

A group of women pick through the waste rock dump of a cooperative ASM mine in Nazca, Peru.

No safety in numbers

For a select group of miners, safety culture has improved dramatically in recent years. Major mining companies are now some of the safest employers in the world, and their managers understand the cultural change that was needed to make that happen. But for the vast majority of the global mining workforce who labour in artisanal and small-scale mines, health and safety can still be an afterthought or worse. How much can we help?

By Correy Baldwin

Valefin Nazcaud

Though artisanal and small-scale mining (ASM) operations may seem insubstantial, their global presence is anything but. According to ASM-PACE, an NGO focused on the ASM sector, there are an estimated 20 million ASM workers around the world. In gold alone, there are 15 million ASM workers in 72 countries, which is about nine times the number of people who work in large-scale gold mines. Such large numbers mean the challenges facing the ASM sector pose large-scale problems.

“I’ve seen holes so deep, that you can hardly see the guys down in them who are digging and lifting out buckets full of ore-bearing material,” says Thabani Mlilo, AngloGold Ashanti’s manager of sustainability for the Americas. This mining, he adds, is often done in rock that has never undergone geological testing and with unknown geological integrity.

ASM workers tend to lack training and technical skills, and the sites often have no operational, safety, environmental or labour standards to speak of. In many cases, ASM operations are unable to gain legal title. In cases where they cannot sell their ore on the legal market, they must turn instead to the black market – or to armed groups that profit from the trade.

The safety risks are obvious, the liability risks less so. It is difficult, for example, to know who is responsible if an illegal tunnel on a major company’s concession collapses, injuring or killing miners. If a company provides any assistance to an illegal mine, it runs the risk of being accused of colluding in the illegal mining activity.

It is little wonder, then, that many mining companies are reluctant to engage with ASM, aside from at the exploration stage, when its presence is often an indicator of mineral potential. Once development begins, any interaction is often seen as far too risky. Even the presence of illegal ASM activity on a concession comes with a multitude of risks, from safety, security and environmental to liability and reputational. However, for mining companies that neighbour these vulnerable small-scale mines, engagement with the ASM sector is a risk that also represents an opportunity to help local communities and have powerful impact on their health and well-being.

Long histories

AngloGold Ashanti is developing its Gramalote project, a joint venture with B2Gold, in the hilly region of Antioquia, about 220 kilometres northwest of Bogota. “Artisanal mining is a generational activity in this part of Colombia,” says Nathan Monash, the company’s vice-president of sustainability.

Though the Gramalote project is new, ASM activity has been ongoing in Antioquia for a very long time. “There’s not a single family in the local community that doesn’t have some link to artisanal mining,” says Monash.

What is artisanal and small-scale mining?

Any mining and or processing activities undertaken by individuals who may have formed a collective or co-operative to undertake them. The scale of activity can range from one individual to large collectives of hundreds or even thousands of individuals working an area with the common denominator being a low level of mechanisation.

Colloquially, ASM is referred to by many different names including galamsey (Ghana), orpailleurs (DRC), garimpeiros (Brazil), Zama Zamas (South Africa) and Barequeros (Colombia). ASM activity can be legal or illegal.

In general, the two sides do not talk much. “There’s a real lack of engagement between the formal sector and the informal sector,” says Kevin Telmer, executive director of the Artisanal Gold Council (AGC), an NGO that works directly with the ASM sector.

The complexity of the problem has made it especially hard to address, says Peter Sinclair, Barrick Gold’s vice-president of CSR. “I think a lot of people have looked at it and thought that it’s too difficult. A lot of NGOs have looked at it from a development angle and said ‘Wow, that’s complicated.’ There are a lot of nasty things involved in artisanal mining. Not in every situation, but it can be a nasty business, so it often discourages organizations from getting involved.”

African Barrick Gold’s North Mara mine in Tanzania has required special attention to ASM issues. Of particular concern to the company was a group of women who were entering the mine property illegally to collect rocks that they would then take away to crush and sell as aggregate. Their trespassing was dangerous, both from a mine safety and personal security perspective. In response, says Sinclair, the operation set up a program to provide the women with equipment and training, to allow them to continue their work in safer conditions and in a more regulated and sustainable way. The company supplied 10 motorized crushers and will provide waste rock for the women to process. Sinclair and his team are currently working to extend power to the site. “It is a win-win, because the women are working in a safer environment, and the mining activities are not unduly affected,” he adds.

African Barrick Gold has also had to deal with a group that wanted to reprocess tailings from small-scale mining. “We saw clear environmental dangers with the practice,” says Sinclair. “So we helped design it in a way that was going to be safe. We helped them understand the use and handling of cyanide, and helped them get the environmental permits as well.”

