



EXPLORING LESSONS LEARNED:

ARTISANAL AND SMALL-SCALE GOLD MINING (ASGM) EAST AFRICA REGIONAL STUDY TOUR

APRIL 17TH-21ST, 2023

Lake Victoria Goldfields, Western Kenya



PURPOSE AND STRUCTURE OF THE SLIDE DECK

This slide deck provides an overview and lessons learned from the East Africa ASGM study tour conducted in Kenya with participation from 8 countries from the region.

The materials are divided into 4 parts:

PART I MERCURY ABATEMENT & MERCURY-FREE OPERATIONS

PART II ADVANCING FORMALISATION

PART III CROSS CUTTING ISSUES

PART IV NAP IMPLEMENTATION



PURPOSE AND STRUCTURE OF THE SLIDE DECK

This slide deck provides an overview and lessons learned from the East Africa ASGM study tour conducted in Kenya with participation from 8 countries from the region.

The materials are divided into 4 parts:

PART I MERCURY ABATEMENT & MERCURY-FREE OPERATIONS

PART II ADVANCING FORMALISATION

PART III CROSS CUTTING ISSUES

PART IV NAP IMPLEMENTATION



INTRODUCTION

- The East Africa study tour was organized by UNEP in collaboration with the Centre for Environment Justice and Development (CEJAD) and EcoCentric in Western Kenya, in April 2023.
- **Objective:** Exchange experiences and share lessons learned on implementation efforts on National Action Plans (NAPs) for the ASGM sector in African countries.
- **Participating Countries:** Congo (Brazzaville), CAR, Burundi, Uganda, Kenya, Eswatini, Zambia, and Zimbabwe.
- **Format:** Workshop sessions on thematic topics combined with mine site visits in the Lake Victoria Gold Fields of Western Kenya to facilitate experiential learning.



STUDY TOUR (FIELD SCHOOL) DESIGN

Participants enriched their expertise in the ASGM sector through knowledge exchange between East African countries, combined with classroom and field visits.

Classroom training modules focused on:

- i) Mercury abatement and Hg-free ASGM operations;
- ii) Advancing formalization in African countries; and
- iii) Crosscutting issues, gender, child labour, mining into critical habitats, and mine rehabilitation/closure.





**STUDY TOUR SITE VISITS: LAKE VICTORIA GOLDFIELDS, WESTERN KENYA
GOT KABONGO (FARMERS OF GOLD) & OSIRI MATANDA (OSIRI CIRCLE)**



Photo of participants during the UNEP East Africa Regional Study Tour workshop session at Mara West Hotel in Lolgorian, Narok Kenya; 18th April 2023.

Photo Credit: Tonney Day, CEJAD

Facilitator: Edward Ndirangu, Ecocentric



PART I
MERCURY
ABATEMENT &
MERCURY-FREE
OPERATIONS

Facilitator: Edward Ndirangu
EcoCentric



WORST PRACTICES: Whole ore amalgamation

Kenya		
Worst Practice	Better Practice	Best Practice
Whole Ore Mercury Amalgamation	Mill & concentrate ore first	Mineralogy & grain size
WHOLE ORE AMALGAMATION has largely reduced with few sites still practicing this technique	Most ASGM sites have adopted the MILL & CONCENTRATE technique mostly as a result of the Lowered processing costs as a result of less Hg consumption	The system of Classifying of ore in accordance to MINERALOGY & GRAIN SIZE is minimally used in ASGM industry. This is because this system requires specialized equipment and technical knowledge;



BETTER PRACTICE: MILL & CONCENTRATE ORE FIRST

The image is from the Farmers of Gold ASGM zone in Lolgorian, Narok County. It depicts a Ball mill in use on-site and bags of milled ore ready for the concentration process. All ASGM zones come fully equipped with Ball Mills, which mill ore to fine powdery dust. Once in this form, it is easy to concentrate, using either rudimentary sluice boxes and sisal bags materials as gold catchers, or via the use of Gravity concentration Equipment.

BEST PRACTICE: MINERALOGY AND GRAIN SIZE

MINERALOGY: Use of specialized equipment such as XRF machines and assay labs to determine the mineral makeup of ores, in order to understand the best type of processing systems to apply to them. **Assay labs are now available in the Goldfields of Kenya, Uganda, and Tanzania.**

GRAIN SIZE: Spiral classifiers and other types of equipment to separate ore according to grain size. Watch the YouTube video on the process [HERE](#).

IMAGE: XRF Machine for Ore Testing

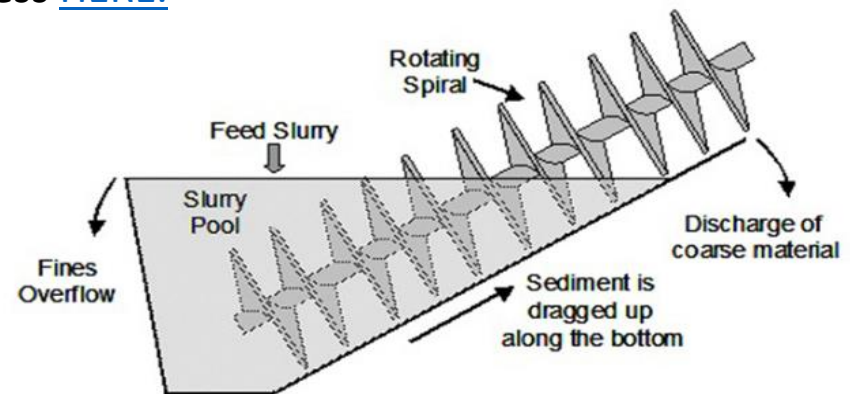


IMAGE: **A Spiral classifier** used to separate grain sizes in both ore and tailings. Such Technology can be **found in Tanzania** processing sites due to advanced knowledge in Gold mining.

These Best Practices are concise and use minimal chemical inputs. The downside is that such a process requires specialized equipment & knowledge which are NOT common in ASGM zones.

