



Social and economic dynamics of mining in Kalima, DRC

INTRODUCTION

Kalima is in Maniema province, 80 km northeast of the provincial capital, Kindu, 2.5 degrees south of the Equator and deep within the Democratic Republic of Congo's (DRC's) tropical rainforest belt. Belgian colonial guidebooks enticingly depict the road from Kindu to Kalima as immaculately paved, with convenient filling stations and roadside restaurants along the way. No longer. After crossing the River Congo by boat or canoe, the journey to Kalima from Kindu follows a road fitfully paved for another 20 km or so, which then degenerates by degree to near impassibility in places with the forest constantly threatening to take over completely, before gradually returning to fitful tar a few kilometres before Kalima.

The town of Kalima, whose population was estimated by the UN Observer Mission in Congo (MONUC) in 2004 at just over 41 000,¹ consists of a township and above that a colonially constructed hill station of dilapidated houses, administrative buildings, a school and hospital which comprise the operational headquarters of the Société Aurifère et Industrielle du Kivu et du Maniema (Sakima). All around Kalima are deposits of cassiterite and, to a lesser extent, colombo-tantalite (coltan) and wolfram, which are mined by thousands of artisanal diggers.

As in so many mining towns in the DRC, and for that matter throughout Africa, mining in Kalima is a vital economic activity. It dominates the lives of those living in the town, as it did for decades under colonial rule, and will no doubt continue to do so for as long as there is an international demand. Yet the contribution mining makes to local human development is far from what it should be. Of course, precisely what is meant by terms such as 'community' and 'development' are contested, and easily oversimplified. Moreover, as this paper describes, while improving the social contribution of informal mining in Kalima presents significant challenges, its impact is multi-dimensional and in some ways present-day mining represents an improvement on the past.

This paper provides a brief overview of mining in Kalima that describes its complex relationship not only with the town itself, but also with the central government and neighbouring countries. An important point needs to be stressed from the outset. A prevalent view of mining in the DRC equates it with violent armed conflict. Indeed, the DRC is often used to illustrate how developing countries that are highly dependant on natural resources tend to suffer from civil conflict. However, for the time being, mining in the Maniema province has not resulted in fighting, nor does it seem to be used by militias or warlords to fund their military activities, although undoubtedly at some point in the exportation of minerals from Kalima those connected to militias and the army derive some benefit from it. The situation is different in the bordering Kivu areas, where mining of minerals such as coltan has been directly implicated in fuelling civil conflict, particularly during the boom in global demand for coltan that peaked in 2001–2002. We need not dwell on the link between such mining and civil conflict. However, the case of Kalima does illustrate that if there is such a link then it is not straightforward to understand or predict.

This paper is part of ongoing research into this area by the author, but draws largely on fieldwork conducted in June 2007. Until now, there has been very little written about cassiterite and coltan mining in Maniema, which is probably due to the focus given to those areas where mining and conflict are so intimately connected. After sketching the history of colonially controlled mining, the paper outlines the author's observations on the community-level impact of mining, the relationship between Kalima and the central government of the DRC and finally, Rwanda's significance in the international trade of cassiterite and other minerals originating from Eastern DRC.

Given the limited time spent in Kalima by the author, the paper presents preliminary findings and analysis only. Subsequent publications will offer more detailed and thorough studies.

HISTORY

Colonially directed artisanal mining of cassiterite, wolfram, coltan² and gold in Maniema and the neighbouring provinces of North and South Kivu began early in the 20th century, after Belgian King Leopold II granted a huge mining concession to Belgian baron and industrialist Édouard Louis Joseph Empain. By the 1930s, all mining operations were run by private Belgian companies, some of which were offshore subsidiaries of the company Empain, founded by the baron.

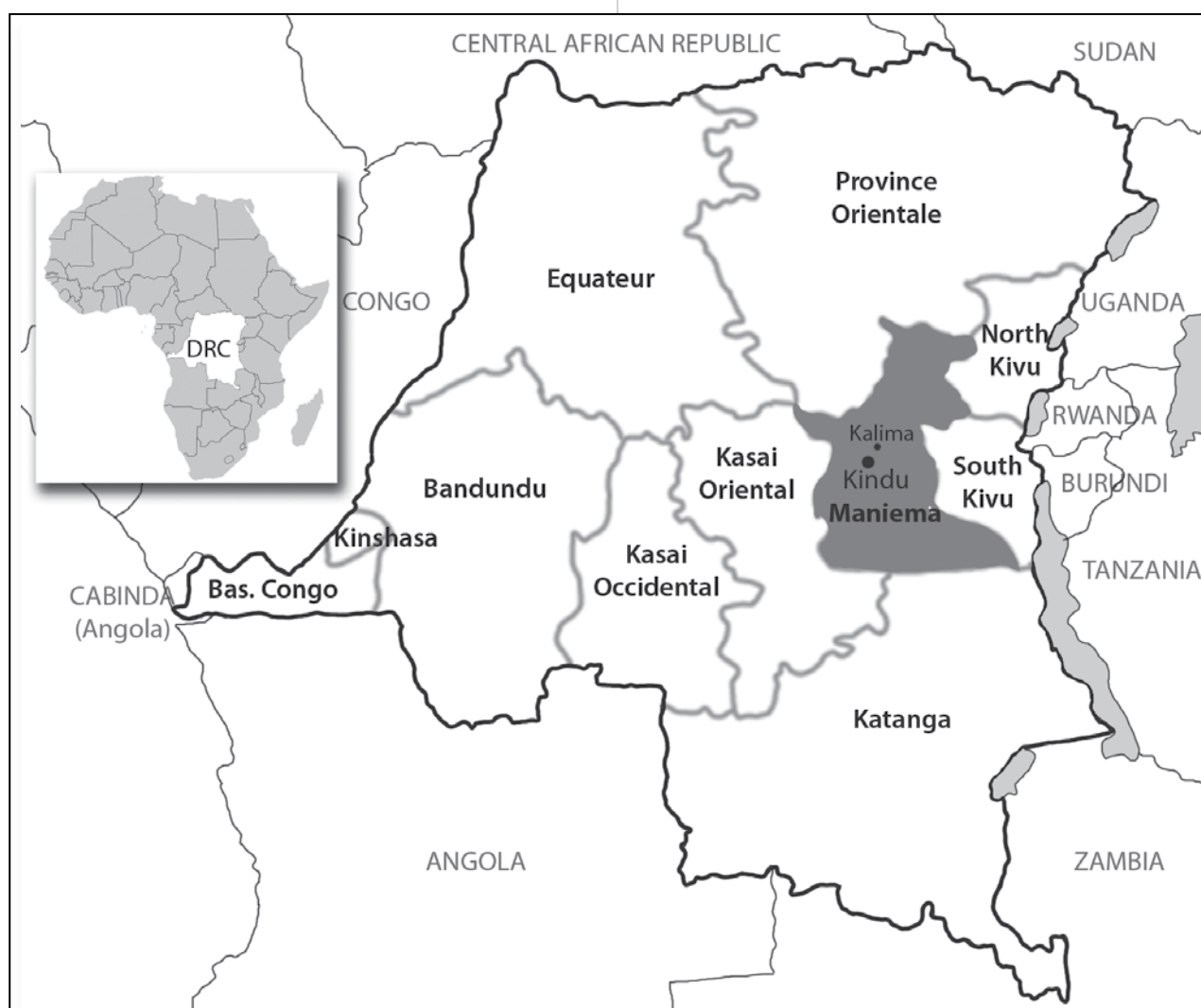
After over a decade of rising production from their cassiterite deposits, the companies began investing in industrial plant only in the late 1940s and early 1950s, constructing small hydroelectric stations to provide electricity at a few sites, including Lutshurukuru near Kalima. This enabled the development of new mines during the 1950s and output continued to rise in the 1960s. Production from Maniema province, including Kalima, was all transported to Kindu by truck and then loaded onto rail and taken to Kalemie on Lake

