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SCRATCHING THE SURFACE

Tracing coloured gemstone
flows from Mozambique and
Malawi to Asia

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November 2021

ACKNOWLEDGEMENTS

The authors would like to acknowledge the contribution of the entire research team, whose hard work – especially during the COVID-19 pandemic and a period of insecurity in Mozambique – made this report possible. They also wish to express their gratitude to everyone who was generous enough to be interviewed for this report, including investigative reporter Estacio Valo. They would also like to thank the Global Initiative Against Transnational Organized Crime (GI-TOC) team for their support. Particular thanks are owed to Virginia Comolli and Mark Shaw for their invaluable assistance in reviewing drafts of the report, as well as to Pete Bosman, Mark Ronan and the rest of the GI-TOC publications team. Finally, we would like to thank the government of Norway for funding this research.

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Cover: Artisanal miners in Montepuez, northern Mozambique.
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Design and illustration: Ink Design Publishing Solutions
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CONTENTS

Acronyms and abbreviations.....	4
Executive summary	6
Methodology.....	9
Introduction: Anything but clear-cut.....	10
Coloured gemstone mining.....	13
Gemstone deposits.....	14
Artisanal and small-scale mining.....	19
Corruption.....	22
Supply chains and financial flows.....	24
Mozambique.....	27
Malawi.....	30
Impact of COVID-19.....	31
Gemstone pricing and payment.....	31
Export and smuggling to destination markets.....	33
Confluence with other illicit markets.....	35
Transit and destination markets	36
Tanzania.....	38
Thailand.....	40
Sri Lanka.....	43
Recommendations.....	48
Notes.....	52

ACRONYMS AND ABBREVIATIONS

- ASM** Artisanal and small-scale mining
- ASWJ** Ahlu-Sunna Wa-Jama'a
- IDP** Internally displaced person
- LSM** Large-scale mining
- MRM** Montepuez Ruby Mining Limitada
- NSR** Niassa Special Reserve





EXECUTIVE SUMMARY

A worker examines a ruby at large-scale mining operation Montepuez Ruby Mining Limitada.
© Matthew Hill/Bloomberg via Getty Images



The trade in coloured gemstones stretches around the world, linking source countries on almost every continent to international trade hubs, mainly in Asia, and on to retail markets. Mozambique is one such source, sitting atop significant gemstone deposits, including precious and semi-precious stones. In fact, the discovery of ruby deposits in northern Mozambique in 2009 has been called the most significant find of this century and the country is now the world's largest ruby producer.¹

Globally, most gemstone mining is conducted by artisanal and small-scale mining (ASM), and much of this is informal. Likewise, in northern Mozambique and Malawi most extraction is conducted by ASM, except for large-scale mining (LSM) operation Montepuez Ruby Mining Limitada (MRM) and a growing number of other companies. The informality and opaque nature of the coloured gemstone industry leaves it vulnerable to smuggling and other criminal activities. The clandestine character is partly a function of the physical nature of coloured gemstones – they are inherently difficult to value and depend on the skill of artisans to draw out their beauty – and partly due to the financial imperative to protect gemstone sources and relationships from potential competitors. This secrecy that surrounds the trade makes it incredibly difficult both to tackle its undesirable effects and to support development in gemstone-producing countries.

This paper provides an overview of the supply chains and flows that run from the mines of northern Mozambique and Malawi, to the international trade hubs of Sri Lanka and Thailand. Analysis of the political and economic environment in which mining and trading take place gives a contextual understanding of gemstone flows both within and out of the region as well as the various actors involved.

There is a tendency to depict those involved in the trade as good or bad. However, when one scratches beneath the surface, a more complex story emerges composed of many shades of grey. While mining in many locations is illegal, because it is unlicensed or takes place in protected areas or privately owned mining concessions, a more nuanced approach is needed – one that appreciates the context in which

miners operate. Mining in northern Mozambique is driven by high levels of poverty and economic desperation. Moreover, poor governance and widespread corruption, ranging from petty profiteering by local law enforcement to allegations of land grabs by political figures, create the conditions in which illegal mining can flourish.

In this environment, foreign traders and buyers, originating from Thailand, Sri Lanka, Tanzania and West Africa, operate as middlemen, buying stones from miners and brokers before transporting them to Thailand, Sri Lanka, Tanzania and Kenya, where they may be cut, polished and sold for further trade downstream. Most of these stones are thought to be smuggled or significantly undervalued. Although the illegal or duplicitous actions of various individual stakeholders in the coloured gemstone sector may seem insignificant, when combined they create transnational networks that trap vulnerable mining communities in poverty and undermine good governance and security.

Responsible sourcing efforts have attempted to tackle these challenges, based on the premise that more transparent supply chains will result in better development outcomes for miners and their communities.² There is also increasing pressure from consumers on gemstone dealers and jewellers to engage in responsible sourcing. However, although responsible sourcing initiatives can provide consumers with peace of mind, in practice they can have less than ideal outcomes for both miners and traders. For example, miners or traders, some of whom have been involved in the coloured gemstone industry for generations, are often unable to secure the financing or provide the documentation necessary to comply with responsible sourcing requirements.

Another incentive for responsible sourcing in the coloured gemstone sector is to guarantee the quality of the stone. This has direct implications for traders in northern Mozambique. The use of heat treatment on stones (a process that enhances the colour and clarity of lower-quality stones) and the sale of synthetic stones in the area have left many gemstone buyers wary of informal traders and only willing to buy from large-scale mines, such as MRM, which are able to provide a certificate of origin and guarantee stones are real and have not been heat treated.

While responsible sourcing has implications for both miners and traders, many interventions to date have only engaged with miners and neglected to include traders. Increased engagement with traders is important not only to make such interventions more successful, but also to protect the livelihoods of traders themselves. Traders can often be marginalized themselves, as research has found to be the case for West African traders in Thailand.³

Despite the complexity of the coloured gemstone trade, the demand for responsible and traceable supply chains is not going to subside and is expected to continue to grow in importance to consumers. As such, this report examines coloured gemstone supply chains and networks, in the hope that this deeper understanding can inform responses and encourage wider stakeholder engagement. Interventions that engage with and empower local communities in source and transit countries, including greater engagement with existing traders, are needed to curb criminality and fully

realize the development potential of the sector. To this end, the following recommendations are made:

- 1. Increase engagement with source communities and coloured gemstone traders.** Interventions ought to build the capacity of miners and smaller traders as well as create local value-addition services and markets for coloured gemstones.⁴ Interventions also ought to have a greater focus on gender, understanding the impact on women and how to best engage with and involve them in programming.⁵
- 2. Establish relationships between ASM and LSM operators.** There is a need to identify realistic and practical solutions that are of interest to both LSM and ASM stakeholders, allowing them to coexist as harmoniously as possible.⁶ This will require communication channels between large-scale and local artisanal operations, and creating legal and feasible pathways for them to cooperate.
- 3. Adopt responsible sourcing requirements in an incremental and flexible manner.** Responsible sourcing needs to be realistic, incrementally implemented in partnership with miners and

traders and exercised in a flexible manner so that it does not create a barrier to effective engagement with ASM miners and small traders.

- 4. Shift regulatory approaches to be more development focused.** Support for responsible and secure mining and trade pathways that reduce opportunities for criminal exploitation is needed. Implementing these reforms will require bringing in partner organizations that can commit to supporting training and providing technical support on a long-term basis.
- 5. Promote increased cooperation between source, transit and destination countries.** In order to tackle smuggling effectively while maintaining and growing legal gemstone flows, international cooperation will be necessary to create stronger incentives to engage in the formal sector.
- 6. Support anti-corruption and good governance initiatives.** A multi-pronged anti-corruption approach aimed at both petty and high-level corruption is required. This should include grass-roots efforts to foster social accountability among communities.

Methodology

Research was conducted in northern Mozambique and Malawi, coloured-gemstone-rich areas where artisanal mining and informal supply chains are prevalent. Close connections between the Mozambican and Malawian ASM sectors, with interlinked flows and actors, justified a combined investigation of the two countries' ASM activities.

The study followed a mixed methodology, taking advantage of primary research carried out by field investigators and complemented by a literature review and remote interviews conducted by telephone. Researchers visited trading centres, including Lichinga, Mavago, M'Sawize, Montepuez, Namanhumbir and Nampula in Mozambique in January 2021, and Lilongwe and Mangochi in Malawi in February 2021. Interviews were carried out with government officials, police officers,


civil society actors, industry experts, private sector actors and security officials, gemstone dealers, brokers and miners. Due to the sensitivity of the research and the security situation in northern Mozambique, questioning was limited in some respects to protect researchers as well as interviewees.

Thailand, Sri Lanka and Tanzania were identified as key transport and trade hubs through which coloured gemstones originating in East Africa are traded and processed before onward transportation to retail markets. Interviews from previous research in Thailand were also supplemented by secondary literature in sections on Thailand, Sri Lanka and Tanzania. The challenges presented by the COVID-19 pandemic and other constraints meant that field research was limited to northern Mozambique and Malawi.



INTRODUCTION: ANYTHING BUT CLEAR-CUT

Rubies are graded in a workshop in Thailand. © Yves Gellie/Gamma-Rapho via Getty Images

The top of the page features a decorative graphic consisting of several large, semi-transparent gemstones (diamonds and rubies) arranged in a pattern. Overlaid on these is a network diagram with dark grey lines connecting circular nodes, suggesting a supply chain or trade network.

East Africa possesses a wealth of coloured gemstone deposits, with transnational supply chains linking the region to global trading hubs in South and South East Asia. ASM accounts for most coloured gemstone production in the region.⁷ Coloured gemstone supply chains are often highly fragmented and complex, making it nearly impossible to trace a gemstone's journey from the mine to the end-user.⁸ As a result, there is limited understanding of the intricacies of stakeholder networks and the supply chains that link mines to international markets. This also makes them susceptible to criminal exploitation and smuggling.

Northern Mozambique exemplifies the challenge. Possessing what has been called the most important ruby discovery this century,⁹ the country also hosts a large informal mining sector. Now one of the largest producers of quality rubies in the world,¹⁰ Mozambique is estimated to produce as much as 80% of the global ruby supply. In Thailand, which has been dubbed the 'ruby trading kingdom',¹¹ most of the rubies traded are now reported to come from northern Mozambique.¹² Mozambique's vast deposits also hold an array of other precious and semi-precious stones, including tourmaline.

Supply chains between Mozambique and Malawi are closely interlinked, with stones and networks criss-crossing the border. Though its mining sector is substantially smaller than that of Mozambique, Malawi also possesses a wide variety of gemstones, including rubies and semi-precious coloured gemstones. Smuggling networks are prominent, resulting in vast quantities of stones being trafficked between and out of the two countries. This is achieved by under-reporting both the quantity and the value of the gemstones or by simply concealing stones that are being exported.

As a result, both Mozambique and Malawi's gemstone industries are thought to be tremendously undervalued. Mozambique is thought to be losing out on millions of dollars in untaxed trade annually, with the only trade figures for Mozambique declared by large-scale ruby mining operation MRM, which alone has sold over US\$584 million worth of rubies since June 2014.¹³ Similarly, only a small portion of coloured gemstone production in Malawi is declared on export.¹⁴

From Mozambique and Malawi, coloured gemstones are taken to the major trading hubs of Thailand and Sri Lanka, either directly or via Tanzania or Kenya. As global centres of the trade, Thailand and Sri Lanka are home to some of the world's biggest coloured gemstone markets, in which merchants and buyers from across the world can be found trading in stones. With significant cutting, polishing and processing capabilities, the two countries mark a crucial middle stage between upstream producers and downstream consumers. Rough stones are smuggled in and polished, and cut gems and jewellery are exported. Tanzania and Kenya are also important producer and transit hubs, and play an ancillary role by facilitating the export of high volumes of low-value stones from Africa to Asia. The importance of these hubs can shift based on economic or policy changes and regulatory efforts.¹⁵

Many miners active in the northern Mozambique ASM coloured gemstone sector are driven by poverty and desperation.¹⁶ Years of government neglect and failure to provide basic services, including security and employment opportunities, have resulted in high levels of poverty, insecurity and violence. In turn, individuals, especially young men with little to no other option, are turning to coloured gemstone mining to earn money. However, because most gemstone deposits (or at least the most lucrative deposits) in northern Mozambique are in protected areas or in concessions held by companies, most miners do not have the necessary access or rights to mine legally. As a result, formal operations are difficult to establish and responsible sourcing and development interventions near impossible.

A lack of political capacity and will to harness the sector and support its formalization has also contributed to the challenge. Ingrained corruption in northern Mozambique has created a climate of instability that has led to the insurgency currently terrorizing communities in Cabo Delgado. There has been little

government investment into mining communities or support for the formalization of the ASM sector, and failed law enforcement efforts have tended to benefit the interests of corrupt actors in the area rather than reduce criminality. This pattern is reflected across much of northern Mozambique and has sowed seeds of discontent, which extremists have been able to exploit to recruit young men and grow support for their cause.

A laissez-faire attitude towards the importation of gemstones in Asian trade hubs has also facilitated the smuggling and gross undervaluing of gemstone flows. Thailand and Sri Lanka rely on the coloured gemstone sector to provide high levels of employment and significant economic and trade returns. Thus, a business-friendly attitude towards gemstone imports is needed to ensure supply chains continue to flow smoothly. This is a justified concern, as experience has shown traders will shift to other locations with lower import barriers if tighter regulations make the trade less profitable. As a result, there is limited interest in ensuring that imported stones are responsibly sourced and properly taxed.

A downward spiral ensues, perpetuating illicit networks that link mines to international markets while keeping communities in the source country trapped in poverty. While the illegal or duplicitous actions of various individual stakeholders in the coloured gemstone sector may seem insignificant, together they create transnational networks that perpetuate poverty and undermine good governance. Small acts of criminality, like dropped pebbles, cause a ripple effect that is felt both in Africa and Asia. They erode the rule of law and governance and undermine sustainable development. For this reason, it is imperative that we unpack the supply chains and networks of the coloured gemstone trade to identify the 'pebbles' and to design effective responses that generate a wave of positive development outcomes.



COLOURED GEMSTONE MINING

Artisanal miners search for rubies near Montepuez, Mozambique. © Matthew Hill/Bloomberg via Getty Images

Gemstone deposits

Rubies are the most significant precious gemstones found in northern Mozambique. They fetch the highest prices and are the most sought-after coloured gemstone found in the area. Other stones mined and traded in the region include sapphires, tourmalines, chrysoberyl, garnets, aquamarines, amethysts, crystal and rose quartz, amazonite, zircon, rhodolite, and granite, as well as gold (see Figure 1). Artisanal mining in Mozambique goes back centuries but developed significantly in the 1980s and 1990s, when many of the large agricultural and mining companies in the country closed during the civil war. Since then, ASM has been one of the main sources of income for local communities.¹⁷


<p>Ruby (Corundum)</p>	<p>Ruby is the name given to red corundum. Prized for their colour and hardness (second only to diamonds), rubies can command the highest price per carat of any coloured stone. Mozambique is an important new source for ruby, with the quality of gems comparable to those from Myanmar, which has traditionally boasted the most sought-after examples.¹⁸</p>	
<p>Sapphire (Corundum)</p>	<p>Sapphire is the name for all colours of the mineral corundum except for red corundum. Depending on their trace element content, sapphires might be blue, yellow, green, orange, pink, purple or even show a six-rayed star if cut as a cabochon. Sapphire is prized for its colour and hardness.¹⁹</p>	
<p>Tourmaline</p>	<p>Tourmaline comes in a wide range of colours. In Mozambique and Malawi this includes green, yellow, pink, watermelon, bi-colour, blue, rubellite and black tourmaline. Colour-changing stones can also be found in Malawi. In the early 2000s, copper-bearing tourmalines similar to those found in Paraíba were discovered in Mozambique. Rare and highly prized, the blue-to-violet examples demand the highest prices of the tourmalines due to their vivid hues, higher colour saturation and rarity.²⁰</p>	
<p>Other stone types</p>	<p>Other types of stones found in Mozambique and Malawi include beryls (aquamarine, heliodor and morganite), chrysoberyl, garnets, amethysts, quartzes, amazonite, zircon, rhodolite, and granite.</p>	

FIGURE 1 Coloured gemstone types found in the region.

The discovery of and demand for Mozambican rubies saw another surge in the late 2000s. In 2007, following a bloody crackdown by the Burmese military in response to the Saffron Revolution, major jewellery companies announced they would boycott gemstones from Myanmar, and the US and EU placed embargoes on Burmese rubies.²¹ In 2008, the discovery of rubies in Tanzania attracted international buyers (mainly from Thailand and Sri Lanka) to the country in search of an alternative source of rubies for American and European customers. This sparked 'ruby fever' across East Africa, and in early 2008 dealers started to bring rubies from the M'Sawize area of Mozambique to buyers based in Tanzania.²²

In Mozambique, this prompted a surge in ruby mining. Reportedly, over a thousand ASM miners were active near M'Sawize in 2008. However, because the deposit was located within the Niassa Special Reserve (NSR),

a police operation closed the deposit in July 2009.²³ In 2009, large quantities of low- to high-quality rubies started to be produced near the village of Namanhumbir, just outside the district capital of Montepuez. The deposit attracted miners from the whole region, with prospectors from the local community being joined by miners expelled from M'Sawize as well as those who had been recently removed from the tourmaline-producing area of Mavuco near Nampula. Asian buyers relocated to Mozambique to be closer to the ruby source and were quickly followed by Tanzanian miners and businessmen.²⁴

Today, mining in northern Mozambique is spread across the Niassa, Cabo Delgado and Nampula provinces. Most ruby mining is concentrated around Namanhumbir, with some ruby mining still taking place near M'Sawize in the NSR. Although, within the NSR, it is reported that many miners have transitioned to gold mining.

