

# The 'burden' of traceability in gold supply chains

David Finlay

**David Finlay** is Responsible Minerals Manager at the Fairtrade Foundation. His role is focused on two main areas – supporting businesses in the UK to use Fairtrade Gold in their supply chains and, additionally, working with institutional donors and impact investors to accelerate the number of mine sites aligning with Fairtrade standards.

## Abstract

Artisanal and Small-scale Mining (ASM) constitutes 15% (600 tonnes) of global gold production but, as a sector, remains largely veiled to both businesses and consumers in developed Western markets. The movement towards the 'responsible sourcing' of such gold is beginning to gain traction, especially in the jewellery sector, but has started some two decades after equivalent movements for responsible coffee, cocoa and tea, and is accompanied by its own – often surprising – challenges. This article provides an overview of both the ASM landscape and the challenges facing miners and supply chain actors in delivering responsibly mined gold to the point of end-consumer products. It concludes with two examples of *mass-balance* models that Fairtrade is introducing to drive increases in the volumes of responsibly mined gold sold from mine sites, which accounts for and responds to the 'burden' of full traceability for both large- and small-scale supply chain actors.

**Keywords:** gold; mining; responsible sourcing; ASM; business; extractives; supply chain; traceability; Fairtrade gold

---

## What is ASM?

The Artisanal and Small-scale Mining (ASM) sector provides an income to 16 million people and can be broken down into two component parts; artisanal mining – which is broadly defined by non-mechanised approaches to recovering gold, using rudimentary tools – and small-scale mining – which is defined principally by the volumes of gold recovered (being less than medium and industrial mine counterparts). Often, small-scale mining is also typified by the use of basic recovery techniques and, according to country context, definitions between each component part blur. For example, a 'small-scale' mine in Peru would be seen as a medium or semi-industrial mine in Uganda.

Within ASM – and mining more broadly – there are two further categories that are germane to distinguish upfront; alluvial mining (which involves recovering free-gold from water sources, such as panning for gold in rivers) and hard rock mining (which involves extracting rock from underground and crushing it to recover gold bearing content).

Across the ASM sector there are a range of cross-cutting challenges linked to hazardous working conditions, transient labour and informal trading networks. Hazardous conditions for miners in the most basic, hard-rock mining contexts may include having to descend 200-foot underground in un-reinforced mine shafts by climbing down a mud or timber shaft. Once underground, miners are at risk of pit collapses and carbon-monoxide poisoning from the use of pumps underground to eliminate the flooding of mine shafts. Other challenges, above ground, include the absence of protective equipment for processing rock and the widespread use of

mercury to recover gold, which poses the risk of brain damage for miners and also the risk of polluting surrounding water sources. In visits to mines, especially in East Africa, the author has seen hazards including exposed mercury pits, where waste mercury and materials are left in pits to seep into the soil, as well as disused pits where falls involving adults or children are not uncommon.

Much of the labour associated with the ASM sector is casual. While individuals do come together into membership structures to form mining groups, these individuals themselves will often be engaged in other forms of income generation (e.g. farming) at different points in the year, while specific activities are outsourced to transient casual labourers. While new mine pits are being developed, for example, the number of workers on site may expand significantly, while at other times weather factors may curtail mining-related activities, such as during the rainy season.

There is often an association between ASM and informal trading networks, which sit outside of regulated trade. Because of this informality, the business models of mining operations themselves can rely on informal structures to sustain themselves. Where access to finance through formal institutions (e.g. banks) may be limited, mines may turn to informal traders for cash – repaying their debts in the form of discounted gold sales. The relationship between traders and mine sites can become bonded and introduce a limit to the environmental and social improvements mines are incentivised to make. In straightforward terms, if you have always used mercury to recover gold, and the person buying gold from you is not motivated to see its elimination, the options open to you for its eradication are themselves limited.

### **The challenges associated with responsible sourcing**

In the last ten years a range of certification schemes (e.g. Fairtrade and Fairmined), as well as third party due-diligence frameworks (e.g. OECD Conflict minerals), have come to the fore, which are founded on the premise that ASM's can operate formally and contribute to economic change through licit trade.