Good reasons for action

When deciding how to address an ASM community in and around a prospective area, it is important to understand the historic roots they may have there. In some cases, companies may obtain concessions that have been mined informally by



ASM workers receive occupational health and safety training from Artisanal Gold Council in Ghana.



An ASM worker at a mine outside of Geita, Tanzania.

local populations for years, or even generations. Resettlement can thus represent a major disruption to local communities.

“In places like Tanzania and Ghana, our international work with artisanal miners is more challenging,” says AngloGold Ashanti’s Mlilo. “We acquired a lot of our mines in Africa [rather than developing them from exploration projects], so the opportunity to implement best practice from the beginning was obviously lost.”

At the Gramalote project, AngloGold Ashanti had the opportunity to take a new approach. Here, one of its first steps was to better understand local ASM activity, as well as the ASM community that would be affected by the project. The company looked at the historic conflict in the region, local stakeholders in the broader community, and the structure and value chain of the ASM.

AngloGold Ashanti approached the ASM workers with the idea of alternative livelihoods – that is, moving the artisanals away from mining and into another economic activity. In the end, the community worked with the company to write the proposal, but only, says Monash, because Gramalote first formed a strong relationship with the community based on trust. Some of the miners were interested in working for the company, while others preferred to remain independent workers, and Gramalote partnered with two Colombian agencies to assist both requests.

“This could be considered unusual,” says Monash. “Given the longstanding nature of artisanal mining in many areas, a shift into agricultural activities is often not viable. The required skill sets are simply not prevalent. Without subsidizing the alternative livelihood, which itself is likely to be unsustainable, making this transition becomes quite difficult.”

At Gramalote, the company was working with a relatively small number of ASM workers. “[It was] in the hundreds and not in the thousands or tens of thousands,” says Monash. “The

upshot is that we wanted to work with these artisanal miners towards a new future in which they are no longer mining.”

Ensuring the idea was supported by the community was challenging. “There is a desire to move away from artisanal mining only if the alternative is better,” explains Monash. “That’s the challenge with alternative livelihoods: there is a reason why artisanal mining takes place – it is the best economic alternative for the people who are undertaking it. It is significantly more profitable than agriculture in many places.”

Strengthening the ASM sector

According to Paleah Moher, AGC’s human and ecosystem health officer, ASM workers are eager to improve the conditions of their operations: “Whether you’re an artisanal miner or a CEO operating in Toronto, everyone wants access to fair employment opportunities and safe occupational conditions. Certainly the miners we work with are absolutely no exception. They have a desire for occupational health and safety; they just lack the resources, and the basic training. As soon as they’re given economic resources or technological provisions, they’re often readily taken up within the community, especially if there’s an economic incentive to do so.”

The plight of artisanal miners is difficult to remedy without outside support. “Involvement from the formal sector is essential if artisanal mining is truly going to be improved at scale, so that it’s not just a development project here and there,” says AGC’s Telmer. “The large-scale sector has the resources, they’re in the field, they have expertise.”

ASM workers also routinely lack access to several services that could be provided by large-scale mining companies including emergency and mine rescue assistance, affordable assaying or milling services, or workshop facilities. Large companies can purchase and treat tailings from ASM opera-



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A worker prepares feed for the mill in the Cotapata mining cooperative near LaPaz, Bolivia. This ASM operation is the world's first fair-trade-certified gold mine.

tions, help store explosives or help set up small-scale processing facilities. Modest financial assistance can help ASM operations purchase safety gear and other equipment or obtain training.

“Companies can also help upgrade and formalize artisanal operations by promoting their participation in mineral certification schemes, which facilitates market access and safeguards better production standards,” says Nicholas Garrett, head of sustainability practice at RCS Global, which worked with AngloGold Ashanti at Gramalote and elsewhere. “This process can involve the provision of technical assistance to artisanal operations, often with the help of consultancy firms or NGOs.”

Too many people to simply relocate

In some cases, the best scenario might involve cohabitation: when ASM miners are either allowed on company property to work, or the company releases a portion of their property to them.

“Cohabitation is a great option that hasn’t been explored enough,” says Telmer. “It’s rare that the two groups are actually targeting the same resource. So there is plenty of possibility.” An ASM operation, he says, might profit from mining a tonne of ore a day from a single vein to eventually produce a couple hundred ounces of gold – an amount not worth accessing for a large company.

“It’s becoming a more interesting approach,” suggests Garrett, “considering that large numbers of artisanal miners, in some contexts, makes it almost impossible to use more conventional approaches like resettlement. From a risk-mitigation perspective, it may often be better to look at ways and options of cohabiting.”

