

# Artisanal Gold: Opportunities for Responsible Investment

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## BACKGROUND

The artisanal and small-scale gold mining (ASGM) sector is responsible for 20% of annual gold production globally – over 400 tons emerging from over 70 nations.<sup>1</sup> This represents a value of approximately \$20B and a work force of 15 million miners.

The sector has historically attracted limited investment, due to stigmas and realities surrounding the informality of the workforce, seemingly unnavigable land rights policies, challenging trade and transport logistics, and – in some cases – links to conflict groups.

Yet, demand is increasing for legally sourced, responsible artisanal gold. Corporations see artisanal gold as an opportunity to expand and diversify sources and to contribute to economic and social development through trade. The rapid rise of the socially responsible investment market is strongly driving corporate behavior. Consumers interested in responsible purchasing are also driving demand.

Use of mercury by artisanal miners is has become a major concern for the gold industry and its stakeholders, as it causes significant negative impacts to the health of miners, men women and children in mining communities, and the environment globally by contaminating the global food chain. As such ASGM mercury must be phased down under a new legally binding international treaty, the Minamata Convention on Mercury. At the same time transparency in the gold supply chain has also become a major concern for the gold industry to avoid gold sourcing from illegal sources that could be supporting conflict or other illegal activities.

Investment mechanisms offer an opportunity to provide incentives and training to reduce mercury use and increase gold yields and create transparent supply chains. These incentives are typically delivered through technical assistance, improved equipment and organization. ASGM also brings some other comparative social and environmental benefits: it provides employment in some of the poorest communities in the world, a much larger scale than industrial mining operations); is more energy efficient than large-scale mining; releases fewer greenhouse gases per unit of gold; and produces less waste rock and tailings per

### *What is “responsible artisanal gold”?*

While there are many definitions based on different corporate policies and standards, there are a few key benchmarks. For example, many in the jewelry sector look to guidance or standards issued by the Organization for Economic Cooperation and Development (OECD), London Bullion Market Association (LBMA), and Responsible Jewellery Council (RJC). These frameworks illustrate that “responsibility” requires due diligence and verification to ensure that mineral production and trade does not support armed groups or corrupt practices, and that it takes place in conditions free of forced labor and the worst forms of child labor. Environmental performance expectations vary, but there is often an expectation for progressive improvement toward reduction and responsible use if not elimination of mercury use, as laid out in the Minamata Convention.

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<sup>1</sup> AMAP/UNEP, 2013. Technical Background Report for the Global Mercury Assessment, Technical Background Report for the Global Mercury Assessment. Oslo, Norway/Geneva, Switzerland.

unit. The opportunities to contribute to social, economic, and environmental improvements make ASGM ripe for socially responsible or “impact” investment and the returns to investors can be very attractive.

## WHAT'S THE CASE FOR INVESTMENT IN ARTISANAL GOLD?

Artisanal gold exploration and production<sup>2</sup> are seen as “frontier” investments due to the risk profile, location, and often a dearth of information about operations and a dearth of significant case studies. But this is changing. With appropriate due diligence and risk characterization, the artisanal gold sector has a number of unique characteristics that make it attractive for investment:

- There is **increasing consumer and corporate demand** for responsible artisanal gold—and this demand may be ahead of supply. Consumers seek responsible jewelry and other products, while refiners, manufacturers, and retailers seek corporate social responsibility values, B2B relationships and customer interest, and/or marketing opportunities. Some refiners may be willing to guarantee 100% off-take at 100% of market value for verifiable, responsibly-produced artisanal gold.
- Investors who engage early in ASM countries and establish leading relationships will have **greater access** to investment opportunities in the sector.
- The **ASGM sector is being de-risked** by international and national policy frameworks, conventions, standards, practices, capacity building initiatives, and other types of public and private engagement.
- Artisanal gold is **currently being produced**, and investment in artisanal gold production improvements will nearly always result in increased recovery and higher production of gold. Artisanal miners are present at locations where the presence of gold has already been established – often through their own prospecting (and typically, where ore could contain 5-60 g of gold per ton). By contrast, industrial or junior exploration companies are a higher risk venture where roughly 1 in 100 prospects leads to an operational mine. Working with existing production greatly de-risks this aspect of the business.
- Investment in relatively simple technologies can **increase recoveries** typically by 30% over existing operations, buffering other potential financial risks such as variable world gold price, and also significantly improve environmental performance of the operation.
- Risks associated with **social license to operate** – an increasing challenge for large-scale mining – can be significantly lower for artisanal mining, as much of the workforce may come from the community.
- Investors can generate a clear and measurable **social impact** because of their investment, along with a **quick repayment period** typically much shorter than the traditional discovery to production cycle of the formal industry. Capital additions immediately yield production efficiencies as well as improved environmental and social performance, translating into real health, social, and economic benefits for miners, their communities, and their ecosystems – locally and globally. ASM operations have a relatively large workforce compared to industrial mining and therefore enhance community gains from investment.

