



PARTICIPANT'S GUIDE

Supporting Best Practices at Artisanal Gold Mines Toolkit

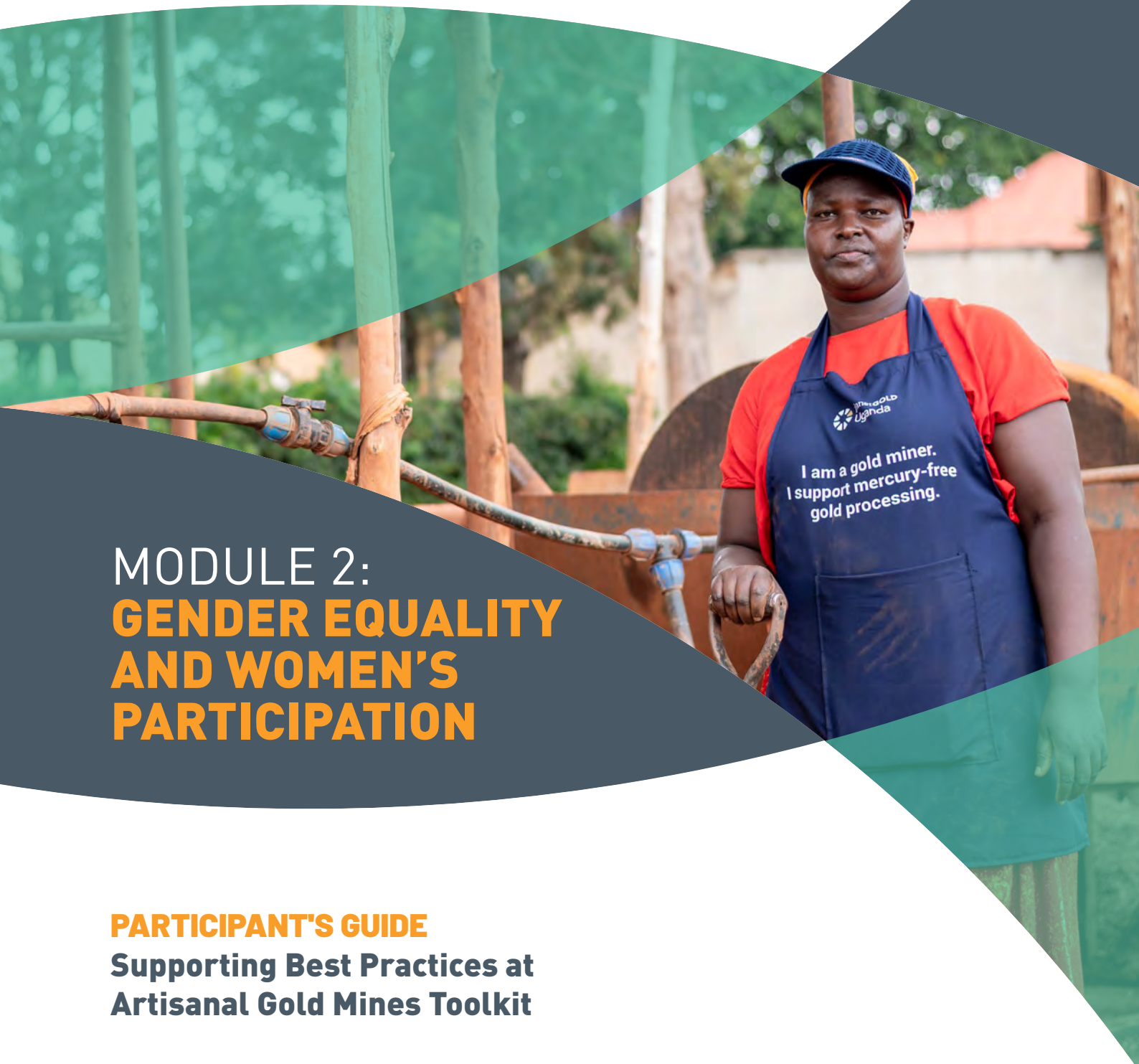
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MODULE 2: **GENDER EQUALITY AND WOMEN'S PARTICIPATION**

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Lead Author: Patience Singo, Devsol

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Managing Editor: Zuzia Danielski

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Photos: Ibrahim Biko (pg. 2) and Media Factory (pgs. 1, 4) in Uganda

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Image 1: Different barriers women face at the mine site.



Image 2: Women in prospecting.



Image 3: Women in mining.