Tanganyika. From there it was transported by barge to Kigoma, Tanzania and from there by rail to the Indian Ocean port of Dar es Salaam.³

Beyond the departure of some expatriate staff, independence in 1960 appears to have had little immediate impact on mining in the Kivus and Maniema, which remained in private, Belgian hands. By the end of that decade, however, several primary deposits were nearing depletion, prompting a succession of company closures and mergers. Cobelmines and Minière des Grands Lacs (MGL) merged to form Cobelmin-MGL in 1968. The company became Cobelmin-MGL-Phribaki-KivuMines in 1974, finally merging with Symetain, which was the only other remaining industrial operator in the region, to form the Société Minière et Industrielle du Kivu (Sominki).⁴

Sominki has been described as owned by the Zairean state,⁵ but in fact, the state held only a 28 per cent shareholding while the owners of Cobelmin, Symetain and the rest held the balance.⁶ In this sense, Sominki was very different from Gécamines, in which the state held the majority of shares and which was the result of the

Figure 1 Kalima in Maniema province, DRC



forced nationalisation in the mid-1970s of Katanga's rich copper and cobalt deposits. The reason for the different treatment, apparently, was that then-President Mobutu Sese Seko regarded Katangan mines as a vital 'cash cow' for his burgeoning personal revenue needs, but considered cassiterite and gold production as insignificant for this purpose.⁷

Sominki's shareholders took an equally dim view of prospects and rarely did the company do much to boost production. Only in 1982 was there any significant new investment in Sominki, when a handful of rudimentary new treatment plants were installed, including one in Kalima. Then, in October 1985, disaster struck: the international tin price halved from US\$5,40/lb to US\$2,50/lb. Though sudden, the price collapse had, in truth, been a long time coming. An international tin council, formed in 1931 and consisting of four of the world's major tin producers,⁸ signed a succession of agreements that were fairly successful, despite opposition from developed countries, in regulating prices by managing the tin supply by using buffer stocks. The strategy, however, began to unravel after tin consumption peaked in the mid-1970s following the arrival of technical substitutes (particularly aluminium) and then went into decline. The agreement finally fell apart in 1985, resulting in the tin price's collapse. The tin price fell heavily again in 1987, while the council struggled on for a while, finally disbanding in 1990.⁹

After the 1987 tin price crash, Sominki stopped almost all industrial production and what little remained was halted after a further sharp fall in the international

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tin price in 1991. At this stage, in a reversion to the early days of the operation, artisanal mining resumed with diggers obliged to sell only to Sominki. Sominki paid the diggers a pittance, greatly reducing their incentive to work, and production continued to plummet.

In 1997, the year Sominki shareholders voted to dissolve the company, recorded cassiterite output was just

7,6 per cent of the level it had been when the company was founded, while recorded wolfram production had fallen to zero and recorded coltan production to just 272kg from a peak of 147 tonnes in 1985.

It should be noted that Sominki's figures are of suspect reliability. One well-informed source reported:

Sominki... were crocking the government. They mixed gold with tin concentrate and extracted it in Belgium for a big profit. And they never paid tax on it.¹⁰

There is no suggestion, however, that Sominki was producing significant volumes of cassiterite, wolfram or coltan that it was not declaring and the figures may be considered an accurate depiction of the overall steep production decline.

Table 1: Recorded Sominki mineral output, 1976-1997 (tonnes)

Year	Cassiterite	Wolfram	Coltan
1976	4 638,1	442,5	52,8
1980	2 592,6	134,3	71,9
1985	3 805,7	33,5	147,3
1990	2 175,9	16,8	33,6
1995	793,4	0	2,4
1997	352,8	0	0,3

Source: Data supplied to the author by Sakima, Kalima (henceforth Sakima 2007).

In 1995, Sominki's Belgian shareholders sold their 72 per cent stake in the company to the US firm Cluff Mining and Canada's Banro, while the government retained its 28 per cent stake. The following year, Banro bought out Cluff, thus becoming the majority shareholder, and in 1996 established Sakima as its Congolese subsidiary.¹¹

In 1996, the Rwanda and Uganda-backed Alliance des Forces Démocratiques pour la Libération du Congo-Zaire (AFDL) launched its military campaign to close the massive Rwandan refugee camps established in 1994 in North and South Kivu, which still harboured the armed perpetrators of the Rwandan genocide of that year. The campaign turned swiftly into a bid to topple the crumbling Mobutu regime as the AFDL found that wherever it ventured, it encountered minimal or no resistance from the Zairean armed forces. By February 1997 the AFDL, by this stage commanded by Laurent Kabila, had captured Kindu.¹²

Back in Kinshasa, which remained for the time being in Mobutu's hands, Banro negotiated a new deal with the Zairean government giving Banro a 93 per cent stake in Sakima and leaving the state with just 7 per cent. The agreement was signed in mid-February 1997. On 29 March that year, Sominki was formally liquidated at an Extraordinary General Meeting and the liquidation was approved by prime minister General Likulia Bolongo on

6 May, just 11 days before Kabila took the capital. The liquidation was highly controversial, if not illegal, not least because while the expatriate Sominki staff was paid out, most of the company's Congolese employees were left with nothing.¹³

Now president of the newly proclaimed DRC, Kabila confirmed Banro's Sakima arrangement in June 1997. Banro, however, balked at Kabila's demand that it inject hundreds of millions of dollars of new investment into Sakima, particularly since it emerged that Banro was only interested in Sakima's gold and not its cassiterite or coltan deposits, and the company's relations with the new government swiftly deteriorated. Finally, in July 1998, Kabila annulled the Banro deal, created a new company called Société Minière du Congo (Somico) and had Sakima's assets seized by decree.

Just a few days later, on 2 August 1998, a new Rwanda-backed rebellion was launched in eastern DRC, this time fronted by the Rassemblement Congolais pour la Démocratie (RCD). Congolese Sakima director Alexis Thambwe was strongly pro-RCD and rebel forces effortlessly took control of Sakima mining deposits in North and South Kivu. Sakima workers report that the disruption caused by the arrival of the RCD in Kalima was minimal but that, as at other mines, what cassiterite and other mineral stocks that had not already disappeared or been looted were 'requisitioned' for the war effort.¹⁴

Since the sharp fall in the coltan price in 2002, artisans in Maniema have become focused on cassiterite mining

With Katanga still in government hands but Maniema and the Kivus controlled by the RCD, the rail link between them was severed and trains no longer ran between Kindu and the south. It was at this time that the practice began of flying all of Kalima's mineral production to Goma or Bukavu, either directly from Kalima or from Kindu.¹⁵ Kalima only has a tiny airstrip, limiting the amount of ore that can be flown out directly from there, so most production leaves the town by truck to Kindu from where, despite the enormous cost, it flies out to Goma or Bukavu, mostly in ageing and uncertainly maintained Russian-piloted Anatov aircraft.