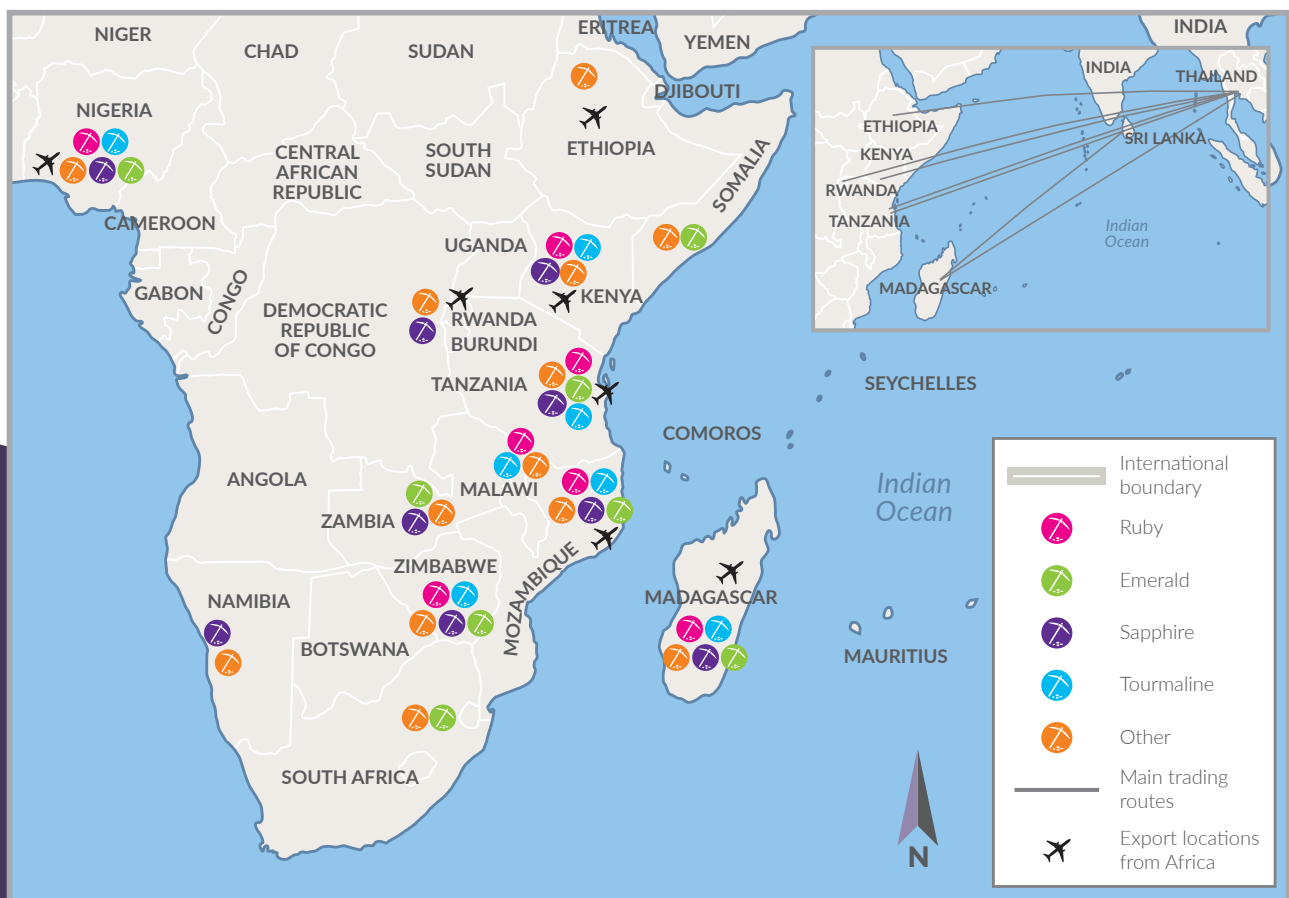


FIGURE 2 Mining sites and flows of coloured gemstones in the region.

SOURCE: Adapted from James E. Shigley et al, Gem localities of the 2000s, *Gems and Gemology*, 46, 33 (2010), 188–216

Though Malawi's ASM sector is significantly smaller than that of Mozambique, it is nonetheless an important source of economic activity for many communities. In Malawi, gemstone mining can be found across much of the country, from Chitipa in the north, to Nsanje in the south. Mzimba, a major ASM site in the north of the country, produces aquamarine, beryl, garnet, amethyst and rose quartz. Ruby mining in Malawi is a much older industry than in Mozambique; the Chimwadzulu ruby deposit has been known and mined since the 1950s but, because it is remote and difficult to access, it has not been easy to mine there.²⁵ Widespread informal

mining has led to a significant and consistent undervaluation of the sector in official figures. Although the industry has officially contributed less than 1% of GDP, estimates place its actual contribution as much higher.²⁶ In recent years, Malawi has developed legislation and policies to support ASM formalization, notably in the form of the revised Mines and Minerals Act 2019.²⁷ Yet critics say progress has been slow.²⁸

Mozambique and Malawi have developed publicly accessible mining cadastre portals, aimed at improving transparency around the ownership of mineral deposits

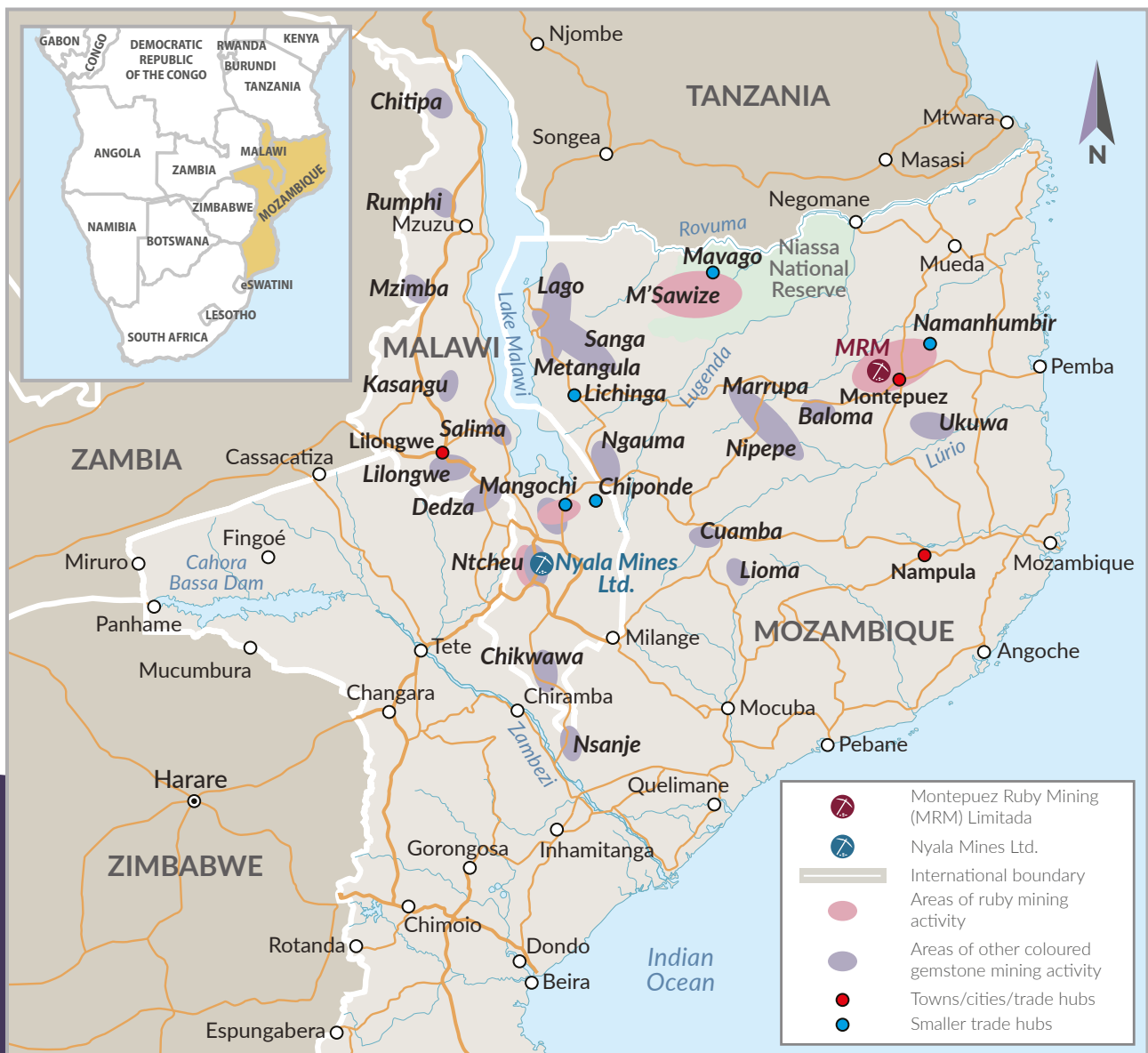


FIGURE 3 Mine sites and trade hubs in northern Mozambique and Malawi.

(see Figures 4 and 5).²⁹ However, this has yet to translate into more clear and accessible mining rights for ASM operators. Globally, most artisanal miners do not have title to land or permits to extract minerals. Mining without titles or permits is often tacitly accepted as 'traditional' or 'informal' in areas not strictly protected by law.

When transparent systems of land registration are not in place it can lead to disputes over the legitimacy of claims. This can include instances where the government has entered into formal agreements with large mining companies, but the local community feels

appropriate consultation did not occur that would protect their customary rights to mine.³⁰ This ever-increasing competition over land and mineral rights, as well as the threat to conservation, is exacerbated by the rising price and demand for coloured gemstones.³¹

Both Mozambique and Malawi are home to conservation areas where the interests of miners and conservationists conflict. These include the NSR and Quirimbas National Park in northern Mozambique, Chimanimani National Park in central Mozambique, and the Namizimu and Perekezi Forest Reserves in Malawi.

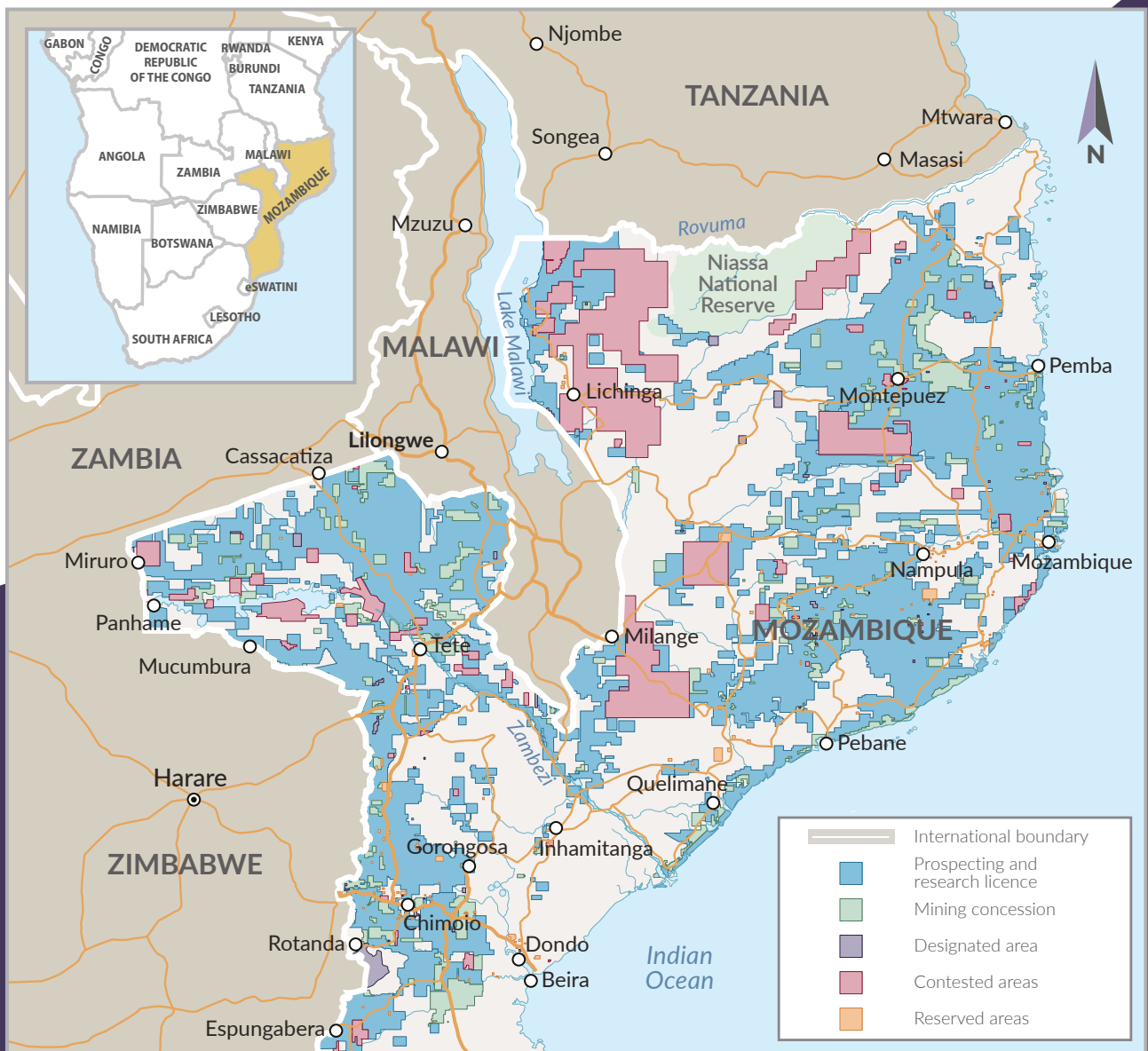


FIGURE 4 Publicly accessible mining cadastre in Mozambique.

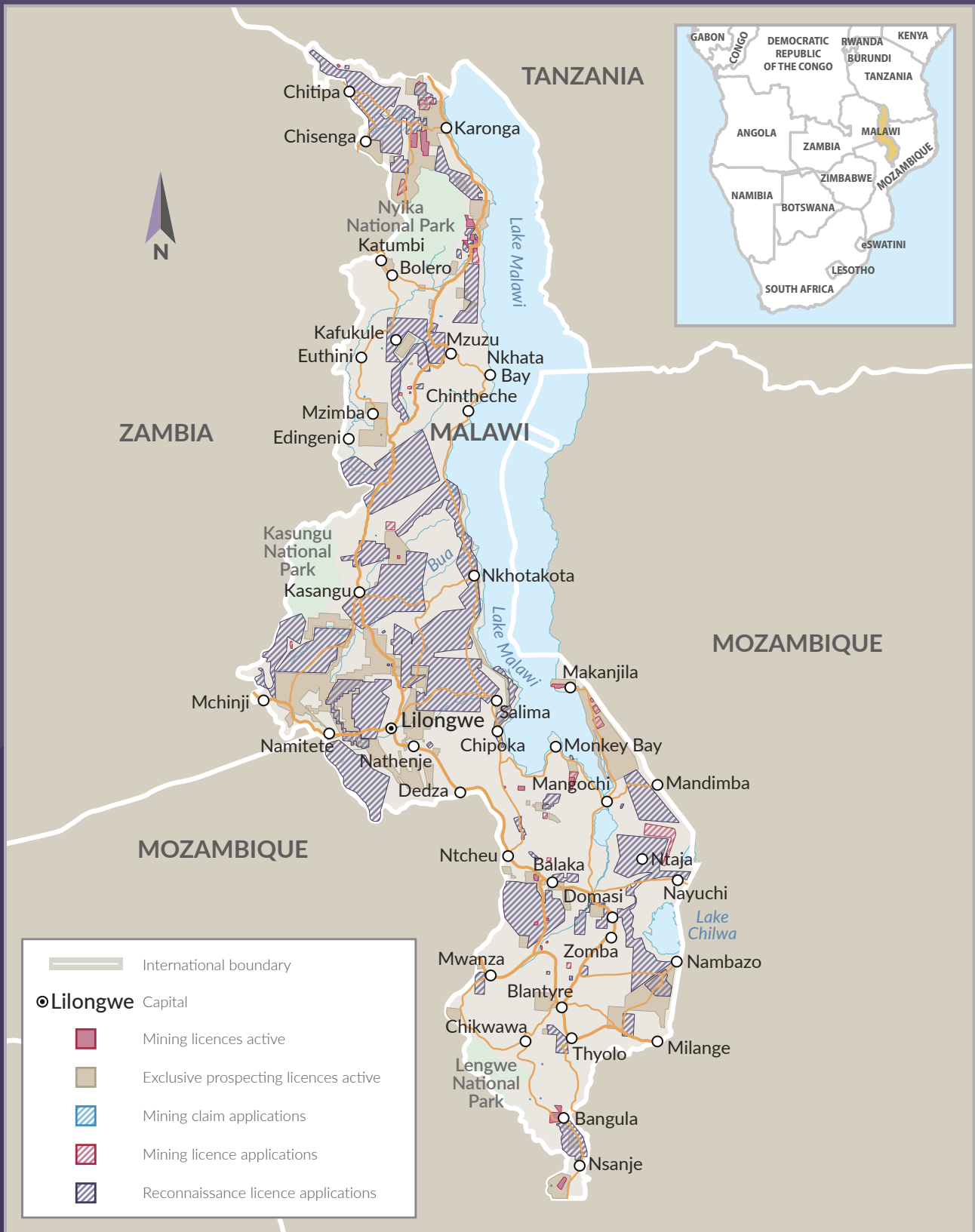


FIGURE 5 Publicly accessible mining cadastre in Malawi.

