

Alliance for Responsible Mining Foundation: Standard Zero for Artisanal Gold and Associated Silver and Platinum

Project Summary

The Alliance for Responsible Mining (ARM) was established to improve livelihoods of Artisanal and Small Scale Miners (ASM) and their communities through organisation, capacity building and market access on terms that support development. Its mission is to set standards for responsible ASM and to support and enable producers to deliver “Fairmined” certified metals and minerals through economically just supply chains to the markets, in order to contribute towards the transformation of ASM into a socially and environmentally responsible activity, and to the improvement of the quality of life of marginalized artisanal miners, their families and communities.

ARM is an international, community-based, multi-sector governed initiative organized to provide a benefit, in the form of site based and product certification and corresponding market incentives, to small-scale and artisanal mining communities meeting criteria for responsible social, labour, environmental, and trading practices. ARM is committed to social justice and environmental responsibility as the values driving the transformation of ASM.

Its strategic objectives are:

1. Standard Setting

- Set fair trade standards for precious metals, diamonds, gems and other minerals through transparent multi-stakeholder processes and with full ground testing with the producers and other supply chain players.

2. Producer Support

- Develop programs to provide producer support to ensure progressive compliance with the fair trade standards through building the capacity of a network of local partners in developing countries. Facilitate enabling market conditions for fair trade jewellery.

3. Communications and Lobby for Improved Market Access and Public Policies for Artisanal and Small Scale Mining

- Create awareness and facilitate access to knowledge and information to consumers and producers regarding the potential of fair trade certification to improve the lives of mining communities.
- Lobby for improved public policies to enable the recognition of artisanal and small scale mining as a legitimate economic activity that contributes to the increased wellbeing of mining communities and the economic development of the country.

Metals are tracked from mine to market to allow retailers to offer consumers what the initiative refers to as a Fairtrade and Fairmined product—with a current emphasis on jewellery products. ARM's initial focus is on gold, including associated precious metals found in the same operation. There is the potential to apply a similar system to other minerals such as diamonds, silver, and gemstones.

ARM has been collaborating with the Fairtrade Labelling Organizations (FLO) to create the Fairtrade and Fairmined Standard for Gold from Artisanal and Small-scale Mining, including associated precious metals. This latest version of the standard will be published shortly. It is based on the harmonization of ARM's Standard Zero with Fairtrade Standards for Small Producers. Under the scope of the proposed FAIRTRADE & FAIRMINED gold standards, certification is open only to Artisanal and Small Scale miner organisations for whom gold mining has been a traditional component of a long-term diversified livelihood, or the core economic activity that determines the cultural identity of the community. Medium and large-scale gold miners are not certifiable under this scheme.

Project Description

[ARM grew](#) out of inspiration from the [Green Gold® Programme](#) in Colombia in 2004. ARM was formally established in 2004 by a network of independent organizations representing community-based miners, environmentalists, NGOs, jewellers, traders, and ASM experts from around the world. Since its inception, ARM has worked to promote responsible mining standards in the artisanal and small-scale mining (ASM) sector, specifically gold.

In 2006, ARM brought together a Technical Committee for the development of a first draft of standards and criteria, known as Standard Zero for Fair Trade Artisanal Gold and Associated Silver and Platinum¹. Institutions and persons on the technical committee combine expertise in different aspects of ASM and fair trade, including certification and chain of custody, strengthening of ASM producer organizations, occupational health and safety issues, mercury abatement, environmental management, gender issues, child labour issues, decent labour issues, emergency preparedness and response, cleaner production, public policy and formalization of ASM, ecological restoration, governance, sustainable livelihoods, and issues related to marketing.

Standard Zero underwent extensive multi-stakeholder consultation between August 2006 and October 2008. Standard Zero has been translated into 5 languages (English, French, Spanish, Portuguese and Mongolian). Throughout the consultation process ARM has organised workshops in four languages in South America, Africa, and Mongolia, attended by over 1000

¹ For list of technical committee members see Appendix 1, and for further details please visit www.communitymining.org

participants. ARM also received comments from influential individuals and organisations in the sector. The development of Standard Zero follows ISEAL Code of Good Practice in Standard Setting.

