ACCESS TO FINANCE FOR ARTISANAL AND SMALL-SCALE MINERS: IMAGINING ALTERNATIVES AND CREATING OPPORTUNITIES

USE-CASE #1: DOWNSTREAM BUYER SUPPORT FOR WOMEN MINERS IN INDONESIA



THE UNIVERSITY OF BRITISH COLUMBIA

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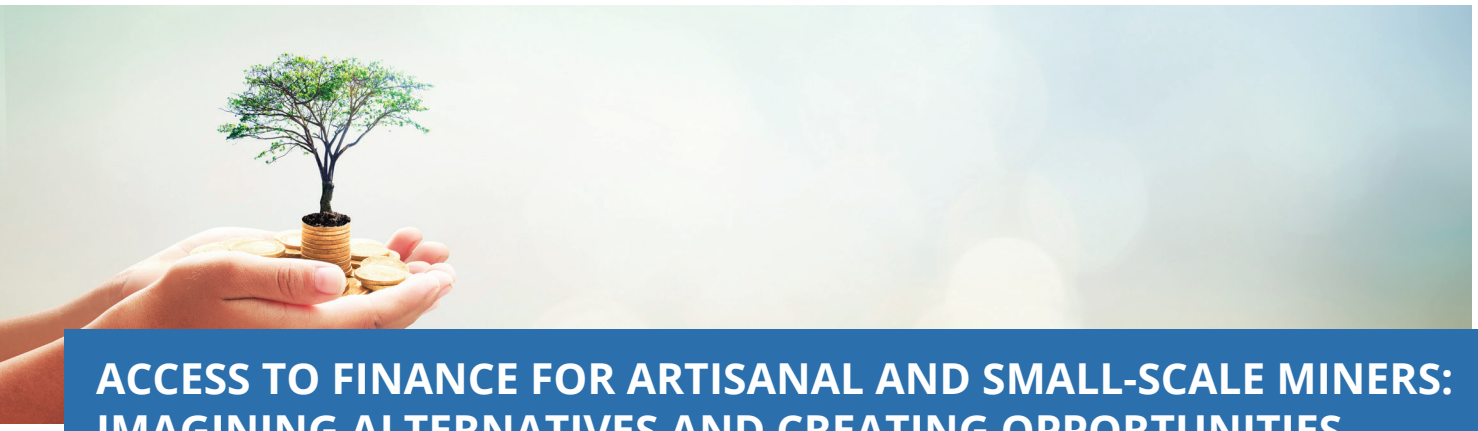


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ACCESS TO FINANCE FOR ARTISANAL AND SMALL-SCALE MINERS: IMAGINING ALTERNATIVES AND CREATING OPPORTUNITIES

In this series, CIRDI is working with our global partner mix to highlight models for tackling a critical problem – how to ensure artisanal miners seeking to make the move to cleaner and more efficient production methods can access the capital they need under fair and inclusive terms?

The series presents these tested solutions in the form of "use-case" studies to better understand the challenges and opportunities that improved access to finance can present for artisanal miners. By providing holistic accounts that trace access to finance models in the ASGM sector from inception to deployment, these "use-case" studies will map actors involved, explain the specific financial instruments designed and institutional platforms deployed, as well as identify key variables that lead to impact, as a potential guide for future action.

BACKGROUND

Artisanal and small-scale mining (ASM) is an essential livelihood for primarily rural populations in emerging economies. The ASM sector provides an essential livelihood for 100 million miners globally and produces approximately 20% of the world's gold and 85% of certain gemstones. These populations are globally diverse, and can include a high percentage of women and indigenous communities.

According to the Global Environmental Facility, ASGM (artisanal and small-scale gold mining) represents the largest source of anthropogenic emissions of mercury, which is a pollutant of global concern. Mercury use in ASGM is widespread in emerging economies and sound chemicals management is critical policy intervention space for countries seeking to address this problem. Mercury represents a serious threat to maternal health and early childhood development. Due to the complex socio-ecological linkages associated with ASGM, any meaningful dialogue must consider its role in local communities, regional cooperation, global markets, and broader sustainable development initiatives. The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury. With its adoption in 2013, the global community urgently requires solutions to advance, sustain, and support artisanal miners and their families.

Moving towards safe, scalable and equitable benefits for marginalized and mining-dependent communities working in ASM worldwide requires capital and resources. This would enable ASM miners to invest in technologies that would help eliminate mercury from the supply chain of gold, create economically viable small and medium sized enterprises, and help generate better livelihood opportunities for communities. Given that ASM is broadly situated in the informal economy, miners are often unable to access formal forms of finance from banks and lending institutions for a variety of reasons such as lack of collateral and low financial literacy. Community and family-based informal lenders tend to dominate this space, and leave the door open for predatory lending terms with few opportunities for compliance terms related to optimum environmental and social performance at scale.