In late 1999 the RCD administration in eastern DRC formally recognised Banro's title to Sakima and demanded a tax of US\$300 000 per annum for the privilege.

Banro retorted that the mines were not operational and the rent was too high, causing the RCD to offer Sakima for tender a year later.

Meanwhile, not long after Kabila expropriated Sakima in 1998, Banro contested the legality of the move by taking the government to court in the United States. The case dragged on and on and was only resolved after Kabila's assassination in January 2001. Kabila was succeeded by Joseph Kabila, said to be the dead president's son.¹⁶ Within a year he settled with Banro, abandoned the Somico project and confirmed instead Banro's rights to Sakima.

The assets themselves, however, were still deep in RCD-held territory and it was the RCD and its ally Rwanda that benefited from a steep rise in state rents from mining that flowed from a significant spike in the international price of coltan during 2000–2001. The price spike heralded a coltan rush and a consequent surge in artisanal coltan production, though this has since greatly subsided in line with a sharp fall since 2002 in the international coltan price. Since then, and particularly since 2004, artisans in Maniema and the Kivus have become much more focused on cassiterite, responding to a huge increase in the price of base metals such as tin, generated by booming Chinese demand.

The DRC's division into three warring zones, one third held by the RCD – one by Kabila and his allies and one by Jean-Pierre Bemba's Mouvement pour la libération du Congo (MLC) – formally ended in July 2003 with the establishment of a transitional government incorporating all three leaders plus members of unmilitarised opposition political parties. *De facto* control of Maniema passed soon after from the RCD to Kabila, but despite its widespread unpopularity, the RCD retained its hold in South Kivu for another year and in North Kivu right up until general elections in 2006.¹⁷

Meanwhile, Banro found a company willing to take on Sakima's cassiterite and coltan deposits so that it could concentrate, as it had long wanted to, on prospecting the company's South Kivu gold deposits. This company was Central African Resources (CAR), now a subsidiary of South African-based Kivu Resources, which signed an agreement to take over Sakima in 2003. Another Kivu Resources subsidiary, Mining Processing Congo (MPC), runs *comptoirs* (mineral buying houses) in Goma and Bukavu, while yet another subsidiary, Metal Processing Association (MPA), operates a *comptoir* in Kigali, Rwanda and a minerals processing facility in Gisenyi for cassiterite ore from MPC's Congolese *comptoirs*.¹⁸

CAR promised to invest US\$36m in Sakima, which was to include the renovation of the company's dilapidated headquarters in Kalima, the installation of a smelting facility in Kalima, the partial settlement of

Sominki employee severance packages and much-needed repairs to the road between Kalima and Kindu. But first CAR wanted to conduct its own studies into the state of Sakima's mines to assess their probable and proven reserves. To CAR's dismay, however, Sakima proceeded to award *amodiations*¹⁹ to other companies for some of its prime deposits, which CAR claims it was not allowed to do.²⁰ For its part, Sakima has justified the *amodiations*, saying CAR was taking too long to fulfil its promises and pleading its own pressing cash-flow needs. Sakima has further claimed the ministry of mines gave it permission to award *amodiations* in 2005, though CAR says this permission was illegal.²¹ CAR threatened to take the matter to court but has yet to do so. Instead, the company says it will await the results of a review of its contract with Sakima by the ministry of mines. The review is part of a ministry attempt, announced in early 2007, to re-evaluate and assess every single mining contract in the country.²²

In the meantime, at the time of writing, there was no industrial production on any of Sakima's properties, including Kalima, and no sign that any was looming. Instead, a growing army of artisanal diggers at Kalima work an expanding network of peripheral sites to the old

The freedom to sell their output for a market-related price during a period of buoyant commodity prices is proving a powerful incentive to diggers

mines and total recorded output is rising. Meanwhile CAR pressed on with its efforts to prospect and drill at Bisie near Walikale but was frustrated in this by Colonel Samy, commanding the 85th Battalion of the Forces Armées de la République Démocratique du Congo (FARDC; the Congolese armed forces), which controls much of the Walikale area. The 85th Battalion comprises mainly *ex-Mai Mai* fighters keen to continue extracting rent from Bisie and opposed to the MPC's presence.

THE DIVERSE COMMUNITY IMPACTS OF CASSITERITE MINING IN KALIMA TODAY

The historical overview sketched above brings us to Kalima's present day, one in which abandoned industrially mined cassiterite deposits are increasingly grown

over with tropical forest foliage and where broken, rusted equipment lies around. It is also a present day in which countless artisanal diggers are busy working the sites around these mines. It is not reliably known precisely how many artisanal diggers work the Kalima cassiterite deposits but it is estimated that thousands do so.²³ As one digger put it, 'We are too many. You cannot count us'.²⁴

Cassiterite deposits are plentiful around Kalima, with most being either on or near the earth's surface. Digging out the cassiterite, then, is not particularly onerous when compared with other cassiterite deposits in the Kivus, such as Bisie, and can be highly productive.

Most of the diggers, it seems, are young men, but women and children are also extensively involved.²⁵

In stark contrast to the tiny sums Kalima diggers were paid by Sominki, in mid-2007 *negociants* were paying them US\$5,50/kg for cassiterite ore,²⁶ with diggers capable of producing over 10 kg of ore daily.²⁷

The freedom to sell their output for a market-related price during a period of such buoyant commodity prices is proving a powerful incentive to diggers. 'Everyone has become a geologist',²⁸ and as a result new deposits are being discovered almost daily and production has soared.

As is typically the case with artisanal mining output, it is impossible to establish exact production figures for cassiterite mining in Kalima. Sakima levies a tax on *negociants* for all the cassiterite they buy from its deposits and as a result of its ongoing efforts to collect this it keeps what are probably the most reliable production statistics available.

As Table 2 shows, by Sakima's reckoning, average monthly production in Kalima in 2006 was 60,8 tonnes, while production during the first five months of 2007 increased by 58 per cent to an average 96,4 tonnes. At US\$5,5/kg, this meant Kalima diggers earned US\$530,200 a month from cassiterite during this period.

As comparison with Table 3 overleaf shows, recorded production in May 2007 was nearly as much as during the whole of 1997, the last year of Sominki's existence. Strikingly, from 1978 onwards, recorded annual industrial production at Kalima was considerably less than recorded artisanal production today.

Table 2: Kalima artisanal cassiterite production, 2007

Period	Production (tonnes)
2006	729,9
January 2007	87,5
February 2007	84
March 2007	94,2
April 2007	95,4
May 2007	120,9

Source: Sakima 2007

Table 3: Cassiterite production at Kalima during selected years, 1976-1997

Period	Production (tonnes)
1976	2342,1
1978	427,5
1981	281,6
1986	430,8
1991	325
1997	141

Source: Sakima 2007

It seems fairly clear, then, that more Kalima people are involved in mining and are making more money from it than ever before. In other words, artisanal mining, particularly during the current international commodities boom, is proving far more remunerative to Kalima's working class than industrial mining ever was.