Pilot tests were conducted during 2008 with a network of organized miners and support organizations working as a regional network to test the standards in 9 different locations in Bolivia, Colombia, Ecuador and Peru, involving over 1500 miners and their communities.

ARM plays a coordinating and training role in the process, monitoring the different groups, facilitating their communication and coordinating regional workshops. This is an iterative process that combines toolkit development by senior consultants, learning by doing, training of trainers through regional and local workshops, and facilitating exchange of experience among organized miners. This approach seeks to foster a two-fold effect:

- Reinforcing alliances among pilot miners' organizations in LAC, with a view to strengthening the capacity and incidence of organized ASM on public policies and on the expansion of the certification model to other organizations and regions.
- Training trainers: Reinforcing learning among a network of local support organizations in LAC with a view to building a critical mass of organisations working towards responsible ASM through the expansion of the scheme, and delivering ARM's producer support program

By late 2010 it is expected that gold labelled as Fairtrade® and Fairmined™ will be available in the market. This gold is extracted and processed using mining techniques that follow social, labour, environmental and trading criteria established by the Fairtrade and Fairmined Standard for Gold from Artisanal and Small-scale Mining, including associated precious metals.

Jewellers will pay a premium for the Fairtrade® and Fairmined™ certified gold, and an additional premium for Ecological Gold. As in all Fairtrade labelled products, the premium is returned to the certified miners, who reinvest it into democratically defined projects,

The "Ecological Gold" standard addresses additional, specific environmental issues. In particular, mines that do not use processing chemicals such as mercury or cyanide are eligible to be labelled "ecological." Other certified gold can use mercury and cyanide but using them must comply with strict processing methods and technology to limit human exposure and environmental releases.

ARM provides evidence that it is possible to create a method to track and ensure a chain of custody for gold. A future challenge for initiatives like ARM is their ability to scale-up significantly with regard to numbers of sites and market share. Further, some have raised questions about the need for more rigorous standards. ARM's strategy is a pro-poor one, that recognizes that change is a process, and therefore aims to create a system that allows responsible

ASM organizations to meet important baseline standards, and then create incentives for new advances.

Nature of Supply Chain, Products and Issues

Jewelry typically accounts for [70%](#) or more of annual demand for gold, with electronics and dental accounting for approximately [11%](#). The percentage used in electronics has been growing in recent years, although some have commented that a shift to copper may be occurring for some components.

Gold is unusual in that it plays an economic role as a [store of value](#)—creating market and demand dynamics that are different for gold than for metals that are treated as pure commodities. For example, large above-ground stocks of gold are held by governments and investors.

Silver is more akin to a pure commodity; however there are very few silver mines in the world—most silver today is a [byproduct](#) produced when other metals, such as gold or copper, are the target.

Gold typically loses its track-ability as it moves through processing and into the economy. The [supply chain for gold is typically complex](#) with little or limited ability to track a particular atom of gold from a mine to consumer product without direct intervention such as the use of tracking technology or methods to isolate gold as it is processed. Provenance can be lost in the processing, trading, fabrication, and melting or re-melting of gold and gold ore. For example multiple mines can feed into a gold roaster or smelter. The exception is when a particular smelter or processing system utilizes inflow from one mining operation, or when inflow from a mine is significant and can be “batched” or tracked through the smelting process. When this occurs, it is then possible to take a marked “bar” or quantity of gold into the manufacturing process.

Large-scale industrial mines are usually part of the formal economy (i.e., they are permitted, pay royalties and/or taxes and subject to government regulations.) Large-scale gold mining is highly industrialized and technologically advanced. Mines are mechanized, require sophisticated planning and engineering, and are capital intensive. Most large-scale gold mines utilize cyanide as a processing chemical, to leach gold from crushed ore. While the use of cyanide has generated public controversy in some instances, other issues typically present more significant environmental issues and challenges—these include the potential for acid mine drainage and its affect on water, impacts on biodiversity, energy and water use, alteration of the landscape, and the potential for [the release of mercury](#) (from the ore body) into the [environment](#). Development of large-scale gold mining can also raise issues related to indigenous rights, effective community participation in decision-making, mining’s contribution to sustainable economic development, mining in conflict zones and conflict over natural resources, and other issues ([MMSD](#), [Newmont CRR](#), [ICMM](#), [Enough](#), [Make IT Fair](#), [Global Witness report](#).)