Artisanal and small-scale mining

Both Mozambique and Malawi possess very significant ASM coloured gemstone sectors. In Mozambique, ASM miners are typically referred to as *garimpeiros*.³² There are a growing number of large-scale operations in northern Mozambique, including MRM, Mustang Resources and Mozambican Ruby. Malawi's mining sector is similar, with artisanal mining accounting for most mining activity while a small number of large-scale operations, such as the Nyala Mines operation at Chimwadzulu Hill, provide high levels of output. Nyala Mines' sapphire and ruby production accounts for most of Malawi's gemstone exports.

The distinction between illegal and informal mining is often unclear to local people (and even more so to the wider public). In some areas, mining is a critical livelihood and systemic barriers make it difficult for miners to operate in full compliance with the law.³³ Attempts have been made to regulate the Mozambican ASM sector, albeit with limited success. In 2003, artisanal mining licences and permits were created for Mozambican citizens.³⁴ More recently, there has been a push to get artisanal miners to register as associations.³⁵ In 2016, this policy became law, rendering what was previously 'informal' mining illegal.³⁶ Built into this initiative have been efforts to exclude non-Mozambican nationals from ASM, with artisanal mining associations required to consist solely of local stakeholders. However, compliance with the new rules has been limited due to lack of state capacity, corruption, high levels of bureaucracy and artisanal mining zones lacking sufficient deposits. As a result, much of the coloured gemstone ASM in northern Mozambique today is illegal.

Various groups compete for influence and control of mining sites in northern Mozambique. Although Mozambicans and Tanzanians are the main nationalities involved, miners are reported to come from across Africa.³⁷ Tanzanians tend to be prominent in the sector due to their extensive mining expertise and financial backing. Part of the appeal of mining is that it requires little capital investment yet can offer significant returns, including the possibility to get rich overnight – something often referred to as the 'gem casino'.

While coloured gemstone mining has historically been seasonal, with farmers mining only during the dry

seasons to supplement their income from agriculture,³⁸ there are indications this is changing. For example, in the Namanhumbir area it is reported that, while miners used to be more active during the rainy season, in recent years there has not been a substantial decline in activity during the dry seasons.³⁹

The number of miners and traders from outside the northern Mozambique region shrank in 2020 as a result of the COVID-19 pandemic, which prompted migrant labourers and foreign buyers to return to their places of origin. This was accelerated by a local drop in ruby prices (as buyers left) and fears of the Cabo Delgado insurgency spreading.⁴⁰ Conversely, there has been a flood of internally displaced persons (IDPs) to Namanhumbir who have fled attacks by insurgents on towns like Palma to the north-east. With few other income options, many work in the mining economy, either directly as miners or by providing ancillary services, such as selling food to workers.

Law enforcement sources stated that casual employment is common at some mining sites. In these cases, artisanal miners are said to be organized and financed locally by a 'team boss', who provides their access to the concession and provides them with equipment. Miners working under these arrangements do not sell the stones they find to buyers but are instead paid a small wage for digging by the 'team boss'.⁴¹ There have been some accounts of racketeering, whereby the up-front costs are merely loaned to the worker leading to a form of debt bondage when the funders are not immediately repaid.

In northern Mozambique, a lack of trust between miners and buyers, as well as the unpredictability of the trade, has dissuaded many miners from entering into such financing agreements. Most miners interviewed reported that they were self-financed and working in small teams. Those who had entered into financing agreements in the past told of how financiers had not returned to pay them after taking stones to market or attempted to renegotiate pre-agreed terms. Those miners who do enter into agreements tend to arrange to reimburse their investors with cash, rather than gemstones, to avoid disadvantageous deals.⁴²



Miners search for gold in the outskirts of Montepuez. There is an increasing overlap between gold and coloured gemstone mining in northern Mozambique.

© John Wessels/AFP via Getty Images

Montepuez Ruby Mining Limitada concession

In 2009, the Namanhumbir ruby deposit was discovered near Montepuez, Mozambique, and has become the largest source of newly mined rubies in the world, producing gems of exceptional quality, colour and clarity. The large-scale ruby mining operation Montepuez Ruby Mining Limitada (MRM) secured a mining licence in November 2011, dramatically reshaping the mining sector in the Cabo Delgado province. MRM operates on a large concession area and has produced more than US\$600 million worth of rubies and is now estimated to account for 50% to 70% of the world's ruby supply.⁴³ With a national 10% production tax, MRM was the second largest taxpayer in the country's mining sector, paying MZN 2.06 billion in 2017 (around US\$33 million) and MZN 2.3 billion (US\$37 million) in 2018.⁴⁴ The establishment of MRM did not end the artisanal mining of rubies in the area, and there has been constant tension between MRM and artisanal miners.

Miners illegally mine the concession, typically sneaking onto the site at night and often bribing police to gain access.⁴⁵ These payments are reported to range from US\$40 to US\$350. Under these arrangements, miners are typically given a time slot of two to four hours in which they can operate. When the time is up, the police or rangers signal that it is time to leave. Miners will then carry excavated soil back with them for washing and processing,⁴⁶ before selling their rubies to Thai, Sri Lankan and West African buyers in Montepuez.⁴⁷

There are reports that local gemstone buyers fund excavation teams and, in some cases, provide miners with the money to pay the necessary bribes.⁴⁸ There are

also reports of police officers and government officials running mining teams through proxies. On 10 June 2021, three police officers, three members of MRM security contractor GardaWorld and one MRM employee were found guilty of facilitating illegal mining on the MRM concession by the Montepuez district court.⁴⁹

Some female mine workers report that law enforcement officers have demanded sex in exchange for allowing them to enter the concession. Often these women are Tanzanian and cannot access legal assistance because of their status as illegal foreigners in Mozambique. Consequently, many women do not report cases of sexual assault to the police, fearing that their complaints will not be investigated, or worse, that they will suffer reprisals. This has resulted in some female miners forming sexual relationships with law enforcement officers to protect themselves from predation by other officers.⁵⁰

While allegations of misconduct by local law enforcement persist, there are also reports that an increasing number of officers are no longer accepting payments in return for access to the concession. As a result, gaining access to the concession has become more difficult for artisanal miners.⁵¹

Most miners in the MRM area are Mozambican, though Tanzanians also operate in the area. Miners tend to work with their fellow nationals, with little cooperation between Mozambicans and Tanzanians. The presence of women and children at mine sites is said to be rare. Those women that are involved in mining activities tend to play a logistical role, providing food to miners in local villages and occasionally at the sites. Young boys are sometimes used to scavenge areas looking for good deposits but are rarely involved in the digging.

As the insurgency in Cabo Delgado has advanced, increasing numbers of IDPs have arrived at the concession. It is believed that around 10 000 IDPs are now residing in and around the nearby villages. Desperate for an income source, many have sought illegal mining work on the MRM concession.⁵²

Some miners and local communities point to conflicting land claims to justify mining on the MRM concession.

The Namanhumbir Management Community Committee, a local organization, argues that General Raimundo Pachinuapa, a former independence fighter and the first governor of Cabo Delgado, engaged in land grabbing and seized the concession in a land grab shortly after the ruby deposits were discovered. Pachinuapa co-owned the company Mwriti Limitada, which subsequently acquired a prospecting licence for the area. In 2011, Mwriti entered into a joint venture with Gemfields, with Mwriti holding a 25% stake and Gemfields a 75% stake in the newly formed MRM. In 2012, the Mozambican government granted MRM a 25-year mining and exploration licence.

Conflicting reports on human rights abuses at the mine site have also featured in international headlines. Since 2012 there have been allegations of land clearances and violent removals being carried out by government forces, specifically the Rapid Intervention Force and the Natural Resources and Environment Protection Force. Both Mwriti and Gemfields have disputed these claims, stating that all activities have been carried out in accordance with Mozambican law.⁵³ One media outlet had to apologize to Gemfields and MRM after the South African press ombudsman found that a report had falsely implicated the companies in violent practices and 'relied on allegations by sources without sufficient verification'.⁵⁴

In 2019, Gemfields agreed, without admitting liability, to pay GBP 5.8 million in settlement of a claim brought against the company by UK law firm Leigh Day on behalf of a group of Mozambicans who alleged human rights abuses at the hands of security forces at or around the MRM concession.⁵⁵ Gemfields recognized that instances of violence had occurred both before and after the company's arrival,⁵⁶ but denied liability and said that the settlement – which included the establishment of an independent grievance mechanism – balanced the interests of stakeholders and avoided tainting MRM's relationship with the local community.⁵⁷ Leigh Day acknowledged that Gemfields had 'taken the claimants' allegations seriously and [had] been proactive and constructive in addressing the wider issues raised by local communities through this case'.⁵⁸

Corruption

There are allegations of widespread corruption in Mozambique, and the coloured gemstone sector is by no means immune.⁵⁹ The problem is pervasive, and cuts across the supply chain: from demanding bribes from miners, to small buyers and foreign traders who buy access to mine sites in restricted areas; to the traders and big international buyers who bribe border guards and customs officials to facilitate cross-border smuggling; to members of the political elite who engage in land grabbing to secure concessions. Corruption also involves all levels of government, from local-level police officers to high-ranking officials. Corruption, especially at the highest levels, results in a downward spiral, empowering the people who engage in illegal conduct and making it difficult to implement the reforms necessary to regulate the sector and realize its development potential.⁶⁰

At the local level, in Montepuez and M'Sawize, miners will pay police officers to gain access to the MRM concession and the NSR. As one middleman put it: 'There is no law that protects artisanal miners in Mozambique. As such, the police monopolize everything.'⁶¹ It was reported that police officers may allow people passage to the mine for a small bribe.⁶² Officers stationed near mine sites will often bribe their superior officers to ensure that they are not redeployed.⁶³ In other cases, police officers enter into profit-sharing agreements with miners or run mining operations themselves.⁶⁴

In Malawi, sites are mostly controlled by local chiefs, who, as custodians of the land, act as the principal

gatekeepers for the deposits. Nevertheless, law enforcement is also influential. Most mine sites are in protected conservation reserves, making mining illegal. Thus, artisanal miners are vulnerable to having stones confiscated by rangers who then go on to sell the stones themselves.⁶⁵ However, predation and conflict between miners and law enforcement happens much less in Malawi than in Mozambique.⁶⁶

Though attempts have been made to target gemstone dealers, many have continued to operate. When unlicensed buyers such as those from Thailand and Sri Lanka have been arrested, little more than a small penalty fee or a short period of imprisonment has resulted. Many reportedly continue to return to Montepuez even after having been arrested. For the police, maintaining a presence of such foreign buyers ensures an ongoing lucrative business. By arresting foreign buyers temporarily before releasing them for bond payments and bribes, the police have an interest in allowing buyers to continue to return to the area.⁶⁷

Alternatively, officers may confiscate stones from foreign buyers who refuse to pay the bribes. Instead of declaring these confiscations as official seizures, police officers may sell the stones themselves, pocketing the profit. In some cases, during raids, police reportedly pay little attention to which gemstone traders are licensed and which are not, preferring to loot known ruby trading houses, taking money and stones by force.⁶⁸



Trucks on the Malawi-Mozambique border waiting to cross over into Mozambique. © Ashley Cooper/Alamy Stock Photo

Niassa Special Reserve

Illegal mining is a major challenge in the Niassa Special Reserve (NSR), a protected wildlife area along Mozambique's border with Tanzania. Coloured gemstone and gold deposits occur in the reserve. Though mining in the NSR is prohibited, an exception was granted to the 40 000 residents of the reserve. These rights were given to the Associação dos Combatentes (combatants' association), a mining association controlled by former independence fighters in Lichinga, which claimed representation of the people living in the NSR. The Associação dos Combatentes is highly influential, acting as a gatekeeper to keep *garimpeiros* out of the main site.⁶⁹ However, members of the association have reportedly allowed illegal miners and buyers access in return for bribes.⁷⁰ The association is reported to require all miners and buyers to register with them in return for receipts guaranteeing access.

Although only local residents are able to legally mine in the NSR, miners from across northern Mozambique and abroad (mainly Tanzania) have been drawn to the deposits. Many of the miners are young men from the area surrounding the reserve. In a region plagued by poverty, the alternative livelihood options available to these young men, subsistence agriculture and fishing, offer little hope for economic advancement. In contrast, mining offers the prospect of a better economic future. Security and pricing influence the choice of what they excavate, with miners seeking out the minerals or gemstones that are easiest and least risky to access while offering the best financial returns. There are reports that an increasing number of miners have moved to gold mining for these reasons.

Law enforcement comprises rangers working for the NSR management and the police in villages located in the reserve. Although rangers do not have the power of arrest or detention, both the NSR teams and police have been involved in confiscating miners' equipment and vehicles.⁷¹ There have also been allegations of more punitive measures by law enforcement, such as forced expulsions, lengthy imprisonment and extrajudicial beatings to control and reduce illegal mining – especially after the introduction of compulsory licences in 2016.

Although the police are mandated to crack down on illegal mining in the NSR, in reality officers are said to be involved in the sector themselves, controlling and extorting miners through the threat of violence and facilitating illegal mining through bribes. While undesirable, this activity needs to



The Niassa Special Reserve has become a site for illegal mining in northern Mozambique. © Mario Franco/Alamy Stock Photo

be analyzed within the context in which they operate. Small salaries, often paid late or not at all, put government agents in a precarious financial position, forcing them to rely on petty bribery or engaging in the illegal mining sector as an alternative source of income. This is not to say petty corruption should be permitted, but rather that it is important to place it within the broader political economy and in relation to networks and power structures. It is evident that low-level government agents, especially law enforcement, work in a grey area heavily influenced by endemic corruption.⁷²


The influx of miners and buyers from outside of the NSR has led to a considerable expansion of mining, taking it far beyond the controlled level intended for locals and resulting in environmental degradation, which threatens wildlife. Further, there is little to no economic incentive for miners to rehabilitate the land once they are finished, leaving local communities to live with the consequences. Some proponents of coloured gemstone mining note that the environmental impact of this form of mining is less damaging than others, such as the mercury pollution associated with gold extraction. However, given the ecological importance of the NSR, even the relatively smaller impact from ruby mining may be deep and lasting.⁷³

Mining has also led to high levels of inflation, with the price of food and other essentials skyrocketing in villages like Mavago and M'Sawize. Conflict and insecurity have increased with competition over mining deposits. Violence and robbery are reportedly commonplace and crowded mining sites have become hotspots for sex workers (raising concerns about the risk of sex trafficking) and other illicit activities.



SUPPLY CHAINS AND FINANCIAL FLOWS

Coloured gemstones for sale at a market in Chanthaburi, Thailand. © Shutterstock



Coloured gemstone supply chains, from extraction to export, are organized mainly by informal and illicit networks that only occasionally and selectively intersect with formal supply chains within Africa.

The coloured gemstone trade is not always consistent: the number of operators and scale of flows vary depending on the type, quality and volume of gemstones being produced by miners. The ruby market is particularly unpredictable. When mines are producing rubies regularly, most miners and dealers can buy and sell on a weekly basis. But when the production cycle is stopped or low, actors are forced to wait through long periods without trading. For other coloured gemstones, like tourmaline, aquamarine and garnets, the trade is more consistent.

Once stones are mined, they move down the supply chain through a network of traders. Traders can be divided into three categories: small traders and buyers; brokers; and larger dealers/buyers. Only companies or individuals with mining licences or export permits can legally export gemstones from Mozambique and Malawi. Although a small proportion of brokers or dealers hold legal permits to trade coloured stones, the majority have no licences and operate illegally.

Foreign nationals (both African and Asian) play a prominent role in Mozambican and Malawian coloured gemstone supply chains. They are heavily involved in the sector and tend to possess superior expertise, buying power and connections to destination markets.