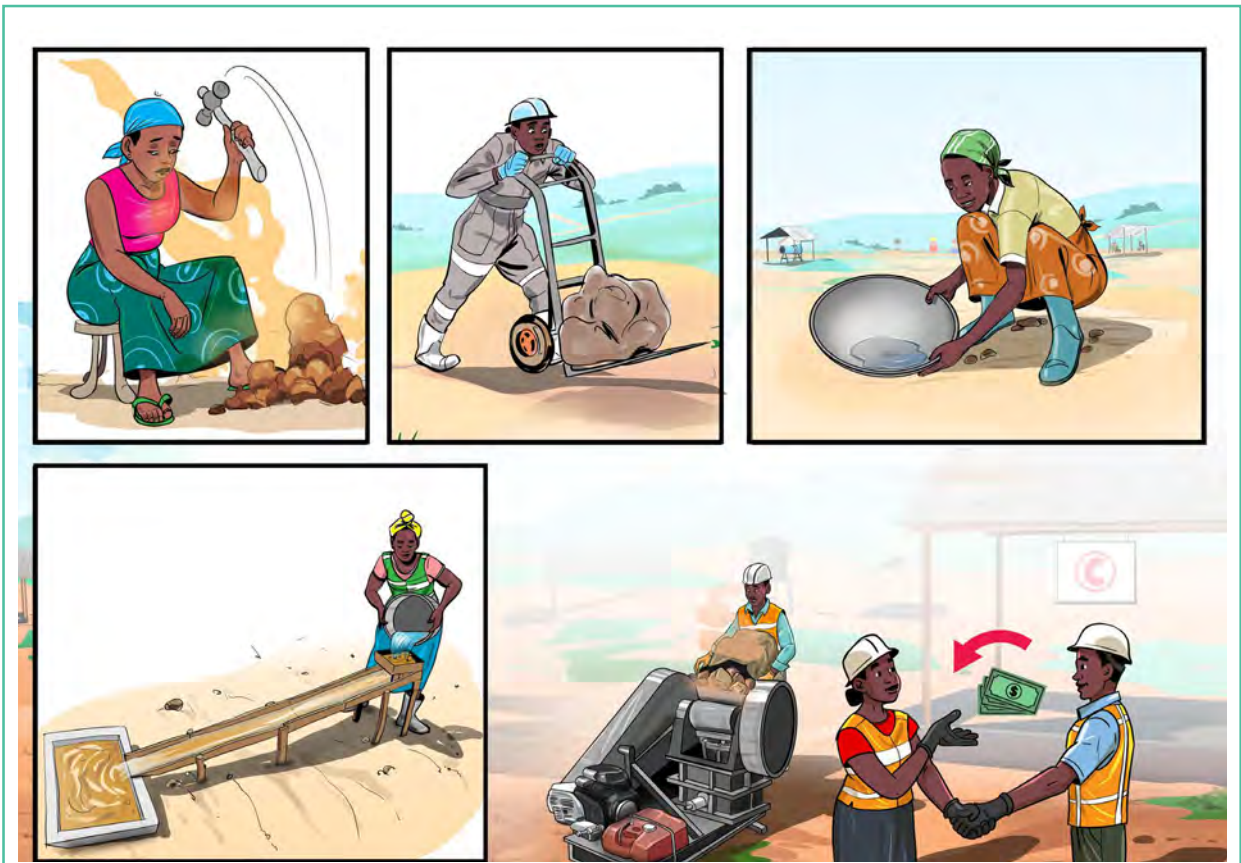


Image 4: Women in mineral processing.



Image 5: Women in tailings management.



Image 6: Women in gold recovery and trade.



Image 7: Women in other roles at the mine site.

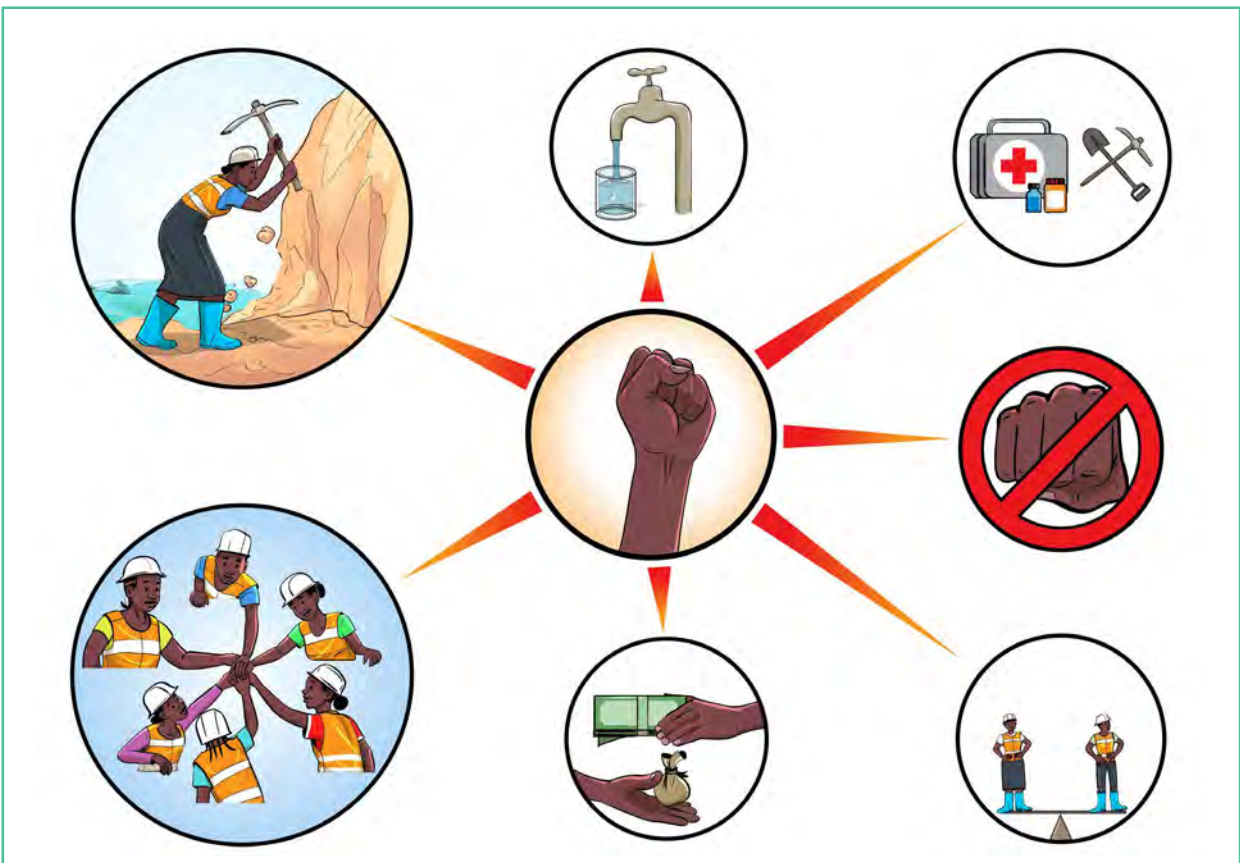


Image 8: Rights of women in the mining sector.