While large-scale mines in some jurisdictions can be identified and monitored, to identify and monitor small-scale or artisanal mines present [different issues and challenges](#). Artisanal and small-scale ([ASM](#)) mining is often informal—it is not always regulated or sanctioned by governments, although in an increasing manner governments are addressing ASM formalisation and legalization. In the mining sector, there is growing attention to the [challenges and conflicts](#) that can result when large-scale and artisanal mining occur in the same area, usually due to the lack of a mining and natural resource planning policy that allow ASM to gain legal access to mineral resources.

The World Bank estimates that there are [13 million people in about 30 countries](#) engaged in ASM on a global basis, and over 100 million people depending on ASM for their livelihood. On a regional or local basis, these numbers will vary due to the market price for gold, local economic and political conditions, and the stability or instability, and capacity, of governments. ASM in some regions is linked to child labour, labour and human rights abuses, unsafe working conditions, conflict and myriad other problems. ASM is often an economic last resort—a means of survival. Challenges related to artisanal mining are particularly significant in [conflict zones](#) such as the DRC.

While the environmental footprint of isolated ASM operations is limited, the cumulative impact of artisanal mining, when practiced by thousands or tens of thousands in one area, can be significant. [Mercury](#) is typically the most efficient, accessible and low-cost method for gold processing at ASM operations—as a result its use is pervasive. The uncontrolled use of mercury as a processing agent for gold can lead to exposure that has serious human health consequences for ASM miners and their families and other community members.

[CASM](#) and other governments and organizations have developed programs and strategies aimed at supporting and formalizing the sector and providing benefit to small-scale mining communities. Most of these strategies prioritize human welfare, health and economic development as a first priority. ARM's premise is that formalization of the sector, including legal access to mineral resources, effective health and environmental safeguards, improved working conditions and labour rights, as well as reclamation, can help promote responsible economic development and benefit responsible ASM and communities. The ARM strategy seeks to promote integration of ASM activity into the formalized economic sector and offer incentives for best practice.

The ability to manufacture products with gold marked from a specific mine or source typically requires direct intervention in the supply chain to ensure appropriate record keeping. Tracking may also require different or unique processing methods or techniques. For example, a smelter or processing facility may be required to process gold ore from a specific mine in a separate batch so that it is not mixed with gold from other sources. This batching and tracking would most likely have to continue in some form through the manufacturing process. Full 100% physical traceability throughout the supply chain is a financial and technological challenge with small

volumes, therefore it may be necessary in the future to maintain effective documentary traceability, while seeking more financially viable models, in order to expand the consumption responsible ASM through market incentives.

While gold jewellery is a coherent product (i.e., it is comprised mostly of the primary metal such as gold), jewellery is not comprised of 100% gold. Gold is blended with other metals to produce a final product with a karat grading or rating. [For example 24 carat gold contains 99.99% pure gold, and 9 carat gold contains 37.5% pure gold.](#) Therefore, when it comes to a particular piece of jewellery, while gold track-ability does not address the source or provenance of the non-gold metals, it does address the provenance of the primary metal in the product. The important point is that the Fairtrade and Fairmined standards will clearly communicate to the consumer that only the gold in the final jewellery product, is certified at this time.

Once in the economy, gold is easily malleable. In other words even “marked” gold can be re-melted and remixed and therefore lose provenance. For example, jewellery that is certified from a particular source could be re-melted and lose its provenance. However, the development impact of the responsibly produced certified gold will have served its purpose to improve the lives of artisanal and small scale mining communities at the time of production of the certified gold.