In Mozambique, the legal opportunities for foreign nationals to engage independently with the sector are limited, with brokerage and export licences reserved to Mozambican nationals. This has led many foreign nationals to enter into partnership arrangements with Mozambicans. This can include marrying Mozambican women as a way of facilitating travel in and out of the country.⁷⁴ It is also common for foreign gemstone traders to engage in other types of trade (such as clothing or other small goods) to disguise their activities and financial flows.⁷⁵

In Malawi, the coloured gemstone trade is also largely informal. As of February 2021, 290 mineral licences had been granted in the country. In contrast to Mozambique, Malawi does allow foreign nationals to obtain dealers' licences.⁷⁶ However, the only

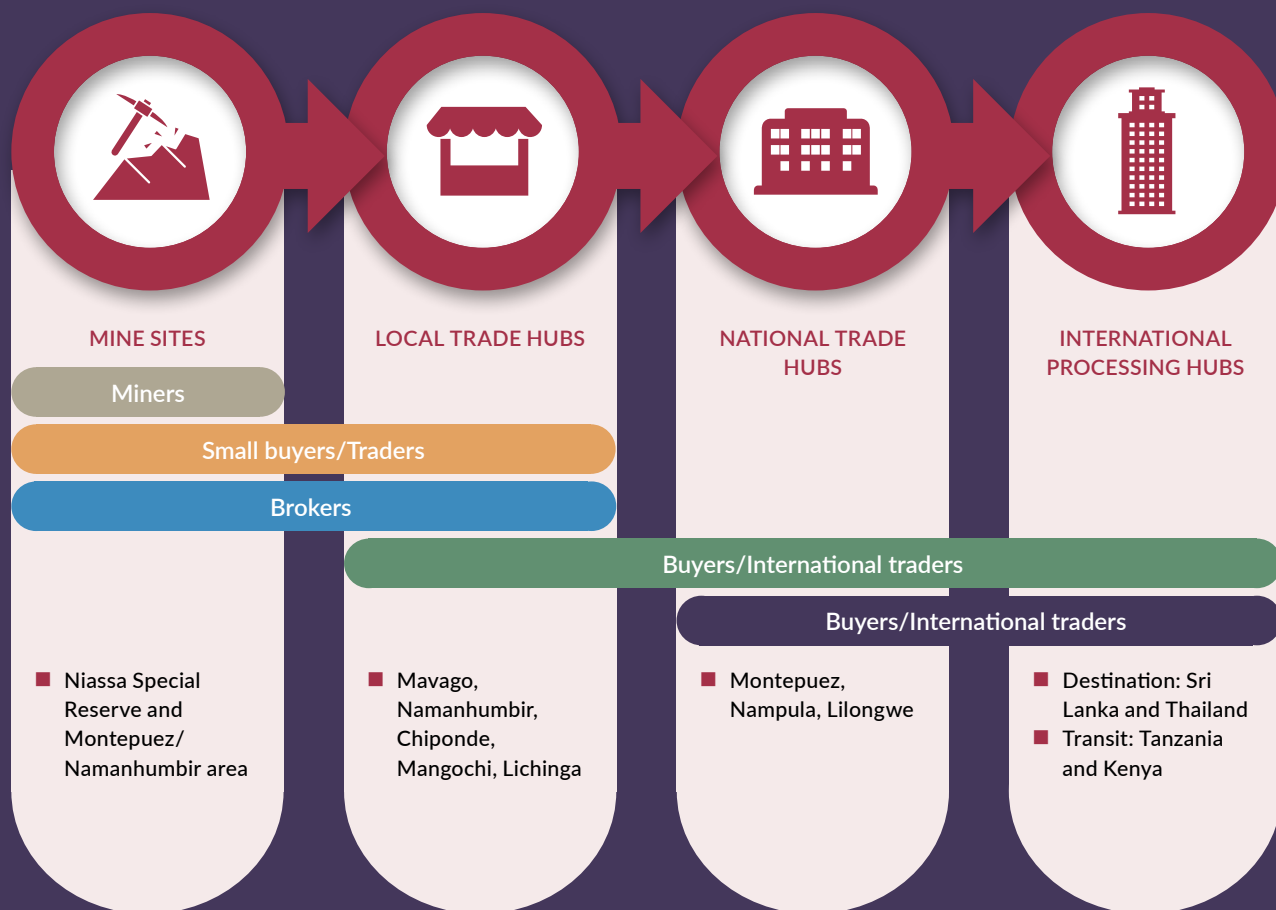


FIGURE 6 Actors and flows along the coloured gemstone supply chain.

formalized coloured gemstones trading is conducted by Nyala Mines Ltd, which mines sapphires and rubies at Chimwadzulu Hill. This company has created a fully integrated, transparent supply chain extending from mine to retailer with its cutting, marketing and sales partner, Columbia Gem House.⁷⁷

Trust underpins business dealings in the sector in all kinds of ways. Over time, the industry, both in Africa and Asia, has been built on trust, with traders relying on business relationships within and between families that can span generations and continents. Yet, trust within the gemstone trade is also about physical security for traders. Many dealers carry gems, leaving them vulnerable to robbery and assault. A trader may have a network of trusted shops in the towns he visits that will let him store his stones in safes. Alternatively, a foreign trader may choose to stay in a hotel and have local ‘runners’ come to him with stones he might want to buy – relying on the runners’ own trust networks to keep them from harm.⁷⁸

Few buyers or brokers report being paid to buy stones on behalf of others or offering financing themselves. Brokers who do operate under pre-financing arrangements say they are never trusted with quantities of cash greater than US\$5 000 at any given time. In situations where bigger deals take place, financiers prefer to make the purchases in person.⁷⁹ There are greater levels of trust reported among West African buyers. According to one Gambian, this trust is based on their shared Mandinka heritage, an ethnic group

found in a number of West African states, and Mandinka buyers support one another.⁸⁰ The cooperation between West African buyers gives them a competitive edge in local markets. For example, West African buyers reported that when they found a good stone but lacked the cash to make the purchase, they would contact friendly investors who would deduct their investment and then split the profit with the finder or pocket the profit and pay the finder a commission.

Mozambique

Mining sites and towns

Small-scale local buyers and middlemen buy gemstones at mine sites or at small trading centres nearby where artisanal miners bring their rough stones for sale. In northern Mozambique, these centres include villages and towns such as M'Sawize, Mavago, Namanhumbir, Nakaka, Nanyupu and Montepuez. They then take them to regional trade hubs where international buyers with the capital and networks to export or smuggle the stones abroad can be found.

Many miners in M'Sawize do not travel to the bigger towns because it is easier for them to sell their stones at or near the mining areas, minimizing travel costs and the risk of robbery. Miners and small local buyers tend to have little knowledge of the supply chain beyond their immediate interactions.⁸¹ For these low-level actors, the main concern is safety, and there is little trust in bigger buyers, who they fear will collude with police to steal their stones. According to the official data provided by Niassa Provincial Department of Mines, there were no ruby or garnet exports from the area between 2016 and 2020, meaning all stones produced in the NSR were either smuggled out illegally or exported through Nampula or Pemba.

The town of Montepuez is a key coloured gemstone trading hub in northern Mozambique.

© Emidio Josine/AFP via Getty Images





FIGURE 7 Northern Mozambique gemstone flows.

Key trading hubs

In Mozambique, the main regional trade hubs are Nampula and Montepuez, with Pemba and Lichinga acting as smaller trade and transit centres. Stones are often traded in Lichinga before being smuggled to Malawi or taken to Nampula to be sold. Montepuez and Nampula are the trading centres of choice for rubies, though the towns are also hubs for all kinds of coloured gemstones.⁸² Nampula is the traditional gem trading centre in northern Mozambique due to its proximity

to deposits bearing Paraíba-style tourmaline, which were discovered in 2004.⁸³ The town was reported to have become one, if not the biggest, hub for coloured gemstone trading and trafficking. A significant driver of trade in Nampula is the availability of cash due to the large number of banks, while the frequent flights into Nampula airport bring further cash injections.⁸⁴

Since the discovery of rubies near Montepuez in 2009, the city has increased in significance as a trading hub. However, the establishment of MRM, the presence

of high levels of local crime and theft, and the recent threat of the Ahlu-Sunna Wa-Jama'a (ASWJ) insurgency spreading to the area have reportedly driven foreign buyers and traders to move their operations back to Nampula. Bigger brokers report struggling to find good stones since MRM operations began in the region, particularly after 2016. Further driving the shift to Nampula are high levels of insecurity and extortion by the police – it was reported that it was dangerous to have large quantities of cash or gemstones in Montepuez without paying for security. Meanwhile, the COVID-19 pandemic has prompted many of the foreign big buyers usually operating there to leave.⁸⁵

Nevertheless, Montepuez has not been entirely abandoned. Thai and Sri Lankan buyers based in Nampula and other areas south of Montepuez still reportedly visit the town in the hopes of buying stones. Many of these buyers are said to be recognizable by the large and expensive vehicles they drive.⁸⁶ Also, lower-level dealers continue to trade in the town, which serves as a trade or transit point for gemstones flowing to Nampula and Pemba.⁸⁷ Others have come in to fill the vacuum. Indeed, a growing number of Senegalese traders are now thought to occupy many of the roles vacated by the Asian buyers who left the city. Senegalese networks tend to operate by buying stones in Montepuez, before transporting them to Nampula, where they can be exported abroad.⁸⁸

In Nampula and Montepuez, a variety of big buyers can be found from elsewhere in Africa and Asia. Thai and Sri Lankan buyers dominate the ruby market and are preferred for ruby sales because they are perceived as being easier to deal with and pay better prices for stones.⁸⁹ West Africans are another major buying group – including Guineans, Malians, Senegalese and Gambians⁹⁰ – with Guinean and Malian traders reportedly having more purchasing power than their counterparts.⁹¹ While Mozambican and Tanzanian miners and dealers said that West Africans are prominent players, many West Africans interviewed denied that they were major actors in the trade, though this may stem from a desire to maintain a low profile or that they tend to deal in lower-value stones.⁹² When West Africans do buy rubies, it is said that they also seek to sell the stones on to Thai buyers. It was reported that many West Africans in Nampula have links to Malawi,

which provides them with additional options to source, buy, sell and move stones.⁹³ A smattering of other nationalities make up the remainder of foreign buyers, including Malawians, Zambians, Sudanese and Somalis, as well as Indian and Chinese nationals.

It was widely felt that foreign buyers are making the largest profit margins in the local coloured gemstone trade because of their ability to sell stones in international gem hubs.⁹⁴

Impacts of the insurgency

The ISIS-affiliate group ASWJ has increasingly terrorized Cabo Delgado since the group carried out its first violent attack there in 2017. The violence has devastated local communities, killing around 2 500 civilians, and displacing a further 700 000 people.⁹⁵ The conflict is thought to be one driver of illegal ASM activity as communities fleeing the insurgency seek new sources of income, including those who have settled in areas near to the MRM concession.⁹⁶ However, the violence has also reduced the number of migrant miners in the area who have fled the instability.

The overlap between insurgents and criminal markets in Cabo Delgado is the result of illicit trade accounting for a significant part of economic activity in the region, rather than active ASWJ engagement with illicit markets.⁹⁷ International observers previously raised concerns that ASWJ may control or tax some of the informal and illicit markets in northern Mozambique, including the coloured gemstone sector, but it appears these concerns were misplaced. Instead, illicit flows seem to have migrated away from areas where ASWJ is active. This includes the ruby trade. Whereas in the past, trade routes (both licit and illicit) between Mozambique and Tanzania passed along the eastern coastal road, most trade has now shifted westwards to avoid the insurgency. As noted, some coloured gemstone buyers are also shifting their operations back to Nampula, in part to avoid the insecurity.

Rather than the insurgency co-opting the gemstone trade, the seeds of discontent created by poor governance in the mining sector have provided a powerful recruitment tool for the ASWJ. The insurgency is reported to have recruited young men from communities in Montepuez⁹⁸ where the group's message of

government predation and corruption has resonated with widespread grievances over the lack of economic opportunities coming from the country's natural resources, and anger at the state actors who have profited from them.⁹⁹

Malawi

Malawian traders source gemstones from miners and middlemen at Malawian, Mozambican and Zambian sites and mining towns, as well as from trading centres on both the Malawian and Mozambican sides of the border.¹⁰⁰ The main entry point for gemstones being transported between Mozambique and Malawi is Chiponde. Lilongwe and Blantyre are the principal trading centres in Malawi. Export certificates can be acquired only in Lilongwe, making the city the country's main gemstone trade hub.¹⁰¹ In Lilongwe and Blantyre major buyers from West Africa, South Africa, India, Sri Lanka, China, Europe and the US can be found.¹⁰²

Where and how far Malawian traders travel to buy and sell their coloured gemstones depend on the extent of their networks, and on the difference in prices at different towns. Some Malawian traders who trade between Malawi and Mozambique smuggle minerals from Mozambique into Malawi by hiding the stones inside the collars of their shirts or in packs of solid cooking oil to avoid detection when passing border control.¹⁰³ Others smuggle stones to the Mozambican towns of Lichinga, Nampula or Montepuez. There is no clear direction of flow between Mozambique and Malawi; depending on dealers' networks and transportation costs, stones may either go from Mozambique to Malawi for export, or vice versa.

Blantyre, pictured below, is one of Malawi's coloured gemstone trading hubs. © Tika Mulamba/EyeEm via Getty Images



Impact of COVID-19

The pandemic has had a significant impact on the coloured gemstone trade, having forced many foreign buyers to return home. For example, small and local traders report that of the 250 big buyers previously operating in Nampula, only 30 have remained since the pandemic. The smaller presence of miners has also resulted in diminished production. In Mozambique, the MRM ceased production completely, generating no revenue in 2020.¹⁰⁴ In Lichinga, Mavago and M'Sawize, whereas buyers used to make weekly trips to regional trade hubs they now go only every other week or less. Similarly, Malawian traders report that before the pandemic they were able to trade weekly but are now only able to trade once a fortnight or month.

Gemstone pricing and payment

There are wide variations in the buying power of gemstone traders at the regional trade hubs. Budgets can reportedly range from a few hundred dollars to tens of thousands of dollars.¹⁰⁵ Quality also plays an important role. Traders tend to either buy large quantities of low-quality gems, or single pieces of high-quality stones. Buying large rubies (defined as 1 gram or larger) is difficult, so, for the most part, traders tend to focus on buying smaller stones at around 0.3 grams or smaller ones in bulk at low prices. Average prices for stones range from a few hundred to a few thousand dollars, although buyers report that prices have been substantially depressed due to the COVID-19 pandemic.

Valuing stones

Valuing coloured gemstones is notoriously difficult, requiring a great deal of knowledge and expertise.¹⁰⁶ Thus, buyers take risks whenever they buy gems: one day they may buy a very valuable stone and the next a synthetic or treated gemstone by mistake. For example, in Lichinga it was reported that there are some Thais who bring synthetic gems to the mining areas and give them to local miners and middlemen (mostly Tanzanians) to sell to other unsuspecting foreign (often Thai) buyers. Local dealers are paid 25–30% of the profits from selling the synthetics. One Tanzanian buyer reported that he sells the synthetic stones for some Thai buyers because it is an easy way to make money and because he has no qualms over this market competition between Thai nationals.¹⁰⁷

To cover these business risks, experienced buyers will do their best to exploit sellers' ignorance by buying stones at a fraction of their potential value from miners and other local sellers who lack the ability to accurately value their finds. West African and Tanzanian dealers tend to be the most knowledgeable when it comes to stone valuation, having years of experience dealing with many different international buyers. Such knowledge gives them a competitive edge when it comes to bargaining.

Miners and local buyers, who are unable to value their stones themselves, will often approach several different buyers to gauge the value of stones before selling them to the highest bidder. While this enables them to seek more competitive prices, it is still thought stones are often significantly underpriced. For example, it is a common



A buyer sorts rough gemstones to be used for jewellery.

© Satoshi Takahashi/LightRocket
via Getty Images

tactic for buyers to say a stone has flaws when it does not. Poverty is another factor that puts miners and local buyers in a poor bargaining position. Due to an immediate need for cash for household goods, including food, miners often have little choice but to accept whatever they are offered. This creates a poverty trap whereby, despite excavating high-quality gems, many artisanal miners are trapped in a hand-to-mouth existence.

Some miners and local dealers rely on brokers with contacts to big buyers and foreign dealers in regional trade hubs to value and sell their stones. In Montepuez, brokers tend to earn a commission of 5% to 25% on gemstone deals. Crucial to protecting their business, they ensure that miners and local buyers do not come into direct contact with big buyers, as this would put them at risk of being cut out of supply chains. Like buyers, brokers will also knowingly undervalue gemstones when dealing with miners and local sellers to increase their profit margins.

Modes of payment

In northern Mozambique, cash is used to pay for stones for a number of reasons. Cash enables buyers to hide illegal transactions and avoid questions about the source of the money. (This became especially important to Tanzanian buyers following the 2015 election of President Magufuli and the anti-corruption efforts he spearheaded.) Cash is also more secure than bank transactions, which cannot be verified immediately.¹⁰⁸ Given the low levels of trust between miners and buyers, the immediate confirmation of payment is key to trade. Even large sales are therefore conducted with cash. Major foreign buyers will carry large amounts of cash from Thailand or Hong Kong to Mozambique to buy stones.¹⁰⁹ Some traders in Mozambique exchange

rubies for a combination of cars and cash. However, exchanging stones for goods is generally avoided, as it is believed that cash deals tend to be better value.¹¹⁰

In Malawi there is also a general preference for cash transactions, though mobile money apps (e.g. Airtel Money and Mpamba) may be used domestically, and international money transfers (e.g. Western Union, RIA and MoneyGram) can be used to pay for exported stones.¹¹¹ West African dealers in both countries reported receiving payments for stones through Western Union, MoneyGram and WorldRemit for stones sold in Thailand or Hong Kong through West African trade networks.¹¹²

The demand for cash makes liquidity important to gemstone traders' purchasing power, with most dealers reporting they would not wait the two to four days it might take a buyer who had offered a good price to acquire the cash.¹¹³

For security reasons, when large quantities of money are involved most Tanzanians prefer to exchange the money in Tanzania rather than Mozambique. This is driven by general lawlessness in northern Mozambique and the increasingly hostile environment for foreign nationals, which has left Tanzanians more vulnerable to Mozambican law enforcement. To facilitate this, buyers seal a parcel of stones and give a note to the seller to take to Tanzania, where they are paid. The stones remain in the Mozambican trade hub with representatives of each party and are released only when the money has changed hands in Tanzania. These transactions are usually done with Thai and Sri Lankan buyers, who typically have business associates in Tanzania.¹¹⁴

Export and smuggling to destination markets

The smuggling and significant undervaluing of stones is rampant in the coloured gemstones sector. For example, Malawi officially exported US\$746 114 worth of coloured gemstones from 2018 to 2020, but this is thought to significantly undervalue actual flows (see Figure 7). Stones may be smuggled out of a source or transit country to avoid export taxes, regulatory requirements or the paying of bribes. Smuggling not only deprives producer countries of tax revenues, but also thwarts efforts to trace supply chains and establish responsible sourcing.¹¹⁵

Year	Ruby		Other coloured gemstones	
	Volume (grams)	Value (US\$)	Volume (tonnes)	Value (US\$)
2018	150	1 027.20	857 869	223 809.77
2019	165.19	1 413.50	508.3	253 551.81
2020	971.8	5 071.80	1 185.70	261 240.36

FIGURE 7 Coloured gemstone export data for Malawi, 2018–2020.

