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Uncovered

The dark world of the Zama Zamas

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Summary

Illegal artisanal mining in South Africa is among the most lucrative and violent on the African continent, with lost production exceeding R14 billion (about USD\$1 billion) a year. Current enforcement and policy responses, which criminalise illegal miners, are misguided, counter-productive and ignore the poverty and socio-economic drivers behind the phenomenon. A more holistic, nuanced and multi-faceted approach is required from government and industry to address the lack of formalisation and the marginalisation of the illegal mining sector.¹

Key points

- Illegal mining in South Africa should be considered to be artisanal mining within large-scale mines, not separate from them.
- While Zama Zamas are members of, or associated with, criminal syndicates, they are not homogenous groupings.
- The violence and insecurity caused by the criminality associated with illegal mining makes some mining areas in South Africa more chaotic and conflict-ridden than those elsewhere in Africa.
- Rough estimates of Zama Zama outputs suggest that lost gold production may exceed R14 billion a year,² making South Africa one of the biggest sources of illicit gold in Africa.
- The true cost of illegal mining activity includes damage to public and private infrastructure caused by vandalism or poor mining practices, as well as the costs of security upgrades undertaken by mining companies to address illegal breaches.

This brief focuses on:



Recommendations

- Like many non-Western jurisdictions, the government and the mining industry should begin a formal process to design and implement due diligence measures consistent with those of the Organisation for Economic Co-operation and Development (OECD) for conflict-affected and high-risk areas.
- The Minerals and Petroleum Development Act must be overhauled to better define the differences between artisanal and industrial mining.
- The Act should be amended so the SA Diamonds and Precious Metals Regulator (SADPMR) no longer has full responsibility for licensing, monitoring and investigating mining permit holders, a role which could be played more effectively by the South African Police Service (SAPS).
- Consideration should be given to centralising the system regulating the purchase and processing of precious metals by licensed scrap metal dealers.
- Projects such as the joint venture of Petra Diamonds and Ikapa in the Northern Cape should be considered a model for companies battling similar problems.
- It is important to provide legal clarity and definitions of the rights and obligations of the artisanal and small-scale mining (ASM) sector, but the Department of Mineral Resources (DMR) must also provide more oversight of and technical support to the sector.
- The Department of International Relations and Cooperation should prioritise regional and international outreach to neighbours and key trade partners to make them more aware of the criminal and national security threats posed by the illicit trafficking of precious metals.

Introduction

Davidson³ cranks the wheel of a *pindula*, a makeshift contraption used to mix crushed ore with mercury to make gold amalgam. He shrugs off a question about the police. 'If they come, we run. Tomorrow we will be back here again.'

His indifference to the law encapsulates the spirit of the estimated 30 000 illegal miners colloquially known as Zama Zamas, a Zulu expression meaning either 'take a chance' or 'try your luck', who operate in ownerless and disused mines in South Africa in conditions that are among the most exploitative and dangerous on the African continent.

The Department of Mineral Resources (DMR) estimates there may be as many as 6 000 such mines scattered across the country, although most of them are found in and around Johannesburg. In more recent years the miners, organised by criminal syndicates, have also gained access to active mines, causing considerable financial losses and security headaches.

South Africa's problem with Zama Zamas is unlike anything seen anywhere in Africa or beyond. The artisanal mining is principally carried out underground in industrial shafts, not in open pits, as is normally the case. While many ASM mining communities navigate a daily combination of unsafe and precarious working conditions, in South Africa Zama Zamas are exposed to extortion, murder, forced migration, money laundering, corruption, racketeering, drugs and prostitution. The criminal motives of desperate and destitute illegal miners are vastly different from the motives of those higher up the syndicate ladder. The lucrative nature of the trade has made murder and pitched gun battles among competing syndicates a frequent occurrence.

The high cost of illegal mining

Illegal mining is costing the state millions of Rand in lost tax revenue – losses that underscore the extensive money laundering and sophistication of the criminal syndicates behind it.