WORST PRACTICES: Open burning of amalgam

Kenya		
Worst Practice	Better Practice	Best Practice
Open Burning	Vapor Capture Tools	Mercury-free Concentration Techniques
<p>OPEN BURNING is still prevalent in many ASGM areas, with this activity being still more commonly used than the prescribed better practice of Vapor capture tools.</p>	<p>Mercury retorts and other mercury VAPOR CAPTURE TOOLS are available in Kenya, however their use is less common than open burning. During the STUDY TOUR, most ASGM sites visited did not showcase the use of vapor capture retort.</p>	<p>For CONCENTRATION TECHNIQUES systems to be common-place in Kenya, intervention from the Government or advanced Multi-lateral campaigns such as PlanetGOLD is required. The objective would be the establishment of a mercury-free pilot project within an ASGM zone.</p>



IMAGES: Mercury amalgam - burning on a stove – the result is sponge gold

WORST PRACTICE: OPEN BURNING

The worst practice of OPEN BURNING is still quite prevalent in the ASGM zones. Although we did learn of mercury amalgam refiners who use vapor capture tools such as mercury retorts, however we did not see any of them in action.



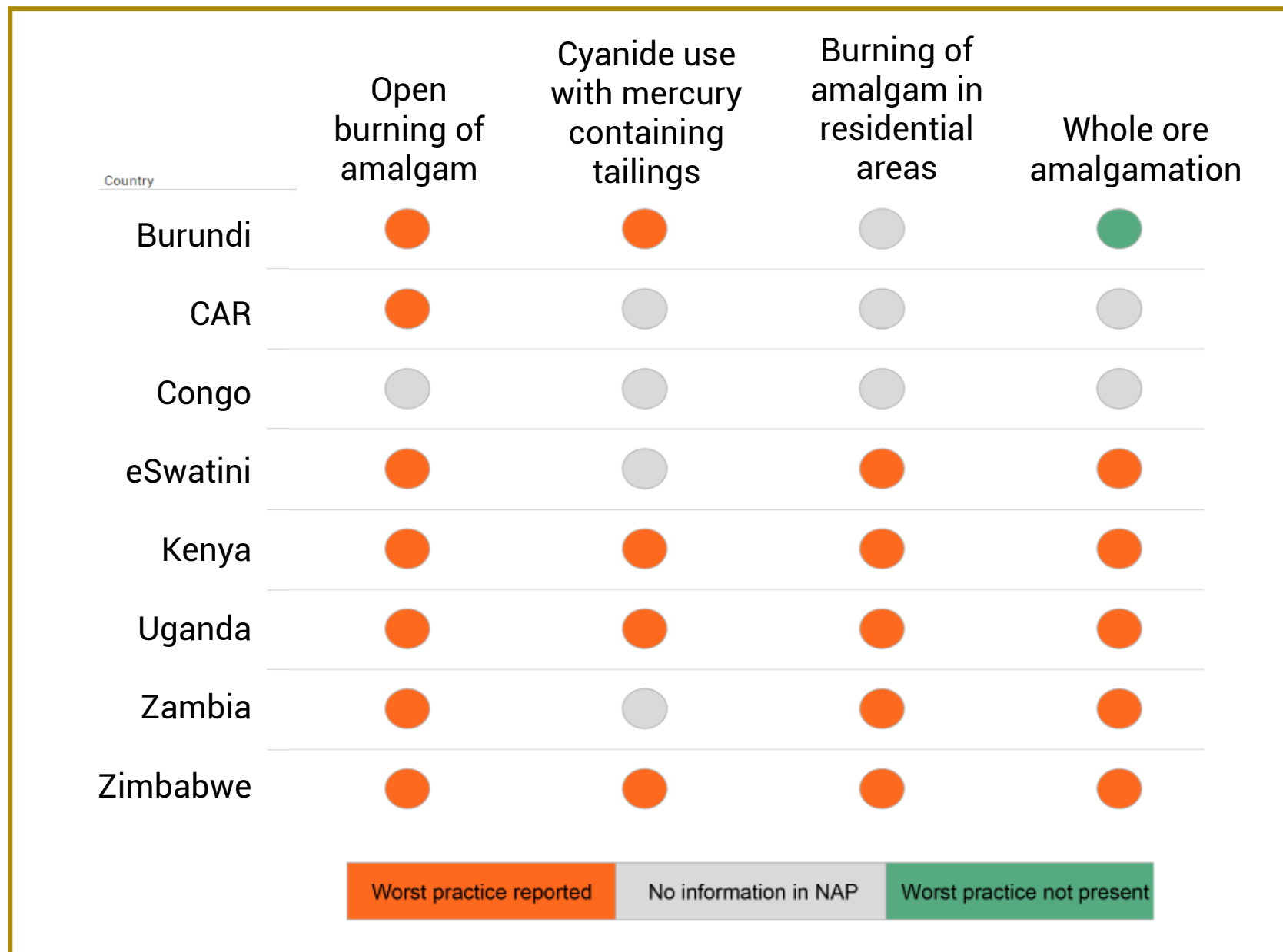
BETTER PRACTICE: BURNING IN DESIGNATED AREAS

All Mining communities visited had designated ASGM zones, where all ASGM-related activities took place. These include mining, ore crushing, ore milling, ore washing with mercury, **burning of gold-mercury amalgam**, and Cyanide Leaching.

WORST PRACTICES: Cyanide and mercury

Kenya		
Worst Practice	Better Practice	Best Practice
Cyanide use with mercury containing tailings	Remove mercury before cyanidation	Direct Chemical Leaching of ore
<p>Unfortunately, the CYANIDE leaching of MERCURY, contaminated tailings is still quite a prevalent practice. The 2 biggest inhibitors to preventing this practice are: 1) the monetary value of Hg tailings; 2) the lack of know-how on the rehabilitation of Hg contaminated tailings</p>	<p>In the ASGM zones visited, there are no locally known ways to REMOVE MERCURY from tailings prior to CYANIDATION. The most effective method currently in use is to separate mercury contaminated tailings from other type of tailings.</p>	<p>The DIRECT CHEMICAL LEACHING OF ORE is somewhat popular in the ASGM zones. Leaching plants are buying ore directly from miners, milling it and leaching it as is. In some instances, the free gold is extracted using gravity concentrators, but leaching is more prevalent.</p>