CIRDI is especially concerned about how increased capital flows to the ASM sector will affect existing patterns of marginalisation and exclusion for women miners. In certain ASM communities, traditional belief systems create social inequalities that lead to abuse of labour, human rights, and unequal distribution of benefits for men, women, boys, and girls. Equal opportunities for economic empowerment and decent work often fail to materialize for women in the ASM sector, who are then streamed into the precarious and hazardous roles in the value chain.

Unfair allocation of property rights and patriarchal social norms may disadvantage women in pursuing ownership, education, enabling technologies and employment opportunities related to the sector. All of these dynamics point to the additional resilience of women ASM miners, whose unique needs and concerns need to be better accounted for in the scaling up the uptake of finance for the sector.

A first step to improving the design and delivery of access to finance models for artisanal miners is to share knowledge and information on what has been tried and with what effects. While a comprehensive typology of access to finance mechanisms is outside the scope of this series, our goal is to at minimum identify a cross-section of debt and equity vehicles, and as well as illustrative models that are specific to ASM communities, including but not limited to:

- government-backed credit schemes
- government-backed tax reinvestment schemes
- community savings funds
- direct grant funds
- revolving funds
- equipment leasing schemes
- downstream buyer support
- private/informal loans
- formal lending/commercial loans
- bridge-financing
- peer-to-peer lending
- equity investments
- blended finance
- philanthropic gifts or corporate community investment programs
- impact investment/social return vehicles
- social impact bonds
- crowdfunding campaigns

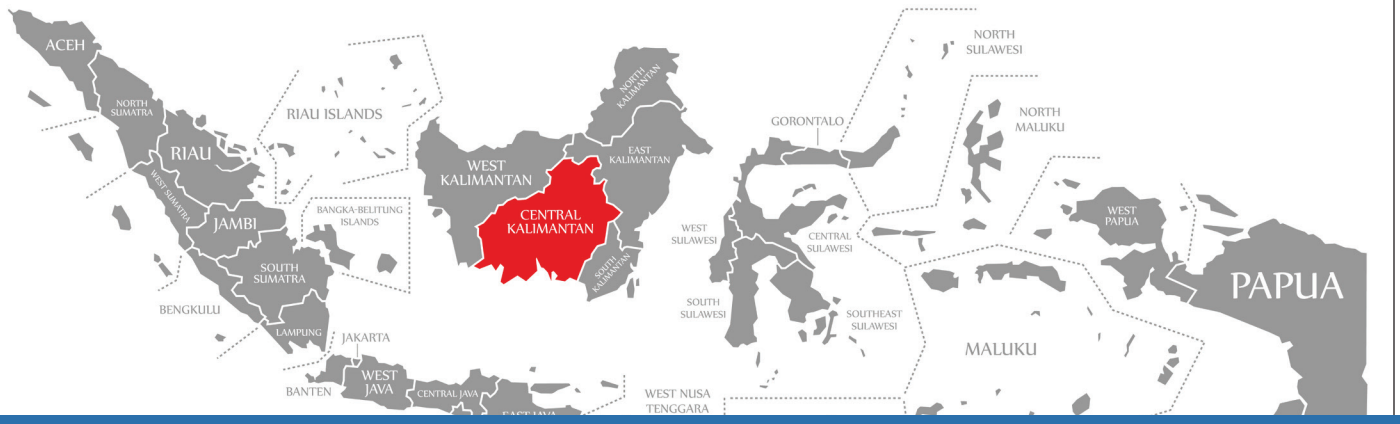


ABOUT THIS USE-CASE

Recent estimates show that 500,000 people are directly involved in artisanal and small-scale mining in Indonesia, with 3 million people dependent on income generated by ASM activities (CIRDI, 2017). In the Central Kalimantan Province, artisanal and small-scale gold mining (AGSM) is central to the livelihoods of many rural communities – including in Tewang Pajangan. Baseline data collected through projects conducted by a local NGO called Yayasan Tambuhak Sinta (YTS) showed a gap between men and women miners, especially around access and control of mining resources and incomes generated from mining.

This case study covers the application of a downstream buyer support model to support a collective of women panners called “Pamuan Jaya Panners” in the village. Through facilitated partnerships with the local village government and a socially responsible jewelry company based in Bali, YTS has helped develop an access to finance model that continues to support 25 women miners in Tewang Pajangan.

This case study will provide local context and existing challenges at the village level, in addition to analyzing the development, implementation, and results of the model. The case study concludes with lessons learned and suggestions for scaling this model in other areas of Indonesia.



I. LOCAL CONTEXT

Tewang Pajangan is a village in Gunung Mas Regency, located in the Central Kalimantan Province of Indonesia, where the primary livelihood is Artisanal and Small Scale Gold Mining (AGSM). The village is located in the Kahayan Watershed, a region famous for its secondary gold reserves. Mining activity in the region can be tracked back to geological surveys that were institutionalized in the 1800s, and they tended for support commercialization via colonial trading companies (Eftimie et al., 2012).

