



Meeting Report

2022 Virtual Global Forum on Artisanal and Small-Scale Mining

April 26 – 28, 2022



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Background

Funded by the GEF and led by the United Nations Environment Programme (UN Environment), the planetGOLD¹ Programme works in partnership with governments, the private sector, and ASGM communities in nine countries to significantly improve the production practices and work environment of artisanal and small-scale miners. By working to [close the financing gap](#), supporting [formalization](#), [raising awareness](#), and connecting mining communities with [mercury-free technology](#) and formal markets, the Programme aims to demonstrate a pathway to cleaner and more efficient small-scale gold mining practices that benefit everyone, from mine to market.

The first phase of the Programme is being implemented by Conservation International, the United Nations Development Programme (UNDP), UN Environment, and the United Nations Industrial Development Organisation (UNIDO), in collaboration with a range of other partners, including members of the Global Mercury Partnership. The Programme formally supports operations in nine countries: Burkina Faso, Colombia, Ecuador, Guyana, Indonesia, Kenya, Mongolia, Philippines, and Peru. In 2022 through 2023, an additional 14 new countries will be added to the program.

The Programme also includes a global component for coordination, knowledge management and communications. The flagship event of the global component is the Global Forum on Artisanal and Small-Scale Mining. This event aims to bring together a wide range of stakeholders engaged in the ASGM sector to inform, educate, and exchange best practices for improving and professionalizing the ASGM sector. Due to the COVID-19 pandemic, the 2022 Global Forum was held virtually. There were about 642 participants in attendance over the course of three-days. Those in attendance ranged from key stakeholders and partners relevant to improving ASGM, including governments, international agencies, NGOs, and the private sector.

This report provides brief summaries of each of the Global Forum sessions. Readers interested in more in-depth information are invited to visit the event page on the planetGOLD website: [2022 Global Forum on Artisanal and Small-Scale Gold Mining](#)

The event page includes links to recordings of each session in English, French and Spanish, the presentation materials (in PDF) and speakers' biographies.

Day One: Tuesday, 26 April 2022

I. Opening Remarks

Moderator: Abiola Olanipekun, Chief, Science and Technical Assistance Branch, Basel/Rotterdam/Stockholm Conventions

¹ The official programme title is: *Global Opportunities for Long-term Development (GOLD) in the Artisanal and Small-Scale Gold Mining (ASGM) Sector*.

Abiola Olanipekun, Master of Ceremonies, opened the meeting with a welcome and introduction of: Carlos Manuel Rodriguez, CEO and Chairperson of the Global Environment Facility (GEF); Monika Stankiewicz, Executive Secretary, Minamata Convention on Mercury; and Ludovic Bernaudat, Senior Task Manager, Chemicals and Health Branch, UN Environment Programme.

Carlos Manuel Rodriguez welcomed attendees to the 2022 Global Forum, which had been postponed from a previously planned in-person event, due to the COVID-19 pandemic. As background he commented that the outcomes of the recent GEF replenishment process were extremely positive and provocative, with strong donor pledges amounting to a 30 percent increase in GEF funding for the 2023-2026 period. These resources mean more funding for integrated approaches to address the drivers of environmental challenges. More integration means higher impact and more flexibility. The new funding also presents a strong opportunity to build on the work to eliminate the use of mercury from the artisanal and small-scale gold mining (ASGM) sector. However, resources are still limited and so much work remains to be done in terms of engagement across the sector. He noted that this Global Forum is the first global gathering of our community under the flag of the planetGOLD Programme, where the participants can listen and learn from each other to help accelerate progress that is sustainable and scalable.

Monika Stankiewicz underscored that through events like the Global Forum and through projects with level of coordination like planetGOLD, objectives of the Minamata Convention can be achieved. During the recent Conference of Parties 4 (COP4), attendees placed an emphasis on engagement to develop and implement National Action Plans, which serve as the cornerstone for this work. COP 4 also marked the first time that gender was a stand-alone agenda item, signaling progress in gender mainstreaming. Monika concluded on the point that the agenda for the 2022 Global Forum was extremely relevant and timely, and thanked the presenters and panelists who shared their expertise.

Ludovic Bernaudat spoke to the audience about the mission and objective of the planetGOLD Programme which works to make small-scale gold mining safer, cleaner, and more profitable with a vision of a clean global supply of gold from small-scale miners. The programme is a tool for the implementation of National Action Plans. The programme is split into two phases: the first, which began in 2019 and comprises 9 countries, and the second, which is currently under development and will see the programme's expansion by an additional 14 countries, bringing the total to 23 countries. The global component of the programme includes a knowledge sharing component, which created the possibility to facilitate events like the Forum. Over the course of the three days the audience will hear from planetGOLD country projects, other experts, and miners themselves on the four main pillars of the programme: (1) mercury-free technologies; (2) formalization (3) access to finance, including for women miners; and (4) supply chain; as well as on related topics such as removing mercury from tailings, gender, and free prior and informed consent for mining communities.

II. Session: The Role of Financial Institutions in Creating Responsible Gold Supply Chains

Moderator: Nikki Duncan, Chief of Party on the USAID Zahabu Safi (Clean Gold) Project, Global Communities

The session opened with a video testimonial from a miner working with planetGOLD Peru. He discussed lack of access to credit and finance – which he perceives to be among the greatest challenges in Peru’s ASGM sector – and how he believes planetGOLD will help miners access finance, thereby increasing their access to mercury-free technologies.

Committed to Generating a Positive Impact through ASGM Financial Inclusion in Peru
Presenter: Rosanna Ramos-Velita, Chairman of the Board, Los Andes

- Los Andes’ mission is to contribute to poverty reduction through financial inclusion, with a focus on rural communities.
- While Peru is well-known throughout the world for its mining export capacity, artisanal and small-scale miners still face significant poverty and lack of economic opportunities. Many continue to use mercury for gold processing, largely due to lack of resources to pursue other avenues.
- Los Andes partners with planetGOLD Peru, and this is a very high-impact project, with approximately 90,000 potential miners with the possibility of lending up to USD 1 billion in working credit.
- The project is also exploring options to focus on women. The type of work that women miners engage in tends to present extreme health risks. Women miners are a key component to the ASGM sector, and they must be empowered through financial inclusion.

El Rol de las Instituciones Financieras en la Creación de Cadenas de Suministro de Oro Responsable

Presenter: Susana Morales, Gold Marketing Specialist, Central Bank of Ecuador

- The presentation focused on the role of the Central Bank in the gold supply chain including ASGM.
- The process of non-monetary gold refinement, which was carried out in 2019 and 2022, saw an increase of USD 235 million and USD 158 million, respectively. Currently, the Central Bank of Ecuador has 378 validated economic agents.
- Of the provinces where the Central Bank has acquired gold, in 2021 the mining districts of El Oro, Azuay, and Zamora Chinchipe comprised about 95 percent of purchases.
- The commercialization systems of the ASGM sector are dynamic, competitive, and assume a continuous change and improvement in the mineral supply chain, which allows for the identification of problems facing ASGM miners and offers up

alternative solutions, including access to legal markets and benefitting from fair price policies.

- The involvement of the Central Bank in the mineral supply chain permits the identification of indicators related to financial inclusion, transfers, and transactions carried out for gold purchases.
- The Central Bank constitutes a channel between the ASGM sector and financial entities for the development of credit products to benefit the mining sector and seeks to promote the inclusion of ASGM in the banking and financial sector as an economic reactivation strategy.
- The success of these financial inclusion strategies depends on the commitment and coordination of all interested and relevant private and public parties within the ASGM sector.

Fireside Chat: Discussion of the USAID-funded Clean Gold Project in Eastern DRC
Panelists: Gaylord Omasale, Head of SME Banking Dpt., Equity Bank (EB) and David McEvoy, Trust Merchant Bank (TMB)

Q: What is your bank's vision for how you plan to support the ASGM sector in DRC?

Equity: Mainly through access to credit. We need to consider all the risks. Our vision is clear, we want to allow access to finance and want to integrate digital tools that are available.

TMB: Our bank provides about one in five bank accounts in the country. ASGM should be a normal fit for a bank like us. We've looked at the sector for a long time but have been hesitant to engage because of the various risks that exist, especially in a largely dollarized economy like in DRC. Our vision now is to lead engagement with ASGM by focusing on three pillars: 1) move our institution and others from risk approach to a risk mitigation and management approach; 2) encourage formalization and investment to facilitate holistic improvements across the board and support the communities and wider economies that ASGM takes place in; and 3) upscale efforts within DRC's banking sector itself to engage more thoroughly with ASGM sector.

Q: In what way is the partnership with USAID helpful in realizing your banks vision, and what has been most attractive about this type of partnership?

TMB: Access and confidence. TMB operates in DRC and the banking sector is dollarized, so our stakeholders are domestic and international. For our bank, which is reliant on relationships with international banks, there is no room for compliance mistakes; if we lose access to dollars/euros, we can no longer trade. A project like this brings a higher level of confidence since we have access to working relationships with reputable stakeholders.

Equity: The ASGM sector is in a bad situation now. Through cooperation we understood that we may have to focus on the daily difficulties that our stakeholders and

shareholders are facing at the small-scale level. For a bank, this means assuming major reputational risk. This project allows us to have more visibility and implement more financial tools.

Q: What are the biggest challenges?

Equity: There is a need to understand what financial education is needed and to develop it through training. These mining populations are lacking education because they did not have access to school. When talking about loan and saving products it is crucial to know what and how to teach on these topics. Another issue is understanding how to manage the issue of governance within these sectors. The approach is an ecosystem approach- by understanding who the stakeholders are. The guarantees are not well defined but could be with a simplified model.

TMB: For us the challenge is twofold. One is to help in the context of our broader relationships with banks, explaining why helping ASGM sector is important for us and why we need to move toward risk mitigation. Two, banks compete for LSM sector mandates. We need to connect the dots to show that there's a shared interest and benefit in ASGM formalization. Volatility and delays contribute to hesitancy. We have to be cognizant about these risks and ensure that we have these sectors' buy-in.

To our knowledge, there are no specific financial institutions dedicated only to financing ASGM but the two banks here are the most forward leaning banks who are actively engaging and partnership to develop and deploy financial products and services.

Questions from the audience:

Q: In the DRC context is there any financial institution dedicated to finance ASGM activities?

A from Nikki: No specific institutions are dedicated only to financing ASGM activities but both Equity and TMB are the most forward leaning banks who are actively engaging and partnering to develop and deploy products and services for ASGM.

Q: Do cooperatives receive prefinancing for activities and what guarantees are required?

Equity: Prefinancing is available if there is a specific relationship between the miner and the bank. When there is a well targeted market, it is easier to offer prefinancing. The bank asks of guarantees funds which allows to divide the risks and prevent risk levels.

Q: What are the challenges in scaling beyond a pilot scenario?

TMB: How to create a synthetic collateral, which we know by studying other sectors in the DRC, the issue of concern is a pipeline of potential clients who have the quantum and quality of data available to be bankable. They offer SME banking often in the

communities to formalize their activities. It is scalable because often time the problems are universal.

III. Investor Toolkit Session: ASGM Financing – A Path Forward

Moderator: Scott Gryba, Finance Specialist, Artisanal Gold Council (AGC)

This session highlighted issues and tools for facilitating investment in the ASGM sector.