In the case of Fairtrade gold, mine sites are supported to align with the Fairtrade standard for precious metals – a recognised marker of best practice for the environmental, social and governance performance of mine sites. This standard ensures that working conditions are safe for miners, social issues are tackled (including child labour), and that systems are in place both to protect the surrounding environment and the health of miners themselves.

After achieving Fairtrade certification, gold from these mines can be sold as 'Fairtrade Gold', generating a minimum price and an additional \$2,000 a kilo premium payment for re-investment back into mining communities. Example investments made by Fairtrade-certified mine sites in the recent past include health clinics, education subsidies for young people and finance towards income diversification schemes. In south Peru, for example, women have co-invested in a now thriving textile business, which provides an income for people away from mining.

'Gold' at this stage of sale at the mine level is un-refined and referred to as 'gold sponge', which is typically 85% pure gold. It is sold initially to refiners, most of whom are in Switzerland, who refine this material to a point of 'Four Nines Gold'; 99.99% gold purity, liberating other metals, including silver, in the process. After this, gold passes on to one of three sectors: jewellery, banking or technology.

In the case of jewellery, gold tends to flow from refiners to manufacturers who create finished pieces of jewellery on behalf of jewellers, or else reform gold into a range of semi-finished forms (e.g. gold wire or gold grain), which jewellers and goldsmiths themselves can then use to create their own pieces in a workshop environment.

Finished pieces are assayed in Edinburgh or Birmingham to verify their gold content, as well as to apply other markers that relate to the properties of the material used, including the application of the FAIRTRADE Mark in the context of pieces made with Fairtrade Gold. This Mark acts as an assurance to consumers that the gold content in a piece of jewellery comes from a Fairtrade-certified mine and has generated benefits for the miners and their community.

There are a number of challenges facing responsible sourcing schemes working in jewellery and other supply chains. Three of the key challenges include a) generating a supply of responsibly mined gold; b) accessing responsibly mined gold; and c) the cost of maintaining physical segregation across the supply chain.

### ***Generating a supply of responsibly mined gold***

With gold trading for over \$40,000 per kilo, trust can be in short supply among mine sites in an ASM context. The introduction of new entities, including certification schemes, into mining contexts can be met with a high degree of scepticism to start with, with large amounts of time needed to establish trust with mine sites. In the early stages of relationship development important commercial information, including, for example, the average recovery rates of gold per month, may be withheld due to fears over security, limiting the level of assurance that can be provided to would-be buyers on the availability of gold.

When identifying mines to work with, Fairtrade – and other schemes – are faced with a tension between ‘established’ mines (whose ‘need’ for the benefits of certification may be less pronounced), and mines who could benefit from certification but need large amounts of costly support and who may be recovering volumes of gold too low to export.

In cases where mine sites are motivated to align with Fairtrade standards, there can be a myriad of challenges attached to providing the technical support needed to comply with environmental and social requirements, which may not have been observed to date, alongside the introduction of traceability and other systems, which – while opening up a range of benefits after certification is complete – do come at a material and transactional cost to mine sites themselves at the point of change.

### ***Accessing responsibly mined gold***

Once a mine site has aligned with a third party scheme (such as Fairtrade) and has met the due diligence requirements of an international buyer, this is just the first step towards gold actually reaching international markets.

The price paid for gold locally is very different to cash-crops within the Fairtrade system. In the case of the latter, goods are perishable and power is often consolidated at the level of traders, who may alter their purchase price at the last moment, undermining farmers who, by this stage, have no other market to sell their soon-to-perish crops to. By contrast, in the case of gold, the demand for this material is both high and not time-limited. As a result, miners may have opportunities to sell gold legally (or illegally) into a range of channels for a very high percentage of the international global price. In this context, the incentive to sell to a Fairtrade trader specifically may not be as high as in a cash-crop context.

Furthermore, there are examples of mine sites who have dual or triple certification with schemes away from Fairtrade, meaning that there are a range of different accredited channels through which their material could be sold. In such cases, fierce competition between responsible sourcing schemes to link buyers with the same gold can have the effect of consolidating power in the hands of the mine sites, rather than traders, and reversing the conventional dynamics seen in global material supply chains between buyers and sellers.