Another revealing comparison with the industrial mining era in Kalima is around working conditions and workplace politics. Like many mining operations, and particularly those established during the colonial era in Europe's colonial dominions, Sominki was a monopoly and deeply hierarchical. A white, mostly Belgian elite occupied all the senior administrative and mining positions and literally lived at the top of the hill in Kalima, with their own hospital and their own spacious clubhouse complete with poorly executed Breugel-type murals in its beer hall. Provisions in ample quantities were imported via Kindu. Down the hill, and firmly beneath them in the employment pecking order, was the African workforce. For them, the company was about the only waged employment option available and they were paid little,

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worked hard and were expected to do what they were told without question. Union representation was forbidden during most of the colonial era and has been legal but weak since independence, but, in accordance with the classical model of colonial paternalism, workers were provided with basic social services including a hospital, a school, a social club, canteen and sports pitch.

In huge contrast, Kalima's artisanal diggers have structured themselves into a myriad of profoundly non-monopolistic and far shallower hierarchies. Diggers have typically formed themselves into associations, usually founded, it is said, by whoever discovered the initial

cassiterite deposit and joined by that person's family members, friends and fellow villagers. Unlike during the industrial mining period, women and children are mining alongside men, which seems to be good for women's empowerment in Kalima but not so good for the education prospects of the town's youth. Associations rarely number more than 20 people and are scrupulous about internal democracy, in many cases annually electing a president and vice-president and often a secretary and treasurer as well.²⁹ In most cases, digger association presidents are men but there are some women presidents too.³⁰

Association presidents are responsible for negotiating sales to *negociants* and are said typically to retain 30 per cent of the revenues earned by junior members of the association. There were no reports of conflicts within or between digging associations turning violent, despite the fact that there was no official registration or demarcation of each association's mining territory. One reason offered for this was that there was plenty of cassiterite around Kalima to go around.²⁴

Diggers all seemed well informed about the international price of tin, which some said they accessed from contacts in Goma or Bukavu via mobile phones. Unlike at North and South Kivu mining deposits where armed groups play a large role, Kalima digging associations appeared free to sell to whichever *negociants* they chose, with the price offered rather than any threat of violence being the determining factor. However, this thesis was not tested exhaustively and may be incorrect; it could be that some or conceivably even many Kalima digger associations are obliged for one reason or another to sell to particular *negociants*. Yet all the diggers and *negociants* interviewed were adamant that only price, and not intimidation, secured their deals.

One impact that few deny concerns what the growth in artisanal mining has done to farming. Kalima's artisanal diggers have greater freedom than the town's industrial miners ever did to structure their work around the rhythms and demands of tropical subsistence agriculture. Yet the general consensus was that food production in the area has significantly declined since the artisanal mining boom as more and farmers abandoned their fields and farming. This is to be expected, since rising Kalima digger earnings increase the scope for a greater division of labour in the region by enabling the diggers to buy food from neighbouring districts less well endowed with cassiterite. But once lost, farming skills are not easily re-acquired and the worry is what will happen in Kalima when the tin price drops. In addition, a local NGO involved in food distribution said malnutrition was on the rise, apparently because food prices have risen due to the reduction in local farming output and this is putting food beyond the reach of the very poor.³¹

Like the vast majority of Congolese, Kalima residents, whether diggers or not, receive almost no social services from the state. The few education and health facilities available are provided by Sakima, churches and the private sector.

There are two hospitals, Kalima General Hospital and a private Catholic hospital. Kalima General was built by mining companies prior to independence, is now in Sakima's hands and has fallen into a state of extreme disrepair. There are few mattresses, specialised medical equipment is in most cases well over 30 years old and often in need of repair. As a result the dentistry facility, for example, performs extractions only. The morgue has been entirely looted and no longer functions. The water supply to the hospital is problematic, apparently because of diversions of the supply upstream by diggers wanting to use it to flush cassiterite from the earth, and sanitation is said to be a major problem. A smattering of international NGOs provide a limited supply of medicines and one, a British charity called Merlin, also gives some money for health workers' salaries, which are pitifully low. Medical assistants in mid-2007, for example, were earning US\$8/month.

A pharmacy assistant resignedly summed up the situation: 'We have been abandoned'.³²

Not far from Kalima General is the private Catholic Hospital, established in 1999 by the medical bureau of the diocese. The hospital is much smaller than Kalima General but far better equipped. This hospital also gets no state assistance and charges patients for its services.³³

Amid the gloom, the most encouraging feature of both hospitals was how very few diggers were there. Industrial accidents were apparently quite common

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during Kalima's industrial mining period but are now much fewer in number since Kalima's artisanal diggings are typically close to the surface (unlike in Bisie, for example) and do not require much, if any, tunnelling. In addition, diggers do not get sick from handling cassiterite, as they do in significant numbers in Katanga's uranium mines.³⁴

Sakima runs a primary school in Kalima that is primarily intended for the children of Sakima employees. But most Sakima employees are nearing or, in many cases, well past retirement age, still turning up to work despite being barely paid in the hope that one day their Sominki severance packages will be paid to them (see below). Most of these people's children are grown up and so the primary school is largely filled with the children of diggers. Sakima has retained its social services unit, which hopes to build a secondary school in Kalima and has plans too for adult education facilities, but the unit has no resources and is praying for a donor.³⁵ Thus although Kalima's miners are probably richer than they have ever been, the level of social service provision they enjoy has probably never been worse.

As we have seen, this is because social services were in the past chiefly provided by industrial mining companies and these companies have stopped working in Kalima. The state has yet to show much sign of stepping into the breach, which leaves the people of Kalima to provide the services themselves or to go without. Yet at least for as long as the tin price stays high, Kalima can actually afford to pay for its own health care and education, funded by monthly contributions from people in the mining sector. The challenge is to manage the process, and particularly its finances, in a sufficiently honest and transparent manner to overcome popular scepticism and suspicion born of years of bitter experience.

Painfully aware of the near total disconnect between the state and the tens of thousands of artisanal miners in the DRC, Laurent Kabila's government established the Service d'Assistance et d'Encadrement du Small Scale Mining (SAESSCAM) in 1999. SAESSCAM's stated aims are to develop and train artisanal miners with a view to creating a new artisanal middle class, to promote social development in artisanal mining areas and to ensure artisanal mining output is taxed.³⁶ SAESSCAM first concentrated its efforts on Katanga and the Kasai provinces, and only reached Kalima in early 2007. One SAESSCAM committee member, speaking on condition of anonymity, said he suspected the main reason for the delay was that the former Maniema governor Koloso Sumaili had been against the organisation's progress.³⁷ By the middle of 2007, SAESSCAM had an office in Kalima, two workers and a motorbike and had contributed funds to improve a much-used crossing of the Ulindi River near Kalima. This was a solid start, though there was still a very long way to go before SAESSCAM could claim to have made significant progress on any of its three mandates. In the meantime, as is so widely the case in the DRC, the main impact the state has on Kalima diggers is in the efforts of its functionaries at collecting rent from them.

The environment

International mining companies seeking to develop mineral deposits in Africa frequently find that thousands, if not tens of thousands, of artisanal miners have got there first. In touting the benefits of their *modus operandi* compared with those of the artisans they seek to displace, companies increasingly cite relative environmental impacts. It is commonly held that artisans create unplanned moonscapes in which far more of the environment is destroyed than would have been the case under planned and centrally directed working conditions. It is also generally argued that industrial mining operations, and particularly those with adequate capital behind them, can anticipate and mitigate potential negative environmental impacts, like, for example, the contamination of a water source, far better than thousands of diggers can, most of whom are thinking of little but their next meal.