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<sup>2</sup> Figures and models described in this document are informed by hard-rock or vein gold ASGM operations. Alluvial mining operations may also present investment opportunities but were not the basis for production, investment, and other estimates and models outlined.

## WHAT ARE INVESTORS LOOKING FOR IN ARTISANAL GOLD PROJECTS?

Early experiences and investments in sectors with analogous small-scale production models can inform private sector exploration of ASGM investments. In addition to the benefits and rationale for ASGM investment highlighted above, investors are looking for ASGM operations with characteristics such as the following:

- **Clear financial model and risk characterization.** Business plan with as much data as possible on the production, geology, ore grade, commodity pricing, hedging options, and other variables and risks to the operation (including technical, social, legal, political, financial). One of the biggest challenges in attracting investment to ASGM is the lack of information and therefore the lack of ability to quantify and embed risk into financial models. More bankable documents (feasibility studies) support more bankable projects.
- **Production data and available feedstock.** Presence of gold at an attractive grade (e.g., 20 g/ton), with a ready workforce to extract it. In an industrial mining setting, many investors would not proceed without a third party production assessment (e.g., National Instrument 43-101, Standards of Disclosure for Mineral Projects, Canada). While ASGM mines do not undergo such analysis, they are typically associated with reasonably high grades, as they would not otherwise attract miners.
- **“Blue chip” off-taker.** A reputable refiner or other buyer to guarantee payment for gold produced to agreed-upon “responsible” specifications. This provides a continuous relationship with the ASGM community and builds trust.
- **Attractive return on investment.** Capital additions to ASGM production can have very quick results and generally lead to superior return on investment (ROI) than junior mining exploration projects or equivalent investments. Given risk profiles and transaction complexities, investors in artisanal gold operations would typically target a minimum annualized return on their investment of 30-40% (i.e., internal rate of return or IRR).
- **Trusted counterparty/operating partner.** As in any opportunity, investors seek a reputable, accountable, and knowledgeable partner. Given the remote location of many ASGM operations, investors also particularly seek a partner with a local network to navigate and build positive community relations and benefits, assure compliance and other aspects of responsible production and trade, and to successfully manage operations. The type of counterparty (e.g., small-scale aggregator vs. publicly-traded company) will inform risk management and financial relationships.
- **Immediate improvement in yield and environmental performance.** Interventions to increase yield can also immediately reduce or eliminate mercury use—a social and environmental benefit that comes at no extra cost to the investor but which delivers significant value to the local community.
- **Stable operating jurisdiction.** A country/region with a predictable operating environment (e.g., legal, regulatory, political, etc.). The operating jurisdiction may inform business arrangements such as which partner(s) take on which risk(s) at different points in production and trade.
- **Built-in and quantifiable social enterprise.** Operations designed with social impact, such as mercury reduction (public and environmental health) or other community benefits (school, hospital, other needs or amenities). Investors are particularly seeking quantifiable social impact, such as statistics on improved health outcomes (or avoided negative impacts) in ASGM communities due to mercury reduction or elimination.
- **Opportunities to de-risk.** Engagement by government, donors, civil society, and other implementing partners can de-risk material, financial, and reputational risks of investors and other partners. Investors particularly look to the public sector to engage in “blended financing”

efforts to fund pilot projects, business plans, or social impact projects in challenging or unfamiliar operating jurisdictions.