- There are three types of finance typical for very early-stage mining projects: debt and equity are most common, there is also hybrid, but this is less common. There are also three categories of debt financing to consider particularly for ASGM: microfinance, national development banks, and equipment loans. Debt financing generally has more stringent lending requirements; in ASGM contexts, this means that assets outside the operation (e.g. vehicles, houses) are often used as collateral. Formal debt financing is extremely rare – close to non-existent – in early- to mid-stage formal gold mining because banks are hesitant to lend due to volatile cash flows, their own lack of mining expertise and understanding, and difficulties valuing and/or liquidating assets. Additionally, mining tenure is temporary and expires relatively quickly.
- Equity financing is much more common, through private equity, impact investors, and partnerships. Equity financing entails selling an ownership stake in the business and is generally more suitable for ASGM.
- A typical financing pathway often begins with a founder investment (largely sweat equity), followed by friends and family investments (typically a small amount). Following this, an early-stage project can typically approach professional investors with a business plan that specifies the use of investment proceeds and geological potential.
- In ASGM, investments larger than USD 10,000 are more suitable for private equity via business partnerships, minority shareholders, profit sharing, and royalties.
- Requirements for seeking investment include: a basic business infrastructure (legal business entity, bank account, organizational structure), a business plan, a financial model, operational data records if already in production, and a technical report on the geological resource.
- To support small-scale mining projects access financing from investors, planetGOLD has developed an Investor Toolkit that was reviewed during the session. The toolkit includes:
 - Business Plan template
 - Financial Model
 - Technical Report template

IV. Session: Financial Access for Women Miners

Moderator: Anna Bugmann, Project Manager, planetGOLD Burkina Faso

Anna Bugmann opened the session emphasizing that the needs of the ASGM sector are more orientated towards men and that women are marginalized. Thus, it is important to support the inclusion of women in this sector. She then introduced a video presentation presented by Salma Kundi from the Tanzania Women Miners Association (TAWOMA).

Tanzania Women Miners Association (TAWOMA)

Presenter: Salma Kundi Ernest, General Secretary, Tanzania Women Miners Association (TAWOMA)

- Founded in 1997 TAWOMA, focuses to help women miners facing problems within the ASGM sector.
- One of the main objectives is to support women miners to achieve a sustainable business environment and economic empowerment by giving financial and market support as well as introducing them to economically viable and sustainable mining mechanisms.
- TAWOMA provides trainings, education, and raises awareness on finances, business management, technologies, health risks, environmental risks, and human rights to improve the mining activities and living standards of women miners.
- The major challenge is to gain access to financial institutions for women miners.
- Salma Ernest states that a clear process and improvement of TAWOMA's work can already been seen.

Estrategia de inclusión financiera para la red de mujeres mineras: Experiencias en el marco del Proyecto planetGOLD Colombia

Presenter: Juan Fernando Céspedes González, Director de Redes; introduced by Manuel Hurtado, Financial Specialist, planetGOLD Colombia

- Shared a strategy that addresses ASGM which consists of the: (1) integration of the majority of natural actors of the chain, (2) articulation of the institutional framework to approach the financial sector, and (3) integration of traders who ensure due diligence and conduct an analysis with different compliance risks, like money laundering and terrorism financing, which makes the chain transparent.
- Cooperativa Financiera de Antioquia (CFA) has created a portfolio of products that have been placed at the disposal of mining activities. The CFA has an evaluation to develop methodology to serve women miners and production activities.
- In collaboration with planetGOLD Colombia, CFA is implementing the first network of women miners, facilitating and improving their quality of life. The project is taking place in Bajo Cauca, El Nordeste, and Sol de Bolívar. Because of family and structure, these women have lived all their lives from artisanal mining. The purpose is that through gathering, learning, and listening to each other they can become

more visible, stop being seen as marginalized women, and can achieve goals to improve their lives and others through empowerment.

- The municipalities, where the project is developed, invites artisanal miners to meet on a monthly basis to develop this network. The network is made up of 13 nodes of women groups. Leadership is already being formalized so that together they can be service providers to the active companies and facilitate commercialization.

Four focuses:

1. What: Strengthen the collaborative scheme (the aim is for them to move towards formalization).
2. Why: Gather to help them aspire to create a business model that allows them to generate income and begin the formalization process, so that this income allows them to improve their quality of life and that of their families.
3. Marketing: women often sell gold at a low price due to informality. Through the network, the women will have a choice to create other productive units (cocoa cultivation, family farming) visible, so that they can find marketing channels based on local and fair consumption. The network will foster economic autonomy and the empowerment of women.
4. Financing: Through the financial education program CFA facilitates access to the product.
 - Weaving the network so that CFA can produce governance visible within these principles. CFA will continue to accompany them over time, (until they have their own autonomy) the guidance does not end when the project ends. They are promoting the planetGOLD Bolivia project and raising awareness around caring for the environment and the importance of eliminating the use of mercury. In Medellin this year there will be a gathering of women leaders.
 - Since the visibility of the project is strengthened, they will be able to take their production units to another level.
 - Women will stop being isolated from the large mining projects in the territory and the owners of large companies will start to integrate them, to increase dynamism the ecosystem in the territory.
 - Finally, the project is providing financial education to women. The majority of women in the network are not proficient with banking. Facilitate a four-month financial education program where they will learn the meaning and importance of saving, family budgeting and future plans that allow them to improve their quality of life. This will also facilitate access to credit.

planetGOLD Burkina Faso : Accès aux Financements Formels Pour les Femmes de Gnikipière

Presenters: Alizèta Ouédraogo, National Project Manager, planetGOLD Burkina Faso; Fidèle Sidinyidé Ramde, Ministry of Gender and Families Burkina Faso

- Most women at the GNIPKIÈRE site process gold using mercury amalgamation. To intervene, planetGOLD Burkina Faso is working with the government on the creation of a FAARF fund, exclusively for women, which will promote women's access to credit, and support financial education. The fund focuses on trade, crafts and processing products. Women are organized in solidarity groups or individually who can benefit from this fund.
- Generally, to access the FAARF fund, one must be a Burkinabe woman, have an income-generating activity, be at least 18 years old, not be employed in the public/private sector, and be motivated. In 2020, the budget was 14 billion CFA francs, distributed to women in 4,498 villages. From 1990 to 2020, over 2 million women benefitted from such funds. Regarding the success of the loans and repayments: 89 percent increased their sales of which 37 percent more than doubled it; 66 percent became independent and autonomous; and 93 percent repaid their loans.
- The fund has encountered some difficulties with credit and repayment, including access to information, autonomy in credit decisions, insufficient financial resources to meet demand, difficulty in repaying credit, and autonomy in credit management.
- The planetGOLD Burkina Faso project held a workshop on access to finance to improve financial inclusion of women in Gnikipière. In addition, there was an awareness campaign on FAARF, to familiarize the women of Gnikipière with the existence of FAARF and subsequently accompany them in obtaining credit. The project is actively working to connect the women beneficiaries to the existing funds, formalize the informal association in Gnikipière, and accompany the women of Gnikipière on the formalization of their informal association. There is a special emphasis on the importance of the link between the fight against school dropout and the strengthening of women's financial inclusion.

V. Session: Facing the Challenges of Formalization

Moderator: Gavin Hilson, Chair and Professor of Sustainability in Business, Surrey Business School, University of Surrey

The session was opened by Gavin Hilson with an introduction of Mayiani Saino from planetGOLD Kenya and a corresponding video for her presentation. This session explored approaches to overcome challenges to creating a well-regulated ASGM sector.

Formalization in the ASGM Sector

Presenter: Mayiani Saino, Project Manager, planetGOLD Kenya

- The introductory video showed an ASGM miner from Kenya, Timothy Mukoshi, who is member of the Artisanal Mining Committee (AMC). The AMC has an advisory role for the Directorate of Mining, namely in granting concessions and permits as well as renewal, revocation and conflict mitigation. Timothy states that miners cannot access finance since they are not formalized. Moreover, there is a lack of a legal framework for ASGM reinforcing this problem.
- Kenya has rich resources but unable to use its potential because many mining and extraction operations are informal. Moreover, Kenya has several laws and acts related to mining but there are many gaps as well as difficulties. But most importantly an implementable legal framework for the ASGM sector is missing, which is the biggest issue.
- Further challenges for the formalization are the lack of geological data, the access to finance and better technologies, and socioeconomic and infrastructure issues.
- To solve these problems there is a need for a long-term strategy to formalize the ASGM sector. Also, the law needs to be revised and the ASGM sector needs recognition from the officials. Finally, encouraging stakeholders to cooperate and to invest will also facilitate the formalization of the ASGM sector.

Conflict Risk Mitigation in the ASGM sector – Early Warning and Early Response

Presenter: Wendy Wilson, Senior Program Manager, Fund for Peace

- Fund for Peace focuses on the development of practical tools and methodologies to address and understand violent conflicts, state fragility, and to secure human rights.
- Fund for Peace Program goal for the ASGM sector in Ghana is to promote the capacity building within the ASGM sector and government, to promote sustainable best practices and to reduce the negative impacts of ASGM in Ghana.
- The Program includes three objectives: Increasing the local awareness and capacity for the adoption of accessible alternatives to mercury; Increasing the national and regional multi-stakeholder engagement and coordination to reform the ASGM sector; Improving the conflict risk mitigation around the ASGM issues
- The drivers of conflicts that were found by Fund for Peace were the competition of land use and resources, for example conflicts between ASGM and farmers, the unclear hierarchy and overlapping roles and functions of local and national authorities on ASGM items, and authorities prioritizing the LSM sector while leaving local communities and ASGM miners behind.
- The Fund for Peace approach for early warning and response includes four principles: (1) a data driven warning and response system, (2) a linking of the early warning and early response, (3) gender sensitivity, and (4) context sensitivity.

Spurring Innovation for Artisanal and Small-Scale Mining in the Amazon

Presenter: Cassie Hofmann, Director of the USAID-financed Accelerating Innovation for Artisanal and Small-Scale (ASM) Mining Operations in the Amazon Program, Conservation X Labs

- Conservation X Labs is a technology and innovation organization that supports solutions addressing climate change. It tries to incentivize innovative solutions with contests and prizes
- In 2019, X Labs started a competition series to address the environmental issues that arise from the ASGM sector. To rank the applications there were three sub-categories for evaluation: The safeguarding of ecosystems, the optimization of supply chains, and the promotion of the formalization process. Afterwards there was field-testing to see the real-life performance and a performance-based prizing.
- This open innovation approach is also promoting partnership coalitions, so stakeholders, experts, customers, founders, investors, and companies can engage with each other to promote the submitted approaches.
- Overall, this approach is bringing attention and resources to the sector, which elevates solutions and changes the narrative within the sector and shows what impact is possible. Moreover, it can inspire people to participate.

Jurisdictional Approach to Sustainable Commodity Production and Sourcing

Presenter: John Buchanan, Sustainable Production Lead, Conservation International's Center for Environmental Leadership in Business (CELB)

- A new jurisdictional approach (JA) is needed due to changing environments and land scales, new insights on forests and sustainable land use, and more sufficient tools are needed.
- The idea of the JA is to combine incentives for the government and producers to focus on a sustainable land use and to leverage investments into supply chains.
- The core elements of the JA include a multi-stakeholder platform led by the government to identify a sustainable vision, an action plan to reach the goals from the vision, and a reporting system to monitor the progress and to improve.
- A successful JA towards sustainability can lower the risk for buyers that seek reliable sources for raw materials as well as investors. Attracting these stakeholders will also help facilitating sustainability approaches.
- The benefits that arise from the JA are the greater inclusion of small-scale producers, the creation of links between market interests and government policies, the possibilities to more efficiently address the environmental issues, and the ability to include other commodities, e.g. food.
- The key challenges are the rising complexity of the approach if more commodities are included, potential free rider problems in the landscape, changes in the government and of the goals of the government, and benefits focusing on companies instead of the landscape.