Image 9: Women can register for a mining permit and run their own mine.



Image 10: Women can aspire to undertake training and increase their knowledge on mining.



Image 11: Women should earn the same money as men.

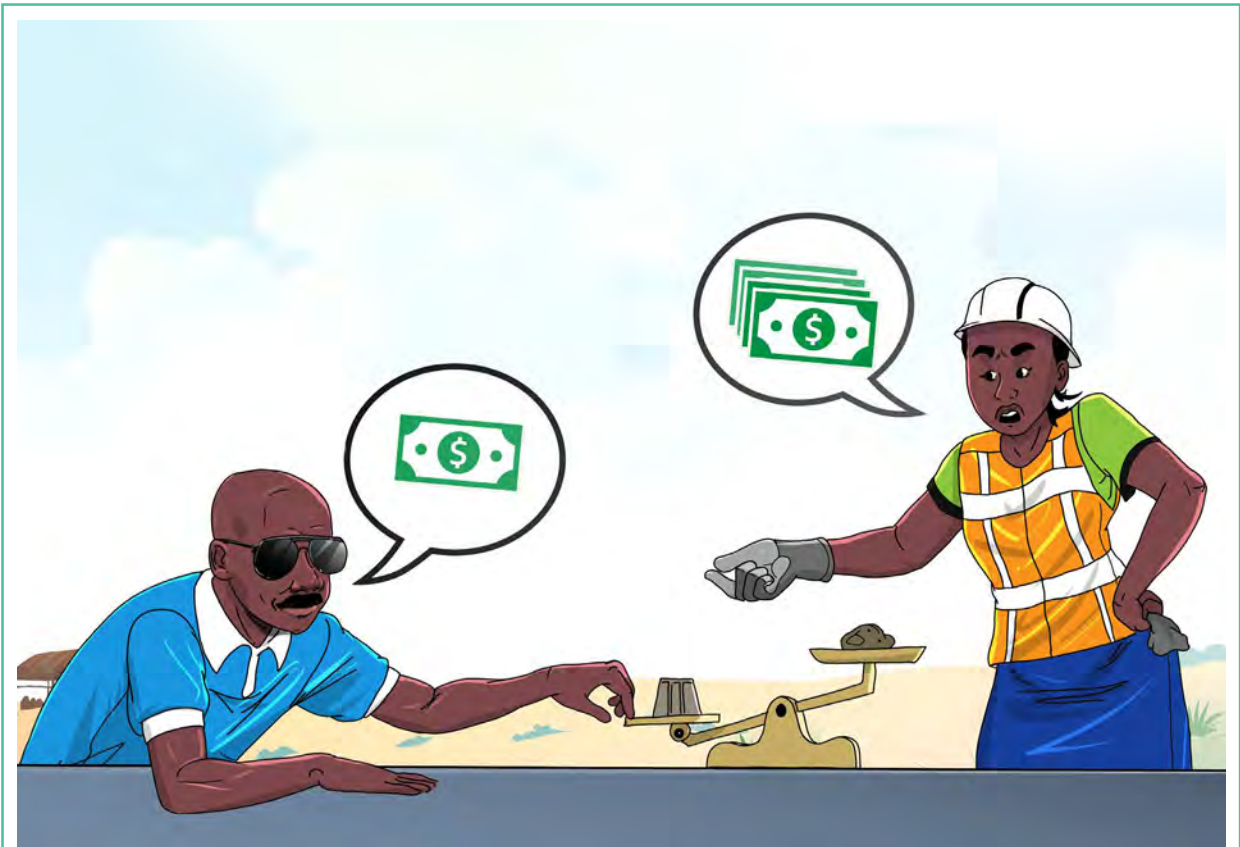


Image 12: Women face economic risks working in the mining sector.