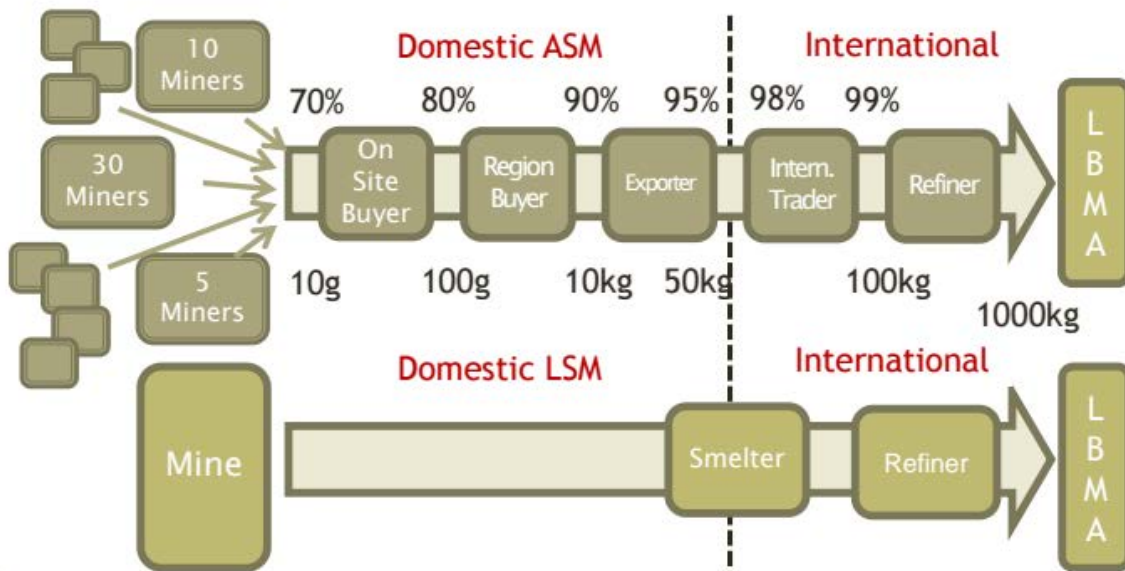
- **Access to financial instruments, for early as well as long-term and larger-scale investment.** Some early investors may need loan guarantees to get involved. Others can support an intermediate scale-up of ASGM operations (e.g., \$1M-\$5M), but are interested in loan guarantees or other financial instruments to enable larger and longer-term expansion (e.g., \$20-\$40M) once initial operations show positive results.

### How do artisanal gold supply chains work?

Artisanal miners may work alone, but they more frequently band together into organized groups, with varying degrees of formality and negotiation power within that arrangement. These groups generally sell their production to a trader in a market environment, where they can sell to whichever trader offers the best price. Traders can aggregate production from many groups, and then explore their own options for selling to the highest-bidding exporter, who then sells to refiners. Trade relationships all along the supply chain are generally based on singular transactions, rather than long-term sourcing arrangements. But many variations exist and trading relationships can be customary or long-standing in some cases.

## ASM vs LSM supply chain

- ▶ Which is more complicated for due diligence?
- ▶ Which pays more into the local economy?



Graphic credit: Artisanal Gold Council

## WHAT PROMISING INVESTMENT MODELS CAN BE TESTED?

Investment models to increase sustainability for ASGM all involve an influx of working capital and/or equipment for miners. This investment is usually very difficult for the miners to access, despite their willingness to participate in a venture and despite the relatively robust ROI for such investment. These models represent various scenarios of funding/equipment to increase the productivity or to provide access to capital itself.

### The “2 kg Model”

*developed by the Artisanal Gold Council*

**Description:** Artisanal mining methods typically yield 30-40% of recoverable gold from ore. Improved gravimetric equipment can increase this yield to 60-80%. This model requires an investor to purchase the equipment, which it then loans to a group of miners, who repay the loan through their increase in production and according to a schedule and interest rate. After capital re-payment, ongoing use of the funds from increased production would include extra profit, as well as about 10% to be set aside for maintenance and operations.

*Not only does loaned equipment produce a return on investment, it forges a competitive advantage in the form of a positive relationship with a supplier. Although several markets exist for the miners' gold, miners will be more willing to sell their gold to the purchaser who has provided capacity building and equipment that has increased their yield and improved their work conditions.*

In one example, a gravimetric processing system in use by the Artisanal Gold Council in several locations costs about \$70 - \$200K (including installation, commissioning and training, as well as other siting and engineering costs). Like any economies of scale business, the cost drops as the volume of systems rises with the first pilot plant in a new country costing perhaps as much as \$500,000. With 1 kilogram of gold valued at about \$35K USD, the payback in equipment costs would be about 2-5 kg of production.