Day Two: Wednesday, 27 April 2022

Moderator: Abiola Olanipekun Chief of Science & Technical Assistance Branch, Basel, Rotterdam & Stockholm Conventions

Voices from the Field

Day two opened with a pre-recorded video, where miners from planetGOLD countries across the globe provided their first-hand perspectives on the biggest challenges they face, and opportunities they see, to improve their operations.

I. Session: Supply Chain Case Studies and Practical Considerations

Moderator: Christina Miller, Founder, Christina T. Miller Consulting

Christina Miller introduced the speakers who shared their global experiences creating a responsible supply chain from ASGM and present practical obstacles/solutions.

Commercialization of Responsible and Mercury-free Gold in Colombia

Presenter: Maria Jose Murillo, Head of Supply Chains, Alliance Responsible Mining (ARM)

ARM is a global initiative that has been working out of Colombia since 2004; its objective is to facilitate the connection between miners and market.

ARM is working with planetGOLD Colombia in Antioquia, Bolivar, and Cauca, to create responsible gold supply chains from ASGM. This project employs a progressive strategy divided into 5 modules, following the CRAFT code:

- Module 1 – Assessment of the miner organization; verifying management systems, etc.
- Module 2 – Legitimacy
- Modules 3 and 4– Identification, mitigation, and reporting of risks; verifying that the mining organizations don't engage in or associate with risks
- Module 5 - Progressive criteria and specific/planetGOLD criteria

The project helps ASGM organizations with compliance, evaluation and development of an improvement plan. To date, one ASGM organization has completed the pilot, with sale of gold to a local trader, with subsequent sale to an international refiner and finally to a jeweler.

Expériences du Projet Or Juste en République Démocratique du Congo et en Côte d'Ivoire *Presenter: Jean Paul Lonema, Project Manager, IMPACT*

IMPACT currently supports in supply chain monitoring, financial inclusion, gender mainstreaming, tax reform, technical assistance in DRC and Cote d'Ivoire. The project focuses on three components: (1) Traceability and reasonable diligence; (2) Measures to encourage and promote legal trade/commerce ; (3) Transforming the economic lives of beneficiaries.

1st step: Traceability and Tracking

- After two years, the DRC project has supported more than 2,100 miners to produce 24 kg of conflict-free gold. In Cote d'Ivoire, similar results on a smaller scale, with 1.778 kg exported in formal circuits and traceability and tracking measures implemented.

2nd step: Incentives

- These can include technical assistance, accompanying miner communities, advocacy exercise, access to international markets (which bring better prices and data), and installation of adequate facilities in areas more convenient to mining communities.

3rd step: Data

- Compelling data allow us to measure how tracking and due diligence programs transform lives.

Cross-cutting issues:

- Environmental protection: reduction of mercury use via new technologies and improvements of processes of amalgamation. In Cote D'Ivoire, the project saw a reduction of women using mercury from 25 percent in 2019 to 0 percent in 2021 and in men 35 percent to 26 percent.
- Gender inclusion: thanks to their system and follow up, the project conducted studies specific to impact on women miners and found that their overall literacy has increased.

Lessons Learned:

- ASGM is very vital sector in lives in local communities and requires important engagement of all stakeholders.
- Tracking and due diligence must be inclusive.

Supply Chain Case Studies and Practical Considerations

Presenter: Wiku Padmonobo, Managing Director, Kalimasada Nusantara Pratama

- ASGM contributes to about 50 percent of Indonesia's gold production, estimated at 100 MT annually. However, the sector is plagued by illegality and informality; there are nearly 2,750 illegal mining sites identified throughout the country, which account for about half of the ASGM sector's gold production. These challenges present big opportunities for improvements in how Indonesia produces and sells gold.

- The lack of a formal gold market presents big setbacks for the ASGM sector in the country. planetGOLD Indonesia helps identify parties to support the establishment of a formal gold market.
- No formal market exists in Indonesia at this moment, and the profit margin between trader levels is quite large. There are opportunities to develop more responsible, level one trader groups.
- Since 2013, this topic has not received much time or consideration. Mining groups end up conducting illegal operations since they are operating in undesignated areas.
- The path forward for planetGOLD Indonesia should be to establish formal market to help miners that already follow responsible mining practices, so they do not have to sell into the illegal supply chain.

Overcoming Barriers to International Routes to Market

Presenter: Candice Jumwa, Mining Engineer and Programme Support, The Impact Facility

The Impact Facility interviewed stakeholders across the value chain (refiners, jewelers, traders, etc.) from multiple countries to understand the nuts and bolts of programs that have managed to get ASGM gold into formal markets.

Practical barriers:

- Security and aggregation: due to production challenges, small-scale producers prefer to sell smaller quantities via cash; no insurance companies willing to take up small transport options.
- Local transport and aggregation: for larger volumes, secure transport can be a challenge as logistics companies are not willing to assume the risk (e.g., local transporters can be targeted and may experience personal harm). Further, ASM volumes also tend to be small, resulting in delays in aggregating sufficient volumes for economically viable exports.
- Payments: due to the ASGM context, miners prefer cash payments which can be a due diligence risk for some downstream actors because of traceability difficulties.
- Export/International transport: these entities are often unwilling to engage because of due diligence risks and small profit margins.

How to overcome these barriers in practice?

- Purity assessments: conducting specific gravity testing (for purity and weight), ideally locally to encourage miners' confidence in the results.
- Payments: when dealing with bank transfers, ensure miners are paid before gold offtake.
- Local transport and aggregation: include first-mile transport. Currently, the burden falls to miners to get gold to the aggregation point or point of export. Initiatives should include local transport options. Engaging with logistics companies often not feasible yet for less than 10kg; public/private local transport options should be considered.

Questions from the audience:

Q: What is the incentive for the miners?

A from Maria: First, the recognition that they can achieve when they are committed to implementing good practices in such a stigmatized sector. Second, improving internal processes to increase productivity and will not generate for them any fines or sanctions. Third, be able to access better prices and better commercial conditions; the market needs to understand this specific ASGM context to best help them overcome the unique challenges that exist.

Q: What is the role of women in these processes?

A from Jean Paul: We have seen that women are more flexible and more aware. In DRC for example, we have developed some alternatives for women's financial inclusion because even though the overall results were positive, women had difficulties accessing funds and new technologies. Women in the ASGM sector really need our support via adequate projects, they need their work to be remunerated, and of course the systems of tracking and due diligence need to be in place to accompany women and promote their engagement.

II. Session: Roundtable: Exporters, Refiners, and Responsible Gold

Moderator: Louis Maréchal, Chief of Minerals & Extractives Sector, Centre for Responsible Business Conduct, OECD

Louis Maréchal introduced the discussion that illuminated what gold exporters and refiners are expecting from responsible suppliers.

Panelists:

- Alice Vanni, Compliance and Sustainability Officer at Itaipreziosi Spa
- Güzhan Gülay, Executive Vice-President, Bora Istanbul
- Alan Martin, Head of Responsible Sourcing Programme, LBMA
- Paula Andrea Gallo Restrepo, Vice-President, Grupo Altea

Q to Alan Martin: What control has LBMA on refiners and what position does the LBMA have on the inclusion of ASGM and impact on related supply chains?

A: LBMA focuses on 3 standards: The good delivery standard guaranteeing the universal quality, the global precious metal code related to the trade of the governments, and responsible sourcing enforcing the ethical trade aligned to the OECD due diligence. ASM has a global impact on the supply of precious metals, but in terms of the refiners the LBMA works with, the ASM sector supplies less than one percent. Therefore, the focus of the LBMA is to find solutions to increase the input share of the ASM sector. Unfortunately, the ASM sector has issues (e.g. mercury) that refiners do not want to be related with, because of the due diligence guidance. Thus, the refiners

do not cooperate with ASM. Therefore, the focus should be more on the responsible management of the sector, rather than on the direct elimination of mercury.

Q to Alice Vanni: Are you, as a refinery, sourcing gold from ASM? What are the associated risks? Do you have any risk mitigation actions?

A: Itaipreziosi is sourcing a small part from ASGM, but ASGM is a reputation risk for refiners. The company started its first project in 2008 in Honduras to reduce mercury in the ASM sector, since then they tried to develop this topic. Refineries can raise awareness on the importance of ASGM and can create synergies with the sector and start cooperating with them. Moreover, finding trustworthy traders or counterparts that interacts with the ASGM sector is one procedure. The refiners can share how sustainability and improve the knowledge with these traders and counterparts. Then the trader can approach the ASGM sector to share this knowledge and to ensure the standards are met in the ASGM sector. Also, cooperating with projects such as planetGOLD is important for refiners to support a positive transformation of this sector.

Follow up question: What percentage does Itaipreziosi source from ASGM? A: No exact numbers are available, but it is a very small percentage.

Q to Güzhan Gülay: Turkey is a major consumer of gold, so how do you see your role in promoting global expectations for responsible sourcing? And could you elaborate your efforts on transparency in the supply chain? What are your plans on reducing the use of mercury globally?

A: There are two entities for overseeing precious metals in Turkey. First the Ministry of Treasury and Finance, which is the legal authority responsible for the supervision and regulation. Second Bora Istanbul is the responsible body for the market transactions. The global role of Bora Istanbul as market regulator is critical for precious metals, since it is a trading platform for many stakeholders and is announcing for example the list of bars that can be traded. Therefore, there is a strong influence on the industry and the market. The actions taken for responsible sourcing started in 2015 in compliance with the OECD. Also, Bora just signed a protocol with the OECD and made a translation of the due diligence guidelines and put it into their legislation. Also, in 2021 the Ministry of Finance and Treasury issued the necessary steps to achieve responsible supply chains including responsible sourcing. Moreover, Bora provides training regarding responsible sourcing, and a control measure was introduced to monitor if standards are met for imports and also control mechanisms at mining sites are implemented in compliance with the Ministry of Environment to see if mercury is used and how it is in line with environmental policies and standards.

Q to Paula Andrea Gallo Restrepo: How concretely do expectations affect your work and business partners? What are the reactions of partners? What is the kind of support you need as an exporting company?

A: planetGOLD has made many efforts and documenting processes to implement traceable supply chains. Also, the expertise from customers helped setting up

transparent and fair supply chains that meet international guidelines. It is important to align with the international standards, for example with the OECD or LBMA standards to guarantee that the precious metals are produced responsibly for the customers. The customers are also allowed to visit the mining sites to check if standards are met. The refiners support training objectives and have partnerships with for example, planetGOLD, to facilitate good standards, which is helpful. It is important to work with this type of organizations to align with the standards.

Questions from the audience:

Q: What costs more ASGM gold or LSM gold?

Alice Vanni: ASGM is more costly in terms of logistics and amounts. If there was a trustworthy trader in a country to source ASGM gold from several ASGM communities, it would reduce the costs from the logistics. It also depends on the products, how many of the stations across the supply chain are certified.

Alan Martin: It depends also on the refinery systems, and how much premium they pay. There is an interesting model from one refinery, where ASGM miners end up getting paid double the price if they use alternative processes to mercury. It is important to find effective ways to give ASGM higher yields.

Q: How do you engage and help miners that do not have an official mining title in order to produce responsible gold?

Paula Andrea Gallo Restrepo: Our supply chain deals with ASGM miners that have titles because processes are in place that guarantee gold that is free of risks. Nevertheless, more informal miners should be included in responsible supply chains, so they have access to fair prices. A suggestion made is that if miners meet requirements of responsible mining that they can be included. planetGOLD has helped and supported the ASGM sector to comply with standards and to produce clean gold. Thus, they can now work with her company and the ASGM miners can get included into the responsible supply chain. Finally, she mentions that it is important that companies like hers support these projects to achieve responsible mining.