Still, such a relationship comes with risks of its own, says Garrett: “If cohabitation is happening on your concession,

there will be a degree of association between the working conditions on the artisanal mining operation and the reputation of your company.

“Cohabitation doesn’t necessarily mean that you’re entering into a business relationship with the artisanal miner. But it could involve technical and other assistance provisions to the artisanal operation, particularly on operational and mine safety – either through the company or, more likely, through third parties.”

A similar notion has been taken up by governments, with mixed results. “In some places in Tanzania, the government has designated areas in which artisanal miners can mine quite safely,” says Mlilo, who suggests the idea has met with a number of challenges. “It’s a lot easier to obtain ore-bearing material from an existing concession than it is to break ground on land where you don’t even know what the quality of the mineral is.”

According to Barrick’s Sinclair, the Tanzanian government is interested in understanding and regulating its artisanal sector better – something in which the industry can provide advice. “African Barrick Gold is working with AngloGold Ashanti and the World Bank and some others to advocate for a more regulated and more formalized approach to artisanal mining in the sector as a whole,” says Sinclair, “and the Tanzanian government is very supportive of that.”

Rigid formal structures not always effective

ASM formalization is championed by the development community that is working to shift the industry from current ad hoc, localized initiatives to an organized, industry-wide approach. A formalized ASM sector with permitting and some safety oversight, it is argued, would also be economically beneficial to local governments which cannot tax concessions that are not ever registered.



A woman picks through the waste rock of the Cuatro Horas mining cooperative near Nazca, Peru. The value chain of ASM mines is often complicated and can vary dramatically in levels of formalization and safety.

Monash says optimistically that the future of ASM mining is one in which it continues to bring needed economic activity to local communities, while also addressing the environmental, social and security challenges that current artisanal mining presents. But he notes that achieving this vision requires collaboration between the ASMs themselves, government, civil society, international NGOs and large-scale miners. It is a task that is complex and requires compromise. In building up the required partnerships, cautions Monash, “We need to ensure that the perfect is not the enemy of the good.”

Ironically, Sinclair points out, as large-scale companies implement more stringent policies for their own operations, working with ASM operations becomes more difficult. He says international guidance and standards – such as the recent OECD guidelines on conflict minerals and responsible supply chain and the World Gold Council’s conflict-free gold standard – struggle with how to deal with artisanal mining.

“They’ve made it much more difficult for small-scale miners to operate in the supply chain because they’re basically trying to regulate the downstream flow of minerals, and that is affecting the source,” he explains. “The industry’s put these standards in practice for very good reasons, but it has had an impact. It’s likely to close off opportunities for artisanal miners, unfortunately.”

Telmer says he believes NGOs will always play a crucial role, as mining companies are beholden to shareholders and cannot escape that reality. “Does using a risk lens to look at this issue allow for the types of innovations that are going to be required to make it a sustainable sector?” he asks. “I would say no; it’s not very helpful to look at it that way.”

Development agencies have the flexibility to help mining companies and governments achieve positive outcomes. “Every location and small-scale mining community that we work with has a unique set of circumstances, with particular conditions and particular needs,” says AGC’s Moher.

Understanding these circumstances, she says, allows her organization to act as an effective neutral third party. “The benefit of working directly with artisans is that we can act as a bridge, or a voice, between these small-scale miners and the larger stakeholders in the area, such as government officials or industry, to help promote and foster healthy relationships and mutually beneficial situations.”

Further, development agencies and governments cooperate to create appropriate health, safety and environmental standards, and to improve health and safety education. They help governments regularize and mainstream ASM by developing mining policy and legislation that recognize ASM, developing programs to upgrade their skills and increasing their access to financing and markets.

Agencies can also influence intergovernmental negotiations. “Issues of environmental contamination, global health and the global gold supply chain are at a multinational level,” says Moher. “It’s not a localized issue or concern.”

Elusive answers

Formalization is a challenging goal and one that requires multiple stakeholders at all levels – from local initiatives to global, intergovernmental policy and standards – but in the end it may be the only way to achieve a safe and viable ASM sector.

“Some form of increased regulation over this industry is absolutely necessary,” contends Sinclair. “Call it formalization or call it just increased application of common sense rule of law, and basic standards.”

“We’ve tried a lot of things as an industry but very few have been successful, to be honest,” says Sinclair. “There’s been a lot of studies, a lot of consultation and conferences on ASM. At the end of the day it is very difficult because it’s a basic livelihood, it’s very difficult to organize, and it involves so many people. It’s not a small challenge.” **CIM**