Analysis

Supply Chain Complexity—Steps (*Complex*)

The supply chain is highly complex with regard to material flow for gold and platinum. On the other hand, the smaller volumes associated with ASM offer the potential to establish a more readily unique supply chain control strategies. ARM intervenes directly to create a unique mine to product supply chain so material can flow from mine site to retailer. While this is workable on a small-scale basis in particular jurisdictions, particularly when the supply chain ends in a coherent product like gold jewellery, there is a question as to whether it rate at which it can go to scale and how the incentives would in a system where minerals are used in subcomponents representing a small percentage of an overall product.

Formalization of Sector (*Informal*)

The ASM sector is typically less formalized than the large-scale mining sector, particularly in regions with weak or unstable governments. Thus, supply chain complexity can actually increase in the ASM sector—as evidenced in DRC. Interestingly, ARM work originated in the conflict prone Chocó region of Colombia, with Afrocolombian miners who had legal right to mine in their legally recognized territories. Clearly, the ARM supply chain strategy can work in highly informal sectors of the economy if willing participants can be found. ARM only works with legal ASM organisations, and in its experience most ASM want an opportunity to do things well and be good citizens of their country and members of their communities.

Material Processing, Coherence (*Mixed*)

Gold is typically mixed in processing, fabrication and trading—this is true for all EICC-GeSI target minerals (tin, tantalum, and cobalt). ARM's response is a strategy that creates a unique supply chain to prevent the typical mixing of sources. Such an approach could be utilized in ASM sectors for metals used in electronics, although it is not clear if the economics of maintaining a dedicated supply chain are analogous—gold has some unique economic qualities as compared to pure commodities.

Significance in Product Composition (*Relatively Significant % for jewellery*)

Metals in an electronics product are typically parts of or ingredients in subcomponents or used to connect components. Each metal typically represents a small fraction of a particular product. In jewellery products, minerals such as gold and diamonds represent a significant and visible portion of the consumer product. A system to track metals into electronics products would therefore have a different result with regard to product claims. The product would contain specific components or subcomponents with ethical properties, in relatively small percentages, rather than a product like a piece of lumber or diamond that is a fully certified or marked product.

Issue/Source Geography (*Relevant*)

The initiative does not directly address the DRC but could offer useful methods or strategies tied to particular sources in the DRC. This project is geographically relevant in that participating regions share developmental characteristics of conflict zones for electronics metals.

Stage of Development, Maturity (*Early Operational*)

After a multi-year standards development process ARM has now field tested its first standard—labelled standard zero—at participating mines, which will produce close to 333 kilos of certified gold per annum after inspections this year. ARM is also implementing a controlled chain of custody to allow its miners to offer certified product directly to interested jewellers. In 2009 ARM and FLO agreed to jointly work on harmonising Standard Zero with the Fairtrade system. The joint standard has undergone a last round of consultation, it has been approved by both organizations as the *Fairtrade and Fairmined Standard for Gold from Artisanal and Small-scale Mining, including associated precious metals*. A collaboration agreement was signed January 21st, 2010, and both organisations are working towards inspections, certification of compliant miners and market launch in late 2010 or early 2011.

Nature of Governance (*Multi-Sector*)

ARM was created by a network of independent organizations with the aim of promoting responsible standards and criteria for ASM. It was set up in Quito, at the headquarters of Rainforest Rescue International (FURARE) by an international group of community-based mining organizations, environmentalists, business people and certification specialists from

Colombia, Ecuador, the United States, the Philippines, Holland, Mongolia, Peru, Sri Lanka, and the United Kingdom. It is [governed](#) by a multi-sector governing body and the standards are set by a technical committee elected by participants from various parts of the supply chain. ARM is able to describe credibly its governance as multi-sector. Such a model could prove useful to EICC-GeSI companies in that it creates significant credibility.

Standards Breadth or Focus (*Multi-Issue: Environmental and Social Objectives*)

The criteria for participating ASM sites address a range of social and environmental issues—with an ecological premium when additional environmental criteria are met. Such an approach could prove useful, allowing differentiation and crediting of electronics products, or brands, depending upon the issue addressed. The ARM strategy suggests that a strategy of targeting specific issues, and then expanding to others, could work. For example, starting with human rights issues and then adding other social and environmental issues.