While traditional panning has been practiced by the indigenous Dayak people of the region for centuries, in the last 30 years ASGM in the village has become increasingly mechanized with the introduction of equipment such as sluice boxes and hydraulic/suction machines for gold processing (Spiegel et al., 2018; CIRDI, 2017). Although AGSM is an important livelihood for the region - the environmental and health costs of the sector are steep (McGrew, 2016). The Indonesian government banned mercury use in ASGM in 2014, yet most artisanal miners continue to use the toxin because of a combination of ease of use, availability, lack of training in alternative methods of extraction and minimal awareness of the associated risks (Speigel and CIRDI, 2018; UNEP and GEF, 2016).

Mining activity continued to intensify after the village received a legal permit from the Indonesian Ministry of Energy and Resources called *Wilayah Pertambangan Rakyat (WPR)*, translated as a Community Mining Area designation. Efforts to formalize mining activity at the village level were advanced by the submission for an *Izin Pertambangan Rakyat (IPR)*[1], a community mining permit. This submission was made on behalf of several capital investors, who are locally referred to as "miner bosses".[2]

In recent years, a number of community planning initiatives have contributed valuable baseline data on community demographics, trends and needs related to mining activity. One of these initiatives included a Canadian International Resources and Development (CIRDI) supported project – "Capacity Building for Multi-level Governance of ASM in Indonesia." Among other priorities, the project sought to facilitate collaborative strategy building and policy development with federal and municipal-level decision makers for addressing local ASM challenges with regard to compliance with global environmental treaties – namely the Minamata Convention and REDD+.

Efforts were made to improve coordination for policy process that cross multiple levels of government, in addition to improving coordination and participation with small-scale miner's associations and end-users in policy processes. This effort was supported through the use of tools such as gender analysis and mapping, Photovoice[3], and community-led analysis and planning activities. Cumulatively this baseline data showed a gap between men and women miners, especially around access and control of mining resources.

In Tewang Pajangan, an estimated 500 men between the age ranges of 20-40 years old work at the mine site. In comparison, there are 50 women who work on this site, who are aged between 25-40 years old. Currently, women miners work primarily as panners as a result of a lack of access to resources, education, capital, and skills training to gain expertise in intensive and mechanized mining activities. Additionally, panning is a traditional and intergenerational skill set among women within the village. In addition to paid panning work, these women experience the "double burden" of leading household responsibilities and engaging in unpaid, domestic labour.

According to the baseline data collected, women panners generate less income as compared to their male counterparts in the village. During the rainy season, women panners can collect around 150-300 milligrams (mg) of gold per day which generates an income of approximately $10-$20 CAD (YTS, 2020). During the dry season, recovered gold amount to 50-150 mg per day, which provides an income of $3-$10 CAD. Meanwhile, male miners who work with machines earn on average of $14-$26 CAD per day – regardless of season. The income of the capital investors or "miner bosses" is around $33-$58 CAD per day, and in Tewang Pajangan these positions are completely occupied by men.

A reliance on "miner bosses" as buyers and sources of finance continues as a result of the unwillingness of banks, financial institutions, and formal lending authorities are generally unwilling to provide capital loans to individual miners and panners and associated collectives. According to sources within the Central Bank of Kalimantan, a few major barriers exist to providing loans to the majority of AGSM community actors including the perceived illegality of the nature of work, the relatively unstable and seasonally dependent income of the miners and panners, and the inability to meet typical indicators of a stable and profitable small business (YTS, 2017).

However, "miner bosses" are able to obtain their capital through informal creditors, selling large assets, or fixed bank loans that remain inaccessible to other actors in the AGSM sector. As a result, miners and panners prefer to borrow from the "miner bosses" on loan repayment conditions that mined gold would be exclusively sold back to them as the lending investor – with debt repaid from the sale of gold obtained. Miners borrow capital not only for their work, but also to cover daily living expenses. This process exacerbates existing power relations and highlights the inequality between the "miner bosses" and miners and panners, where the later has a disproportionate dependence on the former for a basic living wage. This often causes losses for the miners and panners, who at times are only able to sell their gold at rates dictated by the "miner bosses" - restricting them from opportunities to sell gold at a competitive market price.

