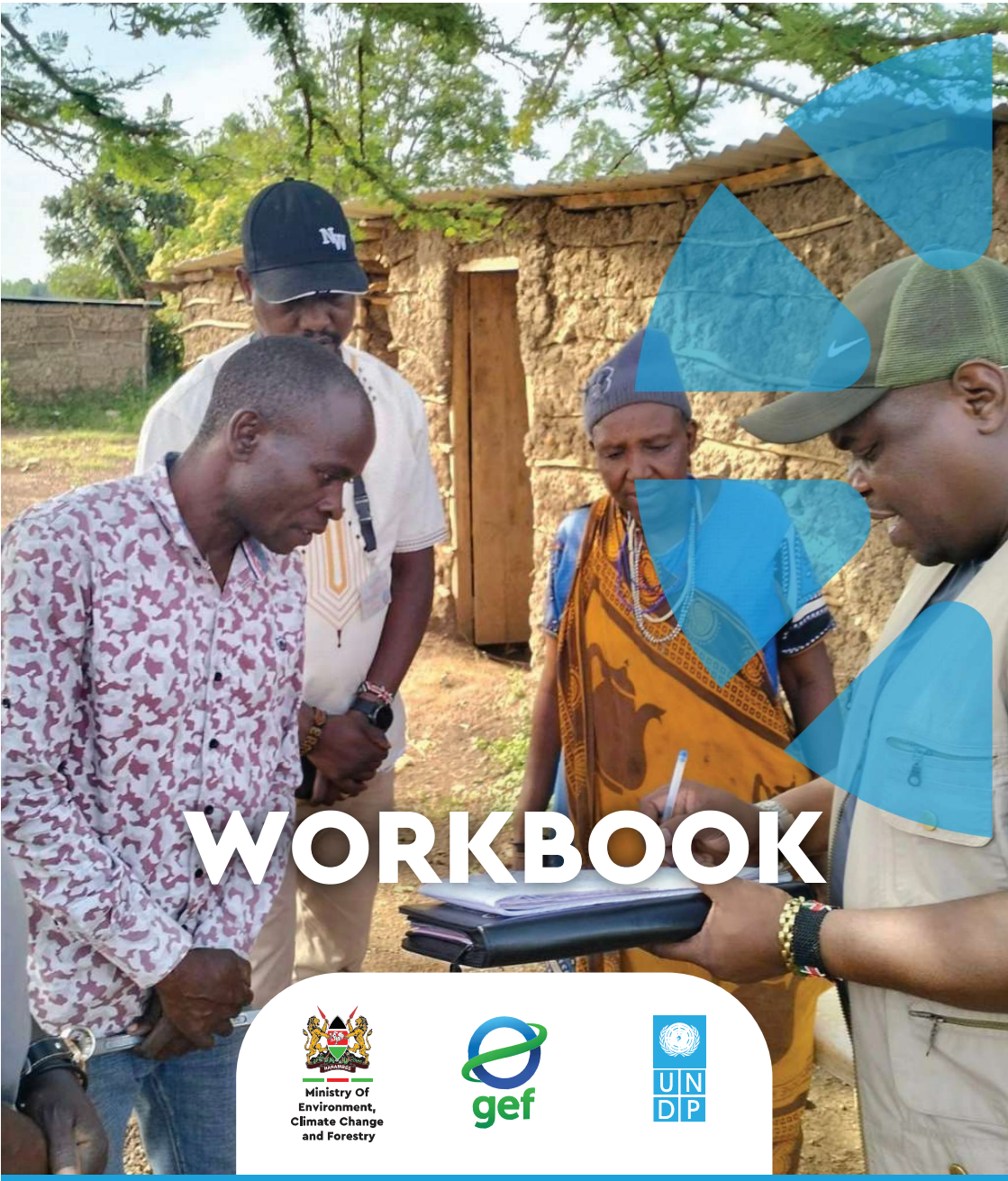
planetGOLD Kenya



WORKBOOK

Ministry Of Environment, Climate Change and Forestry

gef

UNDP

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Introduction

The Government of Kenya through the Ministry of Environment, Climate Change and Forestry received a grant from Global Environment Facility (GEF) through United Nation Development Programme (UNDP) to implement planetGOLD Kenya project.

