *International Business Times*. Accessed at: <http://www.ibtimes.com/modern-day-gold-rush-how-people-one-county-china-are-making-millions-ghana-1260801>
- Tan, C.B. (2013). *Routledge Handbook of the Chinese Diaspora*. London and New York: Routledge.
- Teschner, B.A. (2012). 'Small-Scale Mining in Ghana: The Government and the Galamsey'. *Resources Policy*, 37(3): 308-14.
- Tschakert, P. (2016). 'Shifting Discourses of Vilification and the Taming of Unruly Mining Landscapes in Ghana'. *World Development*, 86: 123-32.
- Wang, F.L, and E.A. Elliot (2014). 'China in Africa: Presence, Perceptions and Prospects.' *Journal of Contemporary China*, 23(90): 1012-32.