Women panners in the community realize that access to capital would help purchase machines and tools to maximize gold collection and increase their daily wages. Additional financing also could create non-mining opportunities for livelihood generation and economic diversification for women in Tewang Pajangan. However, gendered barriers to accessing capital continue to exist. As stated by Priskilla, a panner in the village (YTS, 2020):

"My family never apply for bank loans because we are afraid that we cannot afford to pay the installments."
-Priskilla

Another community member and head of a local women's organization supported this sentiment stating (YTS, 2020):

"I once applied for a loan from a Credit Union, but it was for a different type of livelihood: money to open a stall. I was told the Credit Union will not give loans that went towards community mining activities directly."
-Leni Marlina

II. MODEL OVERVIEW

In 2018-19, YTS[4] developed a pilot project to support women miners and panners access financing to create better and safer livelihood options in Tewang Pajangan. This involved helping the women miners and panners in the village organize together into a working group collective called "Pamuan Jaya Panners". Research demonstrates that self-help groups and collectives for women in rural contexts in Indonesia (and in the Asia-Pacific region broadly) encourage positive collective action, and contribute to process of change in ways women experience personal power and social position within households and communities (Beard et at, 2007; Finnis, 2017).

The Pamuan Jaya Panners group was later formalized as an official self-help group through a decree by the Tewang Pajangan Village Head, in accordance with formalization laws set out by the Indonesian Ministry of Law and Human Rights. The establishment of this group was founded around common issues women panners experienced (low daily wages, debts to "miner bosses", regulatory issues[5]), therefore formalization was crucial in linking women panners to new opportunities and more stable financing. YTS therefore prioritized facilitating partnerships so women panners were being paid fairly for their gold while simultaneously investing in sustainable, safe, and scalable business practices.

Creating an Access to Finance Model: Downstream Buyer Support

YTS identified an avenue for partnership through a Bali-based gold buyer and ethical jewelry company called Gardens of the Sun, who are committed to buying responsibly mined gold.

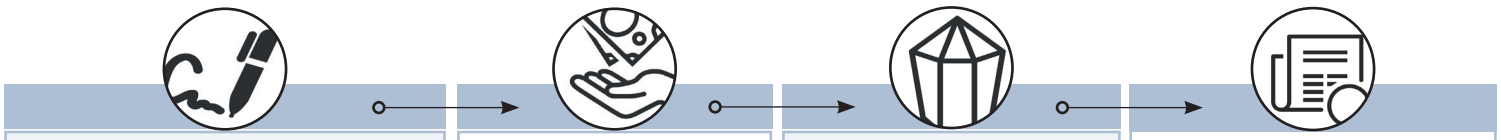
Through active consultation with both project partners and relevant stakeholders, a mutually beneficial financial model was agreed upon, referred to as downstream buyer support.

In this, Gardens of the Sun offered to buy gold recovered through a mercury-free process at a rate 20% higher than local market value. They also provided an interest-free capital loan amounting to $1,940 CAD to the collective at the outset to cover the operations costs of equipment needed for mercury-free gold processing (YTS, 2020). The terms of loan repayment were set at a 10% deduction from the gold payment every month.

The loan process was negotiated through discussions between YTS, Pamuan Jaya Panners, and Gardens of the Sun, and formalized through a written agreement. YTS played an important role in bridging these groups together, identifying the unique needs of the women panners, and preparing them to conduct transactions independently and responsibly. The initial loan was an important financial basis for the development and scaling of the collective's process, and as a result, members were provided training around administration, finance, and advanced techniques in mercury-free gold processing (including direct smelting). This opportunity meets dual objectives of financial empowerment of the community and generation of more mercury-free gold.

To ensure that the collective could can manage finances independently, YTS and Gardens of the Sun developed a simple and transparent mechanism for shipping and paying for the gold. The four-stage process is elaborated below.

FIGURE 1: A MECHANISM FOR SHIPPING AND PAYING FOR THE GOLD



1. A representative from the Pamuan Jaya Panners fills in a detailed record form for each transaction and gold delivery to Bali. This book must be filled in every time a member sells gold to the group, and the log book also contains information on prices paid, along with the amount of gold purchased. The price of the gold is determined after direct smelting.

2. Through the agreement with Gardens of the Sun - gold is bought at a price 10% higher than the local market price in the village if still paying off a loan, and 20% higher when all loans are paid off.

3. The mercury-free gold produced by the collective is then shipped to Bali with approval from the village government – which includes copies of the direct smelting log book and a covering letter from the village administration.

4. When received in Bali, Gardens of the Sun weighs the gold and determines its quality. The price of gold and shipping costs are paid by the buyer and transferred to the group's bank account. This mechanism is outlined in a detailed cooperation agreement [6] signed by both parties.

III. ACTOR ECOSYSTEM

Several actors were (and continue to be) involved in the ongoing process of the downstream support model, and each had a function and role that was important for the project's process, success, and sustainability.

➔ **Gardens of the Sun** is the main gold buyer in the model, in addition to providing an interest free capital loan to support the development of the Pamuan Jaya Panners collective. As mentioned, they are also committed to providing women panners a premium price 20% higher than the national gold price. Gardens of the Sun operates at the intersection of business and philanthropy, and believes in ethical and responsible sourcing. Meri Geraldine, founder of Gardens of the Sun, described this project as a way "to find better and more sustainable alternatives to sourcing raw material" and that "simply vetting large scale suppliers wasn't enough (YTS, 2020)." Given that Indonesia has abundant natural resources, they decided to source locally.