PRESENCE OF WORST PRACTICES based on the 8 countries NAPs



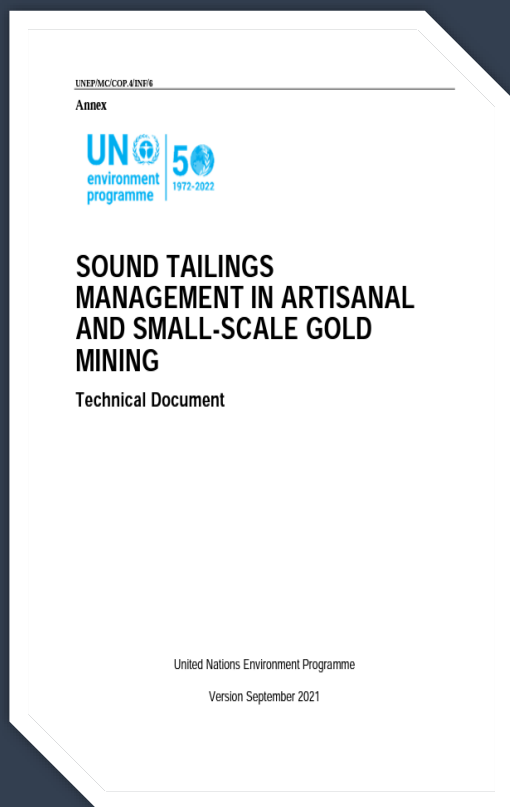
WORST PRACTICE: TAILINGS

All of the ASGM Tailings in both Migori & Narok are purchased by Leaching plant operators. The tailings are tested to evaluate Gold PPM to ascertain their value and then are directly taken for cyanide leaching. Unfortunately, most **plant operators purchase both mercury contaminated tailings and non-contaminated, mix them and then leach.**





GLOBAL
MERCURY
PARTNERSHIP



To further guide the Parties in their efforts to soundly manage ASGM tailings, UNEP in collaboration with the Minamata Secretariat and Global Mercury Partnership developed a **technical document**, highlighting best practices for ASGM tailings management

Available at:

<https://www.mercuryconvention.org/en/documents/guidance-document-management-artisanal-and-small-scale-gold-mining-tailings>

CASE STUDY Kenya MIGORI & NAROK



STEPS TO IMPROVE TAILINGS MANAGEMENT

1. Avoid generating large volumes of mercury-contaminated tailings

Many leaching plants today purchase virgin ore directly from the shaft miners and directly take the ore for cyanide leaching. This by-passes the mercury washing process, reducing on mercury-contaminated tailings

2. Separate mercury-contaminated tailings from other types of tailings

ASGM communities are taking steps to separate tailings at the source. However, this effort can only be sustainable if the tailings offtakers/plant operators also maintain the separation of tailings piles and do not mix Hg contaminated with others

CASE STUDY Kenya MIGORI & NAROK



STEPS TO IMPROVE TAILINGS MANAGEMENT

3. Ecological Restoration project

ASGM communities in Migori have taken a step further and actively established; i) a seedling restoration project that entails use of phytoremediation plants species that extract heavy metals from soil; and ii) rehabilitation of land previous used in ASGM activities such as Mirema Forest.

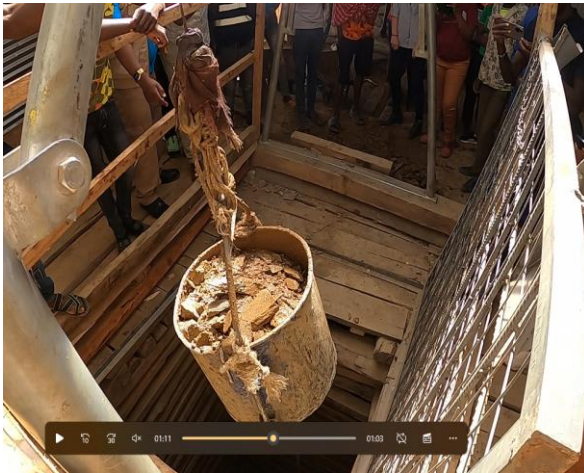
4. ASM Formalization:

The formalization of ASM communities allows for:

- Dissemination of educational material
- Define responsibility for activities such as tailings management
- Facilitate collaborative approaches to solutions and financial mechanisms

BEST PRACTICE: DIRECT CHEMICAL LEACHING OF ORE

The below setup found in some **ASGM** zones shows the best practice of **DIRECT CHEMICAL LEACHING OF ORE**. Other setups also include an extra step in the process, where free gold from milled ore is extracted via gravity concentration techniques. Concentrate obtained from gravity techniques can undergo **DIRECT SMELTING**, which is classified as better practice.



Left to right

Image 1: Ore Extraction from mine shaft

Image 2: Ball mill crushes ore to fine powder ready for leaching

Image 3: A Leaching tank full of ore sludge undergoing cyanidation

WORST PRACTICES LESSONS LEARNED

- There have been **major shifts away from worst practices.**
- In cases where the shift to better and best practices requires the introduction of complex equipment and technical know-how, the **transition can be slow** and in some cases none existent;
- For example, the mechanical removal of mercury from tailings requires a complex system; **So far none of the ASGM sites visited in Knya had such solutions in place.**
- Gravity concentrators also had certain barriers to entry. This is due to the **technical expertise required to set them up and maintain them.**
- **Leaching plants showed the highest levels of success.** Even with their high capital requirements, their low technical input and economic benefits, make them very prevalent in ASGM zones.





BEST PRACTICE

Gravity separation technology - Farmers of Gold Narok

Farmers of the Gold ASGM community, have installed a **shaker-table**, capable of 4 - 5 tons per hour. The table operated for a while, but it has recently been out of commission due to **missing spare parts and the lack of local technical know-how on table maintenance**. This has forced the ASGM community to revert to old ways of ore processing ore, including the use of mercury.



Wet Milling Technology, Antelope Mining - Migori

The Wet Pan Mill is an ancient design that has been used for milling different inputs including wheat, seeds, and mineral ore for several centuries. In this installation, **the wet mill crushes virgin ore into fine particles, which are then carried as a slurry to a collection pond.** This system creates a continuous ore production system, that reduces air and noise pollution due to its water-based system.



Cyanide leaching - asgm zones Narok & Migori

A majority of the Leaching plants in the Narok and Migori area are Carbon in Leach (CIL) style leaching plants. They all use Cyanide leaching and the majority process tailings from the ASGM communities. This means that in many cases, **they are Leaching mercury-contaminated tailings, which is regarded as the worst practice.** However recently, more virgin ore is finding its way to these plants.

CASE STUDY GOING MERCURY-FREE & CYANIDE FREE





GOING MERCURY-FREE & CYANIDE FREE

Mr. William Bobo & The History of Antelope Mining

Mr. William Bobo is a small-scale Gold miner with over 30 years of experience as an artisanal and small-scale miner.

He was employed as a civil servant in the Kenyan government for most of his professional career. He retired approximately 25 years ago, and post-retirement, he went into mining full-time.

Mr. Bobo was never satisfied with the rudimentary type of mining and processing, especially systems that were high risk both from a health & safety and Environmental perspective.