The project aims to demonstrate a pathway to cleaner and more efficient small-scale gold mining practices that benefit everyone with a bid to reduce mercury use by 1.5 tonnes over the course of the five years.
The project supports mining communities drawn from selected mining areas in Narok, Migori, Kakamega and Vihiga counties and is set to establish six (6) demonstration sites in the four (4) counties.

Project's Overall Objective is to support formalization of the ASGM sector and the development of responsible mining, by increasing the government and private sector's capacity and improving regulatory framework. This will improve ASGM operations' access to adequate financial and technical services for the uptake of mercury-free ore processing. The project will also pilot and train miners in the use of best practice technologies that eliminate mercury.

Frequently Asked Questions

What is ASGM?
ASGM is an acronym that stands for Artisanal and Small-scale Gold Mining. There are various definitions of this sector within specific country contexts; however, the Minamata Convention on Mercury defines artisanal and small-scale gold mining (ASGM) as gold mining conducted by individuals or small enterprises with limited capital investment and production.[1]

How many ASGM miners are there around the world?
There are an estimated 10–16 million artisanal and small-scale gold miners around the globe,[2][3] roughly 4–5 million of which are women and children.[4] Kenya has about 800,000 families depending on ASGM.

How much gold does the ASGM sector produce each year?
The sector produces roughly 20% of the world's gold supply each year.[5] In 2020, this gold was worth approximately $28–34 billion USD.[6]

How much mercury do ASGM miners currently emit?
2,000+ tonnes per year collectively, including emissions to air and releases to land and water.[7]

What are the health impacts of using mercury in ASGM?
Mercury is considered by the World Health Organization as one of the top 10 chemicals or groups of chemicals of major public health concern.[8] Exposure to mercury, even in small amounts, is associated with serious health problems, and is a threat to the development of the child in utero and early in life. Mercury may have toxic effects on the nervous, digestive and immune systems, and on lungs, kidneys, skin and eyes.[9]

How do people get exposed to mercury used in ASGM activities?
Liquid elemental mercury is added to an ore slurry to bind to gold and form a gold-mercury amalgam. This amalgam is burned over high heat to separate gold from the mercury, releasing high concentrations of mercury vapors. People working and living in ASGM communities are exposed to mercury mainly through inhalation of these toxic vapors. Mercury can also be deposited on surfaces such as walls, clothing and tools, where it can be re-released to the local environment over time. Some ASGM practices can result in contamination of mine wastes (called tailings) as well as direct release of mercury to water bodies. Microorganisms in water and soil convert elemental mercury into organic methylmercury, which accumulates in the food chain.[10]

I live far away from areas with ASGM activities. How does mercury use in the ASGM sector affect me?
Mercury emitted to the air doesn't just affect local conditions. Mercury can be transported around the world in the atmosphere and can contaminate locations thousands of kilometers from its point of release. It can cycle between the atmosphere and the surface of land or oceans for decades to centuries and longer.[11]

Frequently Asked Questions

Are there alternatives to extract gold without mercury?
Yes. There are several technologies that either reduce or eliminate entirely the use of mercury in ASGM. The appropriate technologies will depend on the ore type, available resources, and social and economic factors.[12] There is no single technology appropriate to every ASGM situation, but successful approaches often include some combination of: improved crushing and milling; gravity concentration tools such as sluicing and shaking tables; flotation; and chemical leaching.

Is using mercury the most efficient way for miners to extract gold?
When used properly, mercury-free technologies can extract a greater amount of gold than traditional methods using mercury amalgamation.[13] Large scale mining companies, for instance, which have the highest gold recovery rates in the world, do not use mercury.