Sourcing locally "made more sense for us, as we would be offering our clients a traceable and sustainable source, we could impact communities directly, and be able to be transparent about our claim of ethical. We would also be cutting our carbon footprint quite significantly, as the existing fair trade, fair mined and/or recycled raw materials options would have to be imported (Ibid)."

-Meri Geraldine

➔ **Pamuan Jaya Panners** is a collective established in early 2018 to help organize women gold panners in Tewang Pajangan. These women are members of the indigenous Dayak community, a group native to the Island of Borneo and the Central Kalimantan province. Panning is an intergenerational skill closely linked to the Dayak identity. The group was established with 10 panners, and now has grown to 25 women members – with the intention of more women panners joining given the opportunity to sell gold at a higher price.

➔ **Yayasan Tambuhak Sinta (YTS)** is a non-governmental organization (NGO) established in 1997 by mineral exploration company PT Kalimantan Surya Kencana in collaboration with the local Dayak population in the region. YTS initiated and facilitated the formalization process, helped empower participants by strengthening the capacity of the panning group, including providing direct smelting training and developing a financial model together with Gardens of the Sun.

YTS also supervised and monitored the gold trading process, ensuring that the transactions ran smoothly, and that both the buyer and seller benefited from this process.

➔ **Tewang Pajangan Village Community** and members of the broader village areas are indirect beneficiaries of this financial empowerment project. The increased income and resulting purchasing power of women panners has resulted in a more active local economy – with spillover benefits to other small businesses such as food stalls and grocery vendors. Additionally, the community benefits from the broader positive environmental impacts of mercury-free gold processing carried out by the Jaya Panners Pamuan, which differs from conventional mining practices that have been historically carried out in the village.

➔ **The Government of Tewang Pajangan Village** helps facilitate the implementation process of project activities, and acts as a supervisor to the downstream buyer support model. They have provided support from the very beginning of the project's development, helping to facilitate the process of socialization, formalization and resolution of internal group problems. The village government also carries out supervisory functions by checking each gold delivery, invoice collection, and checking financial statements regularly. In a conversation with the village head, Muliadi expressed his appreciation for this project as it had a positive impact on the life of miners (YTS, 2020):

"The board has worked quite well in terms of communicating and coordinating with the village administration. Effective communication from the inception of the project has been important to maximize government involvement in the successful implementation of achievement of the desired outcomes."

-Muliadi

Communication and government involvement in this context have been mutually beneficial and can be adopted by other empowerment projects.

IV. PLANNING, DESIGN, AND IMPLEMENTATION OF THE MODEL

A number of factors were considered in the planning of this downstream buyer support model.

1. The first step was conducting a needs assessment, rooted in community-led analysis, planning and mapping activities. Baseline data on women panners was supplemented by regular meetings with Village leadership, and focus group discussions with women panners. As mentioned earlier in the case study, this baseline data showed a gap between men and women miners (CIRDI, 2017). Women panners were earning a significantly smaller daily wage than their male counterparts. With women panners being the primary earners of their households while facing barriers to access traditional loans and lending opportunities, developing an intervention that created access to financial resources and sustainable economic growth through panning work was key.

FIGURE 2: STEPS IN ESTABLISHING A DOWNSTREAM BUYER MODEL IN INDONESIA

Phase	Method	Output
1. Needs Assessment	Community-led analysis, planning and mapping	Baseline analysis report
2. Institution Building	Miner formalization	Legally-recognized women miners collective
3. Capacity Building	Dialogue workshops	Draft cooperation agreement between women miners and capital provider
4. Access to technology	Technical assistance and dialogue workshops	Access to mercury-free technology
5. Model Formalization	Governance, coordination mechanisms and risk mitigation	Final cooperation agreement between women miners and capital provider

2. The second step was a preparation phase, which involved formalizing women panners into the Pamuan Jaya Panners collective. Through cooperation with the Village Head, a notarial deed was registered that formalized this collective as a self-help group with the Indonesian Ministry of Law and Human Rights. Ensuring legality was an important step in enabling the collective to open a bank account and make tax payment (Beard et at, 2007; Finnis, 2017).

3. The third step involved YTS taking a lead in building capacity and trust within the collective, ensuring that all members and administrators had the opportunity to provide their feedback and voice concerns. The women were happy to be involved in the discussion process which was facilitated by YTS and the Village administration, and were eager to express their opinions in developing the cooperation agreement.