SOURCE: Malawi Mines Department, Ministry of Mining

Most coloured gemstones are smuggled out of Mozambique through Malawi and Tanzania or directly from the airports in Nampula and Pemba to international transit and processing hubs in Thailand and Sri Lanka. Smugglers either under-report the volume or value of their gemstones if they have export permits, or completely conceal the minerals when flying them out.¹¹⁶ Although many valuable stones are smuggled from Africa on commercial flights, shipping is used for bulk quantities of semi-precious and large-specimen stones.¹¹⁷

It is reported that the VIP lounges in Nampula and Pemba airports are used to smuggle coloured gemstones, as well as other high-value items and cash, out of the country. Under this system the bags containing the goods are given to an airport official (possibly a police officer), who will then return the bag to the smuggler in the VIP lounge after they have passed security checks.¹¹⁸ Another alleged smuggling method has been the abuse of diplomatic privileges. Prior to crackdowns on the illicit gem trade in 2017, it was reported that smugglers would take stones out in diplomatic bags, which were exempt from security screening.¹¹⁹ These methods of smuggling stones have also been reported in other parts of Africa to traffic diamonds and gold out of the continent.

In Malawi, stones are exported or smuggled out through Lilongwe.¹²⁰ Kamuzu International Airport is a major conduit for gemstone export and smuggling. From the airport, stones are transported to international markets on commercial and cargo flights. West African, Sri Lankan and Indian nationals can be found at the airport arranging shipments. Foreign traders either rely on locals to obtain export permits or acquire them themselves. Consignments of precious and semi-precious stones also leave Malawi in container traffic from Dedza and Mwanza to Beira in Mozambique, and to the Songwe border post in Tanzania, en route to Dar es Salaam. Small numbers of traders also use trains from Nayuchi in Malawi to Nacala in Mozambique to transport their stones to international markets. Malawian coloured gemstones are also smuggled westwards, to Zambia. As much as half of all Malawian aquamarine mined in Mzimba is estimated to be smuggled to Zambia through Lundazi.

In Lilongwe, traders and smugglers can obtain Malawian paperwork stating Malawi as the place of origin for Mozambican stones. With this paperwork, the stones may then be exported to Asia. Although gem labs can identify the provenance of stones from different geological regions, they are unable to easily discern the differences subregionally, making Mozambican and Malawian stones hard to differentiate.¹²¹

Corruption is also prevalent at the export point of the supply chain, and bribing customs officials and border guards is common practice. At border crossings, ports and airports, customs officials are considered to be highly corrupt, turning a blind eye to coloured gemstone smuggling syndicates and profiting in the process. Bribing these agents is considered the norm of doing business.¹²²

Onerous bureaucratic costs associated with the export process mean that gemstone traders 'shop around', smuggling stones to whichever country has the lowest export rates and greatest ease of doing business. Further undermining regulatory efficacy is a lack of knowledge and capacity among customs officials, who are unable to value stones and therefore unable to identify whether the declared value matches the actual value of stones during inspections.

Thai and Sri Lankan buyers are reported to be the most prominent coloured gemstone exporters, accounting for much of the ruby trade. However, West African and other foreign traders are also reported to take stones abroad, often to Bangkok, for sale. However, African traders reported that they preferred to sell their stones in Mozambique or Malawi because it was safer than travelling to Bangkok, where Thai buyers could exploit them or steal their stones. In describing a trip to Bangkok, one Tanzanian trader revealed that Thai networks monitored his every move, eventually forcing him to allow them to sell on his behalf.

Chinese traders are reported to export their stones from the port of Nacala. They tend not to trade in rubies, instead buying other stones, such as garnet and quartz, in large quantities. Most Chinese traders are believed to have licences but evade paying full taxes by underdeclaring the value of their exports.



Confluence with other illicit markets

Although there are overlaps of illegal trading within the mining sector (*garimpeiros* reportedly switch from coloured gemstone mining to gold or other minerals, depending on opportunity and potential profits), there is generally little overlap with other illicit supply chains and networks. In both Mozambique and Malawi, the confluence between the coloured gemstone sector and illicit markets is the result of criminal actors and networks exploiting what is a largely informal sector, and not that the coloured gemstone sector is criminal per se.

Northern Mozambique has for decades been a hub for illicit markets and trade with socially, economically, and politically embedded criminal networks in the region. In particular, drug, timber and ivory trafficking, and human smuggling, have intensified since the early 2000s.¹²³ This intersects with the coloured gemstone sector in the illicit-trade hubs of Pemba, Nampula and Montepuez. Organized criminals in these cities are reported to be involved in multiple markets, including the coloured gemstone trade. In the NSR, gemstone smuggling routes are also reported to be connected to those used in the illegal wildlife trade.

In Malawi, West African, Chinese and Nigerian organized crime groups are believed to pose as gemstone dealers as a way of hiding other criminal enterprises and to launder the proceeds.


Coloured gemstones on display at a gem market. Organized criminals in Mozambique are reportedly involved in the coloured gemstone trade.

© Paula Bronstein/Getty Images



TRANSIT AND DESTINATION MARKETS

Sri Lanka is internationally known both for sapphires mined in the country and as a sapphire trade hub. Shops, such as this one in Colombo, can be found selling jewellery featuring coloured gemstones. © Paula Bronstein/Getty Images



Transit and trade hubs are known to specialize in different types of stones or processing, such as cutting, polishing and treatment. Some trading hubs specialize in high-quality single stones, while others focus on the trade of *melee* – smaller stones that are sorted, cut, often treated, and finished to be uniform in shape and size. *Melee* gems are sold in parcels by weight, with stones aggregated from various sources to provide a relatively standard size, colour and quality to the batch of stones. Gemstone flows are also influenced by supply and demand. For example, buyers may place orders for a set quantity of a certain type of stone and it is then up to the traders to engage with their networks to have the order completed.¹²⁴

From Mozambique and Malawi, stones are transported to transit and destination markets in Tanzania, Thailand and Sri Lanka. Tanzania is a major transit location, hosting the biggest coloured gemstone markets in Africa, although there are reports that Kenya is growing in importance. In Thailand and Sri Lanka rough gemstones are processed by stone cutters and jewellers, which is where the biggest profits are to be made through the beneficiation value added by processing rough-cut stones. From Sri Lanka and Thailand, destinations for stones include China, India, Hong Kong, the US and Europe.

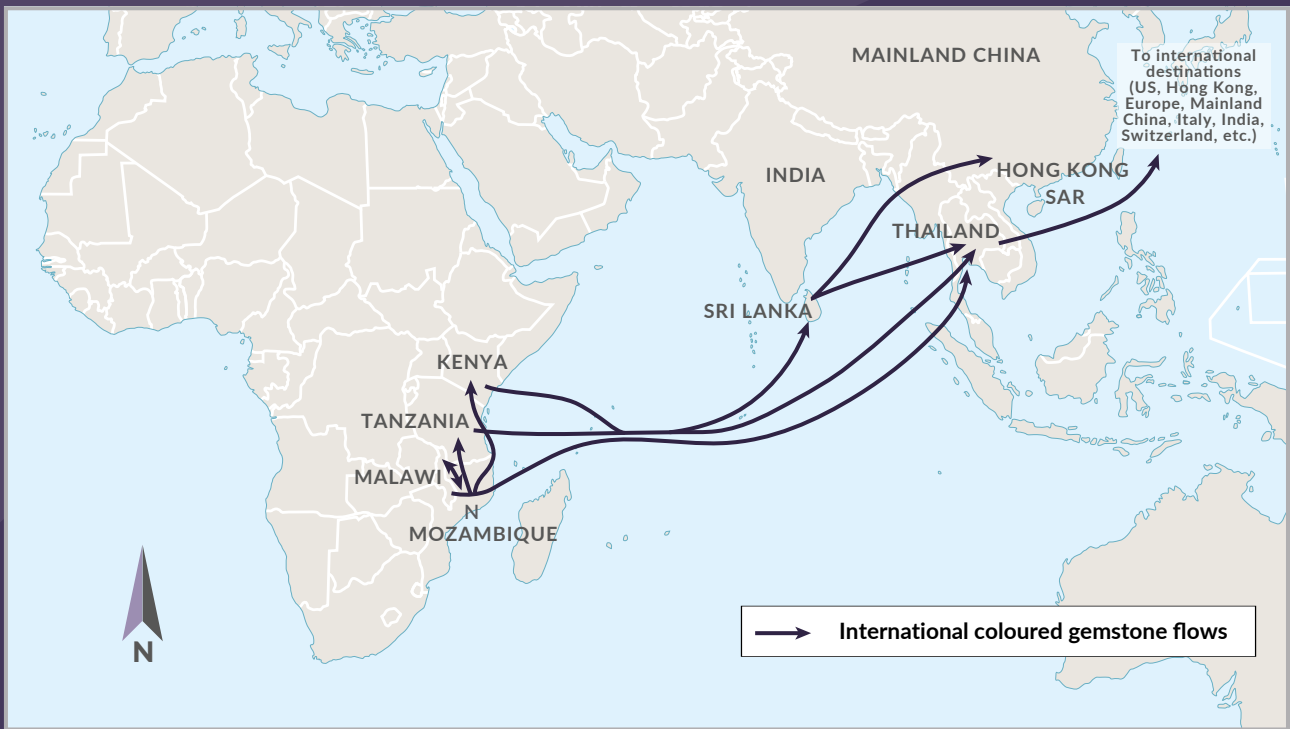


FIGURE 8 Coloured gemstone supply chains from Mozambique and Malawi to international retail markets.

Tanzania

Tanzania's dominant role in this sector derives from the fact that it is a gemstone-producing country, it has significant trade and transport infrastructure, as well as the fact that the government has taken significant steps to support formalization of the sector.

Dar es Salaam and Arusha are the main hotspots of trading activity. Dar es Salaam is one of the principal ports of origin for gemstone shipping from the East African coast, while Arusha is considered one of the most organized and developed gemstone markets in Africa.¹²⁵

Since around 2009, parts of the Tanzanian coloured gemstone market, most notably for rubies, have suffered as buyers and traders flocked to northern Mozambique in an attempt to source the high-quality stones found there. However, this decline has been offset in recent years. A large-scale operation in northern Mozambique to remove unlicensed foreign buyers in 2017 resulted in many displaced buyers seeking new gemstone sources. Concurrently, new deposits were discovered at Longido, a mine in northern Tanzania.

Though Longido cannot compete with Montepuez and Namanhumbir in terms of gemstone sizes and supply, the combination of these events has nonetheless given new impetus to gemstone extraction in Tanzania, which had suffered around the time of the Montepuez ruby discovery.¹²⁶

In contrast to its southern neighbours, the Tanzanian government has long sought to formalize the sector and develop its domestic lapidary, or gem-cutting, industry. A variety of gemstones, including ruby, emerald, sapphire, tourmaline and tanzanite (a stone unique to Tanzania) are mined in the country, mostly by artisanal miners. After an ASM licensing system was introduced in 1998, its contribution to GDP increased steadily from around 0.2% between 1995 and 1999, to 4% in 2015.¹²⁷ In 2018, the government began a programme of opening gem trading centres across the country aimed at bringing the international market to Tanzania and supported the development of domestic polishing and cutting services.¹²⁸

However, stricter government policies aimed at capturing greater tax revenues from gemstone sales have also fuelled smuggling. High export tariffs and royalties, as well as an outright ban on the export of rough tanzanite weighing more than five carats, present significant bureaucratic hurdles for traders and miners. In 2019, the Natural Resource Governance Institute reported that Tanzania's mining sector was the most heavily taxed in the world.¹²⁹ Though taxes and royalties have since been streamlined, the current US\$100 charge for an export licence remains prohibitive for many traders. One trader estimated that 80% of brokers would not be able to afford the licence fee.¹³⁰ Law enforcement have also reportedly become stricter in ensuring that foreign traders have also purchased a US\$250 business visa. As a result, many foreign traders active in Tanzania have left in the last few years and moved their business to Nairobi and Voi in Kenya.¹³¹

Entrenched transnational networks also contribute to high levels of smuggling. Thai traders and miners, for instance, have operated in Tanzania since the 1980s, providing them with established networks that they can use to evade regulation. Thailand and Sri Lanka also maintain a competitive edge in polishing and cutting stones, incentivizing gemstone traders to process stones there. Many Tanzanian miners and traders also operate in Mozambique and Malawi, sending stones back to Tanzania to be traded.

Tanzanite

Tanzanite has been a particular focus of government efforts to curb smuggling. In 2013, the commissioner at the minerals ministry highlighted that Tanzania had exported only US\$38 million worth of the stone, whereas Kenya and India had exported US\$100 million and US\$300 million worth of tanzanite, respectively.¹³² Given that tanzanite is found exclusively in Tanzania, these export figures were taken as indicative of smuggling on a mass scale. Both artisanal miners and large-scale operations have been criticized for their role in smuggling and tax evasion. In 2017, the late president John Magufuli ordered the military to construct a wall around Merelani, Tanzania's main tanzanite source, citing that Tanzania received only 5% of the global tanzanite trade's value as justification.¹³³ The efficacy of the wall remains in question, however, with smuggling continuing to deprive state coffers.¹³⁴ As well as failing to curb royalties evasion, there is evidence that the wall has increased corruption, with a Tanzanian tanzanite trader reporting that buyers and traders bribe police with as much as US\$9 000 to gain access to the concession.¹³⁵



Tanzanite jewellery on display in South Africa.

© Ariadne Van Zandbergen/Alamy Stock Photo

Thailand

Thailand, one of the world's largest coloured gemstone trading hubs, emerged as the world's ruby capital between the 1960s and late 1990s, when it surpassed its regional competitor, Hong Kong.¹³⁶ Once a major source in its own right of rubies and sapphires, today most of Thailand's domestic coloured gemstone deposits are depleted and the sector is concentrated on the trade and processing of foreign stones.¹³⁷ African and Asian rough stones are brought into Thailand, where they are bought, processed and then sold onwards to retail markets elsewhere. Thailand's main gemstone trading centres, Silom Road in Bangkok (where the Jewellery Trade Centre is located) and Chanthaburi's weekend markets, are bustling centres of commerce attracting gemstone sellers and traders from across the world.¹³⁸

The country's dominance in the trade is mainly down to two factors: knowledge and networks. A long history of gemstone production has made the country home to large numbers of highly skilled gemstone processors, polishers and jewellers.

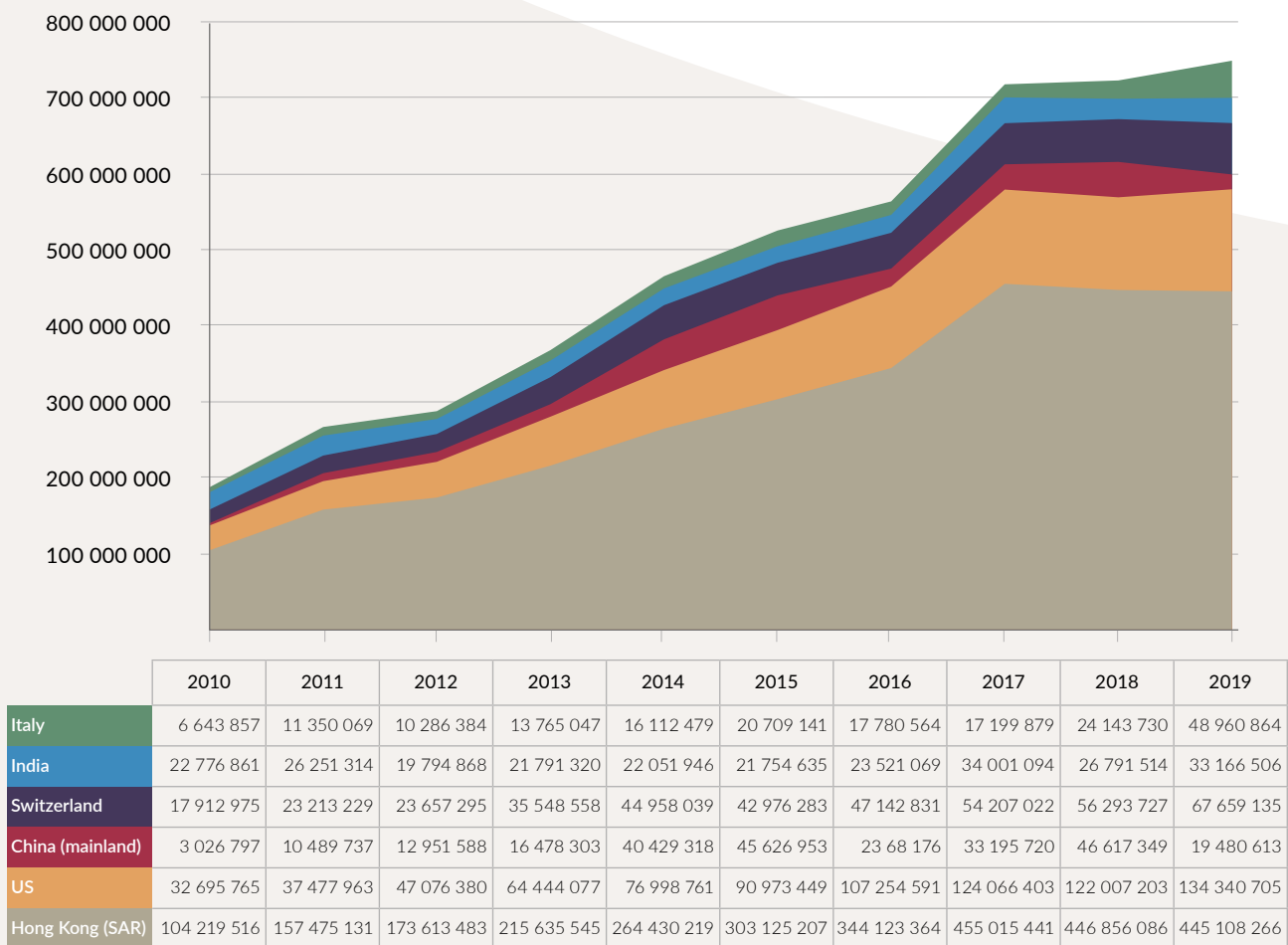


FIGURE 9 Thai worked ruby, sapphire and emerald exports by trade value to the top six export destinations, 2010–2019 (US\$).