### ***The cost of maintaining physical segregation across the supply chain***

If gold is successfully purchased on Fairtrade terms and integrated into Fairtrade supply chains there is a mandate for physical segregation at refiner and manufacturing levels. This way of operating means that when you buy a gold ring that is Fairtrade-certified gold, you can be certain of its material provenance and that the mine from which it came complied with Fairtrade standards and received a premium payment. So far, so good.

However, physical segregation of gold is not always simple and bears extra costs, which are ultimately passed on to the consumer. As noted elsewhere, manufacturers who buy Fairtrade gold as fine, 24-carat gold, will transform this into a range of semi-finished materials (gold wire, grain and sheet), which are then available for jewellers to buy and to fashion into finished pieces of jewellery in their workshops.

Each semi-finished material will be manufactured in segregation and the waste material from the manufacturing process must also be physically segregated, re-melted separately and re-introduced exclusively into Fairtrade lines.

Further still, the karatage and colour of gold sold by manufacturers also varies, in line with the preferences of jewellers and consumers. So gold wire, grain or sheet may be stocked as 9kt, 18kt or 24kt gold, and in any of a rose gold, white gold or brilliant gold finish.

Of course, manufacturers are – to a certain extent – setup precisely for such operations and there is a sense to the transaction costs involved in the case of manufacturing single, consolidated, finished pieces – for example a ring band. However, in the context of highly engineered and multi-part creations, the inclusion of Fairtrade gold – and the weight placed on full traceability across the full supply chain – is less clear-cut.

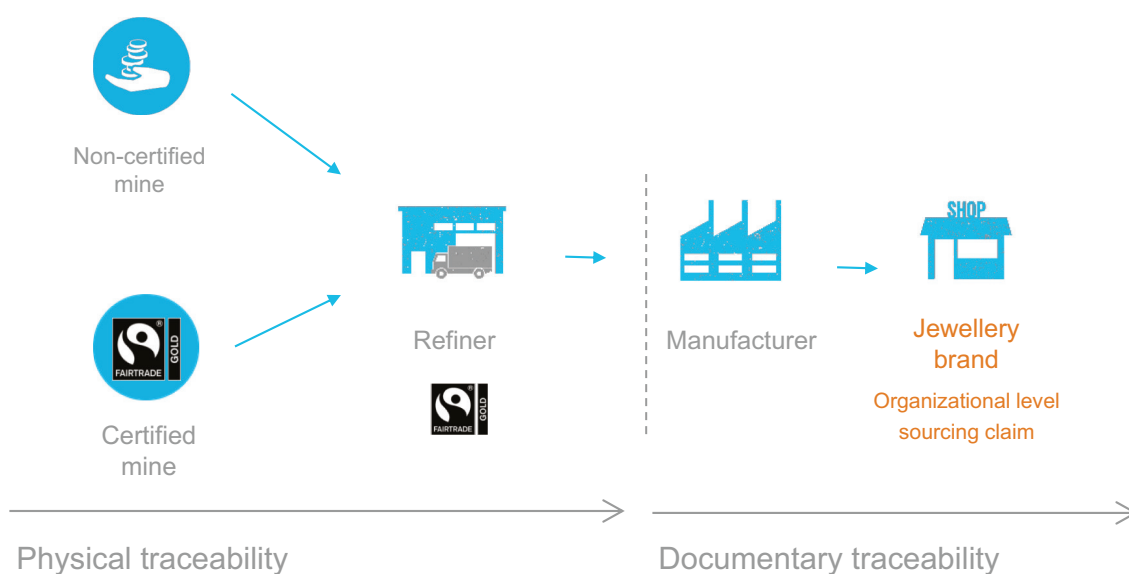
For example, a high-end watch may have upwards of 300 individual components, of which around ten may be caste in gold, each weighing less than one gramme. To manufacture each of these components in a physically segregated production cycle adds costs, which may not marry up with the marginally limited benefits the equivalent volume of gold sold on Fairtrade terms generates for miners themselves. While aggregate benefits can be delivered through manufacturing and sales of such watches *at scale*, the broader nexus between traceability, costs and benefits is one which is underpinned by complexity and needs to be carefully weighed up in the sourcing decisions of individual businesses as well as the campaigning efforts of civil society organisations who scrutinise them.