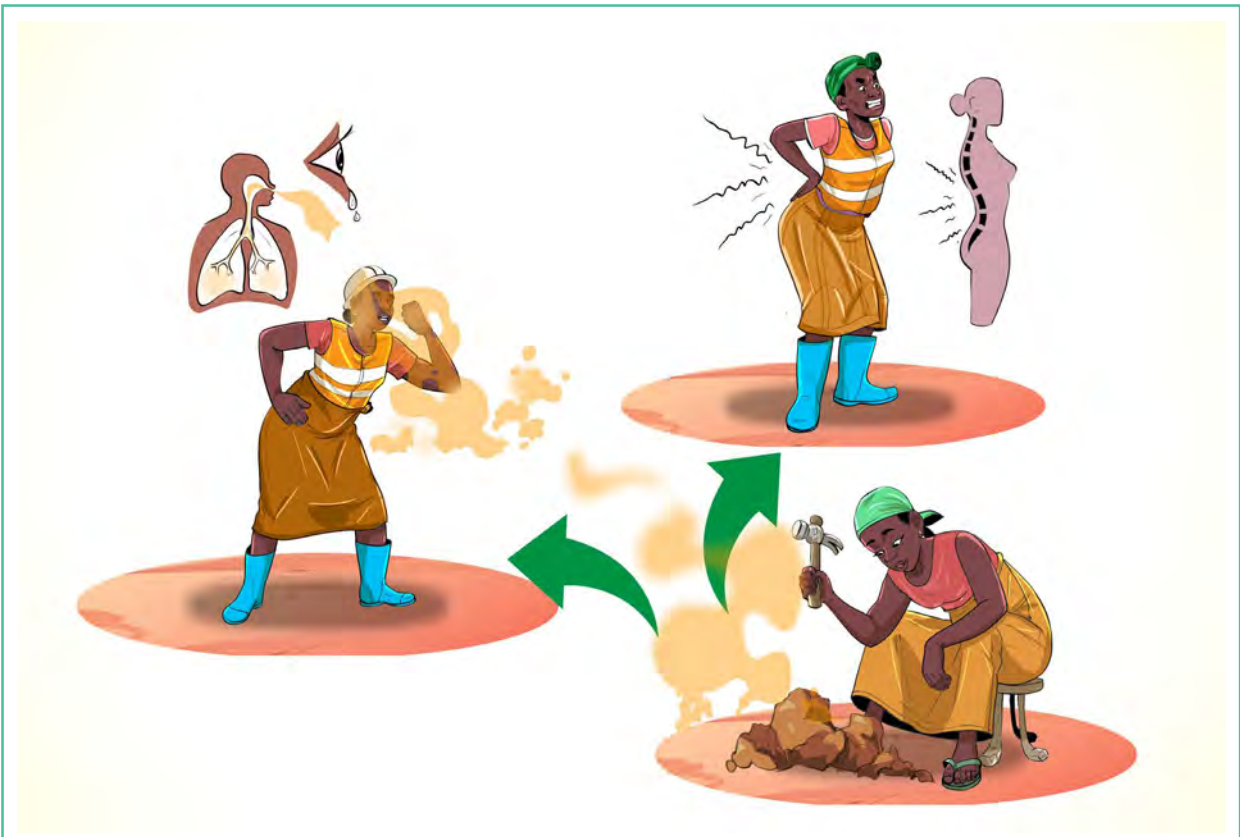


Image 13: Women face health risks working in the mining sector.



Image 14: Women face physical violence working in the mining sector.



Image 15: Women face sexual violence working in the mining sector.

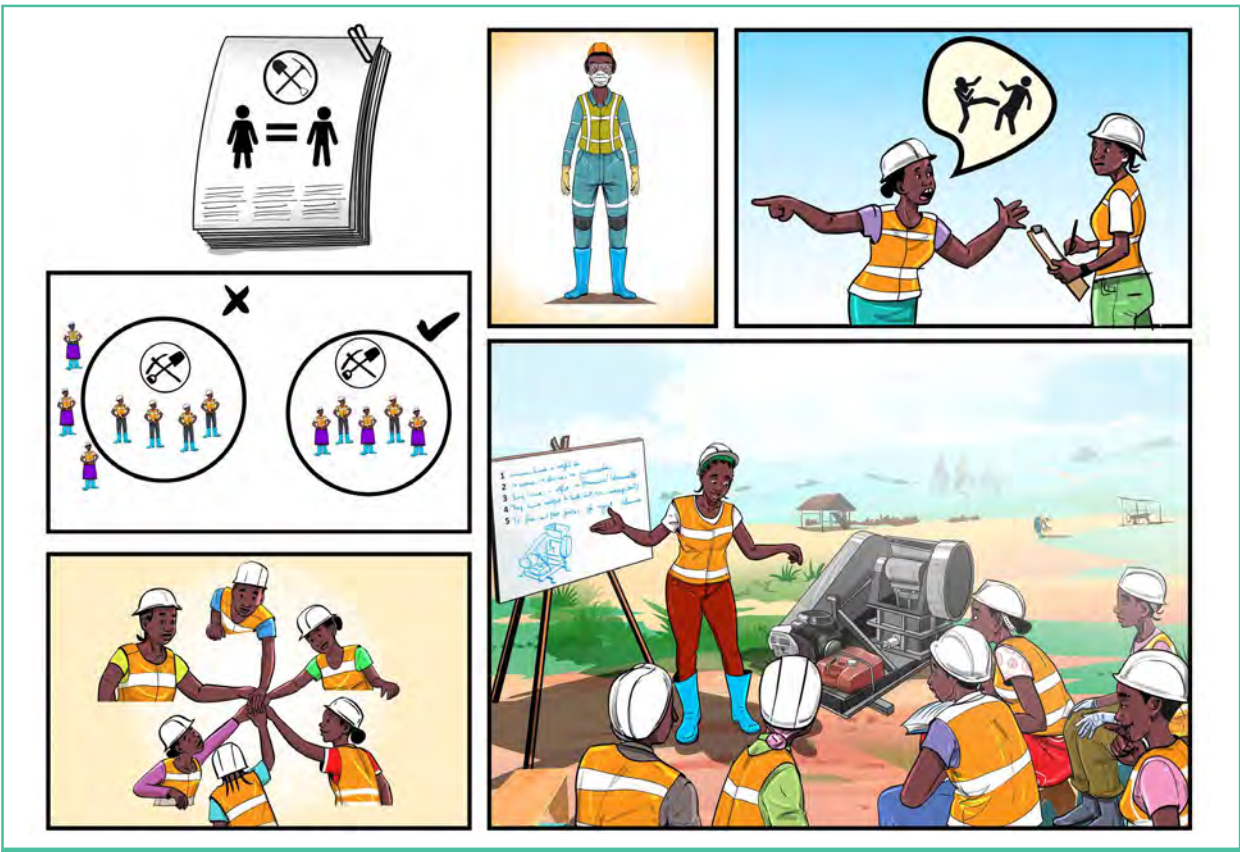


Image 16: Strategies to support women's protection and participation at the mine site.