Louis Marechal: There is an issue of scalability of results from projects that originally have support from NGOs. Another problem is financing capacity of ASGM is really low, hard to achieve better practices.

III. Session: Mercury-Free Gold Production

Moderator: Daniel Stapper, Manager of Pact Mines to Market, Pact

Daniel Stapper opened the session mentioning that many entities have invested money into this sector to find mercury free solutions, but it is a highly complex challenge, not

only due to technical limits, but also due to challenges that arise within ASGM communities by setting new standards that are outside of the communities' worldview.

Next, a video from planetGOLD Peru showed several stakeholders pointing out their contribution to the impact they want to have on a cleaner mining process. They also showed several available technologies for achieving this goal. The key takeaway from this video is the fact that no mercury is needed, and that responsible mining is possible as well as important to save the earth and the health of the people.

Prospecting

Presenter: Dayshawn Billingsy, Technical Officer, planetGOLD Guyana

- Prospecting is the early stage of exploration, to identify areas good for mining. It includes surveys to find geologically attractive areas, laboratory and field testing to find possible reserves, identifying the type of the terrain, and performing drilling. The result is a detailed report on the potential availability of gold.
- The stages for prospecting include geological mapping, exploration and drilling. During the exploration part the area is tested whether it is economically viable. Then, small holes are drilled to gather samples which give an expectation of what can be found and if the area is economically viable. Drilling helps to gain deeper soil samples which can be analyzed as well.
- A video was played that shows the prospecting in practice.

Mercury-Free Processing System for planetGOLD Philippines

Presenter: Louie Bedes, National Project Technical Specialist, planetGOLD Philippines

- Currently at the project site in Sagada, the gold recovery is low due to sluicing and panning methods, which means profits are not maximized. Fifty percent of the gold particles remain in the gravimetric tailings and are sold to different cyanidation plants. But mercury is not used at this site. At the project site in Paracale, there is a heavy use of mercury and a low recovery rate. Also, they use one of the worst practices in mining, the cyanidation of amalgamation tailings.
- Glycine has gained attention in the gold processing as an alternative to cyanide since it is efficient in dissolving metals and non-toxic. It is also safe when humans are exposed to it. The planetGOLD Philippines leaching test results showed that using cyanide has a 94 percent leaching efficiency while cyanide-glycine had a 93 percent efficiency.
- To ensure the protection of the miners, the project wants to decrease the consumption of cyanide, to introduce operational safety measures, to regulate the quality of the water, soil, and air, conduct chemical safety training.
- To protect the environment the project wants to decrease the cyanide dosage used, destroy the remaining cyanide in tailings, monitor the safety practices, and install a tailings storage facility.

Mercury-free Processing System for planetGOLD Mongolia

Presenter: Byambasuren Odgerel, Technologist Engineer, planetGold Mongolia

- The current Mongolian ASGM sector has only two out of nine fully permitted processing plants. They all use gravimetric technology as well as handmade equipment leading to a very low recovery rate which is below 50 percent.
- The goal of the project is to: (1) install two mercury-free processing systems (MFPS) in Mongolia to reduce the mercury use, (2) increase the gold recovery, (3) implement international standards on responsible mining, (4) promote formalized operations, (5) introduce fair price policies and, (6) share experiences with other processing plants.
- A study on different recovery methods was conducted in order to find the most suitable method for the MFPS. Afterwards a processing circuit was proposed.
- The test results from using a vibration mill showed several advantages: It can be used for dry and wet methods, reasonable product size, automatic feeding system, energy efficiency. The challenges arising: more suitable for continuous operation, needs sophisticated adjustment, and it needs a regular maintenance of the safety regulations.

The Mercury Free Technology Atlas

Presenter: Itai Mutemeri, Consultant, Mutemeri Consulting

- The University of Witwatersrand received a grant to research mercury-free technologies and which ones are most suitable for different mining techniques.
- The issue was that many technologies are available, but miners might not be able to select the best technique. Thus, the team created a Technology Atlas, an open-source atlas that gathers data of mercury free technologies in one place.
- Users can add data based on their experiences with the technologies and can use filters to look for the most suitable technology.
- The atlas can incorporate new data as technologies evolve, but the data needs to be verified. The research results are available for a broader audience that do not read scientific papers, and it encourages the ASGM stakeholders to participate in sharing information.
- The atlas does not substitute for a detailed evaluation of the technologies at a particular site, and it is not ready yet for the independent use by miners with a limited technological knowledge.
- Stakeholders include: miners, donors for ASM projects, NGOs, CSOs, researchers, and financial institutions wanting to understand investment needs.

Questions from the audience:

Q to Louie: What is the efficiency of Glycine on refractory materials?

A: They did not try too many materials yet, but the cyanide-glycine leaching of refractory gold ores reached a 90+ percent efficiency after 24 ores.

Q to Louie: Can you confirm a bit more the ore categories that were used?

A: The ores were not really sampled regarding the mineral category, but the ones from project sites are possibly oxides or sulfites.

Q to Byambasuren: Have you done test work on flotation? Why would one not just use the cyanidation process instead of the 2-process circuit if the outcome is better?

A: They tried to test the leaching and the floatation, but it is hard to get permission to use chemicals from the Mongolian government for the ASM sector, due to high chemical spillages that happened before. That is why a gravimetric circuit was used.

IV. Session: Digital Technologies to Support Responsible Gold

Moderator: Ken Davis, Policy & Technical Expert, UNEP

This session looked at some new digital technologies and their potential for impacts on ASGM, including remote sensing (satellite, planes/drones to collect data), blockchain, and traceability/increasing confidence, and discussed how technologies are used to complement each other.

Remote Sensing for ASGM Prospecting

Presenter: Peter Chirico, Associate Center Director, USGS Florence Bascom Geoscience Center

- Why do we need to do a better job with prospecting, and how can this help us with responsible ASGM supply chains? We rarely focus on the geology of the deposits themselves, but this can go a long way with providing better information about finding and processing sites.
- In ASGM, the location type, as well as the extent and grade/quality of deposits, is either unknown or poorly understood; current understanding is based on initial exploration efforts several decades ago. ASGM miners are continually discovering new deposits all over the world. Also, deep soil and sediment obscure and conceal underlying bedrock, while persistent cloud cover and dense vegetation obscure the views of many deposits in tropical climates. Consequently, we are working in data-sparse terrains. Data is rarely collected uniformly, and the data that does exist is often considered proprietary by governments.
- Prospecting for both primary and secondary deposits can employ remote sensing techniques to help fill these gaps. Remote sensing can be categorized into three techniques: mineral mapping, structural geomorphic techniques, and geobotanical. Remote sensing is about filling in gaps between known and unknown information about deposit sites.
- There is no “one size fits all” approach for ASGM prospectivity mapping or assessments.

- The growing gap between miners and technology and the lack of attention paid to capacity building at the national and local levels poses a risk; many technologies require expertise that hasn't been developed at these levels.
- How do we ensure that responsible sourcing doesn't simply promote LSM at ASGM's expense or exclude ASM miners?
- This risk can be mitigated by using open-source data formats, publishing models and results, and insisting upon data sharing agreements.
- Better prospectivity mapping ultimately leads to better environmental protections since it allows us to focus on areas with higher mining potential and inform discussions around sustainability and profitability.

How Can Technology Improve Lives at a Global Scale?

Presenter: Marcus Scaramanga, CEO and Founder, MineXX

- How can we stop environmental degradation and human rights abuses in the ASGM sector, but protect and empower the communities responsible for mining these metals by giving them direct market access and increase livelihood opportunities? The main barriers to responsible ASGM are the lack of accountability and financing. We must work to build accountability – trust, transparency traceability – into mineral supply chains.
- Fighting the illegal market is a big challenge in achieving accountability; on the illegal market, there is no connection between buyers and suppliers in a responsible, transparent way. Competing against an illegal market that has huge benefits against legal market – no taxes, good prices – requires a strong strategy to counter these perceived incentives.
- MineXX provides ASM a financing platform to create traceability, transparency, and trust. How can we use financing as a tool to build this trust, and how do we do it at scale? Many initiatives do not or cannot act at scale. How can we create a model that drives responsible sourcing at scale, bearing in mind that we are competing with high incentive illegal market?
- How does it work? Simple model: (1) build commercial relationship with the supplier; (2) use MineXX platform and staff on the ground to assess mine sites against CRAFT criteria; that data along with the minerals can travel through the supply chain and (3)enable financing miners to create drive for responsible sourcing.
- Technology's impact here: Using blockchain technology enables us to aggregate data from different trusted sources (e.g., local aggregators, governments, digital payments) that can be written directly onto the blockchain, creating confidence and accountability.
- To date, MineXX has supported USD 2 million in transactions across three countries (1,000+ miners).

Monitoring ASGM Activity from Space via the ASM Spotter

Presenter: Leon Riedel, Business Area Manager for Mineral Sector Governance, Levin Sources

- Monitoring of ASGM is intensive and expensive; it can be hard to track developments and stay up to date.
- This tool offers a bird's eye view solution: with ASM Spotter, monitoring can happen nearly live using publicly available satellite data. As such, it is cost effective; can be integrated in GIS systems allowing for layered imagery; and can be combined with on-the-ground monitoring and inspection.
- It can also help us identify how ASM changes and grows over time by providing an early alert mechanism to warn of rapid growth or rush situations and other concerning indicators, such as mechanization. We can also use it to retroactively map the evolution of ASM over time, which can inform strategic response to ASM management.
- ASGM provides livelihoods for millions of people and represents big socioeconomic potential, but these implications can also be negative (e.g. human rights abuses, environmental impacts). ASM Spotter allows for effective monitoring, which in turn leads to more effective governance and engagement.
- ASM Spotter has two components: technology (satellite and AI) and an advisory toolkit, which helps clients interpret data and devise action.
- With additional funding, ASM Spotter's current capabilities can be expanded to include usability improvements, additional post processing support, and combined radar and optical detection.

Questions from the audience:

Q: What is unique in terms of detecting ASGM sites from satellite imagery, what is the innovative aspect?

A from Leon: The ASM Spotter uses machine learning and AI, so we train an algorithm first on a small scale – like the ASM we see in a 10km x 10km area – and the machine learns from that. It is refined and corrected so it keeps learning, and the algorithm improves over time. Currently it results in 80% correctly identified ASM.

Q: Producing a quarriable database (blockchain or otherwise) is powerful for companies serving clients everywhere. Is MineXX different from numerous other tracking and information collecting systems?

A from Marcus: Yes, the way that we've built it is from the ground up/field up, and that is mainly what sets us apart. We've also built the technology to enable a financing business model. We haven't built it just for traceability, although that is one aspect; we've built around the financing and how to create formal financing products/tools for ASM miners.

Q: On block chain, could you explain a bit how that works? Why does this blockchain technology have an application in tracing?

A from Marcus: If you're a downstream stakeholder (e.g., jewelry/car manufacturer), you're reliant on the data [about the origin and production] that comes from the source. With ordinary technology, that data runs the risk of being changed along the supply chain. The benefit of using blockchain technology is that the data comes directly from source and is locked in a "digital safe," and downstream stakeholders have the key, so they have confidence that that data is unaltered.

Q: How can these digital technologies be localized in a way that the ASM miners can apply them?