A 2015 report estimated that about 10% of South Africa's gold production – worth about R8 000 million a year – is stolen and smuggled out of the country. In a document submitted to Parliament in March 2017, the industrial lobby group the Mineral Council of South Africa estimated lost sales, taxes and royalties

at R21 billion a year. Based on rough estimates of Zama Zamas outputs provided by one mining house and a refinery analyst the Global Initiative against Transnational Organized Crime (GI) believes lost gold production far exceeds R14 billion a year, making South Africa one of the biggest sources of illicit gold on the African continent.

The violence and insecurity caused by criminality associated with illegal mining makes some mining areas in South Africa more chaotic and conflict ridden than mine sites elsewhere in Africa. While there are no official numbers of Zama Zama deaths, one accounting, based on media reports of inter-syndicate-related violence, placed the number at 312 between 2012 and 2015. Most of these (67%) were the result of turf wars, with the majority taking place in Gauteng province. Scores more miners die in mining accidents that are neither reported or from which bodies are never recovered. The number also excludes those that have died in below-ground shootouts with mine security or competing syndicates. According to one mine security chief: 'To call it a warzone underground is not an exaggeration.'

The illegal miners are emblematic of a changing South African mining landscape and a direct by-product of the socio-economic inequalities facing one of Africa's leading economic and mining powers. The gold mines of the Witwatersrand Basin, which stretches for 400km through the Free State, North West and Gauteng provinces, are home to one of the world's largest known gold reserves. Since mining began late in the 19th century the region has produced more than 40 000 metric tons, equal to about 50% of all the gold ever mined on earth.⁴

While South Africa remains one of Africa's leading gold producers, its reserves are finite, and declining.⁵ So, too, is the labour force in industrial mines.⁶ During its boom in the 1970s and 1980s the mining industry contributed 21% of South Africa's gross domestic product. In 2016 this had fallen to 8%.⁷ But as shrinking gold resources and reserves make industrial mining less economically viable in the long term, artisanal mining in abandoned and ownerless mines is increasing.⁸

There are competing approaches to the question of how to respond to the Zama Zama phenomenon. While the government prefers to take a hard line, insisting on using the police to subdue the miners, others insist that such an approach fails to address the underlying socio-economic factors or the role played by criminal networks

in orchestrating and benefiting from illegal mining. It also fails to acknowledge the economic potential of the Zama Zamas and the contribution they make to local economies and those of their home countries.

What is clear, however, is that the Zama Zama phenomenon requires a paradigm shift in thinking, particularly among industry stakeholders and government. Debates and approaches – actual or proposed – are still framed through, and deferential to, the perspective of industrial miners. While the Mineral Petrol Resource Development Act (MPRDA) of 2002 acknowledges artisanal miners, it ignores realities in the ASM sector. By and large, artisanal miners have to meet the same licensing requirements as industrial miners, including filing online applications and submitting mining work programmes showing that the applicant has 'financial resources and ... the technical ability to conduct the proposed mining operation optimally'.

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Potential applicants need to assure that 'mining will not result in unacceptable ecological degradation or damage to the environment'.⁹ Analysts point out that this is not a reasonable expectation of artisanal miners, almost all of whom are eking out a marginal living, cannot obtain credit and have no relationships with formal banking. Similarly, they have no access to the Internet or the technical expertise needed to secure the geological and environmental assessments required by the Act.¹⁰ The result is that Zama Zamas operate outside, and in defiance of, the law.

The different ways in which Zama Zamas break the law are not always of their making or within their control. Sophisticated criminal syndicates, for whom the miners are forced to work, perpetrate much of the worst criminality – violence, corruption, human smuggling, tax evasion and money laundering.