These are all-powerful arguments and doubtless true much of the time. But a preliminary assessment of the situation in Kalima suggests the arguments may not hold so well there. Industrial cassiterite mining in Kalima involved channelling large volumes of water to wash away hills, section by section, into nearby streams where the cassiterite is recovered. Artisanal mining in Kalima, however, seems less environmentally intrusive. When artisanal sites are abandoned or exhausted, it does not take long for tropical vegetation to overgrow them,

When artisanal sites are abandoned, it does not take long for tropical vegetation to overgrow them but no vegetation can cover the deep gashes in Kalima's hills wrought by industrial mining

but no amount of vegetation growth can reverse the deep gashes in Kalima's hills wrought by industrial mining. It is also the view of many long-standing Kalima employees that artisanal mining is kinder to Kalima's environment than industrial mining was, but the claim needs a fuller and more systematic assessment before being taken as true.

One environmental impact of Kalima mining that has worsened since the displacement of industrial by artisanal mining is in transport. As discussed above, Kalima's cassiterite used to be taken to Kindu by truck and then freighted by rail to Kalemie on Lake Tanganyika, and from there to the Tanzanian lake railhead of Kigoma and then, by rail again, to Dar es Salaam. Today, however, all of Kalima's output is flown out unprocessed, either from Kalima or Kindu, which is expensive and environmentally damaging. In early 2007, Kindu's rail link with Kalemie and with Lubumbashi in the south finally reopened after ten years of closure but rolling stock is dilapidated and running times are highly irregular. Investment in the DRC's railways is long overdue and ecologically conscious donors should note that providing the means to do this would greatly alleviate the environmental impact of the movement of not just cassiterite, but all the country's mining output.

Mining in Kalima and the state

The interplay of the Congolese state and mining is an important but highly contested issue. A previous section touched on how little in the way of social or indeed any services the Congolese state provides in Kalima. Relating to this, among the commonest and most enduring complaints of the Congolese business community (including the mining sector) are about how much tax it pays, how arbitrary and corrupt the payments demanded often are and how little, if anything, the state provides in return for its predation.

The state's discourse is, unsurprisingly, the inverse, dwelling instead on how little the fiscus gains from the country's mineral wealth, how much and how corruptly this wealth is leached away by the private sector without being adequately taxed. Particularly since the start of the 1998 war, a related complaint from the authorities in Kinshasa has been about how much revenue from minerals and other natural resources that should be accruing to the central government in fact ends up in the pockets of non-state actors, including rebel groups and foreign powers, who then use the money to weaken and attack the central government. This latter argument has been endorsed by most international commentators, including successive UN Panels of Experts and resource NGOs. Thus, for example, following investigations into the cassiterite mining trade in North and South Kivu, Global Witness' first recommendation was that the DRC government should 'extend its administrative control... to ensure the accurate reporting of production and... the collection of appropriate fiscal revenues'.³⁸

As a modest contribution to the debate, this study first investigates what revenues Congolese state institutions and officials manage to collect from cassiterite

mining in Kalima and then discusses issues around the structure of the DRC's tax regime. The issue of neighbouring Rwanda is also touched on here but explored more fully later on.

Table 4: Congolese state revenue structure from cassiterite, June 2007

Item	Price per kg (US \$)
Sakima levy	0,15
Service des Mines levy	0,13
Territorial administration	0,01
Provincial administration	0,12-0,18
SAESSCAM	0,06
Export tax ³⁹	2,9

Sources: Kalima negociant, Goma comptoir, North Kivu ministry of mines.

Table 4 shows that in mid-2007, between them Sakima and the Congolese state sought to collect taxes of up to US\$0,53/kg or US\$530/tonne of cassiterite prior to its export and a further US\$2,9/kg or US\$2,900/tonne upon export. This would imply that state revenue for the first five months of 2007 from Kalima's cassiterite output alone, exclusive of export tax, was around US\$51 000 and state revenue inclusive of export tax was around US\$330 000.

The first five of the taxes in Table 4 are levied in Maniema, either in Kalima or Kindu. Cassiterite only leaves the province by plane in easily countable sacks. Any under-collection of these five taxes, therefore, is likely to be because of corruption, through which the

The main structural issue of concern is the difficulty the Congolese state has in collecting domestic revenue

dealer and the taxation official agree to mis-declare goods and split the resulting tax savings between them. The final tax is levied either in Goma or Bukavu when the cassiterite is due to leave the country. This is by far the most onerous of all the taxes levied and at the same time is the easiest one to evade since exporters can either bribe officials as outlined above or try to avoid them altogether by taking minor routes across the border.

Cassiterite smuggling into Rwanda from the Kivus has indeed been rife for years, though there were indications during 2007 of an improved effort by Congolese customs authorities to prevent it. Improved effort or not, however, Congolese cassiterite will continue to be smuggled into Rwanda for as long as there remains

such a disparity between the two countries' export tax regimes. Rwanda levies no export tax on minerals while the DRC's export tax is extraordinarily high. Rwanda's lack of export taxes on minerals is not, as some Congolese officials allege, because the Rwandan authorities are trying to poach Congolese output and claim it as their own, but because there is zero Rwandan export tax on all non-traditional exports (NTEs), defined to mean anything except tea and coffee, as part of an International Monetary Fund-backed fiscal package intended to promote NTEs.

The more pertinent question, then, is why is the DRC's cassiterite export tax so high? The immediate answer is the pressing revenue needs of the Congolese state. But this is only the beginning and not the end of the matter since there are important structural issues too. The main structural issue of concern here is the general difficulty the Congolese state has in collecting domestic revenue as this leads it to an over-reliance on international trade taxes, such as the cassiterite export tax, which are easier to collect than most domestic revenue. Yet this punishes the country's international trade to the detriment of the economy.

Replacing general sales tax (GST) with value added tax (VAT) is a tried and tested way of boosting domestic revenue, as many African countries (including Rwanda) have already found. If VAT was ever introduced in the DRC this would boost domestic revenue by better enabling the tax authorities to tap into the multiplier effect resulting from increased current and capital expenditure by, for example, people with rising incomes because of cassiterite mining. The DRC tax authorities, however, lack the capacity to collect VAT and remain stuck with GST. Similar capacity problems in the tax authority reduce its take from company and income tax. Meanwhile, the state's over-reliance on revenue from international trade taxes pushes up not only export tax rates but also import tariffs, which encourages the smuggling of goods both into and out of the country.

Another reason for the DRC's punitively high export tax rate for cassiterite is the desperate attempt by the authorities to maximise revenue from those who are not smuggling, to make up for all the lost revenue from those who are doing so. Another reason there is so much smuggling, alleged by the Office des Douanes et Accises (OFIDA; the customs and excise office) in Kinshasa, is corruption among provincial officials, who are over-inclined to pocket revenues instead of passing them along to central government.⁴⁰ There is much truth in this complaint, but one highly understandable reason for provincial reluctance to hand over tax receipts to Kinshasa is how little revenue flows back from the capital to the provinces. Much to the outrage of provincial governors and parliaments, the 2007 national budget omitted an

earlier government promise to increase the revenues transferred from central to provincial government from 10 per cent to 40 per cent as part of a decentralisation package. The excuse offered for the delay was that the 40 per cent revenue transfer can only start once another leg of the decentralisation programme, namely the replacement of the country's existing 12 provinces with 26, is completed, which is due to happen by 2010 (Economic Intelligence Unit 2007). Until then, with the prevailing feeling at provincial level being that state revenues disappear into Kinshasa and never re-emerge, it is thus not surprising that there is often little vigour in ensuring that the central government is paid in full.