A from Pete: USGS is a US government agency, our primary responsibility is in a government-to-government capacity. The organizations we deal with are typically the organizations that have experts; the knowledge exchange occurs at this level, but then we can also build bridges between these ministries/geological surveys and ASM associations and miners. We can be a broker of that information. This piece is key, and this does require thinking about how maps/information are designed to be used in ASGM context. Things like education campaigns on how to use prospectivity mapping, partnering with miners to do field studies can incorporate that local-level engagement. We can do much more in terms of ensuring all this information is peer reviewed, published, and open access. We can insist on wide data sharing agreements to ensure that data is available to miners or other organizations and associations, academic organizations, not just governments. There is tremendous opportunity to do that, but it is a huge challenge to build these bridges.

Q: Remote sensing presents concerns for potential use by law enforcement or other entities to target informal miners in ways that might not be appropriate. How do we ensure that these tools are not used for these strong-arm approaches?

A from Leon: From the beginning, our goal was to avoid the use of this technology as a policing tool. We use safeguards and accompaniments so that we can recognize this behavior and incorporate clauses prohibiting this in our terms of use with clients.

A from Pete: As we engage at government-to-government level, we communicate these messages that our purposes are not for enforcement actions or busts. In most contexts, ASM [as an activity] is legal in the countries, so it is an opportunity to work together and build bridges between national governments and ASGM associations and not "bust" or disenfranchise small-scale miners. From the beginning stages of the project, this must be clearly communicated so everyone understands that this is not the goal of the work.

A from Marcus: All platforms need clear codes of conduct. The challenge here is that as uptake grows, this control of use becomes more difficult. A lot more thought on this subject is required.

Day Three: Thursday, 28 April 2022

I. Session: Controlling Mercury Flows

Moderator: Jerome Stucki, Materials and Chemicals Management Division, UNIDO

Bali Declaration on Combatting Illegal Trade in Mercury

Yun Insiani, Senior Environmental Impact Controller, Ministry of Environment Indonesia

- During the second part of the Fourth Conference of the Parties of the Minamata Convention, Indonesia proposed the Bali Declaration. This proposal was due to the significant increase of the use of mercury, the major contribution of ASGM to the illegal trade of mercury, and the need for action.
- The Bali Declaration is a non-binding political commitment to support the Minamata Convention with the goal to mainstream the issues of illegal mercury trading and to encourage multilateral action in order to safeguard human health and the environment
- The four pillars of the declaration include: (1) encourage international cooperation in enforcement, (2) encourage conducive policies as well as regulations, (3) promote research and education, and (4) promote third party cooperation.
- Three follow up stages are suggested. In the short-term, mainstream the need to combat the global trade of mercury. In mid-term, foster concrete cooperation. In the long-term, propose an international governance framework to combat the illegal trade of mercury.

Global trends and control of mercury trade

Peter Maxson, Director, Concorde East/West

- Mercury trade amounts 4000 metric tons per year. One-fourth is used in mercury added products, similar amount in VCM production in China, and one-third is used in the ASGM sector.
- The reported global mercury trade significantly decreased from 2000-2018, but the demand did not change. Hence, most of the trade is illegal and outside of the scope of governments.
- Once informal trade has established, it becomes almost impossible to follow the routes
- The challenges of the law enforcement include: ASGM is informal and can be dangerous, few incentives to stop the use of mercury, long borders are hard to control, and there is lack of communication and coordination between international institutions.

- The key steps to developing an inspection plan include developing a general framework, conducting a risk assessment, creating an operational action plan, facilitating international cooperation, and an evaluating and reporting the results.
- An investigation takes place after evidence was found and includes identifying the target firms and individuals as well as collecting documents as evidence.

Curbing Illicit Mercury and Gold Flows in West Africa

Marcena Hunter, Thematic Lead on Extractives and Illicit Flows at the Global Initiative Against Transnational Organized Crime

- Mercury is widely used across ASGM in West Africa. Major users are Ghana, Burkina Faso, and Mali.
- The mercury trade is often linked to the illicit gold trade. Also, gold traders are also often mercury traders for the ASGM sector to secure gold sales.
- From 2005 to 2017 there was a big shift of the trading hubs. While in 2005 major hubs were in Europe, the hubs shifted towards China or Mexico due to the European mercury export ban.
- Cyanidation is increasing, while the mercury use is not decreasing. This leads to an even worse pollution since cyanide makes mercury more transportable through water.
- Burkina Faso is a major landlocked trading hub for the region, with the mercury arriving in Burkina Faso from import ports such as Togo or Ghana. This trade is also reflected in the cyanide trade.
- One challenge to combat the illicit trade of mercury is the lack of clear guidance within countries, meaning that there is a need for cooperation between ministries. Another challenge is the misalignment between the several countries.
- What can be done: Continue to build knowledge on the illicit trade flows, identify the challenges related to the illicit flows and address them, increase the law enforcement, harmonizing the regulatory frameworks between miners, and incentivize miners to avoid the use of mercury.

Questions from the Audience:

Q: Demand is driving the mercury flows to the ASGM sector and the ASGM countries had limited success in reducing this flow. Is there any specific incentive for the exporting countries to combat the trade?

A from Yun Insiani: Both importing and exporting countries need to be included to tackle this issue. But the key lies in the commitment of the exporting countries since they have more bargaining power as supplier. But for example, the miners from the planetGOLD Indonesia project are aware that reducing the demand for mercury can reduce the trade which can happen through better alternatives.

Q: Do you expect any other changes of the trading hubs in the future?

A from Peter: The shift was a bit of a surprise in the early 2000s. The hope was that by reducing the supply it would solve the end consumption problem. Unfortunately, the lesson learned was that if there is a demand a supply will appear. Therefore, surprises can always happen and to combat the trading issue the demand and supply side need to be addressed.

Q: What do you think of the relative cost effectiveness of 3 options: Restricting mercury supply from primary mining; preventing illegal trade; making non-mercury technology available?

A from Marcena: ASGM communities are vulnerable when it comes to livelihoods. By restricting the supply without supporting the communities affects these communities badly while empowering the criminal activities on the black market. At the same time providing technical solutions also brought some challenges on a large scale. Overall, the options are all viable, but when it comes to cost-effectiveness providing technologies is the most expensive one.

Q: Since the Bali Declaration is non-binding, do you think there is a risk that a country not adhering is negatively affecting the declaration?

A from Yun Insiani: A common understanding and commitment is needed to combat the illegal trade. But it is likely that some countries will face problems controlling the illegal trade leading to environmental damages. But for Indonesia, for instance, the declaration will show where the government stands on combating the illegal trade.

Q: There are wide ranges in the estimates for mercury trade. How could better data be gathered?

A from Peter: The efforts made to track the mercury origin is important. The challenge is to track down the supply chain to get more accurate numbers, which is difficult. Once there are better understandings of the source, the present challenges and issues of illegal mercury trade can get addressed.

Q: Does cyanide have a replacing impact on the mercury flow to the ASGM sector in the ECOWAS region?

A from Marcena: Cyanide is not directly replacing mercury, but it is complementing it. Using cyanide is an evolving process being more costly but also more efficient, hence more profitable. In response, more wealthy and powerful people can use this cyanide process to capture greater portions of gold. Subsequently, this would influence the gold and financial flows within the region and drawing these people more into criminal activities while negatively affecting the ASGM sector. But overall, there was not a direct replacement of mercury by cyanide. The increased use of cyanide increased the

criminal activities and affects the efforts of the formalization process within the ASGM sector.

Q: Has there been any study recently analyzing the legal trade for allowed uses?

A from Marcena: Not all ECOWAS states made mercury trade illegal, but the problem is that many countries do not report the trade.

A from Peter: Different countries have taken different actions. But as regulations differ and change, it is difficult to see trends.

II. **Session: Gender Mapping and Impact Assessment: Lessons from East Africa & Asia**

Moderator: Lynn Gitu, Program Leader, IMPACT

Lynn Gitu introduced the session which provided lessons from gender experts who conducted gender assessment in their East Africa and Asia operations.

Toolkit for Gender Impact Assessment in ASM

Presenter: Lynn Gitu, IMPACT

- If the formalization process is not addressing gender issues and including gender equality, it can amplify the gender inequalities making women more vulnerable.
- IMPACT recently released a toolkit for the gender impact assessment (GIA) for policy makers and project developers including 14 strategic tools.
- The GIA is based on 4 gender components: (1) the work relations between women and men within mining areas, institutions, and at home; (2) personal and family relations; (3) the perception of women based on rules and norms related to gender; (4) the access to and distribution of resources. These components look closer at the perception and roles of women within these different areas and what challenges and threads women face.
- IMPACT conducted a GIA at the project area in the Ituri province in DRC. First, data was collected on the interests of the women miners, where women leaders were selected and trained to represent the interests in front of authorities. Second, the perception of the personal and family relations was evaluated with a questionnaire. It showed that at the project site, men had a higher acceptance for female workers than in the control group. The third component aimed at an increased safety within the community by introducing peace hubs to enhance conflict mitigation. For the fourth component, the access and distribution of resources, a group within the community was formed to gather financial resources and to redistribute it across this group to all kind of professions with the possibility for new members to join.

- Gender equality interventions can vary and should be adjusted to the needs of the women. Including women and their challenges in the formalization process will make it more viable and sustainable.

Gender Mapping and Impact Assessment in Indonesia

Presenter: Ernawati Eko Hartono, Government Counterpart, Indonesia

- Women in Indonesia are excluded from the community activities, do not have access to alternative livelihoods, face violence, have low education, no access to health services, resources such as land, and finance.
- After the gender assessment, four components for an intervention were planned. The first component aims at developing gender mainstreaming guidelines in the ASGM sector. The second is developing women miners' cooperatives. The third component includes the development of a gender training and gender sensitive technology for ASGM miners for women. The fourth component is also aiming at the development of gender training and sensitive technology but for women and men.
- Lessons learned include: (1) gender assessments should look at gender mainstreaming in general, meaning that gender is not only a women's issue and that other community members (men) should be involved; (2) to maintain and secure the support from partners, it is reasonable to align with their roadmap and to let them participate; and (3) it is possible to undertake gender mainstreaming without altering the project outcomes.
- To ensure the sustainability and replicability in this project, the mining cooperatives and women group members are trained in gender concepts. Moreover, the project needs to engage with regional and national governments to build responsibilities. Finally, engaging with the youth is important as catalyst to increase the awareness on gender issues and potentials.

Lessons learned from Gender Mapping and Gender Action Plan of the Philippines

Presenter: Jacklyn-Belo Enricoso, National Gender Specialist, planetGOLD Philippines

- A gender mapping study was conducted in Sagada and Paracale with highlights on the roles of women in ASM, on the decision making and leadership of women in ASM, the challenges of women in ASM, and the recommendations of ASM stakeholders.
- In general, women in ASM are flexible, seasonal, and low paid workers who work highly informally. The study found 3 reasons why women have limited tasks in ASM: the physical limitation of women, cultural beliefs and gender norms, and the lack of safety measures for women.
- The challenges of women are: limited access to resources, poor working conditions, unpaid care work, violence against women.
- The recommendations to address the challenges are sustainable livelihoods, organizing women, safety and gender responsive measure at the mining site, formalizing ASM operations, raising awareness on violence against women, and a government program.

- The lessons learned from the gender mapping study: the visibility of women needs to be increased, the contribution of women needs to be recognized, the participation of women's participation needs to be improved by gender responsive programs.
- The Gender Action plan by pG Philippines includes seven steps: building gender capacity within the project team; closing data gaps on gender in ASM; engaging officials for gender responsive policies; building capacities for gender at a governmental level; raising awareness among stakeholders; increase awareness in the ASM sector among all miners; improving access to resources for women within the sector.