Nature of Standards/Program Development (*Multi-Sector Participation*)

ARM has achieved a significant degree of credibility on a complex issue set. Interested stakeholders have been [generally supportive](#) in their input with some concerns expressed about the level or stringency of environmental provisions. ARM describes its approach as one that tries to set a responsible environmental baseline and then the standards can advance over time. ARM is seeking to develop its standard and system in compliance with the ISEAL code for new or emerging initiatives. This provides ARM with a degree of stakeholder credibility. ARM's recent partnership with the Fair Trade Labelling Organization provides additional credibility.

Approach to Verification (*Third Party*)

ASM organizations wanting to be certified against the Fairtrade and Fairmined Standard for Gold from Artisanal and Small-scale Mining, including associated precious metals, will be audited and certified by FLO-cert. as Fairtrade and Fairmined™ Gold.

Key Findings

In general, the typical supply chain for gold, platinum and other minerals does not lend itself to a program that seeks to ensure a chain of custody from mine to retail. For ASM mining, there is the additional challenge of the informal nature of the sector. The sector is highly informal at its source, and this pattern continues with materials mixing and loss of provenance sometimes occurring throughout the early phase in the chain of custody. Even where mixing does not occur, there is often difficulty tracking materials due to lack of practice and procedures in this marginalised sector.

ARM developed unique strategies and methods to create a supply chain directly from ASM sources. ARM recognizes that ASM sources sometimes fall outside of regulatory control or exist in areas with weak or ineffective government oversight. Therefore part of the ARM approach is a

focus on formalization of the ASM sector. There could be useful learning here for some ASM sources used in electronics.

Because ARM is focused on ASM, the criteria could be directly applicable to sources for metals from artisanal sources used in electronics. This is certainly true for gold. Only minimal adaptation would likely be required for other metals—due, for example, to the different processes that are used to refine the ore. In the near term, ARM’s site focused approach could be applied to specific ASM sources for target metals in the electronics sector leading to potentially positive, site based case studies and trials.

However, ARM’s approach is not likely to be scalable for target electronics minerals in the near future without dedicated resources and action. Challenges and questions for applying ARM to the electronics sector include the following:

- ARM has a current focus on minerals used in jewellery. This focus on precious or high value minerals may be an essential part of the ARM strategy, particularly because ARM has identified jewellers willing to pay an additional price premium. It is not clear if such a strategy can be applied to industrial metals.
- ARM is using a strategy that promotes the labelling of a product for consumers and the ability to tell the story of the mineral source—and the community that benefited—to the consumer making a jewellery purchase. This translates directly into benefit. It is not clear that this is applicable to industrial metals or consumer electronics.
- A jewellery product is relatively coherent, with a relatively short supply chain as compared to most consumer electronic products and respective supply chains. While a gold ring is typically not 100% gold, it does not contain myriad sub-components and parts, that are in turn comprised of various materials. Therefore, a jewellery product is more readily branded as “responsibly” sourced. This would be more difficult with electronics where a successful chain-of-custody approach could lead to, for example, the tantalum in call phone marked as responsibly sourced, which makes up a very small percentage of the material in a particular phone.
- It is unlikely that electronics products lend themselves to the same product marketing opportunities—the community sourcing story—that appears to be attractive to jewellery designers and retailers. It is more difficult to imagine this occurring related to small percentages of gold or tantalum in a cell phone. On the other hand an “ethical inside” strategy might work, where electronics companies seek to increase the percentage of the product that is responsibly sources, over time.
- It is not clear that the ARM approach is applicable in or near conflict zones—this needs further investigation. At the same time, ARM’s approach may be a strong match for ASM source in other regions.

- Given the multi-sector nature of the consultation on standards, this part of the ARM initiative has advanced at a good rate. However, ARM's capacity to scale up its effort to more sites and/or other minerals may present a challenge.