Mr. Bobo today runs a Gold mine & Processing facility called Antelope Gold Mining. **Mr. Bobo claims the entire system is mercury-free.**



MERCURY- FREE EQUIPMENT FOUND AT ANTELOPE GOLD MINING SITE

Approximately 20 years ago, Mr. Bobo is credited for bringing the Tanzania **dry ball mill** (above pictured) into the Migori area. This equipment changed the processing landscape in Migori, by **increasing the efficiency of free gold extraction.**

The Tanzania dry ball mill today is a mainstay piece of equipment at almost all processing facilities across Migori. It is also locally fabricated and manufactured, with many improvements made toward load capacity and engine power inputs, with options for both diesel and electric-powered motors available.

MERCURY- FREE EQUIPMENT FOUND AT ANTELOPE GOLD MINING SITE



Power supply

Antelope Gold Mining has a **diesel generator** capable of producing enough electricity to power many types of equipment at the Gold mining site. These types of equipment include crushers, milling equipment, winches, site lighting, and power tools.

Extraction

Antelope Gold Mining has a deep shaft of more than 100ft depth, This shaft is driven by a motorized winch that is capable of hauling 1 ton of ore per bucket. A large majority of average mine shafts in the ASGM sector in Migori are manually powered. However recently, motorized winches have become commonplace.

MERCURY- FREE EQUIPMENT FOUND AT ANTELOPE GOLD MINING SITE



Crushing

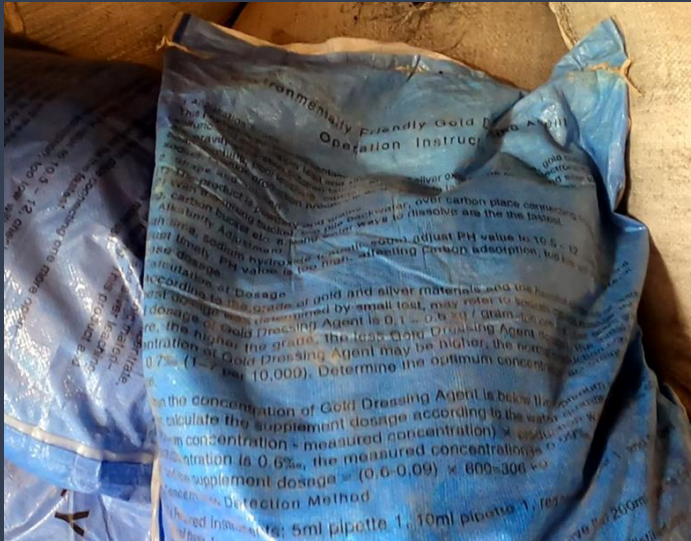
Antelope Gold Mining has a high-capacity **Jaw Crusher** capable of crushing up to 10 tons of rock per 12-hour day. The facility crushes rocks for other ASGM miners in the vicinity **for a fee**. This has helped make processing activities more efficient for the ASGM community in the area.



Milling

Antelope Gold Mining also has a Pan Wet Mill processing plant. This piece of equipment cost Mr. Bobo approx. \$9,000 to purchase and install. It has a capacity of 5 tons per 12-hour day and is a highly efficient technology, well adapted for the area.

MERCURY- FREE EQUIPMENT FOUND AT ANTELOPE GOLD MINING SITE



Leaching

Mr. Bobo and Antelope Gold Mining have successfully achieved a mercury-free Gold production value chain. Their next quest is to go Cyanide Free.

The site has invested in Gold Dressing Agent (GDA) as a substitute for Cyanide. GDA is a chemical developed by Chinese engineers that is claimed to be more environmentally friendly than Cyanide.

GDA is also much cheaper in Kenya. A 50kg bag of GDA costs 14,000 Kenya Shillings, compared to a 50L drum of cyanide that goes for 30,000 Kenya shillings.

Antelope Gold mining **has been using GDA** for several months and Mr. Bobo claims that the Gold production is more or less the same. However, the savings realized due to price difference and the environmental benefits outweigh Cyanide use.



CASE STUDY

Field Experiment on GDA: Youth Mining Leadership

An organization called **Gifted Farm Enterprises** in conjunction with Artisanal Mining Advocates based in Migori, conducted a GDA vs Sodium Cyanide (CN) experiment

They sourced virgin ore from an ASGM shaft in the Migori area and set up an experiment facility complete with leaching facilities and undertook baseline tests;

After the experiment, the team found that

- **Sodium Cyanide has a slightly higher recovery rate than GDA** (difference of 5%)
- GDA makes use of a chemical, Sodium Cyanurate, that under certain conditions, **can turn into sodium cyanide**
- **Recommend that the same precautions** used with CN are applied to GDA

NOTE: These experiments are carried out by members of an ASGM community in Migori. Their test results are neither been verified by a certified laboratory nor have they been peer-reviewed.

A woman wearing a vibrant pink dress and a blue headscarf with a white and red pattern is kneeling outdoors. She is smiling and looking to her right while washing clothes in a large metal tub. The background is filled with lush green foliage and trees. A semi-transparent white box with a yellow border is overlaid on the left side of the image, containing text.