Image 17: Women can invest in mining.

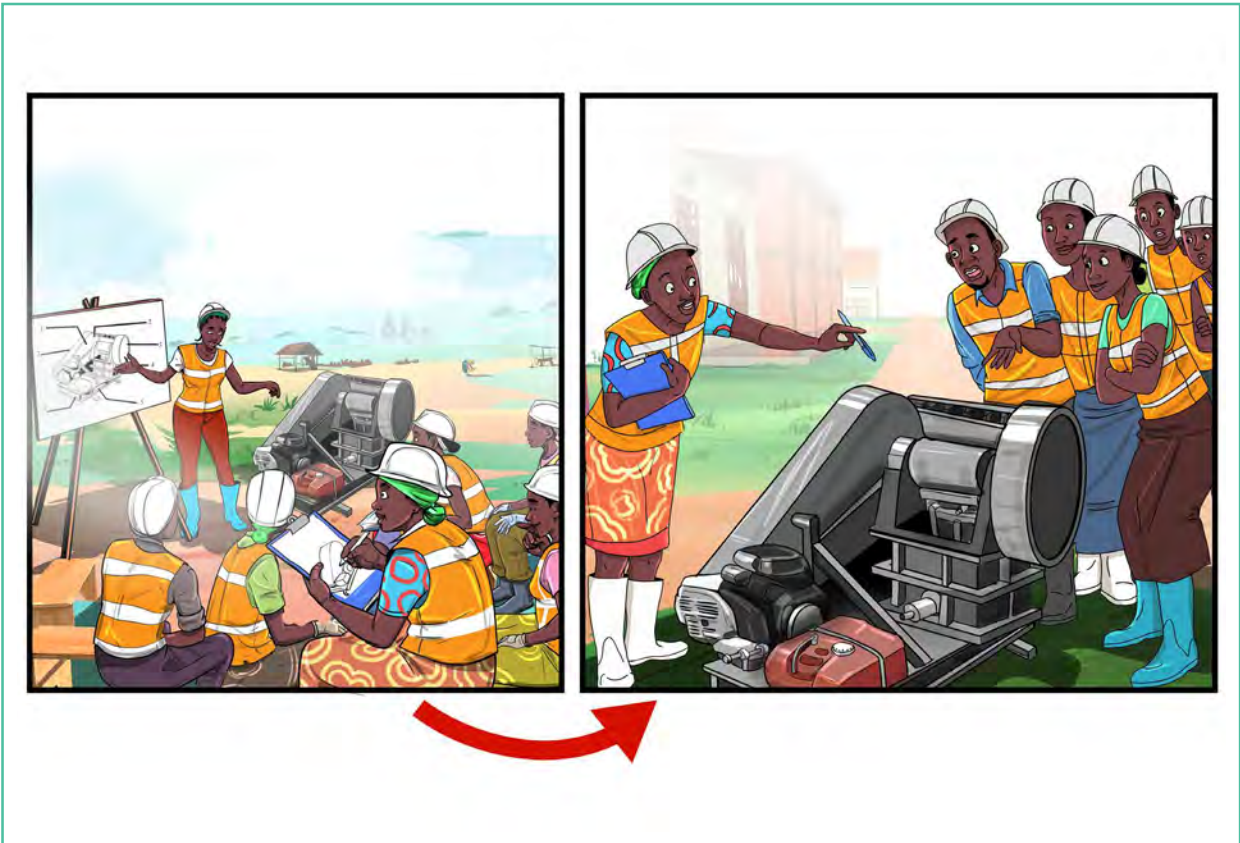


Image 18: Women can take interest in leadership roles and technical knowledge.



Image 19: Mining groups can encourage women to get into leadership roles.



Image 20: Women can be financially empowered.