SOURCE: UN Comtrade

These gemstone workers have honed and developed techniques for preparing coloured gemstones for retail. Examples include the pioneering of ruby and sapphire heating techniques in Chanthaburi, which have allowed gemstone workers to enrich the colour, and consequently value, of duller, cheaper stones.¹³⁹ Such techniques have unlocked significant opportunities for Thai traders to maximize profits.

Added to the country's specialist knowledge are the advantages that come from large networks spread across gemstone producing regions. The Thai presence in many key gemstone producing countries can be traced back to the 1980s, when Thai gemstone miners attempted to expand their operations abroad, most notably to Cambodia, Tanzania and Vietnam.¹⁴⁰ Facing obstacles due to corrupt and predatory government actors, and struggling to grow small domestic family-run businesses into transnational companies, Thai gemstone actors increasingly shifted from running mining operations abroad, to simply sourcing and buying stones from the artisanal mining networks already present.¹⁴¹ This strategy has proved to be successful, leading to a proliferation of Thai gemstone traders, particularly in eastern Africa, with Thai cutters and polishers now relying on intermediary dealers and middlemen, most of whom are West African or Indian nationals.¹⁴²

A friendly government approach, both in terms of encouraging the formal and indifference to the informal aspects of the sector, has created an environment in which the trade has flourished. It is the fifth largest industry in Thailand, estimated to employ more than a million people. Through a lax attitude to imports – there is little in the way of due diligence requirements, as customs do not require proof of origin or of royalties paid – the government has removed bureaucratic obstacles and turned a blind eye to the illicit and informal aspects of the sector.¹⁴³ The Thai gemstone authority, the Gem and Jewelry Institute, admits that the country's imports from Africa are underreported.¹⁴⁴

Attempts have been made to strengthen formal trading relationships, with Thai officials welcoming delegations of ruby producers and representatives from the Mozambican Ministry of Mineral Resources and Energy in 2018. Private sector partnerships have also been promoted, with one major Thai jewellery house offering value-addition partnerships with African industry stakeholders.¹⁴⁵

Gemstone traders in Thailand include locals and foreigners. Among the locals are the representatives of cutting and polishing businesses who seek to buy rough-cut stones for further value addition, and those Thai dealers that travel to Africa and Asia to buy and bring back stones from gemstone-producing regions.

Many foreign traders are West Africans, most of whom come from Gambia, Guinea, Côte d'Ivoire and Mali. Present in high numbers in Bangkok and Chanthaburi, these traders are an integral part of the trade. While some visit Thailand on a temporary basis, many have settled there permanently.¹⁴⁶ It is thought that three-quarters of West African traders in Thailand are members of the Mandinka community.¹⁴⁷ For Mandinka, shared ethnic identity and networks are an important foundation of trust,



Rubies sold in Chanthaburi, Thailand. The country is one of the world's largest coloured gemstone trading hubs.

© Thitiphon Promprayong/EyeEm via Getty Images

in a sector riven with uncertainty, as well as a form of social capital through which Mandinka traders will often help and support one another.¹⁴⁸ Unlike many of the Thai gemstone traders, West Africans tend to deal in lower-value rough-cut stones rather than cut, polished or partially processed stones.

After stones brought to Thailand have been sold, they are polished, processed and set into jewellery. Once worked, they are exported to retail markets. According to UN Comtrade data, the dominant export destinations for worked rubies, sapphires and emeralds are Hong Kong, the US, mainland China, Switzerland, India and Italy.

The COVID-19 pandemic has negatively impacted the Thai coloured gemstone sector beyond the associated fall in gemstone prices. In May 2021, Thailand was hit by its worst outbreak, and Chanthaburi, the epicentre of the gemstone trading community, was at the heart of the infection cluster.¹⁴⁹

Sri Lanka

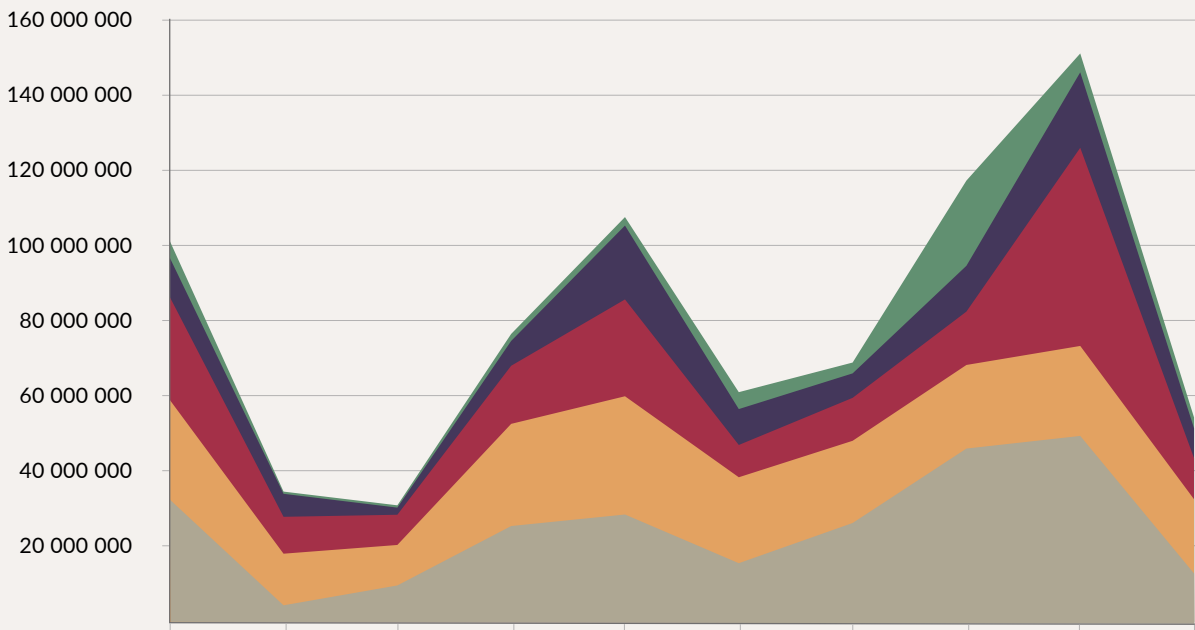
Sri Lanka is both a prominent gemstone producer and entrepôt in the global coloured gemstone trade. It possesses a very high density of precious and semi-precious gemstone deposits, including ruby, sapphire, beryl and more.¹⁵⁰ Sri Lanka is also a primary destination for African gemstones, including those from Mozambique. In 2019, gemstone exports peaked at US\$150 million. This figure is thought to understate the true value of the sector.

Sri Lanka plays a critical intermediary role between source countries that do not possess a strong history of gemstone processing, like Mozambique, and retail markets. Traders bring sapphires and other stones mined in Africa to Sri Lanka, where they undergo value-addition lapidary processes before being marketed and sold domestically or exported.¹⁵¹ According to one of Sri Lanka's major gem-testing laboratories, around half of the stones brought in for inspection were sourced from Africa.¹⁵²

Despite a long history of gemstone trading and ongoing domestic production, Sri Lanka's current prominence in the international coloured gemstone sector was mainly the result of regulatory changes in the 1990s that made it easy and inexpensive to move stones. Simplified, low export rates facilitate the Sri Lankan gemstone trade today. As of 2014, rough, pre-formed and cut stones can be imported for cutting, re-cutting and heat treatment for a flat charge of US\$200 regardless of quantity and value. Foreign buyers who have bought stones valued at over US\$200 000 are fast-tracked through customs with a flat export fee of US\$1 500. As a result, Sri Lankan traders became increasingly established in foreign gemstone markets, including Mozambique and Thailand.¹⁵³

Sapphires of the highest quality can be found in Sri Lanka, and much of the mining in the country continues to be artisanal. © Thierry Falise/LightRocket via Getty Images





	2010	2011	2012	2013	2014	2015	2016	2017	2019	2020
France	4 457 375	586 731	610 966	2 251 137	2 251 137	4 480 081	2 872 801	22 507 820	4 995 371	2 861 608
Switzerland	10 393 787	6 093 590	1 881 162	19 563 469	19 563 469	9 506 787	6 477 209	12 130 477	19 990 394	7 911 606
Thailand	27 267 076	9 768 295	8 004 946	25 645 063	25 645 063	8 550 991	11 376 773	14 136 720	52 481 120	10 890 742
US	26 393 953	13 675 271	10 724 295	31 320 136	31 320 136	22 762 696	21 775 358	22 143 499	23 833 619	19 644 283
Hong Kong (SAR)	32 486 436	4 447 930	9 712 574	28 506 316	28 506 316	15 607 125	26 252 499	45 972 792	49 323 181	12 891 380

FIGURE 10 Sri Lankan worked ruby, sapphire and emerald exports by trade value to top five export destinations, 2010–2020 (US\$).

SOURCE: UN Comtrade (data not available for 2018)

Sri Lanka's role in the global trade has also developed because of the knowledge and skills of its gemstone traders, specialists and craftspeople who can transform rough gemstones into the high-quality processed stones sought by retailers and collectors. Most import-export businesses are family owned and have been so for generations.¹⁵⁴ While Thailand is known for its ruby specialists, Sri Lanka has a reputation for producing high-quality sapphires, elegantly mixing traditional and modern techniques to bring out the greatest beauty in stones. A major sapphire producer in its own right, the country's craftspeople are particularly known for the cutting and polishing skills they have honed over centuries of producing the high-value sapphires known as Ceylons.

Colombo and Beruwala are the main trading centres of the country, where domestically produced stones and stones from abroad are consolidated and traded.¹⁵⁵ China Fort, an area of Beruwala named for its connection to Chinese merchants in the 18th century, is the main market for cut and polished stones in the country.¹⁵⁶ It is claimed that millions of dollars of gemstone transactions take place here on market days.¹⁵⁷ The scale of the market is huge. In Beruwala, an estimated 5 000 traders can be found at any moment, trading on the streets and in gem dealers' offices.¹⁵⁸



Skilled craftspeople transform rough gemstones into high-quality processed stones sought by retailers and collectors. © Satoshi Takahashi/LightRocket via Getty Images

In addition to Sri Lankan traders, foreign buyers and traders are also present in Sri Lanka or have local representatives. In Beruwala, buyers are known to come from across the world, representing a variety of retail markets and trade hubs, including China, India, Bangkok, Thailand, Indonesia, the US, Canada, Australia, England, Germany and France.¹⁵⁹ Foreign buyers often rely on locals, and their networks, to advise on buying and cutting decisions, and to bring in other dealers to present their stones.¹⁶⁰ Foreign buyers also have gemstones brought to a local representative in Sri Lanka and, if they choose to buy stones, the export procedures and logistics are then organized by local dealers who receive a commission.¹⁶¹ These networks provide foreign buyers with expert dealers on the ground who can haggle on their behalf, advise on prices and quality and arrange services, such as lab inspections.¹⁶²

Besides stone processing, Sri Lanka has also developed a growing capacity for laboratory analysis. The demand for this has grown substantially along with the presence of foreign buyers, particularly those from China. For these buyers, identifying and detecting whether stones have undergone heat or other treatments has become increasingly important.¹⁶³

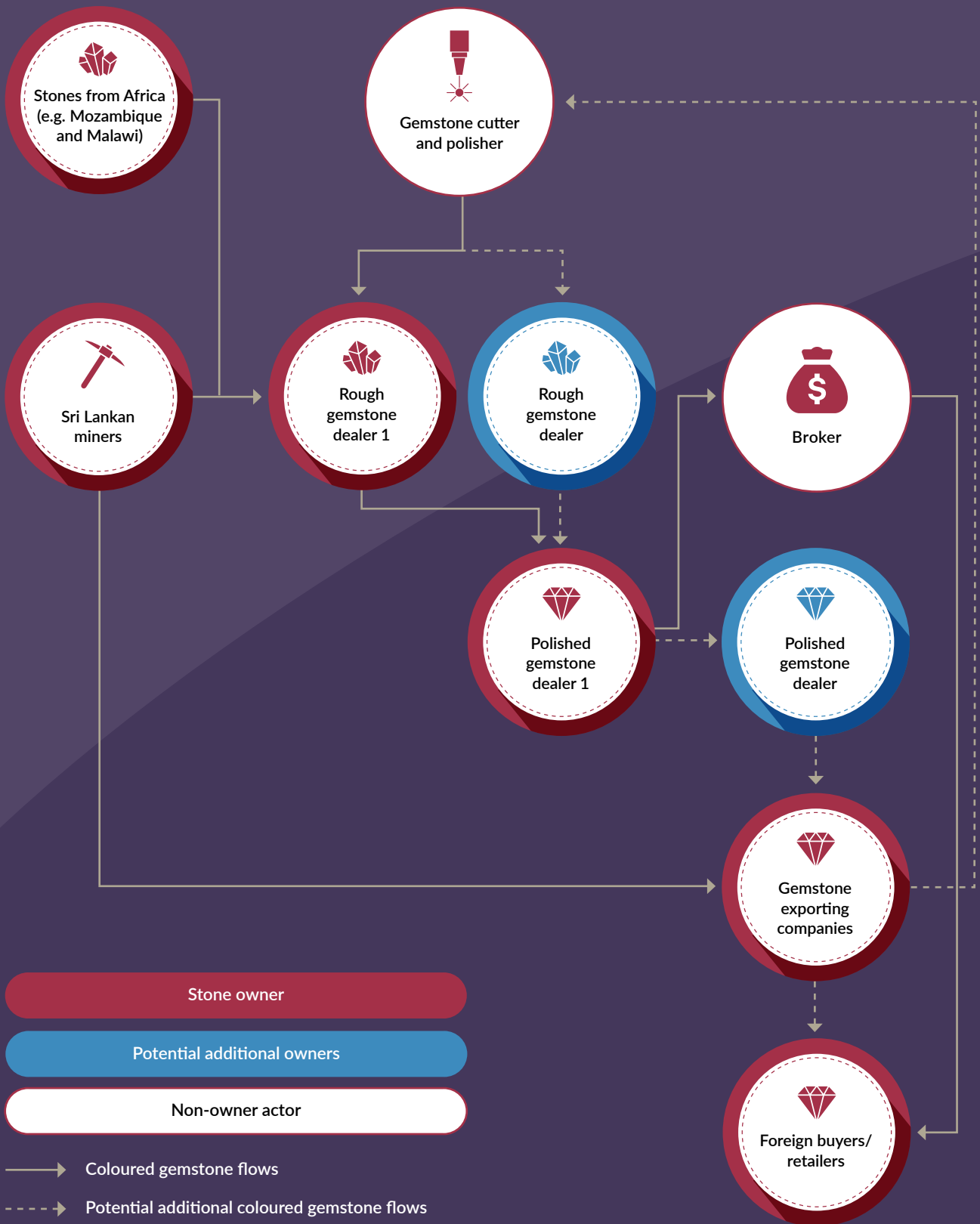


FIGURE 11 Coloured gemstone flows in Sri Lanka.

SOURCE: Adapted from Rafhan Rifan and Pradeepa Jayaratne, Evaluation of the supply chain for coloured gemstones: The case of Sri Lanka, Research for Transport and Logistics Industry Conference Proceedings 2017, 45-49



Sri Lankan traders are also present in Thailand, where they are known to operate in secret at times, bringing sapphires that have been cut and polished in Sri Lanka to the Thai market.¹⁶⁴ UN Comtrade data has consistently placed Thailand among the top export destinations for Sri Lankan worked rubies, sapphires and emeralds. In 2019, Sri Lanka exported a record US\$50 million worth of worked rubies, sapphires and emeralds to Thailand. Other export destinations are major retail markets, including Hong Kong, the US, Switzerland and France. Sri Lankan dealers also report that growing demand from mainland China is reshaping the trade. Whereas traders in the early 2000s tended to visit exhibitions and trade shows in the US and Japan, increasing numbers of traders now travel to China for re-cutting, heat treatment and resale on the Chinese market.¹⁶⁵


UN Comtrade data also points to a significant decline in trade in 2020, consistent with reports that ASM and LSM production decreased dramatically in East Africa during the COVID-19 pandemic.

Dealers and buyers check sapphires and other gems in Beruwala, the main gem market in Sri Lanka. © Thierry Falise/LightRocket via Getty Images



RECOMMENDATIONS

Although the coloured gemstone trade provides a valuable livelihood for communities and traders, the sector is vulnerable to criminal exploitation. © dpa picture alliance/ Alamy Stock Photo



Scratching the surface of the coloured gemstone trade from Africa to Asia reveals highly complex networks. While the coloured gemstone sector is a valuable livelihood, both for communities and traders, the informality and secrecy that shrouds the trade also makes it susceptible to criminal exploitation and smuggling, with vast quantities of stones being trafficked from Africa to Asia. Although small acts of criminality may seem harmless, the resulting global system perpetuates poverty, while eroding the rule of law and governance and undermining sustainable development in source countries.

For the global coloured gemstone sector to reach its full development potential, action is needed in source, transit and destination countries to combat illicit flows and to support sustainability. It is widely agreed that the greatest profits from the coloured gemstone trade are realized at the point of value addition (cutting and polishing). However, efforts to build local processing capacity have yet to show significant, long-term results. It takes years and significant investment to train individuals in the art of gemstone cutting, commitments which many development initiatives are unable to meet. Furthermore, even when a government is willing build a local gem processing centre, there are significant challenges in linking processors to customers in global trading centres like Bangkok. Without this, local cutters will have to travel overseas to sell their stones or sell the stones locally at discounted prices, potentially reducing profit margins to below what they would make from selling unprocessed stones. This approach can also fuel smuggling, as gemstone traders seek to circumvent costly export requirements (as has been seen in Tanzania).¹⁶⁶

Therefore, responses must go beyond increasing the knowledge of local mining communities (albeit this is an important component) and seek better engagement with and leverage of current trading networks. This will require seeking out partnerships beyond the mine site and cultivating more diverse groups of stakeholders, which ought to include current coloured gemstone traders, large-scale mining operators, transit and destination governments, and private sector actors. This should be combined with a two-pronged strategy of supporting local mining communities while also addressing issues of governance and corruption.