A few points of tensions emerged in this process, with some panners expressing concerns about being able to repay the initial capital loan to Gardens of the Sun. Other members were concerned with the collective buyer/seller aspect of the agreement, arguing that certain panners were able to produce more gold on a daily basis yet would receive the same earnings as the rest of the group. The discussions largely revolved around the quantity and price of gold being sold, with the understanding that an opportunity with Gardens of the Sun would enable women panners to sell gold at a price higher than they would receive in the village district and provincial capital.

4. The fourth step was formalizing Gardens of the Sun as a partner, with YTS facilitating a meeting with the early members of Pamuan Jaya Panners and Meri Geraldine (Director of Gardens of the Sun) in 2018. Gardens of the Sun were interested in supporting the collective and women's need, in addition to sourcing mercury-free gold. The circumstances, needs, and concerns of the women panners were discussed directly with Meri Geraldine, which helped in the development and application of this model.



While the project was initiated and formalized through this meeting, the identification of financial mechanisms and finalization of cooperation agreements took place in January 2019. This was done with the full support of the Tewang Pajangan village government and a strong commitment from the panners, especially the group's administrators in the project preparation process.

Technical assistance and input from wider stakeholders and the YTS team was also another important factor at this stage. YTS Technical Director Sumali Agwaral led the initiative to use direct smelting as a method to process mercury free gold, based on previously conducted research (Spiegel et. a, 2018). Prior to this intervention, it was the norm to process gold using mercury – leaving panners and the Village administration hesitant to try a new process. The first direct smelting method using a sample of gold from the panners was successful, proving that gold could be panned through direct smelting without mercury.

5. The final step involved formalizing the cooperation agreement between Pamuan Jaya Panners and Gardens of the Sun. The agreement acknowledged YTS as the project assistant and the Head of Tewang Pajangan Village as the local government representative, and the collective made their first transaction with Gardens of the Sun in 2019. However, it took a year of preparation and coordination between YTS and Pamuan Jaya Panners before the collective was ready to carry out transactions independently and responsibly. To ensure this, YTS built mechanisms to account for potential risks, corruption vulnerabilities and governance change, and for monitoring and evaluation.

RISK ASSESSMENT

An early identified risk was general community mistrust of the NGO's intervention, coming in particular from male miners who were not direct beneficiaries of the program and "miner bosses" who previously held a monopoly on gold buying in the area. From the outset, YTS understood that developing good communication channels between the Village Government of Tewang Pajangan, customary leaders, and community members was important in managing public opinion. This transparency helped quell rumors about fund mismanagement amongst the community, with the Village Head reiterating the goals and priority of the collective. In their communication, YTS emphasized that the collective's capital was still relatively small and that there was no comparison between the scope of a small group business and the overall capacity of gold mining in the village.

CORRUPTION VULNERABILITIES AND GOVERNANCE CHANGES

YTS was aware of the potential corruption vulnerabilities within this system, and identified those involved with the group's operational expenses being an area of concern. This included the payments involved with the direct smelting process, the refining process, and the purchases of chemicals and equipment. While every purchase around operational equipment was tracked via purchase receipt and recorded in the group's cash book – issues around the falsification of receipts have been raised. YTS continues to remind administrators to record and prove all group expenses.



A few additional steps have been taken to prevent corruption across the model. Direct smelting minimizes the possibility of "faking" the gold sold to groups, as in the direct smelting process all the impurities are burned out. When the gold is weighed after direct smelting, the amount is immediately recorded in a log book and weight and price calculation is carried out jointly between the group administrator, panner, and buyer – so all parties are involved. All payments are made to the group account, which must be accessed by two people (the collectives' Chairperson and Treasurer). If one of them cannot be present, they must produce a stamped power of attorney.

Given the reliance on the cooperation of village governance, it came into question whether a leadership change at the Village Head level could impact the success of project. YTS aims to work closely with village governance systems at large beyond the current Village Head, and actively supports the political engagement of members of Pamuan Jaya Panners to create spaces for women's decision-making roles within the village council itself. One achievement was collective member and panner Surie being elected to a Chairperson position on the village council.

MONITORING & EVALUATION

The financial model is designed with clear and structured administrative requirements. The group is required to complete the administration and report every transaction to YTS, as well as receive approval from the village government. This enabled YTS and the village administration to carry out the supervision and monitoring functions relatively easily.

Preliminary monitoring and evaluation are conducted through regular monthly visits to observe the group's functioning and through phone calls with the panners group and with Gardens of the Sun. The project was developed with output indicators which are used to track progress and success. These indicators include the number of women panners who benefit from the model, the number of trainings/meetings conducted, and the income of miners before and after intervention.

Regular communication and monitoring of the transactions between the women panners and Gardens of the Sun - including tracking gold purchases, payments, and shipping of the gold - has been maintained throughout the project. While funding gaps made it challenging for YTS to conduct field visits as regularly in early 2019, monitoring via text messages, WhatsApp messages, and emails continued. In order to help the communication and monitoring process, Gardens of the Sun provided the collective with a smartphone, and YTS gave a short training to collective members on how to use it, including the use of email and social media.