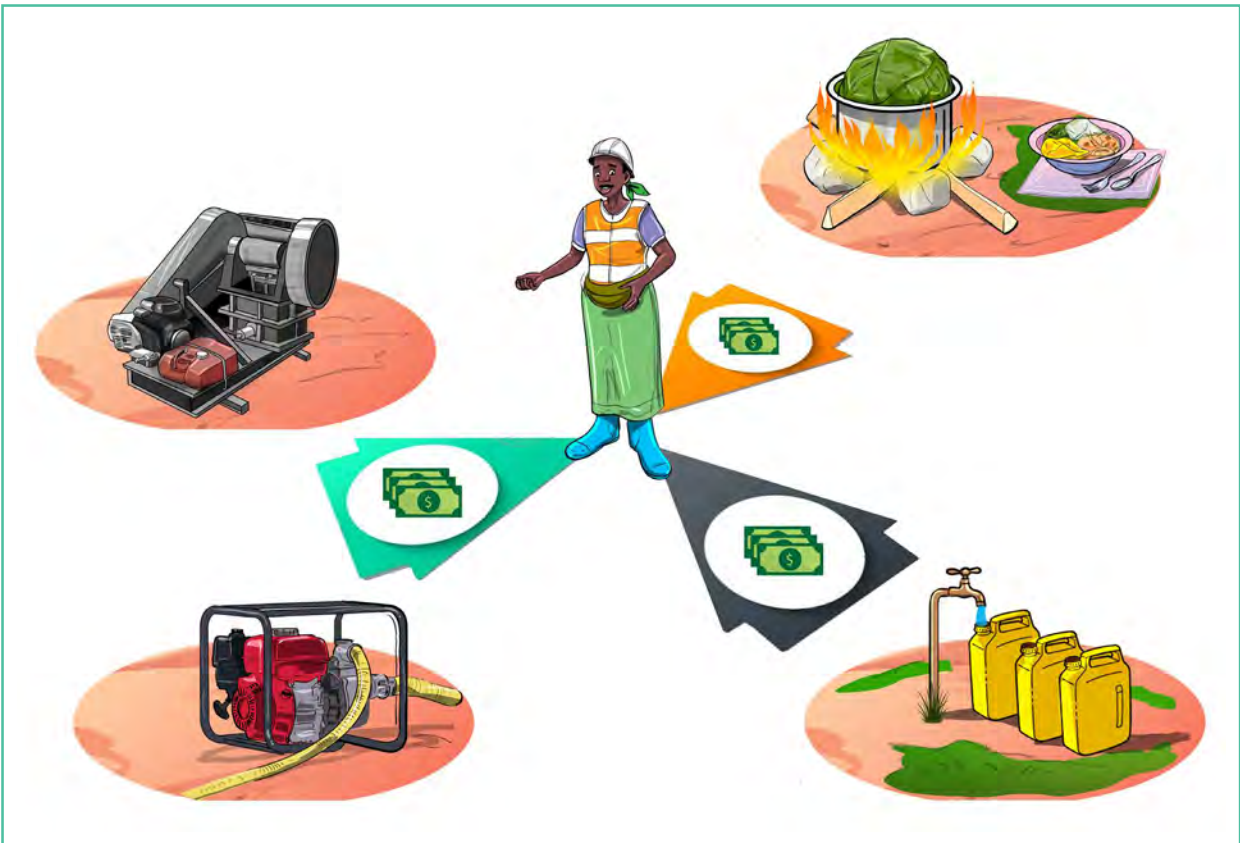


Image 21: Women can identify services to offer to miners.



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MODULE 3: HEALTH AND SAFETY RISKS IN MINE SITES

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Image 1: Workplace hazards at mining site.

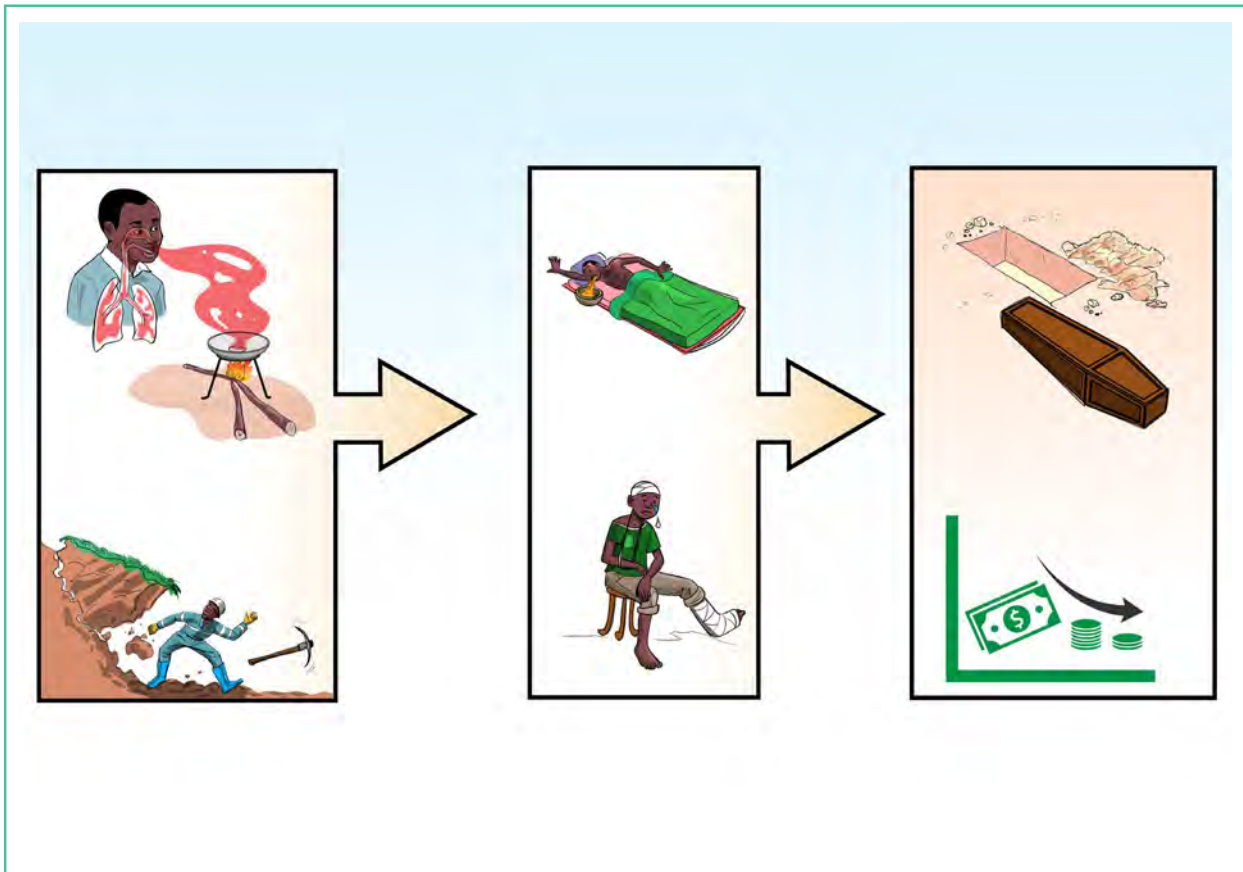


Image 2: Impact of a workplace accident at mine site.