This study aims to shed light on criminal exploitation of the sector and the associated gold trade. Of particular

interest is the way ASGM incomes are secured through the use of violence and corruption and the sector's links to parallel economies. While illegal mining in active and disused mines affects other high-value and precious minerals – most notably diamonds, platinum and chrome – the focus of this report is on the gold sector.

A range of stakeholders, including law enforcement bodies, industry, civil society, government, community members and academics were consulted in the compilation of this policy brief. The author also met Zama Zamas working in and around the Durban Deep mine outside Johannesburg. Several interviewees – particularly in enforcement and mine security – spoke to the author on condition of anonymity.

Background

Illegal mining in South Africa, which is driven by multiple intertwined factors, did not emerge overnight.

During the apartheid years migrant labour, which was sourced primarily from neighbouring countries, was the bedrock of the mining sector, providing cheap labour for the industry.

With the advent of democracy in 1994 came a desire to transform the mining sector and redress some of the legacies of the apartheid era, which had excluded blacks, women, junior and small-scale mining enterprises from the minerals and mining economy. Nelson Mandela's government sought to address this challenge by identifying and harnessing ASM as a vehicle for social and economic development, particularly for disadvantaged communities.¹¹

Substantial changes were made, most notably to the legislative framework of the mining sector, and to its employment numbers. The most significant legislative change was the Minerals and Petroleum Resource and Development Act of 2002, which overhauled the industry and gave legal recognition to the ASM sector.

Employment numbers in gold mining have, however, dropped precipitously since 1995, from approximately 380 000 to about 119 000 in 2014.¹² The layoffs and retrenchments have had social ramifications far beyond the borders of South Africa. Remittances from mining jobs had sustained local economies in countries like Lesotho and Mozambique, where unemployment often hovers above 30%. This has created two dynamics

relevant to the current problem. The first is that there is no shortage of men with mining experience to apply to be Zama Zamas or to impart their knowledge to younger generations. Secondly, because of the social crisis caused by the layoffs, when unemployed men are offered work, legal or illegal, many are willing to take their chances.

All over Africa poverty and desperation push people to seek livelihoods in the ASM sector. The exploitative conditions in which they work may be tough, but the small something they get for their labour is better than the nothing they were making in their home countries. Socio-economic and political crises in neighbouring countries have resulted in millions of Southern Africans, particularly Zimbabweans,¹³ crossing the porous borders to seek their fortunes in South Africa – the Minerals Council of South Africa¹⁴ estimates that 70% of Zama Zamas are undocumented foreigners.¹⁵

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This, in turn, leads to another dynamic. Public perceptions of Zama Zamas are overwhelmingly negative. They are characterised as illegal pests who breach both mining and immigration laws and are responsible for a host of social ills. The prevailing feeling is that whatever bad luck or violence befalls them is their own fault. 'When Zamas are killed it is celebrated,' one journalist points out.¹⁶

These perceptions not only breed xenophobic responses to vulnerable people, they also fail to take into account the real criminals behind the Zama Zama phenomenon, thus hampering appropriate policy and enforcement responses.

Police and the mining industry commonly refer to a five-tier crime syndicate hierarchy:¹⁷

- 1) Individual criminal miners;
- 2) Gangs and illegal mining bosses;
- 3) Bulk buyers at national/regional levels in the form of licensed or registered entities;
- 4) Front company exporters; and
- 5) International intermediary companies and buyers.¹⁸

Traditionally, each level interacts only with the levels directly above and below it, however, recently there has been some blurring of those lines. Nonetheless, the five tiers are still instructive in differentiating the different roles within the criminal supply chain.

Zama Zamas (Level 1), who are at the very bottom of the pyramid, are the most visible and precariously placed. They are generally recruited by 'Level 2s' in their home countries and often only learn the job is illegal when they arrive in South Africa.