To this end, the following recommendations are made:

1. Increase engagement with source communities and traders. Future work will need to find ways to build gemmological knowledge and the negotiation and marketing skills of miners and local traders.¹⁶⁷ Such initiatives ought to be supported and continued. Part of this process will be increasing opportunities for local value addition and developing the local economy – for example by introducing and growing the art of gemstone painting, which has demonstrated benefits for both artisans and miners where it is taking place.¹⁶⁸ In the longer term, fostering the development of local institutions, such as cooperatives or companies, will enable communities to engage with formal traders in transit and destination countries and to access vital finance and secure business. This can be especially important for female miners. As such, interventions ought to also conduct gender analysis to fully understand their potential impact on women and how to best engage and involve them in programmes.¹⁶⁹

2. Establish relationships between ASM and LSM operators. LSM concessions have proven to be a flash point in northern Mozambique, and the threat of conflict will continue to grow as more land is designated as mineral concessions. As such, there is a need to identify realistic and practical solutions that are of interest to both large-scale mines and ASM stakeholders, allowing them to coexist as harmoniously as possible.¹⁷⁰ This will require establishing communication channels between ASM and LSM operations and creating legal and feasible pathways for cooperation between large commercial operators and local ASM communities. Examples of such partnerships can be found in the Democratic Republic of Congo¹⁷¹ and Myanmar.¹⁷²

Although governments are best placed to provide the facilitation, structures and regulation necessary, in the absence of effective governance this is a role mining companies will need to consider taking on. Industry standards and instruments that call for large-scale operations to engage with ASM include the Due Diligence Guidance for Meaningful Stakeholder Engagement in the Extractive Sector, the Initiative for Responsible Mining Assurance, and the International Council on Mining and Metals Performance Expectations.¹⁷³

3. Adopt responsible sourcing requirements in an incremental and flexible manner. Responsible sourcing schemes can create a barrier to effective engagement with many ASM miners and small traders because they lack the knowledge and resources to comply with the strict standards and demands of large companies. For this reason, responsible sourcing requirements need to be realistic and implemented incrementally in partnership with miners and traders, and exercised in a flexible manner. It is important to emphasize that effective proactive engagement with traders and not just miners is necessary to increase chances of success.¹⁷⁴

- 4. Shift regulatory approaches to be more development focused.** Prohibition and criminalization have proven to be ineffective in reducing crime in the ASM sector and can have adverse development impacts for vulnerable source communities.¹⁷⁵ Though both Mozambique and Malawi have taken steps towards formalization of ASM, in Mozambique an aggressive and punitive approach predominates. Thus, there is a need to provide support for developing responsible, secure mining and trade pathways that reduce opportunities for criminal exploitation. Frameworks for the licensing of artisanal mining activities exist in both Mozambique and Malawi, but implementation is low.

Steps that can facilitate greater compliance include streamlining licensing procedures and reducing the bureaucratic hurdles to acquiring licenses and export permits. Also, growing and developing mining authorities' offices and presence can help to ensure that pathways towards formalization are more accessible. This will require changing the tactics of law enforcement and providing training. ASM sites with viable deposits should be designated so that technical support and environmental management support can be given and monitoring of mining activities can take place. Effective support for these reforms will require partner organizations who can commit to supporting training and providing technical support on a long-term basis.

- 5. Promote increased cooperation between source, transit and destination countries.** Finding an effective solution to smuggling while maintaining and growing legal gemstone flows will require international cooperation – in particular, over regulation or the tracking of trade flows. Official cooperation between African and Thai actors has been minimal. It will be important to find ways to make current supply chains from Africa to Thailand more responsible and sustainable without displacing them to other countries. Not only is the coloured gemstone sector an important component of the Thai economy, employing millions of workers, but Thailand also has arguably more responsible labour, employment and trade practices than some of the other countries where flows would most likely be diverted to. As such, regulatory cooperation may need investment in formalization, both in Africa and in Asia, to offer stronger incentives to engage in the formal sector.¹⁷⁶
- 6. Support anti-corruption and good governance initiatives.** State actors play a pivotal role in facilitating illegal mining and gemstone smuggling. A multi-pronged anti-corruption approach aimed at both petty and high-level corruption is required. This should include grass-roots efforts to foster social accountability in local communities. Local civil society organizations that are already engaged in this work, such as the Centro para Democracia e Desenvolvimento (centre for democracy and development) in Mozambique, should continue to receive support from the international community.

NOTES

- 1 Vincent Pardieu et al., Expedition report to the ruby mining sites in Northern Mozambique (Niassa and Cabo Delgado provinces), Gemmological Institute of America, 23 December 2009, <https://www.gia.edu/doc/Expedition-report-Ruby-mining-sites-Northern-Mozambique.pdf>; Vincent Pardieu et al., Rubies from the Montepuez area (Mozambique), GIA News, 2013, https://www.gia.edu/doc/GIA_Ruby_Montepuez_Mozambique.pdf; and Hsu et al., Mozambique: a ruby discovery for the 21st century, GIA, 3 December 2014, <https://www.gia.edu/gia-news-research-mozambique-expedition-ruby-discovery-new-millennium>.
- 2 The Gemstones and Jewellery Community Platform, Glimmers in the shadows: the complex web of coloured gemstone trading, https://gemstones-and-jewellery.com/white_papers/glimmers-in-the-shadows/.
- 3 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured gemstone flows to Asia, Global Initiative Against Transnational Organized Crime (GI-TOC), 31 July 2020.
- 4 For example, by introducing and growing the art of gemstone painting, which has demonstrated benefits for both artisans and miners where it is taking place. See Vincent Pardieu, Gem painting [video], Youtube, 25 May 2019, <https://www.youtube.com/watch?v=tasSYjO1kuc>.
- 5 Lynda Lawson and Kuntala Lahiri-Dutt, Women sapphire traders in Madagascar: challenges and opportunities for empowerment, *The Extractive Industries and Society*, 7, 2, 405–411.
- 6 The Gemstone and Jewellery Platform, Glimmers in the shadows: the complex web of coloured-gemstone trading, https://gemstones-and-jewellery.com/white_papers/glimmers-in-the-shadows/.
- 7 UN Interregional Crime and Justice Research Institute, Expert meeting to discuss a new initiative on coloured gemstones traceability and certification of ethical origin, 2013, http://www.unicri.it/news/article/2013-04-11_expert_meeting_gemstones.
- 8 Léa Collet, Laura Curtze, and Kathrin Reed, Responsible sourcing of colored gemstones, The Graduate Institute of Geneva, 15 December 2013, https://www.responsiblejewellery.com/wp-content/uploads/Responsible-Sourcing-of-Colored-Gemstones_ARS-Final-Report_-_Collet-Curtze-Reed.updated.pdf.
- 9 Vincent Pardieu et al., Expedition report to the ruby mining sites in Northern Mozambique (Niassa and Cabo Delgado provinces), Gemmological Institute of America, 23 December 2009, <https://www.gia.edu/doc/Expedition-report-Ruby-mining-sites-Northern-Mozambique.pdf>; Vincent Pardieu et al., Rubies from the Montepuez area (Mozambique), GIA News, 2013, https://www.gia.edu/doc/GIA_Ruby_Montepuez_Mozambique.pdf; and Hsu et al., Mozambique: a ruby discovery for the 21st century, GIA, 3 December 2014, <https://www.gia.edu/gia-news-research-mozambique-expedition-ruby-discovery-new-millennium>.
- 10 Jason Boswell, Mozambique's lucrative ruby mines, BBC News, 10 February 2017, <https://www.bbc.com/news/av/business-38934307>.
- 11 Vincent Pardieu, Thailand: the undisputed ruby trading kingdom, InColor Magazine, January 2019, <http://www.incolormagazine.org/books/jpnr/#p=15>.
- 12 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured-gemstone flows to Asia, Global Initiative Against Transnational Organized Crime, 31 July 2020.
- 13 Gemfields Group Limited, Montepuez Ruby Mining Limitada (Ruby), <https://www.gemfieldsgroup.com/assets/montepuez-ruby-mining-limitada/>.
- 14 Chikomani Manda, Views from Malawi's ASM sector: Malawi losing out through gemstone smuggling, Mining in Malwai, 6 October 2016, <https://mininginmalawi.com/mining-in-malawi-315/>.
- 15 Interview with coloured gemstone expert, 12 July 2021, by phone.
- 16 Gemmological Institute of America (GIA), Conservation, rubies and gold mining in Mozambique [video], Youtube, 2018, <https://youtu.be/TBXdnma7QBQ>.
- 17 Bernd Dreschler, Small-scale mining and sustainable development within the SADC region, International Institute for Environment and Development, August 2001, <https://commdev.org/pdf/publications/Small-Scale-Mining-Development-SADC-Region.pdf>.
- 18 Gemmological Institute of America (GIA), Gem Encyclopedia, <https://www.gia.edu/gem-encyclopedia>.
- 19 Ibid.
- 20 Ibid.
- 21 Rachel Youngali, Cartier, US jewelers start boycotting Myanmar gems, Reuters, 11 October 2007, <https://www.reuters.com/article/us-myanmar-gems-idUSN1026265720071011>; US House backs crackdown on Myanmar gem trade, NY Times, 12 November 2007, <https://www.nytimes.com/2007/12/12/world/asia/12iht-myanmar.1.8706991.html>; David Brunnstrom, EU agrees to strengthen Myanmar sanctions, Reuters, 16 October 2007, <https://www.reuters.com/article/idUSL15606056>.
- 22 Vincent Pardieu et al., Expedition report to the ruby mining sites in Northern Mozambique (Niassa and Cabo Delgado provinces), Gemmological Institute of America, 23 December 2009, <https://www.gia.edu/doc/Expedition-report-Ruby-mining-sites-Northern-Mozambique.pdf>.

- 23 Interview with coloured gemstone expert, 12 July 2021, by phone.
- 24 Vincent Pardieu et al., Expedition report to the ruby mining sites in Northern Mozambique (Niassa and Cabo Delgado provinces), Gemmological Institute of America, 23 December 2009, <https://www.gia.edu/doc/Expedition-report-Ruby-mining-sites-Northern-Mozambique.pdf>; Vincent Pardieu, Thailand: the undisputed ruby trading kingdom, *InColor Magazine*, January 2019, <http://www.incolormagazine.org/books/jpnr/#p=15>.
- 25 Gemmological Institute of America (GIA), Unearthing Ruby and Sapphire in Malawi, Press Release, 20 November 2014, <https://www.gia.edu/gia-news-press/malawi-field-visit>.
- 26 Tiyamike Haundi et al., An investigation of the socio-economic benefits of small-scale gold mining in Malawi, *Mining*, 1, 1, 19–34.
- 27 Malawi Extractive Industries Transparency Initiative, MWEITI final report for the financial year 2017/2018, 26 February 2021, https://eiti.org/files/documents/4th_malawi_eiti_report_-_26_february_2021.pdf.
- 28 Tiyamike Haundi et al., An investigation of the socio-economic benefits of small-scale gold mining in Malawi, *Mining*, 1, 1, 19–34.
- 29 GIS User, Spatial dimension launches Mozambique EITI compliant mining cadastre portal, 29 August 2013, <https://gisuser.com/2013/08/spatial-dimension-launches-mozambique-eiti-compliant-mining-cadastre-portal/>; Malawi Extractive Industries Transparency Initiative, MWEITI report 2016/2017 fiscal year, November 2019, https://eiti.org/files/documents/malawi_eiti_report_-_2016-17.pdf.
- 30 The Gemstones and Jewellery Community Platform, Hands that dig, hands that feed: lives shared by coloured gemstone mining, https://gemstones-and-jewellery.com/white_papers/mining/.
- 31 Ibid.
- 32 The direct translation of 'garimpeiro' is 'independent miner', although the term is typically used to refer to informal or illegal miners.
- 33 Indeed, 90% of all economic activity in Mozambique is estimated to be informal in some way. See International Labour Organization (ILO), Mozambique joins Portuguese-speaking countries to address transition to formal economy, ILO News, 20 March 2016, http://www.oit.org/africa/countries-covered/zambia/WCMS_462681/lang-en/index.htm#:~:text=In%20Mozambique%20the%20informal%20economy,high%20rate%20of%20over%2090%25.&text=In%20most%20African%20countries%2C%20the,nine%20out%20of%2010%20workers.
- 34 Stefaan Dondeyne and Eduardo Ndunguru, Artisanal gold mining and rural development policies in Mozambique: perspectives for the future', *Futures: The Journal of Policy, Planning and Futures Studies*, 62, 120–27.
- 35 Blair Rutherford and Laila Chemane-Chilemba, The governance of artisanal and small-scale mining in Manica District, Mozambique: implications for women's livelihoods, *Canadian Journal of African Studies*, 54, 1, 139–56.
- 36 Decree No. 25/2015 approving the regulation for diamond, precious metals and gems commercialization, Republic of Mozambique, <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC152136/>.
- 37 Nationalities found during this research include Congolese, Malawians, Burundians, Zambians, Zimbabweans, Somalis, Kenyans, Senegalese, Malians, Gambians, Guineans, Sierra Leonians, Ugandans and many others.
- 38 International Labour Organization (ILO), Inclusive business practices in Africa's extractive industries, ILO Policy Note, 2015, https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---multi/documents/publication/wcms_449662.pdf.
- 39 Roundtable interview with industry experts, June 2021, by teleconference.
- 40 Ruby prices reflected gold prices during the pandemic. While local prices at mine sites saw a significant drop, prices on the international markets remained strong. This is reflected in the most recent MRM ruby auction results, see Ruby Auction Results, London Stock Exchange, 8 April 2021, <https://www.londonstockexchange.com/news-article/GEM/ruby-auction-results/14930138?lang=en>.
- 41 Interview with SERNIC Office, Montepuez, January 2021.
- 42 Interviews with Mozambican miners, Lichinga and Mavago, February 2021.
- 43 Roundtable interview with industry experts, February 2021, by teleconference.
- 44 Ruby mine among biggest taxpayers in Mozambique, *Further Africa*, 29 April 2020, <https://furtherafrica.com/2020/04/29/ruby-mine-among-biggest-taxpayers-in-mozambique/>.
- 45 Interviews with Tanzanian buyers, brokers and miners, Montepuez, January 2021.
- 46 Interview with Tanzanian miner and dealer, Montepuez, January 2021.
- 47 Roundtable interview with industry experts, June 2021, by teleconference.
- 48 Interview with Tanzanian female miner and dealer, Montepuez, January 2021.
- 49 Mozambique: six sentenced for facilitating illegal ruby mining, Club of Mozambique, 10 June 2021, <https://clubofmozambique.com/news/mozambique-six-sentenced-for-facilitating-illegal-ruby-mining-194205/>.
- 50 Interview with Tanzanian female miner and dealer, Montepuez, January 2021.
- 51 Ibid.
- 52 Roundtable interview with industry experts, June 2021, by teleconference.
- 53 Centro de Jornalismo Investigativo, The business interests of General Raimundo Pachinuapa, 13 April 2020; Estacio Valoi, The blood rubies of Montepuez, *Foreign Policy*, 3 May 2016, <https://foreignpolicy.com/2016/05/03/the-blood-rubies-of-montepuez-mozambique-gemfields-illegal-mining/>.
- 54 Mail and Guardian, Apology: Gemfields' Mozambican ruby mine, 30 May 2016, <https://mg.co.za/article/2016-05-30-00-apology-gemfields-mozambican-ruby-mine/>.
- 55 Brecken Branstrator, Gemfields agrees to pay \$7.6m to settle Mozambique lawsuit, National Jeweller, 30 January 2019, <https://www.nationaljeweler.com/articles/6268-gemfields-agrees-to-pay-7-6m-to-settle-mozambique-lawsuit>.
- 56 Gemfields Group, Press statement, 11 February 2018, <https://gemfields.com/journals/gemfields-press-statement/>.
- 57 Gemfields Group, Press statement, 29 January 2019, <https://gemfields.s3.amazonaws.com/News%20and%20Announcements/2019/January/20190117-%20GGGL%20SENS%20announcement%20-%20Gemfields%20Press%20Statement%20in%20relation%20to%20Settlement%20Agreement.pdf>.