Image 3: Factors influencing safety and health risks.



Image 4: Different health risks at the mine site.



Image 5-A: Risks associated with prospecting.

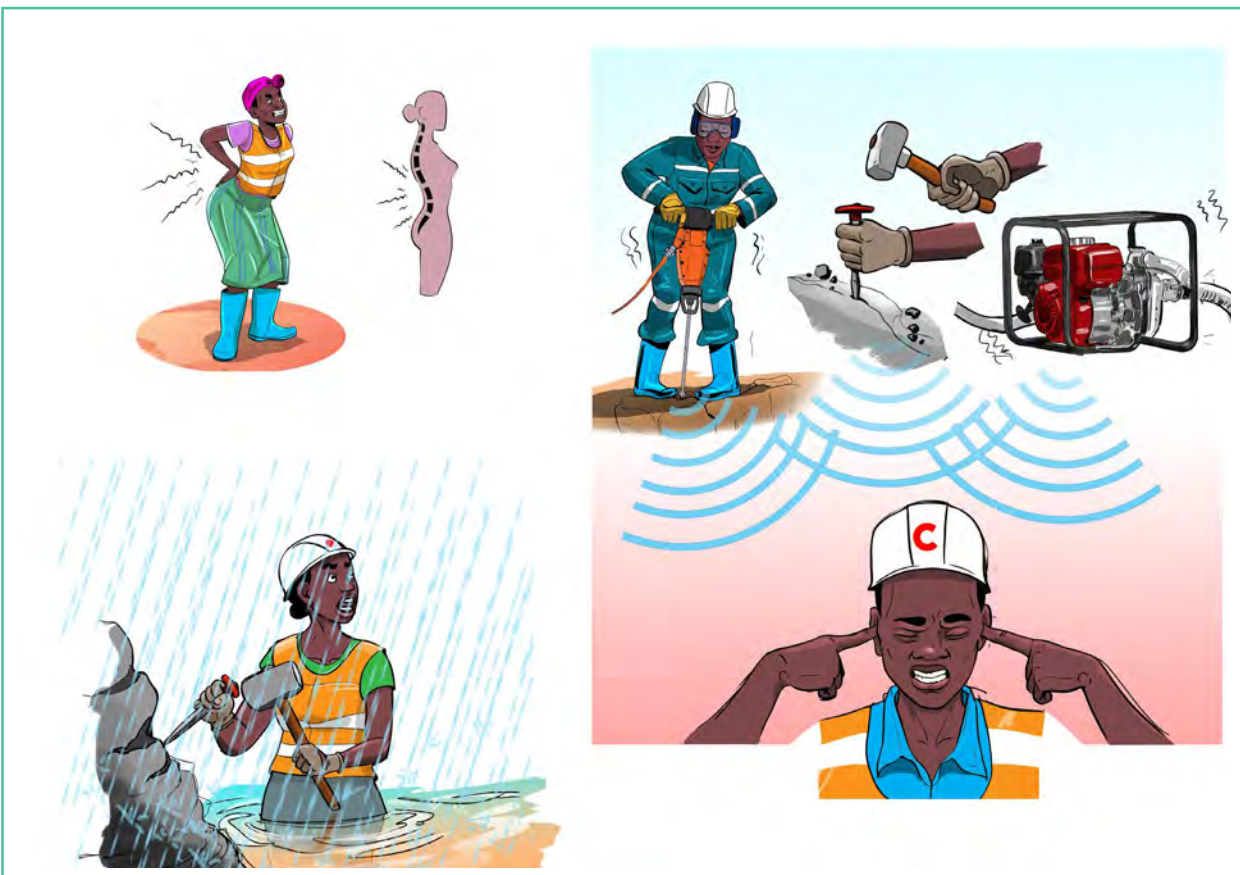


Image 5-B: Risks associated with prospecting.



Image 6-A: Risks associated with mining.



Image 6-B: Risks associated with mining.