Any loans taken by miners to purchase necessary equipment such as head lamps, knee pads, rubber boots or pickaxes are deducted from their earnings. Supplies of food and drink provided during the miners' stay underground (sometimes as long as six months) are sold at extortionately high prices.¹⁹ Those working in active industrial mines, where syndicates pay off mine security and other personnel, are often charged a one-off fee, mostly in the form of a long-term loan – ranging from R22 000 to R66 000 – to access the mineshafts. These loans differ according to the miner's function – miners make more than crushers – and are paid back in increments. Mine security chiefs sometimes use the price as a barometer of the effectiveness of their security protocols: the higher the fee, the less vulnerable the mine.²⁰

Despite these onerous expenses the payment terms must be acceptable because '[t]he Zamas won't go down if they don't make money.'²¹

Those who work directly with Zama Zamas say that the amount they are paid does not necessarily relate to the market price of gold, it depends on how well established they are in a particular mine or community. It is not uncommon for illegal miners to be paid as little as a quarter of the spot price. An average month might bring a miner R4 400 to R7 500, out of which he must pay expenses and repay a portion of the loan.

Level 2s are the lynchpin between the Zama Zamas and the more established criminal syndicates (Level 3s). It is they who buy the gold and front the costs associated with running the enterprise. Level 2s enforce discipline

and ensure production quotas are met and it is they who defend their turf violently from rival syndicates, mine security and, sometimes, the police. They also buy off shift managers and security guards to gain access to shafts in active mines and are tipped off about any impending security sweeps. The professional use of firearms during aboveground encounters with rival gangs, police or private security companies suggests that many of the gang leaders have had some kind of military training.²²

The Level 3s are often established members of the underworld – licensed scrap-metal dealers or pawnshop owners or jewellers, all of which occupations give them the legal right to possess and process gold. It is they who launder the illicit gold into the legal supply chain by converting the lower-grade doré bars (doré is a semi-pure alloy of gold and silver). Prior to delivering the gold to the refineries, the Level 3s often mix and melt down the doré with alloys to make it consistent with jewellery.²³ As with the laundering of any product, the more stages it goes through to disguise its origins, the harder it is for police to connect it to its illicit source. Level 3s also procure mining staples like mercury or explosives.

Level 4s, front company exporters, export the illegally procured gold, generally to the United Arab Emirates (UAE) and Switzerland, and the level 5s are international buyers. Those in levels 4 and 5 frequently operate from outside South Africa, beyond the reach of South African law enforcement agencies.

The higher up the syndicate pyramid, the more sophisticated the criminality. The Directorate for Priority Crime Investigation, known as the Hawks, which targets high-profile crime, notes that proceeds from the sale of gold are often expatriated through the legal sale of commodities. 'It's where crime meets economics,' says one enforcement official. 'Instead of moving money, they will move goods. They work with the business community to sell products like diesel or cement; things that are easily converted into cash.'

At mine site level a clear hierarchy determines compensation and roles. Diggers are at the bottom of the food chain, spending weeks and sometimes months at a time underground in cramped and dangerous conditions. Women (other than prostitutes provided by gang leaders) are not allowed underground. They are, however, allowed to work alongside men as 'crushers', grinding the ore as they

would maize. They usually work in small groups and are paid about R175 per 25kg bag of ore. The product then moves to the 'beneficiation phase', where 'burners' add mercury and process the ore into amalgam. The final product is about 60% pure.

Zama Zamas must be placed within a wider framework of criminality and violence in South Africa.²⁴ The most commonly affiliated forms of crime include trafficking of miners, laundering the proceeds of gold-related crime and rampant murder and violence among rival syndicates. The theft of copper cables from underground workings and surface operations has also been linked with Zama Zama activity.²⁵

The phenomenon is also inextricably linked with the endemic corruption that permeates both the public and private sectors in South Africa. 'The levels of corruption made it easier for crime bosses and syndicates to do whatever they want across the illegality spectrum - whether it be drugs, prostitution or illegal mining,' says one mine security chief.²⁶

Zama Zamas complain that police regularly shake them down for bribes in return for not arresting them, or confiscate their gold and sell it directly to the syndicates