Lessons Learned from the Gender Mapping in the ASGM sector in Mongolia and the Projects Gender Action Plan

Presenter: Lkhagvadulam Jamiyandagya, Gender Specialist, planetGOLD Mongolia

- The Gender Mapping study was conducted at five project sites with the objectives to summarize of gender dynamics in the ASGM sector and to inform project activities for gender mainstreaming.
- The study showed that around 30 percent of the miners are women and that there is a predominant gender division of labor at the ASGM sites with equal pay. Moreover, women participate in the decision making and take leadership roles. Also, due to higher management skills, the miners prefer women as leaders. Another key finding was that women have a higher interest in building capacities in areas such as management and responsible mining. Nevertheless, the study also found some gaps in human rights aspects.
- Recommendations based on the study: collect gender data for evidence-based decision making; improve existing labor policies; improve gender and human rights training; establish and promote women organizations at the mining sites.
- The Gender Action plan by pG Mongolia includes the same seven steps as discussed for Philippines: Building gender capacity within the project team; closing data gaps on gender in ASM; engaging officials for gender responsive policies; building capacities for gender at a governmental level; raising awareness among stakeholders; increase awareness in the ASM sector among all miners; improving access to resources for women within the sector.
- The most important activities are the training of the gender focal points, the implementation of an active gender committee, and gender and human rights trainings.
- Lessons learned: formalization of the ASGM sector will further empower women; intersectional and operational lens on women miners might be needed; human rights are important for the formalization agenda; more action needs to be undertaken for a change; sociocultural norms are barriers for a change; a consistent application of the gender responsive approach is crucial.

Questions from the Audience:

Q: What is the perception of male miners that have old-fashioned values?

A from Jacklyn: There are male miners that keep their values, but what they can do is to conduct a gender sensitive training improving this issue.

Q: *How can the progress be sustained?*

A from Jacklyn: Engage with the government to institutionalize gender norms and gender mainstreaming.

III. **Session: Spotlight: Indonesia**

Moderated by: Tim Tear, Director of the Center for Conservation and Climate Change, Biodiversity Research Institute (BRI)

Monitoring Mercury in the Environment in Indonesia

Tim Tear, Biodiversity Research Institute

- The environmental monitoring media mentioned in the Minamata Convention are the air, the biota, and humans. In Indonesia soil and water are added.
- ASGM is the largest contributor to Indonesia's mercury emissions. Also, Indonesia has a significant contribution to the global ASGM emissions.
- Large portions of Indonesian society, either directly or indirectly related to the ASGM sector, are contaminated above the safety thresholds. Indonesia has one of the highest percentages of mercury found in human hair
- In the biotic compartment, including plants and fish, the results of the monitoring showed that they were also above the safety threshold with some being popular food sources. In the abiotic compartment the results were above the safety threshold.
- In a global context Indonesia has high mercury threat level.
- Next steps: more mercury biomonitoring; build a more comprehensive understanding out of the existing datasets to evaluate the mercury exposure across the country; standardize the mercury monitoring together with the Indonesian government.

Managing Mercury in Indonesia's ASGM

Yuyun Ismawati, Senior Advisory, Nexus3 Foundation

- In Indonesia, 190 out of 514 regencies have ASGM activities with over 1.2 million registered ASGM miners and 10 million people are estimated to be at risk.
- Mercury intoxication was found in more than 70% of adults and almost 50% of children.
- The Nexus3 project consists of four components: assist national and local action plans to phase out the mercury use; assist the national and local action plans to monitor the mercury supply and trade; develop recommendations for mercury storages for mercury waste and confiscated mercury; develop strategies and

recommendations for monitoring mercury in ASGM hotspots and for restricting the trade.

- The countries challenges are mainly connected to the regulatory framework in Indonesia, example: non-existing regulations on trade or prohibitions of trade, and to the law enforcement, e.g. not focusing on big players in the mercury market.
- The projects challenge in proposing a sustainable system for mercury and cinnabar storage are the decentralized illicit trade and imports, the illicit mining and production of mercury and cinnabar, non-existent sufficient storage infrastructures and waste treatment facilities.
- By introducing a sound storage of mercury, the contamination and exposure gets reduced increasing the safety of humans and the environment, while also assisting the national inventory and stockpile reporting
- The follow up of the project will include further mercury monitoring, focusing on the improvement of children's health and characterizing the contaminated sites.

Strategy to achieve the mercury reduction targets and the lesson learned from the pG Indonesia project

Dewi Krisnayanti, Project Manager, planetGOLD Indonesia

- At the project sites a field study showed that mercury use amounts 25kg per 1 ton ore, but less than 1 % of the mercury is released to the environment.
- An application named "Jari Emas" to monitor the mercury avoided from the project sites and ASGM sites in Indonesia has been developed.
- Lessons learned from mercury-free technologies interventions: considering the miners experience into the design process of the mercury-free technology; ensuring that female miners equally benefit from the technologies; access to finance will allow the miners to decide on the technology; formalizing the miners will increase the awareness on the technology shifting; need to ensure the local government support.
- To ensure the projects' sustainability a preparation of an establishment center of excellence to support ASGM miners applying responsible mining is planned.

Remediation of Mercury Contamination in Mining Area of Indonesia

Sunbaek Bang, KOMIR, Korea

- The KOMIR project in Indonesia includes the establishment of an analytical laboratory for mercury, a mercury contaminated site investigation and assessment, a field demonstration for mercury treatment, and a capacity building program.
- For the establishment of an analytical laboratory, KOMIR provides all the necessary equipment for a high-quality assessment.
- The preliminary survey for the investigation and assessment of mercury contaminated sites was completed in March 2022
- A concept for the treatment of the mercury contaminated soil is set, that will separate mercury and has clean treated soil as output.

- The capacity building program includes the development of guidelines on mercury contamination management, raising public awareness on the contamination, a training program on mercury contamination and management for officials, and a local workshop on mercury contamination and management.

Questions from the Audience:

Q: Can you comment on the relative costs of the 2 scenarios that got presented?

A from Yuyun: The calculations are in the final stage. But for the storage facility in Indonesia for 1000 tons of mercury, scenario 1, it will cost about 3 million USD and the operational cost will be around 450 thousand USD. The second scenario will be cheaper as it will be only a temporary storage and afterwards the waste will get exported.

IV. Session: Educating Miners Through Social Media & Other Technology Platforms

Moderator by: Malgorzata Stylo, Associate Programme Management Officer, UNEP

Delve Exchange

Presenter: Blessing Hungwe, Regional Knowledge Exchange Coordinator for Anglophone Africa, Delve Exchange

- Delve Exchange is an exchange network for miners to exchange their knowledge and expertise as well as to build a global network. It connects 720 people from 65 countries. Moreover, it is made by miners for miners and includes monthly forums for an active exchange of knowledge.
- The monthly forum takes place in 3 languages, French, English, and Spanish. It helped to improve the skills, empowerment, and leaderships of the miners.
- There are WhatsApp groups to connect the miners and to have informal discussions which also enables exchange of ideas, practices, stories, challenges, and to provide help.

Kufatilia – SMS Based Monitoring and Prevention of Mercury Use in the ASGM Sector

Presenter: Alexandre Jaillon, Researcher & GIS Manager, IPIS

- This project gathers information from mining sites to report incidents. For this the miners have to send an SMS with the word Kufatilia which triggers a survey related to the most important questions, where, how, when, etc. This supports 20 CSOs operating in eastern DRC.
- This helps documenting incidents that are linked to the production, transport, and selling of minerals in a transparent, participative, and independent way.

- More than 1,800 incidents have been reported from 2018 to January 2022.
- Follow up actions IPIS can do (all numbers are anonymously saved): introducing broadcast messages to the phone numbers from the database raising awareness on mercury; conducting phone surveys on mercury; raising awareness and providing further documentation on the use of mercury.

ARM: Online Learning Platform

Presenter: Natalia Uribe Martinez, Standards and Assurance Manager, Alliance for Responsible Mining (ARM)

- The Alliance for Responsible Mining (ARM) introduced an online learning platform to provide knowledge and guidelines on several topics, e.g. human rights, due diligence, gender equality, etc. Overall, there are 20 virtual courses available on Moodle.
- It is completely operated by ARM with the potential to build a network of ASM practitioners and knowledge multipliers (e.g. miners, organizations, governments).
- The goal is to team up with different organizations to increase the range of this platform.
- Previous and current users are ASM practitioners from Bolivia, Peru, and Colombia as well as several organizations as well as national authorities.
- There is also an ASM progress app that can collect and manage the data from the ASGM sites to monitor the positive progress.

Questions from the audience:

To All: How can you recruit miners to join?

A from Blessing: Since most of the miners have WhatsApp, it is easy to reach out to other miners. Also, they communicate with each other and spread the message. Moreover, leaders and influencers within communities mobilize people. But sharing important information incentivizes people most to join.

A from Alexandre: Kufatilia has a big network including many cooperating NGOs working actively at sites. Through this network the tool is shared. Since the data is then transferred to the NGOs again, they can deal with the incidents.

A from Natalia: Reaching out with Facebook and WhatsApp or even at the site with e.g. flyers. But online is the easiest way.

Q: Are there any possibilities for in person meetings for the Delve platform?

A from Blessing: After the pandemic it would be good to meet in person and to exchange in person. The next phase could include many more things and opportunities.

Q: Will there be any other languages for the Learning Platform?

A from Blessing: There are already three languages, but they are willed to develop more content for specific regions according to the identified needs.

Q: Is there any replication planned for Kufatilia?

A from Alexandre: They are looking to expand in DRC. But for other countries they need to build more capacities, for example in Tanzania or Uganda.

Q: Do internet connection problems occur since many miners live in remote areas?

A from Blessing: Many miners already have WhatsApp and a basic internet connection, so it is fine.

Lynda Lawson shares some last thoughts:

It is important to focus on the empowerment of ASM miners which is a challenging area. Therefore, a cooperation between all institutions and stakeholders is really important to face and tackle the challenges within this sector.

V. Session: Recovering Mercury from Tailings

Moderator: Shun-Ping Chau, US Environmental Protection Agency/ US Department of State

Recovering and Handling of Mercury from Contaminated ASGM Tailings in Colombia

Presenter: Alfonso Rodriguez, Global Mercury Strategy and Country Director, Pure Earth Colombia

This Pure Earth project in Colombia aims to:

1. Understand which mercury recovery technologies are most applicable to the Colombian context.
2. Develop a model for the responsible and profitable recovery of mercury and gold from tailings.
3. Develop and adopt recommendations for technical protocols for safe handling, storage, and disposal of recovered mercury that considers local, regional, and national contexts.

In Colombia, there are large volumes discarded contaminated tailings originated mostly from illegal mining; they were abandoned after many years of use. There are high concentrations of mercury inside the tailings, as well as high levels of gold. There is no regulation for tailings management and perceived overlapping responsibilities between the Ministry of Environment and Ministry of Mining creates confusion. Whose responsibility is it to deal with these tailings?

Tailings characterization – both chemical and mineralogical – was the first step in this process. The objective was to test the effectiveness of retention of mercury by using silver and copper plate technology in ASGM contaminated tailings at pilot scale.

From March 2020 to May 2021, three pilot test phases were conducted during which more than 100 tonnes of tailings were processed. The pilots – which combined different prototypes and techniques – produced varying results, ultimately leading to 50-80+ percent reduction of mercury. Key takeaways include:

- Use of the copper plates method always results in some level of mercury recovery.
- The effectiveness of mercury recovery from tailings can be positively affected by physical pre-treatment of the tailings, such as through a shaking table.
- The mineralogical distribution of the tailings has a low influence of the mercury recovery process using the copper plate method.
- The lifetime of copper plates is variable and requires further study.
- The age of the tailings affects the process, notably after 3+ years.