The rate of payback depends on the capacity of the machine and grade of ore. Assuming:

- Processing capacity= 3 to 5 tons of ore per day (4 T/day on average);
- Average grade = 22.9g per ton of 21 karat recoverable gold (equivalent to 20g per ton of 24 karat),
- Production efficiency = 60-80% (70% on average)
- Price of 24 karat gold = \$35/ gram

Then daily production revenues can be estimated:

$$4 \text{ T/day} \times 20 \text{ g/T} \times 70\% \times \$35/\text{g} = \$2000 \text{ per day.}$$

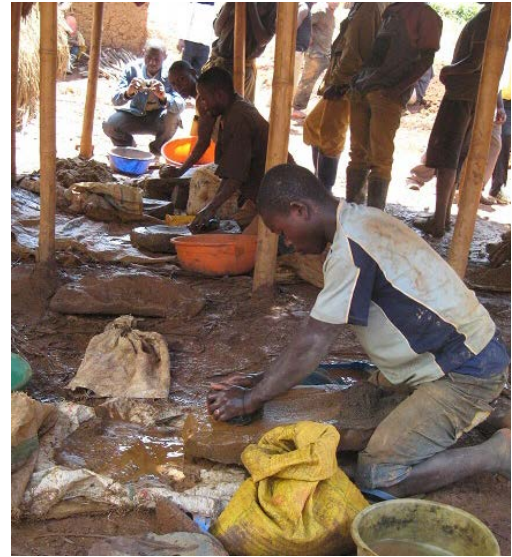
This means the site would produce enough gold to pay back the investment within 40 working days, if all production went to payback. If only the amount of increased production was applied to payback (that is, the extra gold produced due to the 40% increase in productivity on average), then the payback period would be about 80 to 100 working days. Once paid back, and depending on the mine's ore production capability, the group could chose to use the increased profit for a second 2 kg model based system, and so on.

**Investor Perspective:** The relatively quick repayment length makes this an attractive model, and it can accommodate a significant drop in gold prices while remaining profitable. However, with a single 2 kg site

is slightly more difficult to produce a sufficient return on investment to merit transaction costs associated with due diligence, maintenance, and logistical arrangements to secure and transport the gold. Transaction costs per unit could be reduced by linking multiple 2 kg sites together, perhaps alongside a processing “hub” as described in the “hub and spoke” model, described below. Maintenance and service costs also drop if there is a multitude of units.

### **“Hub and Spoke” Model** *developed by the Artisanal Gold Council*

**Description:** The Hub and Spoke model incorporates several “2 kg” operations, servicing a larger area and larger number of mining groups. In this model, 5 – 20 gravimetric systems are installed and operated for 1 – 10 mining groups with a combined ore processing capacity of around 15 – 100 tons per day. Each separate gravimetric system (i.e., each “spoke”) has similar production numbers to those described in the 2 kg model, but in this case, the ore processing residue (tailings) are gathered at a central secondary processing “hub” to extract the residual gold, using a professionally run, industrial type process. And the hub can act as a central organizing entity and monitoring system. Though this model requires larger investment, it provides the great benefit of a *professional* tailings disposal system, leaving the gravimetric plant sites free of environmentally hazardous tailings, while increasing total yield and income for the miners.



*Photo credit: RESOLVE*

#### ***Hub and Spoke: Key Social and Environmental Benefits***

- Preserves individual identity of each of the individual mining operations (spokes) while allowing them to benefit from economies of scale afforded by collaboration with other cooperatives
- Enhances efficiency of land use and miner yield/income through improved recoveries and processing of tailings
- Professional tailings processing significantly reduces environmental risks at each site

In this model, each of the gravimetric systems on a spoke would ideally be within a few hours’ drive of the hub, to facilitate transport of the tailings to a central facility. This central facility, run by highly qualified professionals, would offer secondary processing such as chemical leaching to extract up to a further 30% gold from the tailings. This increased yield produces profit for the centralized processor, as well as potentially provide some additional revenue to the miners selling their mercury free tailings to this central system. The hub could also offer maintenance services for equipment at each of the “spoke” sites and organizational and monitoring capabilities to elevate due diligence capacities.

Under the Hub and Spoke system, different models are available for each of the gravimetric systems on the spokes (2 kg or consolidated ownership of several systems). The hub could be part of one of the mining operations, or it could also be a separate venture, offering a fee-for-processing. It could

also serve as the funder of each of the spokes in a joint venture with the mining operations.