One of the most insidious aspects of high-level corruption was the alleged interference with public servants seen as threats to illegality or business affairs - interference that saw officials either forced from their jobs or resigning, leaving a 'serial crisis of top management'.²⁷

The complicity of local police in illegal mining also complicates efforts to contain the activities of the miners. Zama Zamas complain that police regularly shake them down for bribes in return for not arresting them, or confiscate their gold and sell it directly to the syndicates.²⁸ One gun retrieved during an underground firefight was registered to the South African Police Service (SAPS), suggesting police collusion with the most violent strata of the syndicates.²⁹ Senior police

officials acknowledge such complicity, but have yet to take concrete action to stop the practice.

While almost everybody acknowledges that the Zama Zamas operate illegally, their defenders claim that they are merely trying to eke out a living and their activities should be regarded as 'survivalist mining'. While all levels of government are aware of the syndicate structure, the easiest way to 'show results' in the fight against illegal mining is to arrest the miners, not the more elusive criminal bosses. But as soon as some miners are arrested and deported others arrive to take their place. A better strategy, and one the Hawks have adopted, is to focus on the syndicates.

High-level members of syndicates have been successfully prosecuted, although it is often difficult to identify those involved and to make a solid case against them. On the face of it, the most symbiotic relationship is between the illegal miners and the gang leaders who recruit and manage them, while less is known about the extensive network behind them. The Hawks have begun mapping out some of the networks and have achieved some decisive legal victories but, for the most part, the level 4s and 5s continue to dodge the law.

Illegal gold and the legal market

South Africa differs from many other countries in the way in which illicit gold is laundered into the legal system - most of it is believed to be refined within the country before being legally exported abroad. Police estimate that there are at least 100 small refineries in the Gauteng region alone.

Intelligence suggests that most illegally mined gold is laundered by buyers who sell it either to scrap-metal dealers or to pawn brokers (often associated with the syndicates), who melt down the doré to mask its origin. While the law requires that any sales of recycled jewellery be documented and that the jewellery be photographed before it is melted down, police know that the process is routinely abused.

In one police operation two suspects who were arrested were in possession of both illicitly mined gold and about 3 000 fraudulent identity documents. The suspects are believed to be members of a syndicate that fabricated more than 16 000 fraudulent invoices worth more than R528 million to reflect purchases of second-hand gold jewellery.³⁰ Rand Refinery, the continent's largest refinery, is aware of this practice and has taken steps to

inoculate its supply chain, refining only gold produced by large-scale miners with whom it has long-term contracts. While it is legally required to take gold from the secondary market (those with scrap-metal licences), it successfully discourages this business by charging uncompetitive rates.³¹

While South Africa reported no doré exports at all between 2007 and 2017, UAE data show that more than 34 tonnes arrived between 2012 and 2016

Trade data show another route that has so far evaded the radar of the DMR and of the customs authorities. While most syndicates prefer the local scrap-metal-to-refinery route, there is evidence that illicit South African gold is leaking out through the country's neighbours.

Data reported to Comtrade, the international trade statistics database managed by the United Nations, show that in addition to its massive exports of refined gold, South Africa trades smaller quantities of doré. However, while the data are incomplete, they reveal several things. Between 2011 and 2016 South Africa officially exported to only two countries – Swaziland (now Eswatini) and Botswana. Eswatini was by far the biggest recipient, importing 2 182kg. The market value of the 1kg doré bar is generally estimated at between R51 000 (about \$35 000) and R54 000 (\$37 000), depending on the purity.³²

Eswatini is home to the Lufafa Gold Mine,³³ with a 25% national stake held in trust by the king. It officially opened in February 2016 but was shut down shortly afterwards because of concerns of mismanagement and infiltration by Zama Zamas. There has only been one legal export from the mine – a test export of 1kg sent to Ethiad, a Dubai-based refinery.³⁴ Despite this, India reported two doré imports from Eswatini – an 800kg shipment valued at about R425 million (\$28 934 214) in 2015 and another 300kg worth about R161 million (\$10 903 192), in 2016.