Greater decentralisation in the distribution of government resources and improved domestic revenue collection would create the fiscal space for the government to reduce export taxes, including those levied on cassiterite, thereby discouraging smuggling and ensuring a welcome rise in the overall tax take from cassiterite or indeed any artisanal mining in the country. This strategy, however, requires the implementation of genuine, difficult and complex political and fiscal reform. Thus far the DRC government has opted for the course of least resistance and least impact, namely just increasing export tax rates and hoping for the best.

Sakima employees

Some 504 ex-Sominki workers, many now well into their seventies, have stayed on at Sakima in the hope that one day the severance pay and pension contributions they are owed will be paid them. The Union National des Travailleurs du Congo (UNTC), which represents 410 of these workers, reckons US\$19m is owed them. In 2006, the World Bank paid for severance packages to thousands of Gécamines employees as part of a reform

Reducing export taxes would discourage smuggling and ensure a rise in the overall tax take from artisanal mining

package intended to restore the Kantangan parastatal to profitability. Sominki, however, was a private company and it seems unlikely that World Bank largesse will ever extend to its aggrieved ex-workers. Some of CAR's putative US\$36m investment in Sakima, though nothing like US\$19m,⁴¹ is to pay out Sominki workers, but with this investment on hold, the workers are sceptical any

money will be forthcoming soon.⁴² In May 2007, Victor Kasongo, the deputy minister of mines, visited Kalima and promised to address the issue on his return to Kinshasa. Shortly after, there was talk of the establishment of a new committee to examine the circumstances under which Sominki was liquidated, which would include Banro, but little had come of the initiative at the time of writing.

Negociants

In mid-2007 there were 18 *negociants* operating in Kalima. During this period they bought cassiterite from diggers at US\$5,5/kilo and sold it to *comptoirs* for US\$7/kilo. From January to May 2007, when cassiterite output from Kalima was 482 tonnes (see Table 2), this meant local *negociants* earned a total of US\$723 000, or an average of US\$144 600 per month. It did not prove possible to identify how the money was split between the *negociants* though the town's largest operator said he bought and sold 50–60 tonnes of cassiterite a month, half the recorded Kalima total.⁴³ Most of the *negociants'* revenue is profit, since taxes and transport taxes are paid by *comptoirs*, leaving only labour costs,⁴⁴ a provincial tax of US\$0,12–0,18/kilo and whatever payouts are necessary for *negociants* to maintain their position.⁴⁵ With such a lucrative business, it is hardly surprising that most, if not all, of Kalima's *negociants* have political connections and thus protection. For all this, Kalima *negociants* regard themselves as privileged compared to their North and South Kivu counterparts because of the refreshing absence of armed militia demanding a cut of their profits. As one *negociant* put it: 'In Walikale there are so many soldiers. But here we are free, free, free'.⁴⁶ Much of the *negociants'* profits are being re-invested in Kalima, often through the establishment and stocking of increasingly ambitious retail outlets.

All Kalima's *negociants* are well known to each other and there is an informal association between them but they essentially regard each other as competitors. This may be the reason *negociants* have thus far failed to team together to fix one of their most pressing problems, namely the appalling state of the road connecting Kalima to Kindu. All the *negociants* have an interest in fixing this road and thus reducing the wear and tear on their trucks, and between them they have the means to do so, but have thus far proved incapable of setting aside their competition sufficiently to address the issue together.

Comptoirs

There are no cassiterite *comptoirs* in Kalima or Kindu, but there were 22 in Goma and 10 in Bukavu in mid 2007, all buying from *negociants* and selling on to

international buyers. It is estimated that Goma *comptoirs* were spending US\$7.7m a month buying cassiterite during the first half of 2007 and employed around 550 people between them.⁴⁷ When asked, most *comptoirs* insist they are very careful about which *negociants* they buy from to make sure they are not purchasing any cassiterite from sites controlled by militia. But while some who have said this might be telling the truth, the fact remains that cassiterite from sites controlled by militias has no difficulty reaching the market, meaning that someone is always buying it.

In an effort to introduce a measure of accountability to the business practices of *comptoirs*, in February 2007 Global Witness submitted a complaint in Britain against UK-registered Afrimex to the UK National Contact Point, under the British government's allegedly strengthened procedures for considering breaches of the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises. Afrimex operates in Bukavu at Kotecha, where it is the biggest trader and retailer in foodstuffs in the city. Kotecha is also a significant cassiterite *comptoir* and one of Global Witness's allegations is that it has purchased ores from mines controlled by non-state militias.⁴⁸ The UK National Contact Point had not visibly acted on the matter at the time of writing.

Most, if not all, the cassiterite coming out of Goma and Bukavu heads eventually to the Malaysia Smelting

A huge incentive to smuggle that is enthusiastically acted on by many is that profits can be doubled by avoiding export tax

Company (MPC), the world's biggest tin smelter. Typically the product goes via Kigali to Uganda and then through to Mombasa, from where it is shipped out, sometimes passing through a Rwandan *comptoir* too, and sometimes not (see below).

For *comptoirs* to operate successfully in Goma or Bukavu they must have capital and political clout and many are owned by politicians or their financiers. Maintaining patronage networks is crucially important for *comptoirs* to ensure a steady supply of product. Much of Kalima's output goes to MPC's *comptoirs* via one particularly influential *negociant*.⁴⁹ As indicated above, in mid-2007 these *comptoirs* were buying cassiterite ore from *negociants* at US\$7/kg. One tonne of Kalima cas-

siterite ore contains about 670kg of tin, meaning that to buy one tonne of tin, *comptoirs* need to buy 1.49 tonnes of Kalima's ore. At US\$7/kg, this cost them US\$10 430/tonne in mid 2007.

The international tin price exhibited extreme volatility during 2007, beginning the year at a little over US\$10 000, reaching US\$14 000 during the research for this study, peaking at nearly US\$17 000 in July 2007 and then falling sharply to around US\$13 000 in August. When the price was at US\$14 000, and at a purchasing price of US\$7/kg, *comptoirs* were typically making US\$500/tonne or US\$0.50/kg in profit, once all taxes, transport, mineral treatment and overhead costs were covered. Additional profit, sometimes substantial, could be made from other minerals in the ore, with one *comptoir* operator saying that in mid-2007, niobium was particularly 'interesting'.⁵⁰ Even without this extra money, US\$500/tonne on cassiterite was still a good profit, though just a third of the margin enjoyed by *negociants*.⁵¹ If *comptoirs* evaded export tax by smuggling their goods out of DRC or declaring them incorrectly, as outlined above, the saving could be US\$500/tonne, thus doubling their profits. There is thus a huge incentive to smuggle, which is enthusiastically acted on by many.