A central cyanidation facility, depending on size, would cost approximately \$1-3M for a 50 – 100 tons per day (TPD) system. Assuming again that the original ore grade is approximately 20 g/T (for 24 karat

equivalent), and that the initial processing has 70% efficiency, this means that 30% of the gold remains in the tailings. At 95% efficiency and 50 TPD, the facility could produce revenue of approximately:

$$50 \text{ T/day} \times (20 \text{ g/T} \times 30\% \text{ left in tailings} \times 95\% \text{ efficiency}) \times \$35/\text{g} = \$10,000 \text{ per day.}$$

***Investor Perspective:*** This model benefits from the relatively quick repayment term and resiliency to potential price fluctuations of the 2 kg model. It also overcomes that model's limitations through its ability to produce the larger quantities needed to offset transaction costs by aggregating production across multiple sites. It also creates efficiencies in three ways: 1) the addition of a processing unit improves the final gold yield from each site; 2) the incorporation of professional transportation reduces losses by miners; 3) it enables economies of scale relating to site and equipment maintenance (which can be provided by the single hub).

Further, the model reduces risk in important ways. The simplified chain of custody results in improved documentation and ease of verification of responsible, mercury-free production. The presence of a confirmed, consistent, and trusted buyer is attractive to miners and reduces the likelihood of smuggling. It also creates useful redundancies – even if one site fails (for mechanical or other reasons), production can continue at the other sites.

Finally, it lays the groundwork for further gains – by establishing infrastructure to enable the first hub, an investor establishes a platform for further investment in the area.

## **Bank of ASGM**

*developed by the Artisanal Gold Council*

***Description:*** Sometimes, the best ideas for investment and use of funds come from the ASGM miners themselves. These uses of funds could include upgrading of existing systems, purchase of simple or enhanced excavation equipment, or hiring and engagement of professional support. However, due to the informal nature of the sector, the investment community's lack of information about it, and the currently minimal contact between the two worlds, access to investment funds is limited.

The Bank of ASGM could serve as an intelligent or educated fund, staffed with experts and professionals who are knowledgeable about the sector. It could offer access to credit; provide professional, technical, and financial advice; and support some convening activity. Interest rates, conditions of collateral and repayment terms would be in the “patient capital” or “socially responsible investment” realm and would be set such that they were optimized for the ASGM sector.

Through the advice provided by the funding organization, miners would be free to choose in what area to direct investment funds, and could include aspects of the two models presented above or other uses.

***Investor Perspective:*** The current gap between the ceiling for micro-loans and the minimum threshold for standard investment has produced a gap in which artisanal cooperatives are unable to access credit to purchase equipment or training to improve their yields. Experience from the micro-finance sector reflects rates of repayment of around 97%.<sup>3</sup> This model may be particularly interesting to a socially responsible investor or B-Corp/C3 Corporation, or attractive to other investors. To some degree it is the miners who will decide what kind of investment suits them.

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<sup>3</sup> See, for example, Microfinance Information Exchange, <http://www.themix.org/about-microfinance/FAQ> (question 6).

## Downstream and Other Investment developed by the Artisanal Gold Council

**Description:** In the Downstream model, investment is focused on the end-user of responsible artisanal gold. In one example, a gold-backed exchange-traded fund (ETF) could be backed by only responsible artisanal gold. This fund would likely have an initial minimum investment holding of approximately 2 tons. A portion of the management fee earned by the fund would be directed back to improving the artisanal gold mining sector, potentially incentivizing a greater number of miners to behave responsibly (e.g., eliminating the use of mercury) and produce yet more responsible artisanal gold and so on. Incentives could take the form of simple one-time payments or an increased price-per-ounce, etc. In this 2-ton model, and assuming a Management Expense Ratio (MER) of 1%, a 2-ton fund would earn about \$700,000 per year ( $\$70M \times 0.01$ ), indefinitely, of which a portion, perhaps 1/4 could be redirected back to the artisanal mining sector. This MER rate is in-line with rates paid by other funds, and bears a slight premium for its responsible sourcing.

**Investor Perspective:** This fund would attract investors who want exposure to gold in their investment portfolio but also want a socially responsible asset in their holdings. The attractiveness of the fund is (a) exposure to physical gold; and (b) is the ability of this investment to contribute to socially responsible, environmentally improved, and development-positive outcomes, including the development of incentives for ASGM miners to continue to focus on responsible methods.