Where does the mercury used in ASGM come from?
Mercury enters via multiple formal and informal pathways. Mercury can often be bought at hardware and mining stores in cities and larger mining towns or directly at the mining sites where local traders offer mercury. In some cases, traders supply mercury in advance for access to the recovered gold.[14]

If miners know mercury harms human health and the environment, why do they continue using it?
There are several complex socioeconomic reasons why artisanal and small-scale miners use mercury. Many miners need to extract gold every day to meet subsistence needs and may not have the time for technologies that take longer to process ore. Many miners also do not have the financial capital required to get access to mercury-free technologies. Extracting gold using mercury is quick and easy, and can be done by a single person. Mercury can also be cheaper in the short term, and it is easy to transport anywhere, whereas other technologies sometimes require large equipment that cannot be moved easily.

How much mercury use does planetGOLD aim to prevent?
The programme supports Kenya's commitments under the Minamata Convention on Mercury to reduce and, where feasible, eliminate mercury use in the sector. The planetGOLD Kenya aims to achieve mercury reductions of 1.5 tonnes.

Is planetGOLD a gold certification system?
No, planetGOLD does not certify gold products.

How does planetGOLD ensure that sites it partners with operate in a safe, environmentally and socially sound manner?
Sites participating in the planetGOLD programme are expected to conform with the planetGOLD Criteria for Environmentally & Socially Responsible Operations, which ensures that artisanal and small-scale mining entities participating in the programme undertake sufficient efforts to avoid, minimize, mitigate, and where appropriate, offset adverse impacts to people and the environment.

Strategies

The project seeks to promote the adoption of alternative technologies that are safe for the environment and the miners, and also profitable when used by bigger and better organized groupings using the following strategies:

- Strengthening institutions and the policy/regulatory framework for mercury-free ASGM
- Increasing the access of mining communities to finance to enable the procurement of mercury-free processing technologies
- Increasing the capacity of mining communities for mercury-free ASGM through the provision of technical assistance, technology transfer and support for formalization
- Raising awareness and disseminating best practices and lessons-learned on mercury phase-out in the ASGM sector

This workbook seeks to capacity build the artisanal and small-scale gold miners from the 23 project's cooperatives on Governance, Finance, technological transfer and awareness raising.

The capacity building will take place in the six demonstration sites that the project is setting up with the help of Migori, Kakamega, Vihiga and Narok county governments who set aside land for the same

Support formalization of the ASGM sector

Help miners access financing for mercury-free technologies

Provide technical assistance and training on alternative technologies

Raise awareness and disseminate best practices

Governance

The governance course is designed to help the 23 project cooperatives, build their capacity of how to best govern their groups as they seek to be further formalized by the State Department for Mining. The following topics will be covered under the governance course:

i. Project Group Formation
ii. Group Dynamics
iii. Leadership
iv. Project's Leadership Organogram
v. Formalization of ASGM
vi. Mining Policies and Regulations

Activity 1

Draw the organogram of your cooperative

Activity 2

Draw the organogram of your group

Activity 3

Write a list of all the requirement your group needs to get Dealership and Processing License

Activity 4

Write a list of all the requirements your group needs to get an Artisanal Mining Permit (give a page for the assignment)
Include tables on: (Each to have a page) with a header
1. Members Register
2. Sample of Minutes
3. Mine/Land Lease Agreement
4. Land Owner Consent Form

Practical Activity: (Sample records in ASGM)

1. **Minutes of meetings record**

MINUTES OF ASGM MINERS MEETING

Date of Meeting: _____
Time of meeting: _____
Name of the Group: _____
Name of mine: _____
Person Chairing the Meeting: _____

Meeting Agenda:

i. Preliminaries
ii. Review of status of concern from the previous meeting
iii. Discuss mining items required
iv. Discuss recent accidents and risks
v. Plan events for the next period
vi. A.O.B