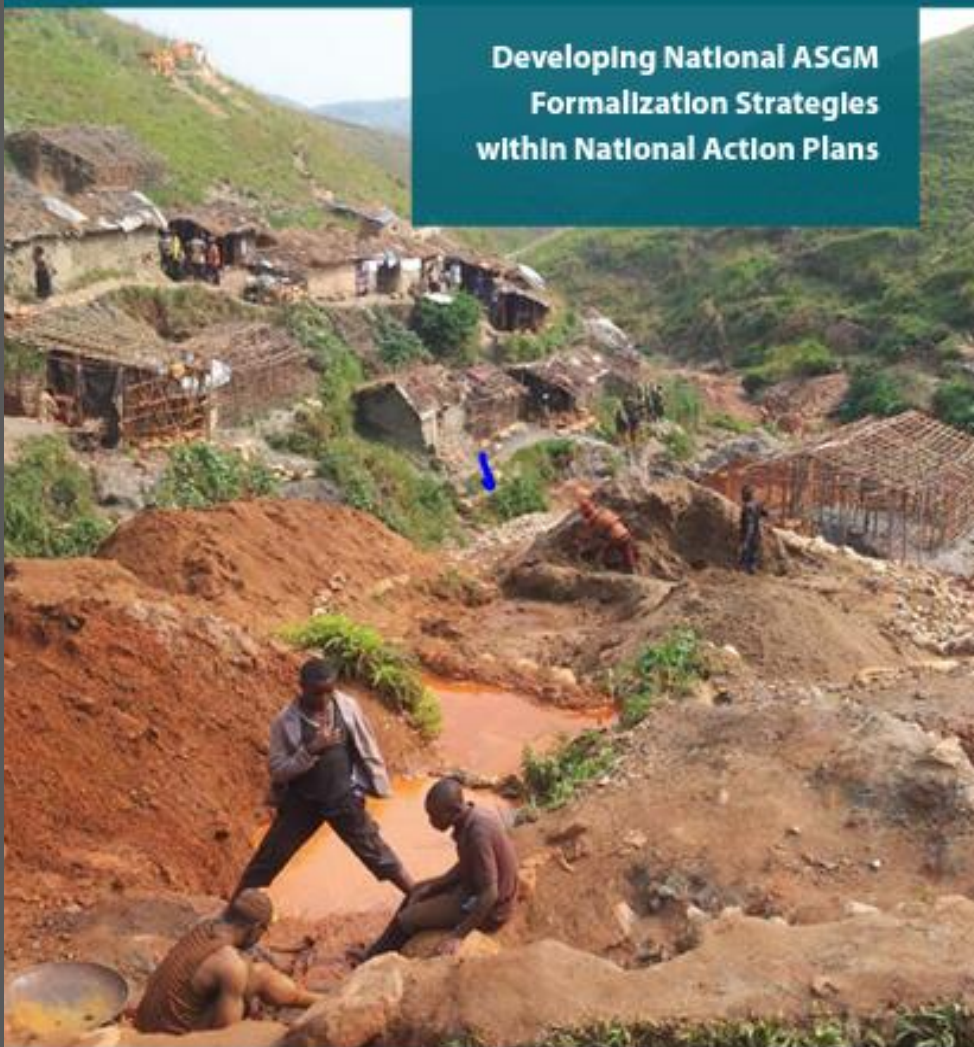
PART II

ADVANCING FORMALISATION

Facilitator: Fredrick Otieno
Centre for Environment Justice & Development (CEJAD)

HANDBOOK

Developing National ASGM
Formalization Strategies
within National Action Plans



SESSION OBJECTIVES

- Exchange and learn about formal and informal governance structures and their roles in advancing formalization.
- Learn and exchange on best approach to improve laws/regulations and streamline the formalization processes in the ASGM sector.
- Compare key issues between jurisdictions and identify barriers to formalization.



LEGAL ISSUES

Most ASGM operates on a continuum between informal and quasi-formal, or partially compliant with existing laws.

Degree of formality/informality determined by

- Progressive nature of laws (and legal definition of ASGM);
- Perceived benefits of formalization; and
- Ease of post-formalization compliance.



KEY OBSERVATIONS

In East Africa, many decentralized structures for formalization conflict with national mandates with limited clarity on legal definition of ASM that don't reflect existing practice or reality on the ground.

- The legal definitions vary widely between countries and can be a barrier to legal compliance and enforcement.

“Our Artisanal Mining Committee was gazetted in 2021 but has not been able to operate because of a lack of funds. Not even a single permit has been issued to miners.”

Bismark, a representative of the Artisanal and Small-Scale Association of Kenya lamented during the classroom session.



UGANDA CASE STUDY

Uganda attempted to provide clear and comprehensive criteria for defining artisanal mining. This has the possibility of reducing conflicts, enhancing formalization, and improving compliance for miners and their entities

In Uganda, artisanal mining is defined to be characterized by the following:

- (i) Activities are continuous or seasonal;
- (ii) Carried out by individuals or groups of individuals; primarily and exclusively using manual labor and manual tools;
- (iii) Carried out at a single site or multiple sites; and
- (iv) Focused on producing mineral products that are primarily delivered or sold **to traders in those mineral products; local artists and craftsmen; or builders acting within the national economy.**



REPRESENTATIVE MINING ENTITIES (MEs)

Kenya's Experience

- Mobilization and registration of miners are mainly supported by civil society and donors, therefore speed and effectiveness are mainly affected by the flow of development funds.
- Miners recognize the need for self-organization and collective bargaining rights. In Kenya, local, county, and regional associations have emerged to enhance self-regulation and improve their capacity to lobby the government.
- Capacity within the leadership of the miner organization needs to be enhanced for governance and accountability to be sustainable.

TECHNICAL & FINANCIAL BARRIERS TO FORMALISATION: ACROSS PARTICIPATING COUNTRIES

- Most mining departments are underfunded on matters of ASGM- a challenge in executing their mandates.
- In countries where mining departments were well facilitated, the process of formalization was fast-tracked.
- In most countries, exploration and mining concessions are granted to Large-scale Mining (LSM) companies. This has left room for potential conflicts between ASGM and Large-scale Scale Operators (LSOs).

In Kenya, the State Department of Mining is required by the Mining Act 2016 to facilitate the registration of miners into cooperatives and support operations of Artisanal Mining Committees (AMCs). The AMCs are mandated to vet and review applications and recommend the issuance of artisanal permits for ASGM.

However, due to the lack of a dedicated budget, gazetted AMCs have not been able to discharge their mandate.

Aron Kecha, CEJAD

OPERATIONAL BARRIERS

- In Kenya, slow processes of miners organizing into cooperatives due to administration requirements and by-laws.
- Most registration is facilitated by donors and other CSOs, thus dependent on the availability of funding.
- Most African countries have yet to gazette exclusive areas for ASM or developed a zoning strategy for coexistence between larger-scale miners and ASM operators.
- Informality affects operations through limited access to equipment, finance, and training, reducing capacity to improve legal, environmental, health, and safety compliance.





- In Narok County, **Farmers of Gold**, is an example of the first self-help group which has successfully implemented an identification card system for > 4000 members consisting of smaller informal groups of miners.
- In Migori, the **Migori County Mining Association (MICMA)** acts as an umbrella representing 22 self-help and welfare groups, cooperatives and Savings and Credit Circle Organizations (SACCOS).



ARTISANAL VS. SMALL-SCALE

*“If you go to the ground and see how we are working, then you realize that we do not have artisanal miners in Kenya. We do not use traditional tools. We are using machines. **We want the definition reviewed to reflect who we are.**” We are artisanal and small-scale miners.*

Simon Jaramba

Chairman, Farmers of Gold
Lolgorian, Narok County



SUMMARY OF KEY RECOMMENDATIONS:


Legal

- **Laws:** Provide legal clarity on the definition of ASM distinction between Artisanal and Small scale operations.
- **Provide a legal window for overlapping mineral rights in the law:** This will provide for an agreed zoning strategy that allows for co-existence between large, small-scale, and artisanal miners based on agreed terms. *This could be made possible by considering the depth as a criterion for classifying mining operations as in the case of Uganda.*
- **Zoning of ASM areas:** Countries should intensify efforts to allocate/zone areas for artisanal mining to fast-track applications for permits by artisanal miners, and encourage them to formalize.