- 58 Leigh Day, Statement by Leigh Day in relation to the settlement of the human rights claims against Gemfields Ltd, 29 January 2019, <https://www.leighday.co.uk/latest-updates/news/2019-news/statement-by-leigh-day-in-relation-to-the-settlement-of-the-human-rights-claims-against-gemfields-ltd/#>.
- 59 See for example: Public Integrity Centre (CIP), Requests for mining concessions increase as armed conflict intensifies in Cabo Delgado – who are the owners of mining licenses in Cabo Delgado?, 20 July 2020, <https://www.cipmoz.org/en/2021/07/20/8153/>; Mathias Bak, Mozambique: Overview of corruption and anti-corruption, Transparency International, 15 December 2020, <https://www.u4.no/publications/mozambique-overview-of-corruption-and-anti-corruption-2020.pdf>; Nicholas Norbrook, How Mozambique's corrupt elite caused tragedy in the north, Africa Report, 10 April 2021, <https://www.theafricareport.com/79096/how-mozambiques-corrupt-elite-caused-tragedy-in-the-north/>.
- 60 The Gemstones and Jewellery Community Platform, Hands that dig, hands that feed: lives shared by coloured gemstone mining, https://gemstones-and-jewellery.com/white_papers/mining/.
- 61 Interview with gemstone middleman, January 2021.
- 62 Interview with NSR conservationist, Niassa, January 2021.
- 63 Interviews with miners and dealers, Mavago, January 2021.
- 64 Interviews with miners and dealers, Mavago, January 2021.
- 65 Interviews with Malawian dealers, Mangochi and Lilongwe, February 2021.
- 66 Interviews with Malawian dealers, Mangochi, February 2021.
- 67 Roundtable interview with industry experts, June 2021, by teleconference.
- 68 Interviews with Mozambican and Tanzanian miners and dealers, Lichinga, Mavago, Montepuez and M'Sawize, January 2021.
- 69 Interviews with Mozambican and Tanzanian dealers, Mavago and Lichinga, January 2021.
- 70 Interview with NSR Conservationist, Niassa, January 2021.
- 71 See for example Gemmological Institute of America (GIA), Conservation, rubies and gold mining in Mozambique [video], Youtube, 2018, <https://youtu.be/TBXdnma7QBQ>.
- 72 Marcena Hunter, Pulling at golden threads, ENACT, April 2019.
- 73 The Gemstones and Jewellery Community Platform, Hands that dig, hands that feed: lives shared by coloured gemstone mining, https://gemstones-and-jewellery.com/white_papers/mining/.
- 74 Ibid.
- 75 Interview with coloured gemstone expert, 12 July 2021, by phone.
- 76 Interviews with Malawian and West African dealers, Lilongwe and Mangochi, February 2021.
- 77 Deborah Craig, Can gemstones bring prosperity to Malawi?, *Gems and Jewellery*, 26, 1.
- 78 The Gemstones and Jewellery Community Platform, Ancient crafts, modern problems, https://gemstones-and-jewellery.com/white_papers/a-story-of-many-facets/.
- 79 Interview with Mozambican broker, Lichinga, January 2021.
- 80 This reflects the findings in the GI-TOC report, A rough cut trade, which investigated the role of West African traders in the Thai coloured gemstone market.
- 81 Interviews with miners, local middlemen and traders, M'Sawize, January 2021.
- 82 Interviews with Mozambican and Tanzanian miners and dealers, Mavago, Montepuez, M'Sawize and Lichinga, January 2021.
- 83 Research by Laurs, et al. in Mavuco and Nampula in 2008 found that the vast majority of buyers in Mavuco come from West Africa. Locals typically had contract mining arrangements with West African buyers, who support them in exchange for first refusal rights on their products. One local dealer told researchers that there were at least 200 buyers, and some employed several dozen miners. The tourmalines are brought from the miners to the buyers by 'runners' who move between the mine and town on motorcycles. The West African buyers then sell the rough stones to other buyers who come to the Mavuco market (typically other West Africans, as well as Brazilian and Thai dealers), or in Nampula (where German buyers and other foreigners are also active). In Mavuco the stones may be purchased individually, while in Nampula they are commonly offered in parcels weighing from hundreds of grams to a few kilograms. See Brendan M. Laurs, et al., Copper-bearing (Paraiba-type) tourmaline from Mozambique, *Gems and Gemology*, 44, 1, 4–30.
- 84 Interview with investigative journalist, Pemba, January 2021.
- 85 Interviews with Mozambican and Tanzanian miners and dealers, Montepuez, January 2021.
- 86 Roundtable interview with industry experts, June 2021, by teleconference.
- 87 Interviews with Tanzanian dealers in Montepuez and West African dealers in Nampula, January 2021.
- 88 Interviews with Ghanaian and Gambian dealers, Nampula, January 2021.
- 89 Consensus amongst the vast majority interviewees across northern Mozambique, January 2021.
- 90 Interviews with Mozambican and Tanzanian miners and dealers, Mavago, Montepuez and M'Sawize, January 2021.
- 91 Interview with Ghanaian dealer, Lichinga, January 2021.
- 92 Interviews with West African dealers, Montepuez, January 2021.
- 93 Interview with investigative journalist, Pemba, January 2021.
- 94 Interviews with Mozambican and Tanzanian miners and dealers, Lichinga, Mavago, Montepuez and M'Sawize, January 2021.
- 95 Alex Vines, What next for the insurgency in Cabo Delgado?, Chatham House, 7 April 2021, <https://www.chathamhouse.org/2021/04/what-next-insurgency-cabo-delgado>.
- 96 Roundtable interview with industry experts, June 2021, by teleconference.
- 97 GI-TOC, Eastern and Southern Africa Risk Bulletin, 17, 28 April 2021, <https://globalinitiative.net/analysis/esaobs-risk-bulletin-17/>.
- 98 Interview with former law enforcement officer, Pemba, 24 January 2021; Interview with senior NGO worker from Niassa Province, Pemba, 22 January 2021.
- 99 GI-TOC, Eastern and Southern Africa Risk Bulletin, 17, 28 April 2021, <https://globalinitiative.net/analysis/esaobs-risk-bulletin-17/>.
- 100 Interviews with Malawian and West African dealers, Lilongwe and Mangochi, February 2021.
- 101 Ibid.
- 102 Ibid.
- 103 Interviews with Malawian coloured gemstone traders, February 2021.

- 104 Roundtable Interview with industry experts, February 2021, by teleconference.
- 105 Interviews with Mozambican, Tanzanian and West African miners and dealers across northern Mozambique and Malawi, January and February 2021.
- 106 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured-gemstone flows to Asia, GI-TOC, 31 July 2020, <https://globalinitiative.net/analysis/africa-asia-gemstones-trade/>.
- 107 Interview with Tanzanian broker, Lichinga, January 2021.
- 108 Interviews with miners and dealers across northern Mozambique and Malawi, January and February 2021.
- 109 Interviews with West African dealers, Nampula, January 2021.
- 110 Interviews with Malawian dealers, Lilongwe, February 2021.
- 111 Interviews with Malawian and West African dealers, Lilongwe, February 2021.
- 112 Interviews with West African dealers, Nampula, January 2021.
- 113 Interviews with Tanzanian dealers in Montepuez and a Mozambican dealer in Lichinga, January and February 2021.
- 114 Interviews with Tanzanian dealers, Montepuez, January 2021
- 115 The Gemstones and Jewellery Community Platform, Ancient crafts, modern problems, https://gemstones-and-jewellery.com/white_papers/a-story-of-many-facets/.
- 116 Interviews with dealers, buyers and brokers across northern Mozambique and Malawi, January and February 2021.
- 117 Interview with Guinean gemstone trader, Chanthaburi, January 2020.
- 118 Interview with foreign law enforcement official, Maputo, January 2021; Interview with investigative journalist, Nampula, January 2021.
- 119 Interview with private sector actor, Maputo, January 2021.
- 120 Interviews with Malawian dealers, Lilongwe, February 2021.
- 121 Interview with industry experts, February 2021, by teleconference.
- 122 Interviews with dealers and traders across northern Mozambique and Malawi, January and February 2021.
- 123 Alastair Nelson, A triangle of vulnerability: changing patterns of illicit trafficking off the Swahili coast', GI-TOC, June 2020, <https://globalinitiative.net/wp-content/uploads/2020/06/Triangle-of-Risk.-web.pdf>.
- 124 The Gemstones and Jewellery Community Platform, Ancient crafts, modern problems, https://gemstones-and-jewellery.com/white_papers/a-story-of-many-facets/.
- 125 Vincent Pardieu and Wim Vertriest, Update on colored gemstone mining in Tanzania, *Gems and Gemology*, 52, 3, 317–330.
- 126 Wim Vertriest, Aaron C. Palke, and Nathan Renfro, Field gemology: building a research collection and understanding the development of gem deposits, *Gems and Gemology*, 55, 4, 490–511.
- 127 Willison Mutagwaba et al., Artisanal and small-scale mining in Tanzania – evidence to inform an 'action dialogue', International Institute for Environment and Development (IIED), 2018, <https://pubs.iied.org/sites/default/files/pdfs/migrate/16641IIED.pdf>.
- 128 Brecken Branstrator, State of the colored stone market: building benefits at home, National Jeweler, 6 November 2019, <https://www.nationaljeweler.com/articles/6288-state-of-the-colored-stone-market-building-benefits-at-home>.
- 129 Thomas Scurfield and Silas Olan'g, Magufuli seeks the right balance for Tanzania's mining fiscal regime, Natural Resource Governance Institute (NRGI), 31 January 2019, <https://resourcegovernance.org/blog/magufuli-seeks-right-balance-tanzania-mining-fiscal>.
- 130 Brecken Branstrator, State of the colored stone market: building benefits at home, National Jeweler, 6 November 2019, <https://www.nationaljeweler.com/articles/6288-state-of-the-colored-stone-market-building-benefits-at-home>.
- 131 Interview with coloured gemstone expert, 12 July 2021.
- 132 Mohamed Daghar, Efforts to curb tanzanite smuggling make Tanzania shine, ENACT, 25 July 2019, <https://enactafrica.org/research/trend-reports/efforts-to-curb-tanzanite-smuggling-make-tanzania-shine>.
- 133 Fumbuka Ng'wanakilala, Tanzania orders wall built around tanzanite mines to end illegal trade, Reuters, 20 September 2017, <https://www.reuters.com/article/us-tanzania-mining-wall-idUSKCN1BV1YF>.
- 134 Laurence M. Stevens, Despite new wall, tanzanite smuggling persists, African Mining Market, 17 July 2018, <https://africanminingmarket.com/despite-new-wall-tanzanite-smuggling-persists/2014/>.
- 135 Mohamed Daghar, Efforts to curb tanzanite smuggling make Tanzania shine, ENACT, 25 July 2019, <https://enactafrica.org/research/trend-reports/efforts-to-curb-tanzanite-smuggling-make-tanzania-shine>.
- 136 Vincent Pardieu, Thailand: the undisputed ruby trading kingdom, InColor Magazine, January 2019, <http://www.incolormagazine.org/books/jpnr/#p=15>.
- 137 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured-gemstone flows to Asia, GI-TOC, 31 July 2020, <https://globalinitiative.net/analysis/africa-asia-gemstones-trade/>.
- 138 Ibid.
- 139 Vincent Pardieu, Thailand: the undisputed ruby trading kingdom, *InColor Magazine*, January 2019, <http://www.incolormagazine.org/books/jpnr/#p=15>.
- 140 Ibid.
- 141 Ibid.
- 142 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured-gemstone flows to Asia, GI-TOC, 31 July 2020, <https://globalinitiative.net/analysis/africa-asia-gemstones-trade/>.
- 143 Ibid.
- 144 Interview with the Gem and Jewelry Institute of Thailand, January 2020.
- 145 Interview with gemstone industry representative, Bangkok, January 2020.
- 146 Richard Paddock and Muktitia Suhartono, Gemstone traders in Thailand are hit hard as the country battles a virus surge, *The New York Times*, 12 May 2021, <https://www.nytimes.com/2021/05/12/world/gemstone-traders-in-thailand-are-hit-hard-as-the-country-battles-a-virus-surge.html>.
- 147 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured-gemstone flows to Asia, GI-TOC, 31 July 2020, <https://globalinitiative.net/analysis/africa-asia-gemstones-trade/>.
- 148 Ibid.
- 149 Gary Boyle, Gem traders at heart of new cluster, *Bangkok Post*, 10 May 2021, <https://www.bangkokpost.com/learning/easy/2113219/gem-traders-at-heart-of-new-cluster>; Richard Paddock and Muktitia Suhartono, Gemstone traders in Thailand are hit hard as the country battles a virus surge, *The New York Times*, 12 May 2021, <https://www.nytimes.com/2021/05/12/world/gemstone-traders-in-thailand-are-hit-hard-as-the-country-battles-a-virus-surge.html>.

- 150 Sri Lanka Export Development Board, Gemstones found in Sri Lanka, <https://www.srilankabusiness.com/gem-diamond-and-jewellery/about-sri-lanka-gems/sri-lanka-gemstones.html>.
- 151 The Gemstones and Jewellery Community Platform, Glimmers in the shadows: the complex web of coloured gemstone trading, https://gemstones-and-jewellery.com/white_papers/glimmers-in-the-shadows/.
- 152 Andrew Lucas et al., Sri Lanka: Expedition to the island of jewels, *Gems and Gemology*, 50, 3, 174–201; As part of this process, it is possible the provenance of African stones may be falsified to make it look like they are from Sri Lanka or other sources. African sapphires are often less valuable than those from Sri Lanka, Burma or Kashmir. Another incentive is that gem traders often prefer to keep competitors away from their real suppliers. As a Burmese gem merchant told coloured gemstone expert Vincent Pardieu, 'Miners are afraid to speak, dealer tell stories'. See Vincent Pardieu, Field gemology: the evolution of data collection, *InColor Magazine*, 46, 36–44, <http://www.incolormagazine.org/books/moav/#p=37>. Thus, falsifying the origin of a stone can result in much greater profits and a more secure supply for an unscrupulous gemstone trader.
- 153 Andrew Lucas et al., Sri Lanka: Expedition to the island of jewels, *Gems and Gemology*, 50, 3, 174–201.
- 154 Ibid.
- 155 The Gemstones and Jewellery Community Platform, Glimmers in the shadows: the complex web of coloured gemstone trading, https://gemstones-and-jewellery.com/white_papers/glimmers-in-the-shadows/.
- 156 Ceylon Gem Hub, The world famous Chinafort 'Pathe' gem market, <https://ceylongemhub.com/chinafort-gem-market-beruwala-pathe-srilanka>.
- 157 Ibid.
- 158 Andrew Lucas et al., Sri Lanka: Expedition to the island of jewels, *Gems and Gemology*, 50, 3, 174–201.
- 159 Ceylon Gem Hub, The world famous Chinafort 'Pathe' gem market, <https://ceylongemhub.com/chinafort-gem-market-beruwala-pathe-srilanka>.
- 160 Andrew Lucas et al., Sri Lanka: Expedition to the island of jewels, *Gems and Gemology*, 50, 3, 174–201.
- 161 Ibid.
- 162 Ibid.
- 163 Ibid.
- 164 Interview with Sri Lankan gemstone trader, Bangkok, January 2020.
- 165 Andrew Lucas et al., Sri Lanka: Expedition to the island of jewels, *Gems and Gemology*, 50, 3, 174–201.
- 166 Interview with coloured gemstone expert, 12 July 2021, by phone.
- 167 The Gemstones and Jewellery Community Platform, Glimmers in the shadows: the complex web of coloured gemstone trading, https://gemstones-and-jewellery.com/white_papers/glimmers-in-the-shadows/.
- 168 Vincent Pardieu, Gem painting [video], Youtube, 25 May 2019, <https://www.youtube.com/watch?v=tasSYjO1kuc>.
- 169 Lynda Lawson and Kuntala Lahiri-Dutt, Women sapphire traders in Madagascar: challenges and opportunities for empowerment, *The Extractive Industries and Society*, 7, 2, 405–411.
- 170 The Gemstones and Jewellery Community Platform, Glimmers in the shadows: the complex web of coloured gemstone trading, https://gemstones-and-jewellery.com/white_papers/glimmers-in-the-shadows/.
- 171 Through the Mutoshi pilot project in the Katanga province of the Democratic Republic of Congo, Chemaf, a Congolese mining subsidiary of Trafigura contracted mining services to an ASM cooperative of 5 000 artisanal miners called Comiakol in partnership with the NGO PACT. To ensure the safety of the ASM contractors, Chemaf's Health, Safety and Environment team maintained oversight of Comiakol while two full-time representatives of PACT supervised the project. See Trafigura, Mutoshi pilot project: The Chemaf case study, <https://www.trafigura.com/responsibility/responsible-sourcing/mutoshi-pilot-project/>.
- 172 In Mogok, Myanmar, using the 'Kanase system', families of mine employees and local communities were given the right to collect and mine the tailings (waste material) of different mining companies. Stones collected from the tailings can be sold in local markets as parcels and are commonly used for making gem paintings. This collaboration has seriously lowered tensions in gem producing districts. See Pham Van Long, Vincent Pardieu, Gaston Giuliani, Update of gemstone mining in Luc Yen Vietnam, *Gems and Gemology*, 49, 4, 243–245.
- 173 John R Owen and Deanna Kemp, A large-scale perspective on small-scale mining, Centre for Social Responsibility in Mining, The University of Queensland, 2019.
- 174 The Gemstones and Jewellery Community Platform, Glimmers in the shadows: the complex web of coloured gemstone trading, https://gemstones-and-jewellery.com/white_papers/glimmers-in-the-shadows/.
- 175 Patience Singo and Kady Seguin, Best practices: formalization and due diligence in artisanal and small-scale mining, IMPACT, May 2018, https://media.africaportal.org/documents/IMPACT_ASM-Best-Practices_May-2018-EN-web.pdf.
- 176 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured gemstone flows to Asia, Global Initiative Against Transnational Organized Crime (GI-TOC), 31 July 2020.
- 177 Vincent Pardieu, Thailand: the undisputed ruby trading kingdom, *InColor Magazine*, January 2019, <http://www.incolormagazine.org/books/jpnr/#p=15>.
- 178 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured-gemstone flows to Asia, GI-TOC, 31 July 2020, <https://globalinitiative.net/analysis/africa-asia-gemstones-trade/>.
- 179 Ibid.
- 180 Vincent Pardieu, Thailand: the undisputed ruby trading kingdom, *InColor Magazine*, January 2019, <http://www.incolormagazine.org/books/jpnr/#p=15>.
- 181 Vincent Pardieu, Thailand: the undisputed ruby trading kingdom, *InColor Magazine*, January 2019, <http://www.incolormagazine.org/books/jpnr/#p=15>.
- 182 Marcena Hunter and Lynda Lawson, A rough cut trade: Africa's coloured-gemstone flows to Asia, GI-TOC, 31 July 2020, <https://globalinitiative.net/analysis/africa-asia-gemstones-trade/>.
- 183 Ibid.



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