Los desafíos del Estado en la Gestión de los relaves de la Minería Artisanal

Presenter: Silvia Méndez, Environmental law attorney and legal consultant, Pure Earth

- The Colombian government has enacted various mandates related to environmental contamination, including a law banning the use of mercury in all production and industrial processes. Despite this ban, which came into full effect in 2018, many ASGM miners in Colombia continue to use it due to lack of access to alternatives.
- Principal challenges that characterize the ASGM sector in Colombia include the social and environmental impacts associated with the informal mining sector. It is a complicated social issue that is also caught up in the stigma related to the armed conflict in the country.
- One question that has not been resolved through these mandates related to the management of mercury, particularly the abandoned tailings. Which entities should intervene and who should be involved in managing these challenges? The state? Government contractors? Private entities? Collaboration between all relevant parties is indispensable, but the legal gap that exists is currently generating confusion in terms of tailings management, processing, and disposal.
- A financial mechanism for the disposal of tailings must be urgently defined; the ASGM sector in Colombia provides livelihoods opportunities for many, but the illegal financing and use of mercury permeates the sector and generates huge environmental and social harm in the country.

Questions from the Audience

Q: How do you find mercury in the soil and water?

A from Alfonso: We identify mercury with a mixture of sediments. The humidity of the sample affects the equipment, so we send part of the samples to a laboratory for testing.

Q: How do miners in Colombia feel about this copper plate method you use and are they interested in adapting it? How do we provide economic incentives to miners to reprocess the tailings?

A from Alfonso: The idea is to remove as much mercury from the tailings before using cyanide to extract the gold, as the combination of cyanide and mercury is extremely toxic. With this process, we've been able to show to miners in real time how it works, and they are very interested. Adapting this technique will also help them to get formalized more easily; demonstrating how they are managing and disposing of the tailings in this way will help them obtain recognition by the state as legitimate and formal miners, so that is a huge incentive.

Q: Have you tried gold kacha equipment?

A from Alfonso: Yes, we did. We initially tried gravimetric methods before copper plates. We are improving it and think we can increase efficiency by using gravimetric technique before using copper plates.

Q: How do you prevent people from using the plates for mercury amalgamation again? What do we do with the mercury? How do we handle mercury-contaminated water?

A from Alfonso: In Colombia, to get formalization process, the miners need to present an environmental management plan that includes tailing management strategy.

Q: Which changes in regulations must be implemented to facilitate recovery?

A from Silvia: We need regulations regarding commercialization of the gold. If we recover mercury we can dispose of it, but we don't know what to do with the gold because we need certificate of origin that has legal background/foundation. So, we need legislation to allow for recovery of mercury and provide guidance for can be done with that gold. On legal side, how do we commercialize the gold we recover and how do we store and dispose of the mercury within the Colombian legal framework and within a technologically sound way. There is still a lot of work to be done.

VI. Session: Gender Impacts and Assessments: Lessons from South America

Moderator: Diana Cabrera, planetGOLD Ecuador project, Ministry of the Environment Ecuador/UNDP

Análisis de Género en la MAPE

Presenter: Ana Maria Aranibar Jiménez, Fundadora y Socia Mayoritaria, Cumbre del Sajama

- The study was conducted for the upcoming project in Bolivia under planetGOLD+

- In Bolivia are two working groups of female miners, the ones mining for industrial mines and the independent ones, the Barraquilleras. The number of the latter ones have been growing over the past years.
- The gender assessment study conducted for the ASGM sector showed that the women of the sector are invisible, use mercury without any safety measures, are not recognized for their economical contribution, have a lack of leadership, and lack policies for women
- Four components to address these issues were identified: optimizing the ASGM project strategies by focusing on the empowerment of women and increasing their visibility; Improving the access to finance for female miners; introducing safer and cleaner technologies to prevent the use of mercury while also providing trainings and knowledge; and improving the knowledge of institutions to empower women and also building capacities.

Goldsmith Workshop in Portovelo

Presenter: Karla Alvarado, President, ASORF; Verónica Salomon, Co-founder, Martalia Jewelry

- Men dominate the mining activities in this region while women are highly underrepresented. Moreover, goldsmiths were only male, due to stereotypes and cultural beliefs, for example women are too weak and cannot work there.
- With the support of the government, they were able to create a workshop that enables miners to become goldsmiths. First there were only men, but over time more and more women joined. After a certain time, they proved the stereotypes wrong and learned all the practices of a goldsmith. Furthermore, they proved that they easily could contribute to the economy and create valuable products.
- Currently there are 12 women in the association who can make a living for themselves and their families. Also, they want to include the youth to show them future opportunities and to provide workshops.
- Veronica Salmon, from Martalia Jewelry and supporter of this association, mentions that she is proud to be a partner of this project. Historically, women were always said to be weak and to have a disadvantage and to learn domestic tasks while boys learn technical skills from their father. But this project proved those stereotypes to be wrong and that it is time to empower women. She also mentions that the business challenge now will be to create a brand and to promote the brand to make it profitable.

Women's Role in Guyana's ASGM sector

Presenter: Kazia Watson, GEF Safeguards Coordinator, Conservation International Guyana

- A gender assessment was conducted within the pG Guyana project due to the requirement of the projects' objective, but also because there was limited information and only an estimate on women miners within the ASGM sector.
- The scope of the assessment was to identify the gender roles across the value chain, to identify the constraints on opportunities for women regarding the participation and livelihood options, and to include women from indigenous villages.
- The findings of the assessment showed that men were dominating all stages across the value chain, while women were only engaged in support services (e.g. domestic labor or shop workers), marketing (retail jewelry) and as consumers, and it was difficult to find female workers at the mining site.
- The challenges identified were the financial barriers, the gender blind spots within policy frameworks, the exploitation of women, the traditional gender roles, the lack of women organizations empowering themselves, and lack of information about mercury and alternatives.
- The lessons learned include the following: training for women is essential; women miners need to be more visible; there is a need for a steering committee for women; women need to be supported to participate in suitable workshops and trainings; the gender aspect needs to be integrated into all project consultancies; tailored communication for women and men is important.
- Further recommendations: financial mechanisms that are suitable and accessible for both genders are needed; trainings on new clean technologies need to be ensured; gender sensitive projects and policies need to be implemented; women's cooperation needs to be supported.

Q and A:

Q: Any advice for young women?

A from Karla and Veronika: Never give up and continue to work hard. Also see yourself as equal. Moreover, learn how to rise and face all the challenges that come into your way. Finally, embrace yourself and break through all the stereotypes.

Q: What are the possibilities to create access to credits for women miners?

A from Ana Maria: It is important to formalize women miners to get access to financial credits. Moreover, the use of good practices needs to be supported.

Q: What are the differences in the tailored communications to women vs. men miners?

A from Kazia: The awareness raising on mercury is just focusing on men and not on women. Therefore, it is important to talk specifically to women to acknowledge the threads women face when they are exposed to mercury.

Q: What are examples of financial mechanisms that are not accessible for women and men?

A from Maria: The financial mechanisms in Bolivia are burdensome for both, especially in the mining sector due to the high risk of it. But working in the ASGM sector includes an even higher risk. Moreover, several issues occur making it even harder to gain financial access, for instance miners cannot provide collateral. Also, there is a huge gender gap since women miners do not really have access to credit. Thus, it will be important to find a financial institution that is willing to cooperate.

Q: If more women had leadership positions, would it be easier to close the gender gap?

A: Often men within the ASGM sector agree that women are good at managing, but regarding the business structure, the mining site, and technologies men still see themselves superior and stereotypes mainly prevail.

VII. Session: ASGM Impacts on Forests

Moderator: Luis Fernandez, Research Professor of Biology, Center for Amazonian Scientific Innovation at Wake Forest University

Characterizing the Impacts of ASGM on Forests

Presenter: Luis Fernandez, Wake Forest University

- To characterize the impacts of ASGM on forests, the type of mining technology needs to be analyzed. Also, the location and ecosystem need to be included in this assessment.
- To analyze the direct impacts there are several impacts to look at: deforestation, defaunation (loss of fauna), soil disruption, landscape transformation, and contamination by chemicals and heavy metals.
- The indirect impacts of ASGM on forests looks at the forest fragmentation, e.g. due to creation of transportation corridors; forest degradation, e.g. due to the mechanical damage from the transit of mining operations; and the contaminant transfer and redeposition, e.g. due to the mercury release to water.
- Key takeaways: There are high rates of direct and indirect impacts of ASGM on forests, widespread mercury contamination due to mining activities, a high soil destruction and degradation in the mining areas, and ASGM is the driver with the highest rates of soil carbon loss per hectare.

Capture of Mercury from ASGM in Amazon Forests

Presenter: Jacqueline Gerson, Watershed Biogeochemist, University of California Berkeley

- The impacts of mercury in ASGM in the Madre de Dios region in Peru was the subject of this research study. The region has around 70,000 miners and 4500 hectares per year are deforested with 80 tons of gold per year extracted and over 180 tons of mercury released.

- Gold mining drastically alters the landscape cover.
- The study tried to understand how mercury impacts and enters the forests and its ecosystems. The results showed that one of the major sources of entry are aerosols sticking to the canopies of trees. These aerosols will get washed down and enter the ecosystem or enter the ecosystem due to the litterfall. The Los Amigos site had even one of the highest reported amounts of mercury contamination due to that.
- Lessons learned: It is important to protect forests near to ASGM sites since it has major impacts on ecosystems due to the release of mercury, which will also have impacts on indigenous communities, terrestrial food webs, and ecosystem services.

Deforestation from ASGM in the Amazonas

Presenter: Matt Finer, Senior Research Specialist & Director of MAAP, Amazon Conservation

- Amazon Conservation is tracking and monitoring the deforestation of the Amazon with satellites within the MAAP project.
- Analyzing the area of La Pampa in Peru showed that gold mining rapidly degraded the area from 2017-2019. Afterwards they reported the findings, which led the government to launch a mercury operation to target the issues at La Pampa in early 2019. After one year remarkable results could be seen since no further degradation was visible.
- While La Pampa stayed unchanged other areas show a tremendous increase in deforestation, which means that miners resettled. This is called mining leakage. Also, the government then expanded its operation to aim at this leakage.
- Also, they can track even the locations of the mining technologies as well as camps, which further helps addressing this issue.

Questions from the audience

Q: Are there any cyanide treatment processes seen in the Amazon?

A: By evaluating several sites, the results showed that some sites are using cyanide.

Q: Is there a global or regional study that would provide an overview of the scale of the problem of mercury being inside primary forests?

A: Unfortunately, not, but there should be the focus on future projects that aim at this issue.

Q: Is it feasible to automate the identification of mining equipment, e.g. by using machine learning?

A: Yes, the MAAP project is the perfect opportunity to use it and to improve the identification process.

VIII. Session: Applying Principles of Free and Prior Informed Consent in the ASM Context

Moderator: Taylor Kennedy, Director of Organizational Impact and Acting Director for the Sustainable Resources Program, RESOLVE

Taylor Kennedy introduced the idea of Free and Informed Consent (FPIC). FPIC is the principle that an indigenous community has the right to give or withhold consent to proposed projects that may affect their land, natural resources, lives, and wellbeing. FPIC is intended to be a safeguard for the human rights and is recognized under international law (e.g., UNDRIP, ILO169), some local laws, and several voluntary policies.

FPIC is distinct from but may include community consultation, broad stakeholder engagement; social license to operate; grievance mechanisms; and compensation and benefit agreements. Building trust is essential to enable and establish free consent. FPIC is an ongoing process involving the development of relationship and agreements that must be maintained throughout the life of a project.