Photo credit: RESOLVE

## Investor Platform developed by RESOLVE

**Description:** Some of the key challenges that inhibit responsible external financiers from participating in any given artisanal mining operation include the complexity and high costs of structuring investment deals and the relatively low investment amounts required by ASM gold projects. In general, it is much easier to secure financing for a \$5M project than a \$500,000 project, simply because it is more difficult for the smaller project to generate a sufficient return to cover the upfront transaction costs of defining the deal and establishing the necessary contractual relationships.

The Investor Platform model addresses this challenge and leverages the interest of both donors and investors. In this model, donor resources are engaged to help enable private sector investment. The principle components of the model are the following:

1. Donors, foundations, and investors join together with development agencies and NGOs that work in ASM gold projects to create an alliance committed to enabling responsible private sector finance of ASM gold mining operations.
2. The alliance uses donor funding to engage specialized project development consultants to define individual investment deals in ASM gold mining projects, including the development of pro forma



financial models, partner due diligence, draft contract development, supply chain logistics, working capital structure, and modeling of social/environmental benefits.

3. The private sector members of the association help to oversee the project development work and also have a right of first refusal for investment in the projects once they are defined.
4. The non-profit partners help to certify that the projects are consistent with social and environmental best practices and help to market the gold in niche ethical markets.
5. The Investor Platform would receive a “developer’s share” of the investment projects (representing the value of the work that went into preparing the project for investment and on-going marketing work done by NGOs). Any future revenue stream of that share would be channeled to the Trust, and the Trust would then use that revenue to finance work on other future ASM Gold projects or for non-profit grants to benefit local communities connected to ASM gold sites, such as the construction and operation of schools, clinics, roads, or other needs identified by the communities.
6. All participants in the alliance would work to promote the downstream sales of its ASM gold projects, communicating the important social/environmental benefits of the projects to downstream consumers and thereby possibly supporting a responsible ASM gold premium, enhancing the return on investment and encouraging the development of other such projects.

The Investor Platform model can be used with any of the other investment models presented above and also provides a mechanism for systematic replication and the engagement of all relevant actors in a responsible ASM gold supply chain.

***Investor Perspective:*** The Investor Platform meets critical needs by leveraging multi-sector vetting and incubation of projects, and addressing the information asymmetry that is a major barrier to private investment in ASGM. It also presents an opportunity to de-risk investment by incorporating a blended finance model of public and private investment, with donor funds dedicated to developing business models and pilots to demonstrate proof of concept, and private sector investment to implement or scale up projects. Investors may be willing to participate in conventional roles of providing capital for a return, but also as members of a public-private partnership, with a key driver being access to data on sector and project actors, risks, production estimates, and other information that is typically very difficult to assess. In addition to engagement of government and investors, participation by civil society, downstream companies, and legal advisors will inform an appropriate legal framework and define desired responsible sourcing outcomes. The partnership could also design and manage a monitoring and evaluation program to ensure follow-through on intended positive social impacts at the mine site and community levels.



*Photo credit:* RESOLVE

## WHAT ROLE CAN DONORS PLAY?

The international donor community is an important partner in supporting improvements to the ASGM sector. Government agency donors have contributed development, capacity building and technical assistance, and other funds for projects in and around ASGM operations and communities, and to formalize and improve ASGM supply chains and market access. Other donors include multilateral development and financial institutions such as the World Bank and other development banks, which provide support to governments in ASGM-producing countries, and the Global Environment Facility, which serves as the financial mechanism for the Minamata Convention on Mercury.

Donors share an interest in private sector engagement in artisanal mining operations as a means of building on their past funding and enabling a scale of implementation beyond the means of public sector financing. Private sector investments may also be more nimble in responding to opportunities that arise outside of donor budget cycles and funding decision schedules.

Investors see value in continued engagement of donors in ASGM projects for a number of reasons, including initial financing, information-sharing, government and stakeholder engagement, and a number of other roles that serve to de-risk investment:

***Blended Finance***– Donors can improve investor confidence – especially when large outlays of cash are required for expensive equipment purchases – by acting as a loan guarantor or insurer.

***Policy, Capacity Building, and other Government-to-Government Assistance***– Donor governments can support efforts and capacity building to assuage policy challenges on issues such as land tenure, formalization, and permitting.

***Revolving Funds***– Donors can establish or contribute to a revolving fund that can offer mining operations access to credit to purchase equipment, participate in training, or other activities that can increase yield and improve health and environmental outcomes.