YTS understands the importance of institutionalizing changes to make this project and others sustainable and able to continue to run without external funding. To do this, YTS is continuing discussions to strengthen the cooperative model, engaging with government funders, and exploring potential collaboration with local social entrepreneurs. YTS received funding from the Economic and Social Research Center at the University of Edinburgh from June 2019-2020, which will allow the NGO to visit regularly and meet directly with the group and listen to the needs of the collective.



V. PRELIMINARY RESULTS

DIRECT IMPACTS

To date, the financial model has worked as intended. By the end of November 2019, before the expected deadline, the collective was able to pay off its initial capital loan to Gardens of the Sun. By the end of 2019, the group's total capital was $2,207 CAD (YTS, 2020). At this time, 15 additional members joined the group – bringing the total membership of the collective to 25 women. The profits made from selling to Gardens of the Sun is used as capital to buy gold, pay taxes and cover additional operational costs. Group membership continues to expand, and scaling of operations enables them to send gold to Bali more frequently than anticipated.

Additionally, through training and capacity building efforts the collective members had the opportunity to learn how to manage finances, pay bills, and organize operational costs on time. An increase in income for the women panners and cooperative management has enabled them to meet the financial needs of their families, including investing in their children's education (YTS, 2020).

INDIRECT IMPACTS

It is also worth noting the spillover effects of this model on achieving broader gender equality in Tewang Pajangan, particularly around women's leadership and governance. Women in the collective have been receiving acknowledgment from the village government and surrounding community – including local governments in the province and companies that are members of the CSR Forum in Gunung Mas (YTS, 2020).

As mentioned, collective members have been elected to the Village council, and Leni Marlina, the Chairperson of Pamuan Jaya Panners, has been sought as a guest speaker at the local and provincial level. This has also translated in success for Gardens of the Sun as a company – the commitment to sourcing ethical gold and supporting women's collective have had a positive impact on sales and the overall profile of the company. In 2018, Gardens of the Sun was nominated for the Be the Change Award for social enterprises globally.

SUCCESS FACTORS

Given these results, a few factors may be attributed to the model's success. These include an emphasis on reciprocal partnerships, stakeholder buy-in, efforts to design a scale such that existing power relations are not abruptly disrupted, and support from government and village-level administrators.

INCLUSIVE PARTNERSHIPS

➔ This project was successful as a result of the strong partnership between all parties, and particularly because of the participation of the miners. This project would not have been as effective without a clear financial model and the strong commitment of Gardens of the Sun, underscoring the positive roles that local social enterprises can play. Not many buyers are willing to provide interest-free capital loans and provide premium prices 20% higher than the national market price. This financial model provides a strong motivation for panners to cooperate as a group and produce mercury-free gold.



CONSIDERATION OF POWER RELATIONS

➔ This financial model does not disrupt the gold marketing chain in the village, so there is almost no conflict with gold buyers or other mining groups. It was designed to not create problems or conflict in the village. The financial model is very small in scale when compared to the capacity of conventional miners and the circulation of gold in the village. With the old group member format of 10 people, in a month the group can only sell 25 - 35 grams of gold to Gardens of the Sun, which means that on average 1 miner can only sell 3 grams per month (YTS, 2020). Whereas the 1-unit dredge that is normally operated on the Kahayan River, conventional miners can get 3-5 grams per day. It is estimated that in Tewang Pajangan Village there are 75-150 dredges. The estimated total gold in the village is 300-500 grams a day. That number could get smaller, because gold recovery in Tewang Pajangan Village continues to decline. In 2019, miners' income will generally decrease due to the long dry season. Miners in dredges and panners have difficulty working when the dry season comes.

SUPPORT FROM GOVERNMENT AND LOCAL ADMINISTRATORS

➔ All administrators and members have demonstrated commitment to this model, and try to attend every meeting and any training given by YTS. Having accountable administrators in the collective was also a positive factor in the model's success so far. In YTS's experience, many empowerment projects fail because of a lack of trust in management, especially considering that the business handled by the group involves gold that has high economic value and involves a large amount of money. To maximize participation, YTS ensures that the group has full control of its membership, decision making powers, and ability to elect their representatives. This facilitates trust and respect between the board, collective members and the Gardens of the Sun.

➔ On-going commitment and support from the government of Tewang Pajangan Village has also been a critical factor for the model's success. They helped the process of formalizing the group, prepared documents needed to make the tax deeds and group bank account and facilitated resolution of internal group problems and broader issues in the community.