Mozambican doré exports also raise some eyebrows. The United States Geological Survey estimates the country's total output of gold to be roughly 600 to 900kg a year,³⁵

but between 2011 and 2013 Mozambique exported 2 000kg to Singapore, 1 003kg to Lebanon and 1 000kg to India.³⁶ Police and mine security identify Mozambique as the most likely departure point for South African gold.

Zimbabwe, itself a gold producer, is another attractive transit point for Zama Zama gold. With direct flights from Zimbabwe to Dubai the only obstacle for couriers is to get past official controls in Harare. UAE's hand-carry gold policy allows couriers to sell their merchandise directly to gold traders in the Dubai souk without demonstrating provenance, export taxes or documentation.³⁷

All these avenues are dwarfed by the exports from South Africa to Dubai. While South Africa reported no doré exports at all between 2007 and 2017, UAE data show that more than 34 tonnes arrived between 2012 and 2016.³⁸ These exports probably left through the legal system – processed at small refineries in Gauteng and given legal export papers by the SA Diamonds and Precious Metals Regulator (SADPMR). Given that Rand Refinery exports the entire industrial production of South Africa to countries other than Dubai, these figures give a more accurate picture of the scale of the illegal trade.

The Policy Deficit: Enablers of illegality

The detrimental effects of illegal mining on South Africa's economy spread far further than the problems of lost gold and government royalties.

One mining house alone has, since 2013, spent almost R366 million on upgrading its security infrastructure and protocols to make it harder for Zama Zamas to penetrate the mining precinct and its shafts. In 2017 its security sweeps collared almost 1 400 Zama Zamas in the shafts.³⁹

Johannesburg has incurred huge expenses caused by poor mining practices, vandalism and theft. The biggest problem for the city is the use of explosives, which have compromised support pillars in decommissioned mines and resulted in tremors, which put at risk the structural integrity of roads, adjacent residential communities and businesses. It also poses a significant public safety threat as some of the blasting has taken place close to pipelines carrying gas and fuel. A spark could start a fire capable of incinerating property within a radius of up to 300 square metres.

The issue of illegal mining is firmly on the agenda of the South African government, which has funded research under the auspices of the United Nations Integrated Crime and Justice Research Institute. It has also hosted two high-level round tables to seek the opinions of experts and has engaged with the OECD to learn more about how its *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*⁴⁰ might be applied locally. The government has set up the National Coordination Strategic Management Team, a multi-agency task force,⁴¹ and has held several parliamentary briefings on the matter.

So why has there not been more progress?

Many interviewees say the DMR and its affiliated agencies, chiefly the SADPMR, have failed to respond to the issues.⁴² They complain of difficulties in identifying and obtaining access to DMR officials with whom they can engage. The SADPMR has suffered from a crisis of leadership and has, at times, provided very little oversight. The DMR has had four ministers in five years and key senior management positions, including those of director general and deputy director general, remain vacant. This has had an impact on continuity and on responses to a range of pressing issues in the mining sector, not the least a durable solution to the Zama Zama problem.⁴³

It would not be fair to blame the DMR alone for the myriad challenges and failures of responses to the Zama Zamas. Much of the current dysfunctional response lies within the MPRDA, which bestows the regulatory responsibility to license and monitor miners and scrap metal dealers on the SADPMR.

These tasks were previously carried out by SAPS, who would do due diligence checks on applicants and monitor trends within the industry through their access to mandatory raw production and trade data supplied by permit holders. The 2002 Act removed them from that oversight role, leaving it to SADPMR officials, who have neither the investigative skills nor the inclination to carry out this function. To make things worse, the SADPMR only shares such information if approached through official channels.