Name and Signature of members present

i. _____
ii. _____
iii. _____
iv. _____
v. _____

Members Absent with apology

i. _____
ii. _____

Members Absent without apology

i. _____
ii. _____

Min 01/12/2022: Preliminaries
_____
Min 02/12/2022: Review of status of concern from the previous meeting_____
Min 03/12/2022: Discuss mining items required
_____
Min 04/12/2022: Discuss recent accidents and risks
_____
Min 05/12/2022: Plan events for the next period
_____
Min 06/12/2022: A.O.B
_____

Minutes Signed by
Chairperson..... **Date: .....**

Secretary ..... **Date: .....**

2. **Register of Members**

S/No.	Members Name	M/F	Date of Registration	Membership Number	ID.No.	Contacts	Shares
1.							
2.							
3.							

REPUBLIC OF KENYA **FORM No.**

THE MINING ACT NO 12 OF 2016

LANDOWNERS' CONSENT FORM (DESIGNATION OF ASM AREAS) - PRIVATE LAND

Section (13) of the Mining Act provides that the Cabinet Secretary may designate an area of land to be reserved exclusively for artisanal and small scale mining operations.
By signing this consent form the landowner agrees to their land being designated as an artisanal and small scale mining area.
This consent does not affect the right of a landowner or a lawful occupier of the area designated from undertaking non-mining operations or activities in any area to which it applies. This consent is non-compensatory because it is not a consent to mine. However, where a permit for mining operations is subsequently granted to a person other than the landowner, the prospective investor shall enter into separate consent and compensate the landowner in the prescribed manner as per section 99 & 153 of the Act.

This consent is made on this .....day of..... 20.....

PART I: LANDOWNER

Landowner Declaration

I ……..give consent to the Cabinet Secretary responsible for mining to designate my land for purposes of artisanal and small scale operations in accordance with the provisions of the Act.

Landowner Particulars

Name			ID/ Passport No.
Postal Address	Code	Town	Tel.
Signature		Date	

PART II: LAND PARCEL PARTICULARS

Parcel No.	Map Sheet No.	Area in acres/hectares	Village/Sub- location:
			Location:
			District/Sub- County:
			County:

Co-ordinates (WGS-84 DMS)					
Latitude			Longitude		
Degrees (º)	**Minutes (')**	**Seconds (")**	**Degrees (º)**	**Minutes (')**	**Seconds (")**

PART III: LANDOWNER WITNESS (Area Chief/Assistant Chief)

Name			Tel.
Postal Address	Code:	Town:	
Signature & official stamp		Date:	Location/Sub-location:

Dated this .....day of..... 20.....

Signed By:
Name (Landowner)…… Signature……

In the presence of
Name ……..……ID No……..……..…… Signature ……

Signed By:
Name (CS Representative)…….……. Signature & official stamp……

Attachments:

REPUBLIC OF KENYA **FORM No.**

THE MINING ACT NO 12 OF 2016

LANDOWNERS' CONSENT FORM (DESIGNATION OF ASM AREAS) –REGISTERED COMMUNITY LAND

Section (13) of the Mining Act provides that the Cabinet Secretary may designate an area of land to be reserved exclusively for artisanal and small scale mining operations.

By signing this consent form the landowner agrees to their land being designated as an artisanal and small scale mining area.

This consent does not affect the right of a landowner or a lawful occupier of the area designated from undertaking non-mining operations or activities in any area to which it applies. This consent is non-compensatory because it is not a consent to mine. However, where a permit for mining operations is subsequently granted to a person other than the landowner, the prospective investor shall enter into separate consent and compensate the landowner in the prescribed manner as per section 99 & 153 of the Act.

This consent is made on this .....day of..... 20.....