Rwanda

Most, if not all the DRC's cassiterite passes through Rwanda and there were said to be 10-15 *comptoirs* in Kigali in mid 2007.⁵² As we have discussed, much of the cassiterite is smuggled from the DRC into Rwanda to evade Congolese export taxes. This smuggled product is then typically exported as being of Rwandan origin, explaining why Rwanda's cassiterite recorded export figures are so much higher than its recorded production.⁵³ The conclusion of many Congolese about this is shared and summed up by Global Witness, which has written:

Rwanda, which is the main conduit for cassiterite exports, is reaping major benefits. Thus the stabilisation of Rwanda is being achieved at the expense of the DRC's peace, security and its treasury.⁵⁴

Yet though it is popular, this conclusion is questionable. While it is true that much of Rwanda's recorded cassiterite export should more properly be recorded as re-export just transiting Rwanda, the mere fact of this incorrect description does not in itself make either Rwanda or the Rwandan government any richer. Taking the Rwandan national economy first, the incorrect export description means the official balance of payments figures are rosier than they should be. Yet because in the real world beyond official statistics Rwandese *comptoirs* have still had to

pay Congolese for their cassiterite, the actual balance of payments is unchanged.

Meanwhile, the Rwandan government does not charge import taxes when the DRC's cassiterite comes in and does not charge export taxes when it goes out. The Rwanda Revenue Authority (RRA) only charges Kigali *comptoirs* company tax and its employees' income tax, but it does so regardless of whether cassiterite passing through these *comptoirs* has been declared at the DRC/Rwanda border. Thus there seems no obvious reason why cassiterite smuggling should be enriching the Rwandan state's coffers. There appears to be good evidence that in the past, during the RCD's occupation of eastern DRC, the Rwandan Defence Force (RDF) was itself trading in and directly profiting from coltan, though this is strongly denied by the Rwandan authorities. There is no suggestion, however, that by 2007 the RDF or any other organ of the Rwandan state was actively trading in cassiterite and therefore directly profiting from the trade.

International mining companies

For international mining companies, northeastern DRC is far too challenging an operating environment and most avoid it. Banro is one of the exceptions, having tenaciously held onto South Kivu's gold deposits with its main efforts apparently directed towards increasing their proven reserves through a drilling programme. A similar strategy has been adopted by other international gold mining companies prospecting in the Kilomoto gold mines of Orientale Province further north.

CAR also intends carrying out an extensive drilling programme on Sakima's properties, but had also initially seemed keen to re-start industrial mining at Kalima. By 2007, after several expensive years of wrangling with Sakima, CAR's enthusiasm for Kalima appeared to have waned and most of its energies were directed towards carrying out a drilling programme at Bisie while at the same time keeping its Goma and Bukavu *comptoirs* going. Other smaller international operators have wanted to secure *amodiations* for Sakima deposits and some have been granted them, including one near Kalima. For this they are obliged to pay a substantial rent to Sakima but the companies are finding the going very tough and production from the *amodiations* is said to be minimal.⁵⁵⁴

CONCLUSION

Few mining companies, governments or NGO activists have any kind words for artisanal mining. Mining companies complain that artisanal miners cherry-pick the best mineral deposits, destroying their long-term mining potential in the process through their haphazard and unplanned operations. Governments fret that artisanal

production never pays enough tax and often funds non-state militia and/or hostile neighbouring governments. NGO activists tend to agree with governments about this, and also express deep concern at dangerous labour conditions on artisanal sites and the prevalence of child labour.

It was asserted in the introduction, however, that each case of mining is different and it is hoped that the subsequent examination of the case of Kalima has born this out. The key finding of this study is that artisanal mining not only generates higher output than industrial mining ever did, but is also better for the mass of people in Kalima, particularly during this ongoing period of high commodity prices. This is for a number of reasons. First, artisanal mining employs more people than industrial mining did. Secondly, Kalima's thousands of artisanal miners collect a far higher proportion of the final tin price for their cassiterite output than they did as employees of industrial mines and they also benefit directly and immediately from rising global prices. Thirdly, diggers' employment conditions are less hierarchical and oppressive and, thanks to the proliferation of diggers' associations, far more democratic than they ever were. Also, women have greater opportunity for advancement, too, to which the emergence of in Kalima of digger associations headed by women attests.

It is of concern that farming has been negatively affected by the artisanal mining boom in Kalima, but hardly surprising. And if farmers-turned-diggers are buying their food from other farmers, is this not helping develop the rural economy? Instead, the main concern must be that social service provision, which in Kalima like many mining towns was premised on industrial mining, has collapsed. There is an urgent need to revitalise social service provision, possibly partly or fully paid for by artisans' contributions to ensure ownership, but also potentially with donor and humanitarian agency input. Under normal circumstances the state too should play a role, and perhaps through SAESSCAM it will one day. Yet waiting for the state to provide has never been a good option thus far in the DRC and neither donors, humanitarian agencies nor the Kalima community should do so this time.

The environmental impacts of artisanal mining in Kalima, meanwhile, deserve more careful examination. A preliminary study, and widespread local opinion, is that artisanal mining is more environmentally benign in Kalima than industrial production. If this is true, it is a major finding that should help shape future developments there. But precisely because of the apparent finding's significance, it deserves more thorough testing by environmental specialists, which was not possible for this study. At the same time it is incontestable that flying minerals out is a more environmentally damaging way

of transporting them than the railway freighting it has replaced. The answer is to revive the railway and get it working properly again. Ecologically conscious donors looking for DRC projects should take note.

Maniema is less riven by politico-ethnic conflict than North and South Kivu and far less afflicted by the ravages and predations of state and non-state armed groups. That this is so despite the similarity of Maniema's resources to those found in the Kivus suggests the conflict in the Kivus may not be a war over resources, but rather, a war sustained by resources. The absence of armed militia in Maniema is a major reason why Kalima's artisanal mining is apparently so benign, as this absence improves prices received by diggers, their working conditions and labour relations.

The study has shown that the Congolese state derives more tax revenue from cassiterite mining than at first might appear to be the case, even if this revenue is not as high as it would like it to be. International NGOs like Global Witness strongly champion the cause of boosting the tax revenues of the Congolese state that are derived from natural resources and they are right to do so. Boosting domestic revenue collection is a vital component of state building and is much needed. Yet it should also be recognised that a serious attempt to boost domestic revenue means not just collecting the tax currently demanded by the Congolese state but, more fundamentally, restructuring its tax system to make international trade taxes less punitive, and instead working towards introducing VAT, as well as improving income tax and company tax returns. Simply elevating trade taxes to absurd levels and then crying foul when traders evade them is a poor tax strategy that should be condoned by no-one.

Much has been investigated, written and revealed about the illegal exploitation of the DRC's natural resources by neighbouring countries, greatly enhancing our understanding of real trade and money flows in the Great Lakes region. But it should not be automatically assumed that, just because resources are smuggled out of the DRC into neighbouring countries, these countries, or their governments, derive great benefit from it. Certainly huge profits can be made from time to time, and indeed were during the 1998–2002 war in the DRC. However, as has been argued above, artificially rosy balance of payments figures for the DRC's neighbours because of smuggling do not in themselves translate into any material benefit for their economies, while the potential benefits to neighbouring state government coffers depends on their own tax regimes. Where states do not impose either import or export taxes on these resources, the benefits are fairly minimal.

In sum, this study finds that in the case of Kalima, artisanal mining benefits more local people in terms of

employment, income, working conditions and gender equity than industrial mining ever did and probably more than it ever could. The study further suggests that the environmental impacts of artisanal mining, except for the craziness of mineral ores being flown out by plane, are gentler than those of the industrial mining it has replaced. Finally, while tax revenues may be lower than if the deposits were mined industrially, this has been found to be in large part because of inadequacies in the Congolese tax regime, which require urgent reform. Rather than obsessing over the tax issue, the Congolese state should focus more on service provision, reminding its long-suffering citizens what tax revenues are supposed to be for.