VI. REPLICATION AND NEXT STEPS

While the success of this model can be attributed to factors specific to Tewang Pajangan Village, YTS believes that the opportunity to scale similar access to finance models in Central Kalimantan and other regions of Indonesia is possible. Taking into consideration key procedural and regulatory recommendations, this model not only has the potential to reach larger numbers of women panners across Indonesia – but can also contribute to livelihood diversification and better economic growth opportunities for women and their families working at the village level.

DIGITIZING OPERATIONS AND REGULATORY REFORM

In order to scale and replicate this model to different villages and regions, YTS recognizes the benefit of converting their existing record management system into a digital model. Currently, a physical leger system best suits their needs given the size, scope, and technological literacy of the group. This exemplifies the need not only for appropriate applications of technology and online ledgers and management information systems, but the importance of accompanying capacity building initiatives to ensure that the women panners can access and apply this technology accordingly.

An additional recommendation to scale the model to other mining communities across the region involves advocating for simplifying the regulatory process to allow panners and AGSM community actors to work without fear of unwanted legal repercussions. Despite the existence of WRP/IPR and other AGSM formalization mechanisms, accessing and enacting these permits for small-scale miners remains a challenge. As noted, panning is considered a traditional and protected indigenous Dayak vocation in Central Kalimantan – but this is not the case for all panning activities across the country. Therefore definitive government regulation is required to facilitate the ability for small-scale miners and panners in AGSM to continue and scale work.

ECONOMIC LIVELIHOOD DIVERSIFICATION

Baseline data collection and gender mapping were key elements to understanding the localized context of women's economic needs, activities, and outputs not only in the immediate context – but in long term planning for sustainable economic growth. For example, early baseline gender mapping carried out by YTS in Tewang Pajangam demonstrated that the majority of women's earnings are used to support their family and their children's education as opposed to their own personal needs.

Additionally, most members of the collective are the primary earners in their family, as their husbands are older, experience chronic illness, or have legal problems preventing them from working. As the collective expands, the Pamuan Jaya Panners are focusing on providing better benefits to members and creating economic diversification options for women in the village. Cognizant of depleting gold reserves, they aim to develop more sustainable livelihoods besides panning, such as agriculture, plantations, and animal husbandry. Similar to the Pamuan Jaya Panners model, YTS also assists the development of fishery groups in the nearby areas of Bukit Batu District, Palangka Raya City.

EXPANDING TO GEMSTONES AND ENGAGING SOCIALLY RESPONSIBLE JEWELERS

In an effort to replicate this work and support other miners' associations in Indonesia, YTS has worked with Gardens of the Sun to expand their model to work with artisanal gemstone miners in Indonesia. Additionally, Gardens of the Sun are facilitating discussions with similarly focused jewelry companies in Bali to encourage and guide them to sourcing of local, mercury-free gold, and support women-led panning collectives. Gardens of the Sun are setting a precedent for jewelry focused social enterprises by continuing to "give back" to the communities they source their gold from. This includes initiatives to provide scholarships to the children of members of Pamuan Jaya Panners who are in high school and college, internship opportunities for high school or college graduates, as well as providing uniforms, books and school equipment for children in elementary and junior high school.

ENDNOTES

1 A People's Mining Licence (Izin Pertambangan Rakyat – "IPR") is a license for conducting a mining business in a WPR area of limited size and investment. IPRs are not available to foreign investors.

2 The person who provides the capital to the miners, or the owner of the mining equipment and also can be the owner of the land or the buyer of gold. Usually they immediately buy the gold produced and share the profits with the miners. The purchase price of gold is entirely determined by them, which can often be unfair to miners.

3 A type of research method that places subjects as actors by asking them to take photos to convey concern, curiosity or appreciation of the surrounding environment. (Spiegel et al., 2018; CIRDI, 2017).

4 With support from the aforementioned CIRDI Program:
"Capacity Building for Multi-level Governance of ASM in Indonesia.

5 Certain regulations related to the Indonesian Mineral and Coal law require all miners (including panners) to conduct an environmental impact assessment to their process of extracting and processing gold referred to as AMDAL. Given the small scale of their operations and the high cost of receiving this and other environmental assessment certificates for running mining businesses, the women panners find it challenging to meet the regulatory requirements.

6 This document contains the obligations of both parties, the form and price of gold, terms of payment, delivery, late delivery, force major conditions, disputes & settlements, term of agreement, and other matters. It has an attachment of the provisions on the delivery requirements & method, receiving & confirmation, terms and procedures for payment, production operational capital and return. The agreement was made in 2 languages, English and Indonesian so that both parties could understand it carefully before it was signed.

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P.3: Map of Central Kalimantan, Indonesia. Ingo Menhard
P. 8 & 11: Provincial forum on visual storytelling and women empowerment in small-scale mining communities in Palangkaraya. Sam Spiegel
P. 9 & 10: A Photo Voice exhibition in Katingan Province organised to facilitate dialogue between different stakeholders. Sam Spiegel

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