PART I: PARTICULARS OF THE COMMUNITY
Authorized Community Representatives Declaration

I/We, 1……..……, 2……..……..……,
3……..……..……give consent to the Cabinet Secretary responsible for mining to designate the community land described below forpurposes of artisanal and small scale operations in accordance with the provisions of the Act.

Particulars of Community

Name of the community:			Registration No.
Postal Address:	Code:	Town:	Tel.

Particulars of Authorized Community Representatives

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date

PART II – LAND PARCEL PARTICULARS

Parcel No.	Map Sheet No.	Area in acres/hectares	Village/Sub- location:
			Location:
			District/Sub- County:
			County:

Co-ordinates (WGS-84 DMS)

Latitude			**Longitude**		
Degrees (º)	**Minutes (')**	**Seconds (")**	**Degrees (º)**	**Minutes (')**	**Seconds (")**

PART III:LANDOWNER WITNESS(Area Chief/Assistant Chief)					
1	Name:				Tel.
	Postal Address:	Code:	Town:		
	Signature & official stamp:	Date:	Location/Sub-location:		
2	Name				Tel.
	Postal Address	Code:	Town:		
	Signature & official stamp	Date:	Location/Sub-location:		
3	Name:				Tel.
	Postal Address:	Code:	Town:		
	Signature & official stamp	Date:	Location/Sub-location:		

Dated this .....day of..... 20.....

Signed By:

Name……Designation …… Signature……

Signed By:

Name……..……Designation …… Signature……

Signed By:

Name……Designation …… Signature……

Signed By:

Name (CS Representative)……. Signature & official stamp……

Attachments:

- ✔ Minutes of the meeting authorizing consent.
- ✔ Copy of registration certificate of the community.
- ✔ Copy of land registration certificate.

Financial Literacy

This finance literacy course is designed to provide artisanal miners with basic knowledge, skills and tools to access outside financing for their operations.

The following topics will be covered under financial literacy:
i. Financial Management by ASGM
ii. Access to finance
iii. Financial Record Keeping
iv. Financial Report Writing
v. Business Plans for Income Generating Activities (IGA)
vi. Proposal Writing
vii. Road to Market and Value Addition (Marketing)

Activity 1

List the sources of finances for your cooperative

Activity 2

List the sources of finances for your gold processing business

Activity 3

Populate a simple cash book using your personal experience

Activity 4

Populate an analyzed ledger using your personal experience

1. Simple Cash Book
2. Analyzed Ledger

Notes

Business records are how investors assess the value of a business and include financial, operational and geological records.

Record keeping refers to the actual process of writing down operational information and business activities (transactions) as they happen.

4. **ASGM Inventory record**

ASGM Inventory record For the Month of					
		Date:			
	Mining Equipment and Machines	**Description (Model/Type)**	**Quantity**	**Value (Kshs.)**	**Status**
1					
2					
3					
4					
	Total Value				
	Gold Stock and Products				
1.					
2					
3					
4					
	Total Value				
	Other inventories and Assets				
1					
2					
	Total Value				

5. **Sales and Expenses Record**

Date	**Activity Description**	**Quantity**	**Rate**	**Total Amount**
	Sales			
1st Dec.	Sold Processed gold mined	kgs	@	
5th Dec.	Sold gold tailings	tones	@	
10th Dec.	Sale of gold products			
	Total Income (a)			
	Expenses			
15th Dec.	Paid for Wages			
20th Dec.	Fuel charged			
	Extraction & Crushing costs			
	Utilities (water, gas, electricity)			
	Transportation charges			
	Cost of mercury/ chemicals			
	Monthly lease charges of mines			
	Total Expenses (b)			
	Profit/Loss made (a-b)			