SUMMARY OF KEY INTERVENTIONS

Operational

- **Increase support to state mining institutions:** Governments should increase budget allocation to the institutions in charge of mining and dedicated budget provided to support formalization.
- **Support and strengthen mining entities (MEs):** Strengthening mining entities (i.e., strengthening the governance structure, supporting the development of strategic documents, and sensitization on legal frameworks and record keeping.
- **Sensitize and train miners:** This should include awareness of legal frameworks governing the sector, benefits of formalization, rehabilitation, worst practices using mercury, and health and environmental impacts of mercury use among others.
- **Linkages with other sectors:** Equipment leasing or manufacturing companies, financial institutions, and markets should be included.
- **Miner exchange programs:** Miner exchange programs are needed to enhance experience sharing and learning on best practices for formalization and gold recovery practices among others.



“Formalisation works best where it is miner driven and supported by progressive government laws and support.”

“Formalisation must bring tangible value to miners.”

“As miners, we are very ready to work with the government to formalize the sector. However, we feel that the government of Kenya is not doing enough. We lack areas to work on because they are under license by large mining companies.”

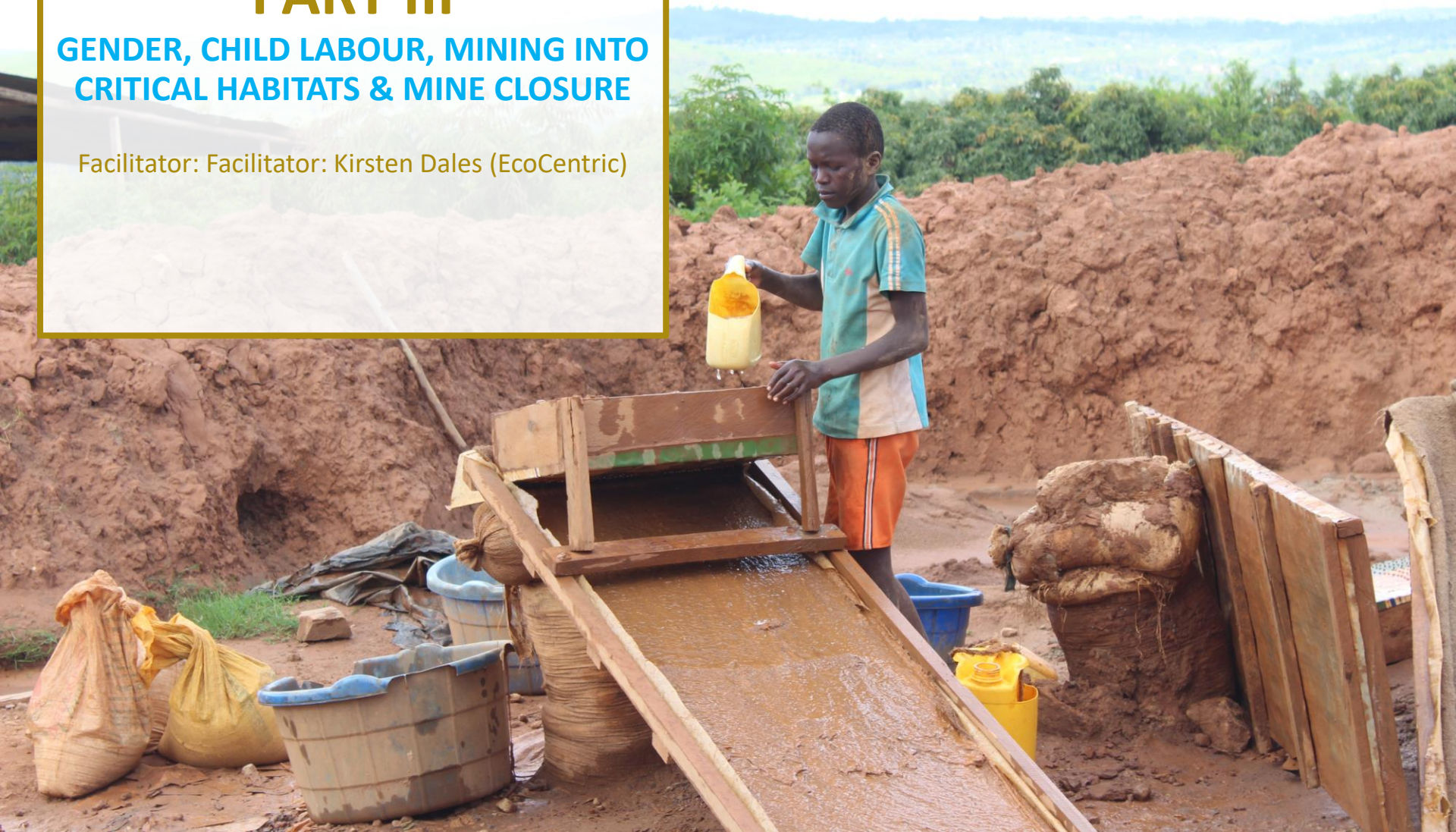
Kephers Ojuka

Chairperson of Migori County Miners Association (MICMA)