## Responding to challenges and the future of Fairtrade gold

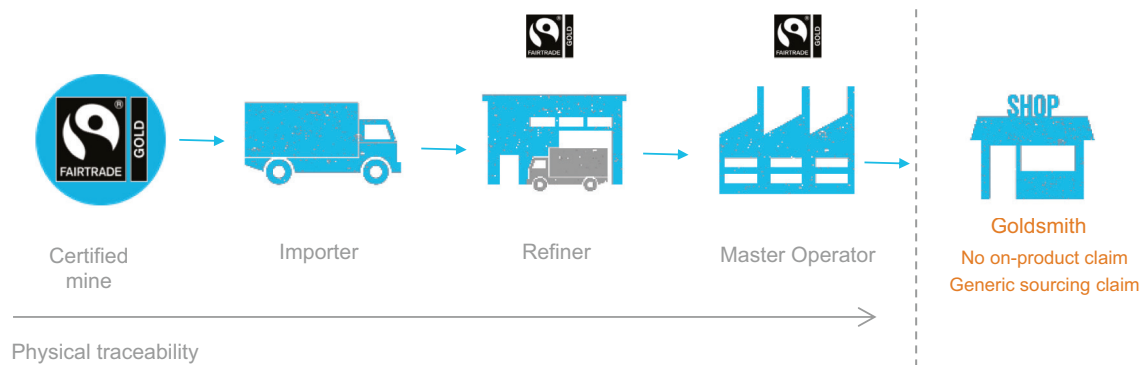
The challenges noted in acquiring and then working with responsibly mined gold do not absolve businesses from taking their sourcing decisions seriously. More needs to be done, however, to ensure that the balance between working with responsibly mined gold matches the costs of doing so.

To respond to this *traceability–cost–benefit* nexus, we have recently expanded the ways in which businesses can work with Fairtrade Gold. For businesses interested in making large sourcing commitments, our *Gold Sourcing Programme* (see Figure 1) makes it possible for end brand to directly purchase fully-traceable Fairtrade Gold from a refiner and to fold this into their manufacturing facility. After this point, the traceability is then lost.

In exchange for this, the end-using business is able to make a group-level claim on their website and their CSR materials pertaining to the volume of gold they have sourced on Fairtrade terms and the associated



**Figure 1** Fairtrade's Gold Sourcing Programme enables businesses to make a sourcing commitment at an organisational level



**Figure 2** Fairtrade’s Goldsmiths Scheme enables smaller businesses to work with Fairtrade Gold in a streamlined fashion

premium payment and benefits this has contributed to for origin mine sites. Crucially, such businesses are not able to use the FAIRTRADE Mark on individual finished pieces – so there is no end-consumer claim, but the group as a whole can demonstrate that a percentage of the gold used in their pieces *in general* comes from Fairtrade-certified mine sites.

We have an equivalent sourcing solution for small goldsmiths (see Figure 2), which provides them with permission to buy fully-traceable Fairtrade Gold from manufacturers and to generate generic claims that indicate their support for Fairtrade Gold (in general), without having to subscribe to audit and reporting costs usually associated with working with Fairtrade. However, again, the trade-off here for such goldsmiths is no on product claims can be made, as there is no system of verification beyond the point of purchased, semi-finished materials.

## Conclusion

In conclusion, while the challenges facing businesses seeking to responsibly source gold are very real, there are a growing number of practical solutions that offer a choice between ‘fully-traceable’ systems and mass–balance systems (where certified gold loses traceability within the supply chain but still drives the same benefits for mine sites themselves). The decoupling of this link between sourcing practices of businesses and the physical material used in individual finished products will be important for driving sales of certified gold from the perspective of mine sites, but this must be carefully balanced against clear and transparent communications, both from businesses and certification schemes to consumers; not just in gold but for other precious materials too – especially gemstones – where the journey towards responsible sourcing solutions is still in its infancy.