In accordance with the post-apartheid 'economic transformation' agenda, the new Act liberalised the refinery market, which has '[opened] the door to criminality'.⁴⁴ Industry analysts and police complain that

the SADPMR shies away from its regulatory mandate and operates opaquely, shielding the identities of the smaller refineries and prioritising a political agenda of black economic empowerment, while turning a blind eye to clear reputational and criminal risks.⁴⁵

With Rand Refinery rejecting any product originating from secondary markets and ASM sources, this leaves smaller refineries as the only place for illicitly mined gold to go. In order to export gold, these refiners also need to apply for a separate licence. The SADPMR does not disclose numbers but it is clear that Rand Refinery is not the only one with such a permit – the 34 tonnes of exports to UAE (a country to which Rand Refinery does not export) attest to this.⁴⁶

Existing legislation offers no option for the ASM and LSM sectors to co-exist. While two diamond companies in North West Province took the unprecedented step in June 2018 of allowing Zama Zamas to mine tailings on their properties,⁴⁷ creating a possible model for others, this does not happen across the board. It is not a feasible option for active gold mines, which have invested heavily in infrastructure and are rightly reluctant to share their shafts and gold production with Zama Zamas. But for South Africa's disused gold mines it could be a game changer.

Beyond legislative obstacles, perhaps the biggest challenge to finding a solution to the chaos and criminality of the Zama Zamas is one of approach. Like other governments on the continent South African authorities regard illegal miners primarily as criminals who should be brought to heel through the force of law.⁴⁸ The socio-economic drivers that motivate them, the difference between the miners and the criminal syndicates they work for and the exploitative circumstances in which they are recruited are too often either downplayed or ignored.

Criminalising, demonising and scapegoating illegal (and mostly foreign) miners is an easy deflection away from more difficult discussions of uncomfortable truths about the persistent poverty, poor service delivery in marginalised areas and political instability in neighbouring countries that contribute to men becoming Zama Zamas in the first place.

Moreover, it completely ignores their economic significance and contributions. The Bench Marks Foundation, for example, has argued that the 30 000 Zama Zamas in South Africa have a dependency ratio

of 1:8, meaning that 250 000 people depend on them. Shutting down artisanal mining would create another 280 000 victims of unemployment, which would not only increase poverty rates but could also add to South Africa's already high violent crime rate.⁴⁹

Conclusion

Despite its position as a global miner, South Africa does not have much experience in dealing with an artisanal sector. This requires the government, like the Zama Zamas, to 'take a chance' on positive interventions and learn from African countries with more exposure to the ASM sector. It is hoped that a more holistic, nuanced understanding of the Zama Zama phenomenon will contribute to the development of multi-faceted responses that are able to curb criminality and enable the sector to contribute more effectively to development.

While Zama Zamas undoubtedly operate in a criminal environment they are not a homogenous group. Although active gold mines affected by illegal miners are legally entitled to remove them, the current approach, which favours using the law to bring them to heel, is misguided and counter productive. The poverty and socio-economic factors driving the phenomenon are bigger and more relentless than the rule of law.

Any amendments to the Minerals and Petroleum Development Act should explicitly acknowledge the inherent differences between ASM and LSM and change the law and the licensing process to align

better with the realities facing artisanal miners. The current Act mandates the SADPMR to license, monitor and investigate mining permit holders, tasks critics claim it is not equipped to carry out. An amended Act should either enable this role to be shared with or be returned to the exclusive control of the SAPS. The SAPS and SADPMR should also cooperate in monitoring permit holders and their operations. Any legislative amendments should tighten the licensing requirements for scrap-metal dealers and gold export permit holders and mandate the DMR to publish their corporate details.

Joint ventures such as that between Petra Diamonds and Ikapa would allow ASM mining within an industrial concession but set parameters such as where the miners mine, what techniques they use, to whom they may sell the gold and when they must vacate the property. The authorities should also seek the advice of civil society organisations working on technical solutions in ASM sectors affected by conflict.