***Proof of Concept Studies***– Donors can fund the development and testing of innovative financing models and scalable technologies.

***Geological Assessments***– Donor nations could leverage the expertise of government agencies – such as U.S. Geological Survey, or Germany’s Federal Institute for Geosciences and Natural Resources (BGR) – to assess strong candidates for investment sites.

***Subsidies for Positive Health and Environmental Benefits***– Donors can incentivize responsible investment by providing subsidies on projects that make public improvements by reducing or eliminating mercury use at artisanal mine sites.

***Convening Power***– Government can attract and vet credible private sector, civil society, other government, and other stakeholders to frame and design projects or programs, as well as through monitoring and assessment in implementation phases.

***Entrée to Financial Instruments***– Government agencies can help open dialogues with governmental and multilateral entities that provide financing, loan guarantees, or other financial instruments to larger-scale projects.

### ***How can civil society organizations contribute?***

***Site prioritization:*** Civil society organizations can assist in identifying candidate sites by identifying areas where mercury reduction would be most impactful or strategic.

***Identification of metrics for “success”:*** NGOs can provide guidance on the metrics by which investors can measure the social, economic, and environmental impacts of their investments.

## WHAT'S NEXT? HOW CAN I LEARN MORE?

Initial investor consultations indicate support for further development and demonstration of the above models. Further exploration and implementation of public and private sector engagement in and financing for ASGM will take place in an emerging partnership, continued work of individual organizations already testing some of these models, and via other financial instruments in development.

The US Department of State seeks to convene the ***Mercury Reduction Investment and Innovation Forum (MRIIF)*** to speed the pace of change in artisanal gold mining sector with strategic public and private investments in local projects, regional planning, and global coordination. The partnership will seek to fund and implement mercury reduction activities as a means to formalize artisanal gold mining and enable market access for responsible artisanal gold.



*Photo credit:* RESOLVE

In the context of this partnership, investors, companies in the gold supply chain, donors, NGOs, and other development organizations will help further develop and test models such as those described in this document, potentially within the framework of an Investor Platform model. This forum can also provide a mechanism for outreach to international finance institutions and funds and other potential partners that can support greater private sector engagement in ASGM. It may also serve as a platform to engage with the Global Environment Facility as it begins a first round of funding for activities to support implementation of the Minamata Convention.

For more information on this emerging partnership, please contact Jen Peyser ([jpeyser@resolv.org](mailto:jpeyser@resolv.org)) or Taylor Kennedy ([tkennedy@resolv.org](mailto:tkennedy@resolv.org)) at RESOLVE or Jane Dennison ([dennisonje@state.gov](mailto:dennisonje@state.gov)) at U.S. Department of State.

Individual organizations will also continue project implementation and investor engagement in ASGM, some of which has been described in this document. For further information on investment models developed by the Artisanal Gold Council, please contact Kevin Telmer ([ktelmer@artisanalgold.org](mailto:ktelmer@artisanalgold.org)) and Mike Williamson ([mwilliamson@artisanalgold.org](mailto:mwilliamson@artisanalgold.org)).

*This document is based on a workshop convened by RESOLVE, Artisanal Gold Council, Natural Resources Defense Council, and U.S. Department of State Mercury Program. For more information on these organizations, please see the below descriptions:*

- **RESOLVE** designs collaborative solutions to complex environmental and social challenges with business, government, and civil society partners. RESOLVE, an independent NGO, designed and manages the **Public-Private Alliance for Responsible Minerals Trade** and is supporting the launch and facilitation of the Mercury Reduction Investment and Innovation Forum. RESOLVE is a workshop co-organizer and facilitator.
- **Artisanal Gold Council** (AGC) is a not-for-profit organization dedicated to improving the opportunities, environment, and health of the millions of people involved in artisanal and small-scale gold mining in the developing world, and has conducted many successful **ASGM projects** including active investment dealings. AGC is a co-organizer, content expert, and presenter for the workshop.
- The **Natural Resources Defense Council** (NRDC) is an NGO leader in advocating mercury reduction and supporting the Minamata Convention. NRDC is the United Nations Environment Program's **Global Mercury Partnership ASGM area** co-lead and is a co-organizer and host for this workshop.
- The **U.S. Department of State Mercury Program** works towards reducing mercury pollution, particularly from its largest source, artisanal gold mining, and on implementation of the Minamata Convention on Mercury.