Example of ASGM balance sheet

Fixed Asset	**Kshs.**		**Kshs.**	
Digging Equipment		xxx		
Generator		xxx		
Crushing/Grinding Equipment	xxx			
Sluice boxes	xxx			
Dry Washer	xxx			
Slurry Pumps		xxx		
Transportation Equipment		xxx		
Extraction equipment (Shake table)		xxx		
		xxx		
Total fixed Assets			**xxxx**	
Current Assets				
Gold stocks		xxx		
Tailings		xxx		
Mercury		xxx		
Debtors	xxx			
Cash at bank		xxx		
Cash in hand	xxx			
Total Assets				**xxxx**
Current Liabilities				
Advance from sponsor		xxx		
Fuliza loan		xxx		
Bank overdraft		xxx		
Creditors	xxx			
Long term Liabilities				
Grant	xxx			
Capital		**xxx**		
Total Liabilities + Capital			**xxxx**	

7. Simple Cash Book

ASGM CASH BOOK FOR THE MONTH OF.....					
			Cash In (Received)	Cash Out (Paid)	Balance
Date	**Transaction**	**Folio**	**Ksh.**	**Ksh.**	**Ksh.**
1st Dec.	Received grant/Loan		xxx		**xxxx**
3rd Dec.	Money Invested in ..			xxx	**xxxx**
5th	Bought mining equipment...			xxx	**xxxx**
10th	Sold gold		xxx		**xxxx**
15th	Sold gold tailings		xxx		**xxxx**
20th	Paid miners and casuals			xxx	**xxxx**
	TOTALS		**XXX**	**XXX**	**XXXX**

8. Analyzed Ledger

ANALYZED LEDGER
Name of Business: .....
PERIOD (From).....To.....

Date	Particulars	Cash Book			Purchases	Sales	Expenses	Creditors	Debtor	Assets
		In	Out	Bal.						

Notes:
Geological record keeping is important both for miners and potential investors. Showing that the host geology can support the operations over the investment periodis very important. This may entail an assessment by the competent geologistdetailing the type and volume of ore as well as expected grade.

Importance of the geological records:

- Efficient mining with efforts directed to the area that have produced the most gold
- More successful exploration as miners, build on mining experience in the area
- Effective mine planning
- Build case for possible expansion
- Ensures mining takes place in permitted areas

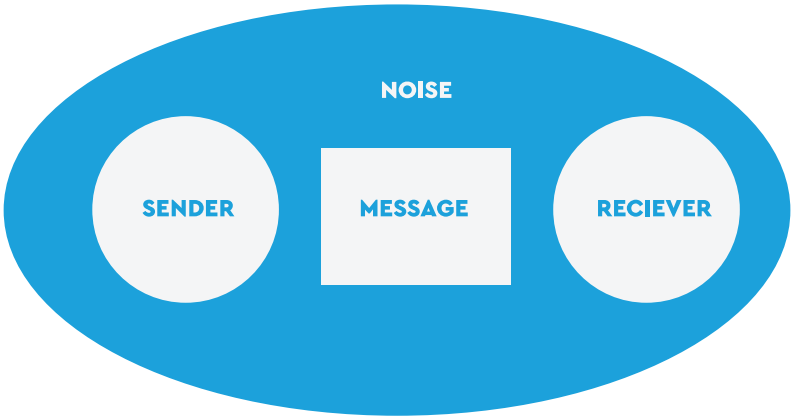
Awareness Raising

This course seeks to equip the miners with effective communication skills to enable them raise awareness of the dangers of mercury while sharing the mercury free technologies they have learned with the rest of the community

i. Effective communication on the Dangers of Mercury

ii. Mainstreaming gender in ASGM gold processing

Figure 1: Communication Model



Activity 1:

Join the online campaign by pushing the #SayNoToMercury

Activity 2:

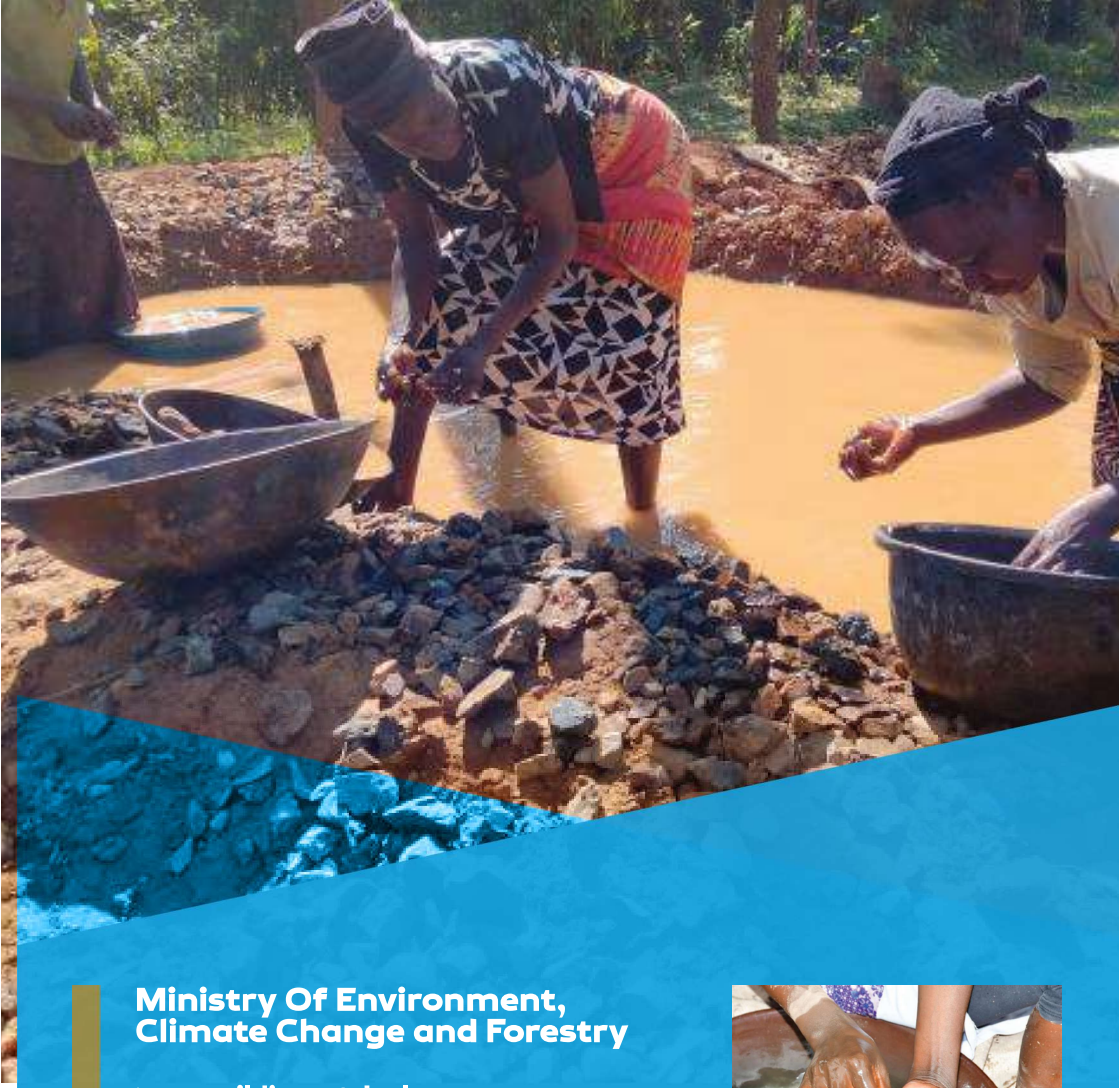
List the people you would reach to with the dangers of mercury message

Activity 3:

List the channels you will use raise awareness

Activity 4:

List the tools/skills you will need to raise awareness of the dangers of mercury in your community



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IMKA Gold Project
Integrated Sound Management of Mercury in Kenya's ASGM (IMKA)

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