Lessons Learned on Working to Attain Free, Prior and Informed Consent (FPIC) in Sagada, Philippines

Presenter: Sarah Aviado, National Project Manager, planetGOLD Philippines

Sagada province is one of two project sites in planetGOLD Philippines. ASGM plays an essential role in poverty reduction and rural development in this area.

In the Philippines, the legal basis for FPIC is derived from the Indigenous Peoples Rights Act (IPRA). This requires the full disclosure of intent and scope of activity be shared and achieve consensus of all members of indigenous communities determined in accordance with their customary laws and practices that is free from external manipulation, interference, and coercion.

Under the planetGOLD Philippines, the project in Sagada complied with FPIC. Three community consultation sessions were held, during which a full overview of the project scope and potential impacts was provided to community members. Concerns regarding income-generating activities were raised and resolved, and ultimately the mining communities expressed their support for the project.

Lessons Learned:

- Language can be a big barrier; ensure that technical specialists who can speak the local language(s) are present to ensure full understanding of the project.
- Always listen to the community; recognizing their questions and concerns will help find proper solutions.

- Technologies developed should address both economic and environmental concerns.
- Social acceptability is more than complying with laws; projects must be genuinely received and welcomed. FPIC is key not only for starting a project, but also sustaining them.

Applying Principles of FPIC in the ASM context

Presenter: Johannes Abielie, Coordinator for the ASM mercury phase-out project in Suriname, Alliance for Responsible Mining (ARM)

For successful engagement with the Maroon communities in interior of Suriname:

- Clearly identify the topic you want to bring to their attention.
- Communicate objective of their engagement.
- Respect and apply local engagement principles.
- Give delegation space to get representative feedback. For example, one could go to the village and talk to small group, leave, and assume that the village has been consulted; however, the proper way is to explicitly solicit the participation of a wider group, otherwise you may end up with a situation where your engagement has been based on contact with small non-representative group.
- Take traditional living conditions into account (for example, going in the morning means most people are out in the fields and not home, allowing some nefarious parties to “bypass” full discussion and manipulate their way to consent.
- “Westernized” ways of communication do not work in these contexts and will have poor results/engagement.

Some principles to consider:

- Legality is different from legitimacy. Not all rights have found their way into the formal legal framework. This creates space, especially for companies, to manipulate and get “consent” without respecting the communities.
- Rightsholders are not shareholders. Shareholders in many ways are much more powerful in terms of capital in terms of resources and knowledge.
- In the communication process, the initiator should not monopolize the interaction. The gap in information should never be exploited.

Challenges

- The challenge in Suriname was mostly in the “I” – “informed.” Communities often do not understand the full, factual consequences of a technical project as they are not technical experts. Companies and governments that actually do not want true, genuine engagement can exploit this by ticking the box and moving forward. It is really important to make sure that communities are connected with sources that can provide them with enough information on the topic at hand.
- Other part that presents difficulties is the “C” – consent – as companies interpret this generously. They engage, but what if the communities do not agree? What is the legal consequence if communities say no? Often there are no harshly stipulated actions that follow if a project moves forward without community consent.

Questions from the Audience

Q: How do you encourage women's participation and integrate gender considerations?

A: Find focal points within the community to bring women into the fold for a broader range of participants and perspectives. Be explicit that you want expression of whole community, not just community leaders.

A: For gender, it is important to conduct advocacy training for women, and gender sensitivity training for all miners. Also, make sure women are included during consultations and ask them directly for their feedback during the open forum.

Q: What are the foreseen direct or indirect impacts (positive or negative) to the nearby non-mining barangays in the Philippines should the facilities be successfully built in the selected area?

A: We are strictly following the environmental standards set by the government. Measures show that if there were to be an impact, it would be treated before it is released so it will never reach those barangays. Also, as to economic impacts, it will benefit them, too. Socially, that is why we want to have support from all the barangays since they all belong to one tribe, one community, so there are benefits. Any foreseen negative environmental impacts can be mitigated and prevented.

Q: It is truly great to hear stories from the field, from Sarah and Johannes. What would be your advice to the other projects in other countries on this topic to make sure the initiatives are responsible? What could be done better?

A from Johannes: The general thing that always helps is to push for formalization. Make sure these principles are adopted by relevant government authorities. The other thing is to make people aware of the impacts of the large-scale activities. Be mindful of the tricks that companies use, and then mitigate them. For example, companies can exploit gaps in knowledge and not be 100 percent forthright or transparent. To mitigate this, one could hire an independent consultant to assess and present to communities to provide fuller picture. Also, companies often have strong ties to groups in villages, so they can make sure that those people are present but somehow limit participation from others (e.g. by holding meetings while people are out at their plots) to sway attendance.

A from Sarah: connect with the people, listen to them. After all, the project is for them, their empowerment, and their welfare. FPIC is continuous and necessary to sustain it throughout and after the project lifecycle. Genuine consent and acceptance are crucial to any project's success.

Q: Have the FPIC discussions explained to the community that miners in Sagada, members of the community, are exporting their tailings to be treated with cyanide outside of the community boundaries? Is there an ethical issue in doing so or is it

reasonable for one community to reject a technology for their community but continue to utilize that technology in another community?

A: The miners explain to non-mining neighbors that they're losing a lot because miners are bringing the tailings to another municipality. But, if they have the environment friendly processing facility in their own municipality, then they don't have to take on those transport costs and the incomes stay local. So, if they are open to the possibility to more economic benefits throughout the municipality, this is a good example of bringing the income and generating positive impacts for every barangay.

Final Reflections

Taylor: There are a number of reasons that FPIC should be on our collective radar so we can all find ways to do this better in the ASGM space. There is value in having social acceptance, even from a moral perspective – doing so out of recognition of the disadvantage ASGM miners face, as well as human rights challenges associated with the sector. From a pragmatic perspective – pushes for formalization will likely result in ASGM miners being held to same standards as LSM miners. Moving toward broader engagement can bring more opportunities for impact, and diversifying participation helps crowdsource ideas and fully understand those potential impacts.

Johannes: The use of FPIC is impact based. Seek communities' help in understanding impacts and to have a say. Most ASM activities in Suriname take place around communities themselves. So, if there are standards to hold them accountable, there would need to be a significant increase in financial and technical capacity. We should make sure that the communities are safe and benefiting from it, including the elderly and women. They need to be considered and their perspectives need to be captured via FPIC.

Sarah: FPIC is the operationalization of how we respect the rights and lives of indigenous people. This must be given time and attention. It can cause delays, but the welfare of community comes first.

IX. Session: Forest-Smart Mining

Moderator: Idriss Deffry, World Bank Group

John Drexhage, World Bank Group, began the session with comments on the goals of the World Bank Group is to help evolving countries with its ASGM sectors to be a crucial part of the global energy transition. The Climate Smart Mining (CSM) initiative is the first initiative that brings together many stakeholders such as governments, financiers, private sector to support countries in CSM. This initiative includes policy and technical advice, providing risk mitigation, supporting countries in meeting their Paris Treaty agreements, and supporting the access to finance. The goal of the CSM initiative is to achieve an environmental, sustainable, economical viable and participatory path for local communities

What are the Challenges and Opportunities for ASM in Forest-Smart Mining

Estelle Levin-Nelly, Levin Sources and Felix Hruschka, Alliance for Responsible Mining

- The presenters described a project to develop guidelines and indicators for Forest-Smart ASM mining (FS-ASM) and to design processes to include FS-ASM standards in the existing ASM standards.
- The highlights of the FS-ASM standards are: three general principles including the safeguarding of the forest ecosystems, human rights approaches, and a commitment to the mitigation hierarchy; the main focus of the standard concentrating only on forests and forest related topics; guidelines for ASM stakeholders to support the FS-ASM.
- There are 4 major areas to make FS-ASM a success: promote the standard through campaigns; pilot the standard in ASGM-related countries; support the integration into existing standards; build a coalition between adopters, users and stakeholders to maximize the impact and share lessons learned.

Panel Discussion

Hosted by Remi Pelon, World Bank Group

Louopou Lamah, Ministry of Environment Guinea

David Abiamofo, Minister of Natural Resources Suriname

Ruby Weinberg, Program Manager at Gemfair

Gustavo Fonseca, GEF

Q for David Abiamofo: What is the impact of the ASGM sector on the environment in Suriname?

Firstly, the Minister thanked the World Bank for the Forest Smart Mining initiative. He mentioned that the ASGM sector has huge impacts on the livelihood of many citizens as an income source and therefore it has a huge impact on the whole economy. But the ASGM sector has many impacts on the environment due to the deforestation, mercury contamination and hence also on the human health as well as on ecosystems. Unfortunately, there is still a massive use of mercury in Suriname and with Suriname being one of the countries with the highest forestation, the issues that come with the ASGM sector are really challenging.

Q for Louopou Lamah: What are the impacts of ASGM on the environment in Guinea?

The conditions in Guinea are really difficult since ASGM has a big impact on the society and environment due to the soil degradation, deforestation, and contamination due to mercury. This threatens the environment as well as the health of many people. However, the existing environmental activities and objectives will be beneficial for a sustainable development of this sector.

Q for Ruby Weinberg: What impact does your organization have and how can you protect the environment?

The organization is working in Sierra Leone purchasing diamonds from ASGM miners. To join this program a set of minimum standards need to be met for the miners,

especially the OECD Due Diligence. Moreover, labor and safety standards are highly important and required as well as environmental standards. Afterwards, the organization works with miners in the longer term. And to further protect the environment, the organization tried to assess how mining land can be reclaimed and how to use it further on.

Q for Gustavo Fonseca: Is there an opportunity for the GEF to invest into Forest Smart Mining?

Forest-Smart Mining is a really important topic for the GEF having a focus on several environmental issues. By financing projects, the goal is to prevent these environmental issues as well as the ones that arise from the ASGM sector. Therefore, the FSM initiative would be a good initiative to support for the future.

Q for Louopou Lamah: What kind of support does Guinea need to tackle the issues that arise from the ASGM sector?

In order to prevent the impact and support the protection of the environment, it is important to improve national regulations and standards, to assess the environmental impacts, and to introduce mechanisms to compensate the negative impacts of the ASGM sector. Moreover, it will be crucial to take forest into account while talking about the improvement of the ASGM sector. Finally, Guinea needs the support of different countries and organizations to tackle the issues.

Q for David Abiamfo: What support does Suriname need?

To reduce the negative impacts, more access to data is needed and it will be a key to build capacities in sustainable mining and to provide sustainable mining activities. Unfortunately, the sector has limited financial capacities and thus needs access to finance. Furthermore, a review of the legislation and a technological transfer is needed. To achieve this, the responsible ministries and different organizations need to cooperate to tackle the issues and to improve the ASGM sector.

Q for Ruby Weinberg: What positive contribution can you make with your work?

ASGM miners lack the funding to implement the basic standards needed. An important objective is to support miners to meet the standards that her organization sets. Also, with their program they were able to incentivize a sustainable use of the community's lands. And another important aspect is to engage with the local stakeholders to identify the needs of them and to incorporate the needs as best as possible into the program.

Q for Gustavo Fonseca: How feasible is it for GEF partners to embrace the FS-ASM standards and to mainstream it?

The GEF can incentivize the implementation of the standards in the projects as financiers of the projects. And since the World Bank has case studies from countries where GEF partners are operating it might be easier to mainstream the FS-ASM standard in those countries. Finally, using the FS-ASM standards and tools would be an ideal tool for many countries since the ministers mentioned the need for help and the desire to implement better policy guidelines.