If the small-scale mining board were to be re-established it could provide skills training for ASM miners, particularly in relation to safe mining practices and the use of explosives and mercury.

And finally, centralisation of the system regulating the purchase and processing of precious metals would contribute significantly to including Zama Zamas in the legal supply chain. A single designated gold buyer, or a small group, would buy at the daily spot price, offering the miners true market value for their gold, thereby incentivising them to operate within a formalised and legal framework.

Notes

- 1 This policy brief is part of a cross-regional study of criminality and the African artisanal and small-scale gold mining sector conducted by ENACT affiliate the Global Initiative Against Transnational Organized Crime. Marcena Hunter, a senior analyst at the Global Initiative, reviewed the report and managed the overall study.
- 2 Interview, senior mine security team, Johannesburg, 6 June 2018; telephone interview, refinery analyst, Johannesburg, 27 June 2018.
- 3 Not his real name.
- 4 Chamber of Mines of South Africa, *Mine SA 2017: Facts and Figures Pocketbook*, February 2018, p 11.
- 5 For example, between 1999 and 2014 production dropped from 451 184kgs to 151 618kgs. 8.3.1 Metallic minerals; South African Statistics, 2015; www.statssa.gov.za/publications/SASStatistics/SASStatistics2015.pdf
- 6 South African Statistics, 2015, s 6.2.1. Labour figures for the 'mining and quarrying' sector dropped from 613 584 jobs to 490 684.
- 7 Jason Musyoka, 'Illegal mining about survival, not criminality', *Mail&Guardian*, 28 July 2017; <https://mg.co.za/article/2017-07-28-00-illegal-mining-about-survival-not-criminality>
- 8 Personal interview, David van Wyk, Bench Mark Foundation, 7 June.

- 9 Mineral and Petroleum and Resources Development Act (2002), s23. Available at: www.wylie.co.za/wp-content/uploads/MINERAL-AND-PETROLEUM-RESOURCES-DEVELOPMENT-ACT-NO-28-OF-2002.pdf
- 10 Interview, Kgothatso Nhlengethwa, mining geologist, University of Witwatersrand, 7 June 2018.
- 11 Pontsho Ledwaba and Kgothatso Nhlengethwa, 'When Policy is Not Enough: Prospects and Challenges of Artisanal and Small-Scale Mining in South Africa', *Journal of Sustainable Development, Law and Policy* 7(1), 2015.
- 12 'Mining: Winner and Losers of 2017', Statistics South Africa, 28 February 2018. Available at: www.statssa.gov.za/?p=10963
- 13 It is estimated that there are three million Zimbabweans in South Africa.
- 14 Formerly the Chamber of Mines. The name change took effect in May 2018.
- 15 Interview, Ursula Brown, Minerals Council of South Africa, 8 June 2018.
- 16 Interview, Chris Clark, 30 May 2018.
- 17 Ben Coetzee and Riana Horn, 'The theft of precious metals from South African mines and refineries', Institute of Security Studies, Pretoria, August 2006.
- 18 UNICRI, 'Strengthening the security and integrity of the precious metals supply chain', Torino, Italy, May 2016.
- 19 Interview, mine security chief, Johannesburg, 4 June 2018.
- 20 Interview, mine security team, Johannesburg, 6 June 2018.
- 21 Interview, mine security team, Johannesburg, 6 June 2018.
- 22 Interviews, senior law enforcement officers, Pretoria, 5 June 2018; mine security, Johannesburg, 6 June 2018.
- 23 Interview, senior law enforcement officers, Pretoria, 5 June 2018.
- 24 See, eg, Riana Horn, 'A Proactive Approach to Curb Asset-Theft at a South African Mine', Master's thesis, UNISA, June 2012, pp 26-36; Available at: http://uir.unisa.ac.za/bitstream/handle/10500/6039/thesis_horn_r.pdf;sequence=1
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