PART III

GENDER, CHILD LABOUR, MINING INTO CRITICAL HABITATS & MINE CLOSURE

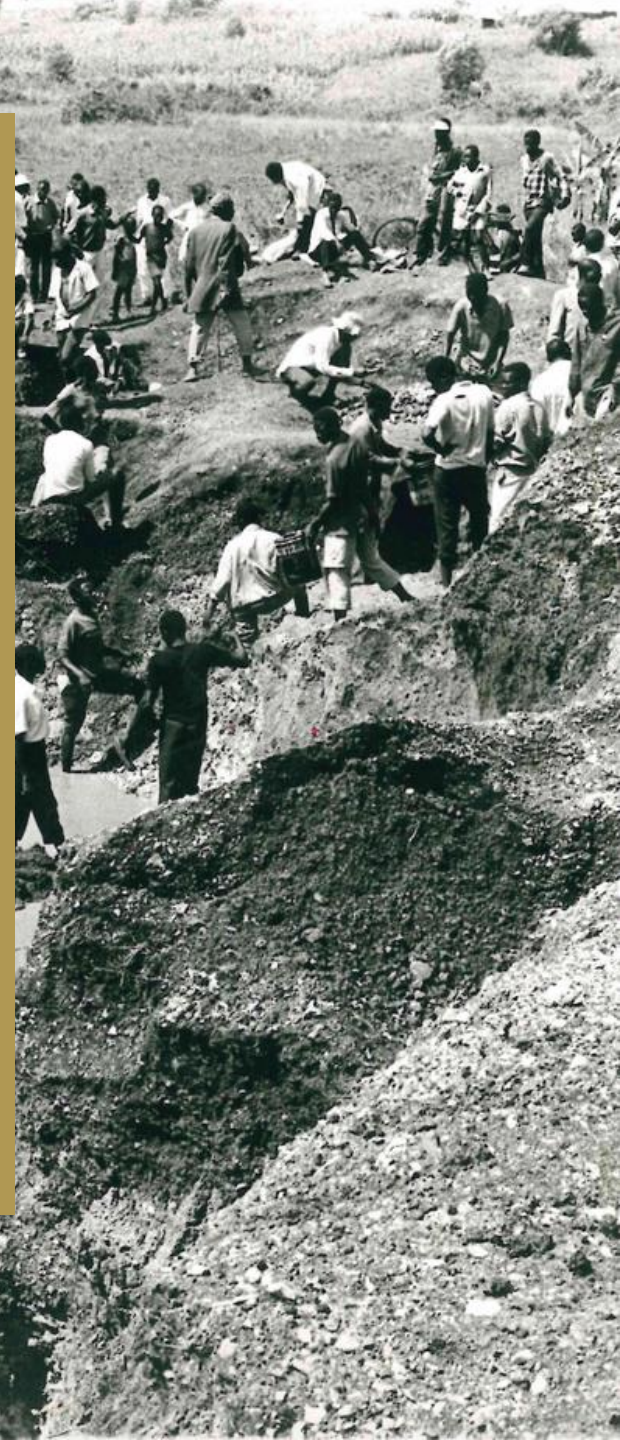
Facilitator: Facilitator: Kirsten Dales (EcoCentric)



GENDER

Gender is an essential cross-cutting theme. Time and resources must be invested in understanding the Gender Division of Labour (GDOL) between women and men in the ASGM sector and roles in their communities to inform NAP intervention strategies.

Gender norms can change and require updated information to support evidence-based decision-making. Gender analysis is necessary for all NAP on ASGM updates.



ROLES OF WOMEN IN ASGM

In Africa, women average between 30-40% of the primary mining workforce depending upon the local circumstances and are changing in East Africa.

Gender roles are dynamic and
Require gender analysis.





EMPOWERMENT & INCLUSION

Savings and Credit Circle Organizations (SACCOS) or table banking groups in Eastern Africa offer an opportunity for women's empowerment through financial inclusion in Kenya.

Study tour explored lessons learned by MOKA (Mikei, Osiri, Kabobo villages) in Migori County as a successful SACCO case.



CHILD LABOUR

Child Labour in the ASGM sector is a cross-cutting issue in all Sub-Saharan African countries with higher rates in West Africa vs. East Africa.

Most NAPs on ASGM in East Africa have targets to eliminate child labour. Tackling the issue requires site-specific approaches such as the design of '**Child Labour Free Zones**' for ASGM communities and village '**Child Labour Committees**'.

CHILD-LABOR-FREE ZONES: CASE STUDY OF OSIRI, KENYA

In Osiri Matanda (Migori County), the Osiri Circle, has reduced the worst forms of child labour by banning anyone under 18 from entering underground mine shafts through a 'Child Labour Free Zone' approach.

Shaft owners and mine pit bosses have been critical stakeholders in overseeing and enforcing these child labour prevention measures and encouraging parents to keep children out of Osiri mine sites.

Actions taken by the Osiri Circle are self-regulated through regular shaft spot checks and fines to shaft owners.



CASE OF OSIRI: CHILD-LABOR-FREE ZONES

- Child Labour-Free Zones (area-based approaches) have been in place since 2018/19 in Osiri ASGM community.
- The Osiri Circle developed a multi-pronged approach by addressing the root causes of child labour, tackling:
 - Poverty (Financial assistance and literacy training)
 - Lack of housing (Built dwellings homeless families)
 - Lack of school (Built primary school in Osiri)
 - Lack of rules/enforcement (Child Labour Committee)



BIODIVERSITY

ASGM has significant impacts on biodiversity. Study tour evidence revealed disconnects between regulatory requirements for Environment Impact Assessments (EIAs), as miners rarely have the funds or capacity to reclaim degraded lands, forests and inland waterways.

Mining into critical habitats and protected areas drives biodiversity loss through habitat degradation, fragmentation, invasive species encroachment, pollution and diminished resilience to climate change.

MINING INTO MAASAI MARA

The Greater Maasai Mara Ecosystem is an iconic natural and cultural landscape of but is threatened by medium and small-scale gold mining in regions of Western Kenya and Tanzania

Human-wildlife conflict in Lolgorian, Narok County – an ASGM hot-spot - is an emerging conversation issue requiring action on pollution prevention and mine rehabilitation to avoid harm.



MINING AND BIODIVERSITY

Mining affects biodiversity at multiple spatial scales (site, landscape, regional and global) through direct (i.e. mining, blasting, digging) and indirect processes (via influxes of industries supporting mining operations, and external stakeholders who access to biodiversity-rich areas in search of gold.

Impacts and mitigation measures should be included in NAP on ASGM updates.

MINE CLOSURE

Miners have historically focused on one thing, mining. Mine closure and post-mining land use transitions have become critical in East and Central Africa.

Guidance on mine closure for the ASGM sector is lacking, but must be practical, concrete and resource-efficient.

NAPs require updates on biodiversity mainstreaming and clear guidance for miners to support mine closure domains (remediation, reclamation, rehabilitation, ...toward ecological restoration).



COMMUNITY ACTION: NYATIKE-MIREMA FOREST REHABILITATION

In Osiri Matanda (Nyatike-Sub-County), the Mirema Forest was heavily deforested due to harvest for charcoal and expansion of the ASGM sector to access gold deposits and support underground shaft infrastructure in the 1980s and 1990s, accelerating until 2018.

The Nyatike-Mirema Community Forest Association (NYACOF) registered in 2018 brought together community members from all villages adjacent to different blocks making up the forest.