NOTES

- 1 <http://www.citypopulation.de/CongoDemRep.html>
- 2 Cassiterite is a tin oxide mineral and the chief ore of tin. It is used as a protective coating for steel containers, in solders for joining pipes or electrical/electronic circuits, in bearing alloys, in glass-making, and in a wide range of tin chemical applications. See: <http://minerals.usgs.gov/minerals/pubs/commodity/tin> (accessed 31 March 2009).
Wolfram, also known as wolframite or tungsten ore is an important element in the production of electrical equipment spanning the electric lightbulb to sophisticated military equipment. See <http://minerals.usgs.gov/minerals/pubs/commodity/tungsten> (accessed 31 March 2009).
Coltan, derived from the name columbite-tantalite is a metallic ore used primarily in electronic goods such as mobile phones and computers. See <http://www.tanb.org/index.html> (accessed 31 March 2009).
- 3 Interview with Michel Kabagambe Lobho, head of exploration, Sakima, Kalima, June 2007.
- 4 Internal Sakima report, 2005, partially copied to the author.
- 5 Global Witness, *Under-mining peace; Tin: The explosive trade in cassiterite in eastern DRC*, London: Global Witness, 2005, 15.
- 6 Interview with Faruzi Mukonde, director general of Sakima, Kalima, June 2007.
- 7 Interview with Michel Kabagambe, *op cit*.
- 8 At the time these were Malaya, Nigeria, Bolivia and the Dutch East Indies.
- 9 S Pawlett, *The rise and fall of comibol: The political economy of Bolivian tin*, 1999, <http://archives.econ.utah.edu/archives/pennl/1999m10.d/msg00005.htm>
- 10 Interview with mining company director, Goma, June, 2007.
- 11 A Tegera, *The coltan phenomenon: How a rare mineral has changed the life of the population of war-torn North Kivu province in the east of the Democratic Republic of Congo*, Goma: Pole Institute, 2002.
- 12 G Mthembu-Salter, *The Democratic Republic of Congo, recent history, in Africa south of the Sahara 2007*, London: Europa, 2006.

- 13 Interview with Jean Zabakulu Lubungu, *délegue syndicat principal*, Sakima, Kalima, June, 2007.
- 14 *Ibid.*
- 15 Interview with Michel Kabagambe, *op cit.*
- 16 Controversy has existed for years as to whether Joseph Kabila was in fact the son of Laurent Kabila.
- 17 Mthembu-Salter, *The Democratic Republic of Congo*, 2006.
- 18 Interview with Brian Christophers, managing director, Mining Processing Congo, Goma, June 15th, 2007.
- 19 *Amodiations* are contracts in which the holder of a mining title gives whole or part of the exploitation of this title to another party, for which the holder is paid a royalty. <http://www.presse-francophone.org/apfa/defi/a/amodiati.htm>
- 20 Interview with Brian Christophers, *op cit.*
- 21 Interview with Faruzi Mukonde, *op cit.*
- 22 Interview with Brian Christophers, *op cit.*
- 23 Interview with Faruzi Mukonde, *op cit.*
- 24 Interview with Lufimbo Kikusi Kaskito, digger association president, Kamandala village, June, 2007.
- 25 Interviews with diggers, Kalima, June 2007.
- 26 Interview with Norbert Kipalamoto, *negociant*, Kalima, June, 2007.
- 27 Interview with Lufimbo Kikusi Kaskito, *op cit.*
- 28 Interview with Michel Kabagambe, *op cit.*
- 29 Interviews with diggers and Sakima employees, Kalima, June 2007.
- 30 Telephone interview with Kalima resident, August 2007.
- 31 Interview with Lufimbo Kikusi Kaskito, *op cit.*
- 32 Interview with Tchengi Ikaso Raymond, vice-president of Pangi chieftancy civil society, Kalima, June 2007.
- 33 Visit to Kalima General Hospital, June 2007.
- 34 *Ibid.*
- 35 Interviews with medical staff, Kalima General Hospital, June 2007.
- 36 Interview with Lambert Molamba, manager of social services, Sakima, Kalima, June 2007.
- 37 S Bellaiche, *République Démocratique du Congo: Le défi démocratique, Bilans et Perspectives*, Kinshasa: Promotion Afrique, 2005.
- 38 Interviewed in Kalima, June 2007.
- 39 Global Witness, *Under-mining peace*, 5.
- 40 This is levied by the Office des Douanes et Accises (OFIDA), the Office Congolais du Contrôle (OCC), Cellule Technique de Co-ordination et de Planification Minière (CTCPM) and the Office du Gestion du Fret Maritime (OGEFREM).
- 41 Interview with Deo Rugwiza, director general of OFIDA, Kinshasa, March 2006.
- 42 Interview with Brian Christophers, *op cit.*
- 43 Interview with Jean Zabakulu Lubungu, *op cit.*
- 44 Interview with Norbert Kipalamoto, Kalima, June 2007.
- 45 Each *negociant* employs dozens of young men, principally to sort and shift materials.
- 46 Interview with *comptoir* buyer, Goma, June 2007.
- 47 Interview with Norbert Kipalamoto, *op cit.*
- 48 Internal documentation from one *comptoir*, Goma, June 2007.
- 49 Global Witness, Press release, 2007, http://www.globalwitness.org/media_library_detail.php/510/en/global_witness_calls_upon_the_uk_government_to_hol
- 50 Interview with Norbert Kipalamoto, *op cit.*, and MPC *comptoirs*, Goma and Bukavu, June 2007.
- 51 Interview with *comptoir* operator, Goma, June 2007.
- 52 Interview with Norbert Friedrich, MPC, Bukavu, June 2007.
- 53 Interview with *comptoir* manager, Bukavu, June 2007.
- 54 Global Witness, *Under-mining peace*, 30.
- 55 *Ibid.*, 4.
- 56 Interview with Faruzi Mukonde, *op cit.*



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ABOUT THIS PAPER

Artisanal mining is a vital economic activity in the town of Kalima in the DRC, dominating the town as industrial mining did for decades under colonial rule. This paper describes the complex relationship between mining and the town itself, as well as with the central government and neighbouring countries. The key finding of the study on which the paper is based is that artisanal mining not only generates higher output than industrial mining ever did, but is also better for the mass of people in Kalima in terms of employment, income, working conditions and gender equity. It further suggests that the environmental impacts of artisanal mining, except for the craziness of mineral ores being flown out by plane, are gentler than those of industrial mining. Further, while tax revenues may be lower than if the deposits were mined industrially, this is shown to be largely because of inadequacies in the Congolese tax regime, which require urgent reform. Finally, while a prevalent view of mining in the DRC links it with violent armed conflict, mining in the Maniema province in which Kalima is located has not resulted in fighting, nor does it seem to be used by militias or warlords to fund their military activities. The case of Kalima illustrates that if there is such a link it is not straightforward to understand or predict

This paper was commissioned by the ISS Corruption & Governance Programme (Cape Town) as part of a research project on natural resource exploitation in Africa. For further information contact the ISS Cape Town office.

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FUNDER

This paper was made possible by the support of the Royal Norwegian Embassy in South Africa.



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