As the majority of residents (average 61%) reside in ASGM areas of Macalder and Osiri adjacent to deforested areas, local have been empowered through skills development in **Assisted Natural Regeneration Techniques.**

MIREMA FOREST, MIGORI KENYA

Five years ago, the 810-hectare (2,000-acre) Nyatike-Mirema Forest in Migori County, Kenya was heavily degraded.

Today, thanks to the NYACOFA, County Government and Kenya Forest Service (KFS), Kenya Forest Research Institute (KEFRI), World Vision and ICRAF the area is now a lush, green and intact forest delivering key ecosystem services that feed the Kuja and Migori River, both major tributaries of Lake Victoria.



PART IV
ASGM NATIONAL
ACTION PLAN
IMPLEMENTATION:

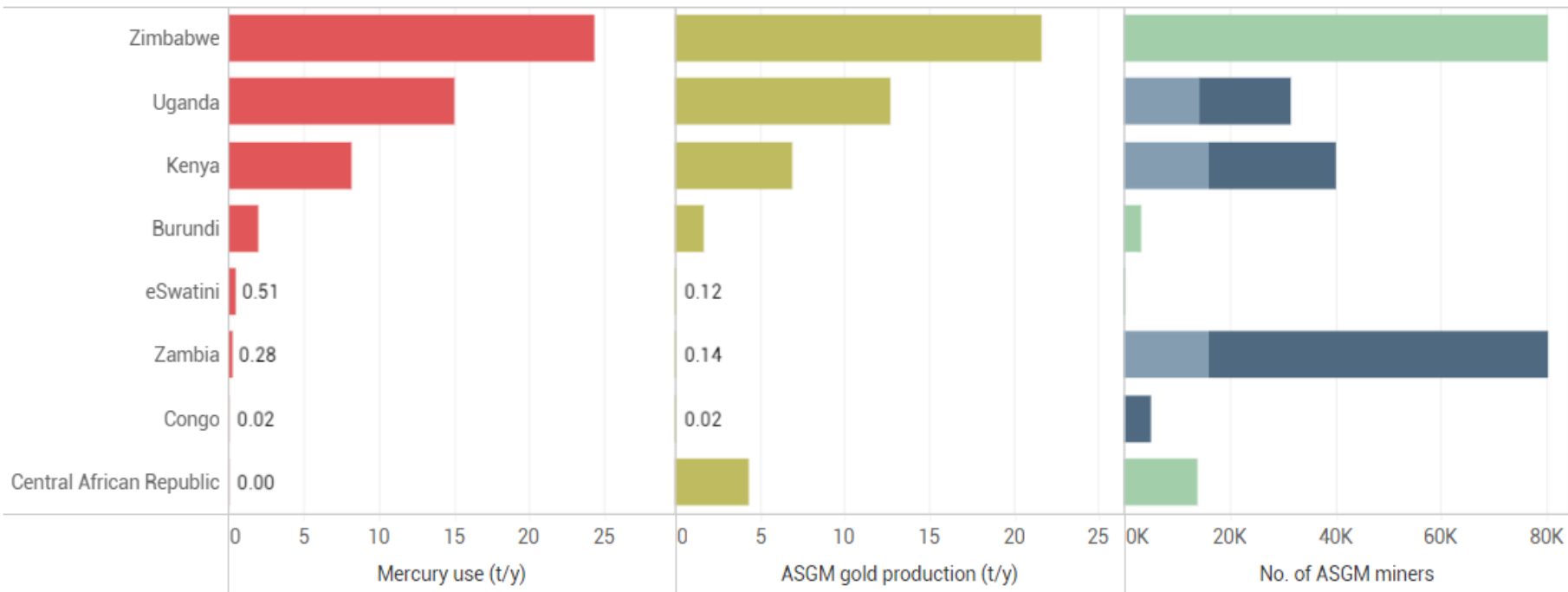
REFLECTIONS FROM
THE COUNTRIES

Facilitator: UNEP & CEJAD





KEY BASELINE NAP DATA based on the 8 countries NAPs





Progress of NAP Implementation

- Countries with NAPs have **achieved some progress** in implementation. This has mainly included elements of awareness creation, formalization, and piloting of best practices. Zimbabwe has undertaken a pilot project on mine site rehabilitation.
- Kenya is **implementing the NAP through the PlanetGold project**. Congo, Uganda, Zambia, and Zimbabwe also hope to leverage on PlanetGold projects to enhance NAP implementation.
- Uganda has attempted to **pilot various best practices** in the ASGM sector. Shaker tables, borax, gold catchers, and direct smelting have been piloted in three districts namely, Busia, Kassanda, and Amdati. Kenya is also in the process of piloting mercury-free technologies.
- Other countries like Burundi, Eswatini, and Congo are **yet to start NAP implementation**



Challenges in NAP implementation 1/2

- **Inadequate coordination mechanisms between the environment and mining ministries** as well as with other relevant sectors. In some countries, the mining ministry was not involved in NAP development and is thus not actively involved in implementation.
- Some countries lack specific legislation and guidelines for the ASGM sector – a **challenge in compliance & enforcement.**
- Published materials are **not popularized or disseminated in local languages** thus affecting awareness creation efforts.
- **High cost** of mercury-free-gold recovery technologies has limited accessibility and adoption by miners.

Challenges in NAP implementation 2/2

- **Budgetary limitations** among government agencies charged with developing the ASGM sector.
- **Weak involvement of large-scale mining operators** in the management of the ASGM sector.
- Inadequate **institutional capacity** particularly with regard to ensuring compliance and enforcement as well as managing the risks posed by mercury.





Identified gaps

- Most NAPs lack strategies for **managing mercury-contaminated tailings**.
- The NAPs did not adequately address elements of **mine rehabilitation** and closure.
- Most NAPs have not provided exhaustive measures to address issues of **biodiversity loss or mining into critical habitat**.
- **NAP Revision** are needed to update missing sections and provide update on the baseline situation and progress in implementation.

Identified priorities

- **NAPs** on ASGM are living documents and require **periodic updates**
- Uganda and Kenya requested support to update their NAPs.
- **Review of NAPs to include elements:** of tailings management, mine rehabilitation and conservation of biodiversity in line with the post 2020 global biodiversity framework.
- Dissemination and popularization of newly developed NAPs.
- **Promotion of best practices** such as piloting of mercury-free technologies, fast-track formalization, and enhance access to financing for the ASGM sector.
- Need for exchange programs/workshops **for countries and miners** to learn and share best practices.





Prepared by CEJAD and EcoCentric in consultations with UNEP
August 2023