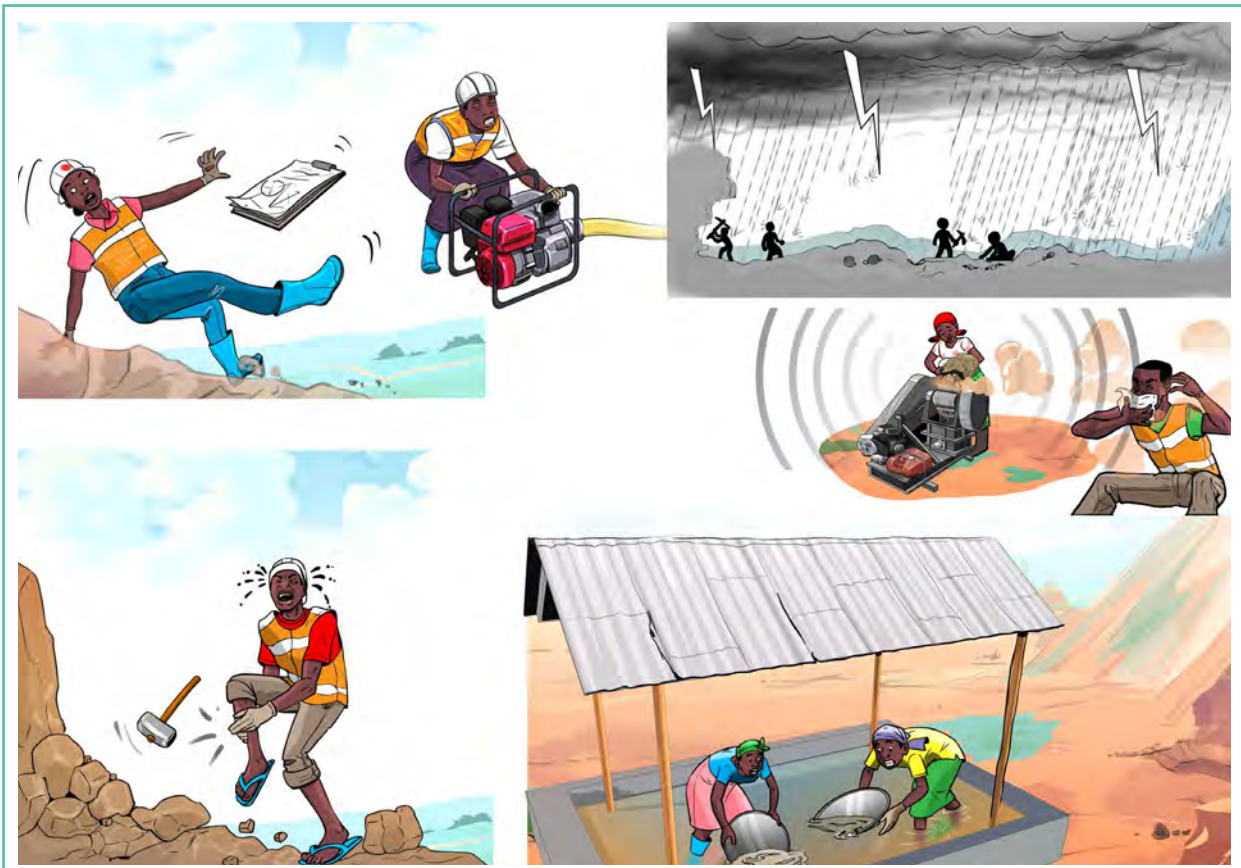


Image 7: Risks associated with processing.



Image 8: Risks associated with tailings management.

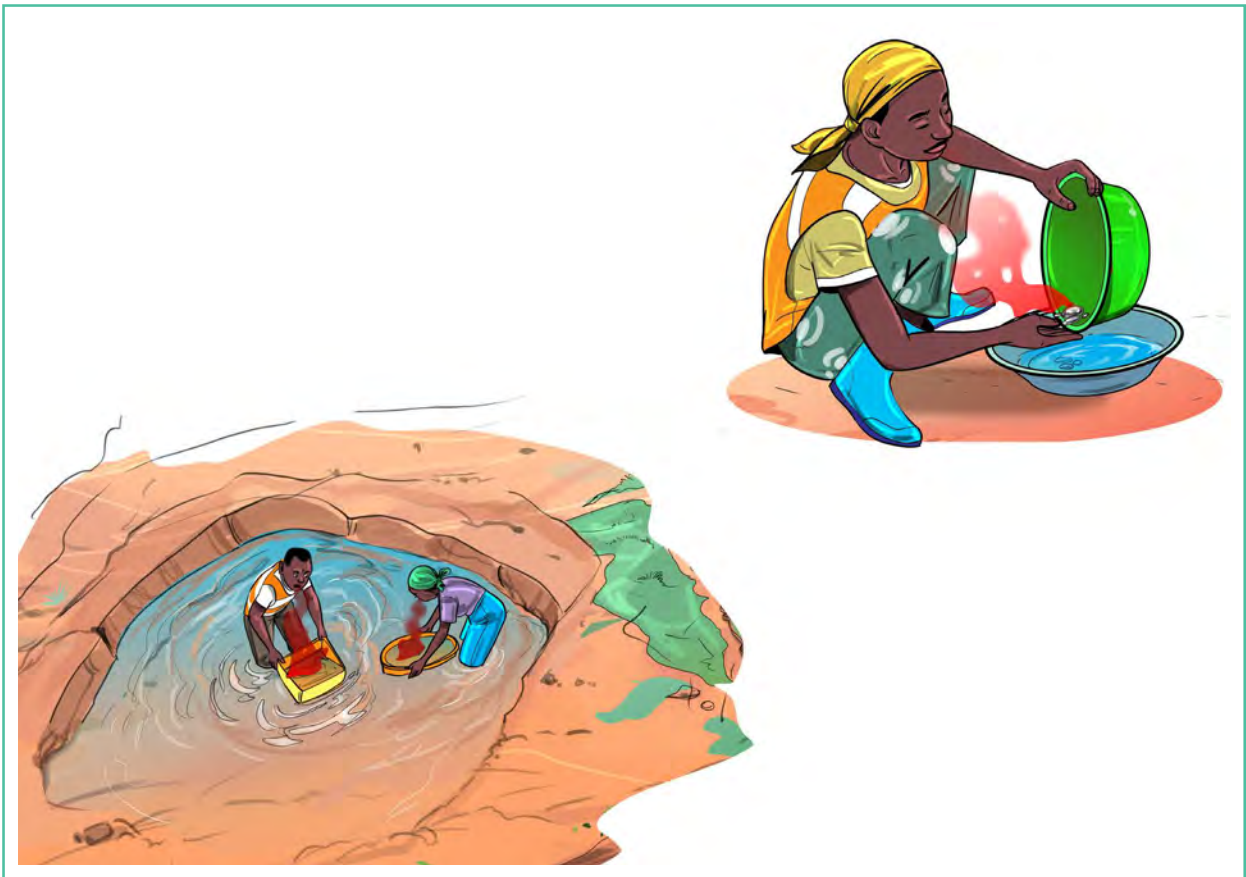


Image 9: Risks associated with gold recovery.



Image 10: Risk of injury.

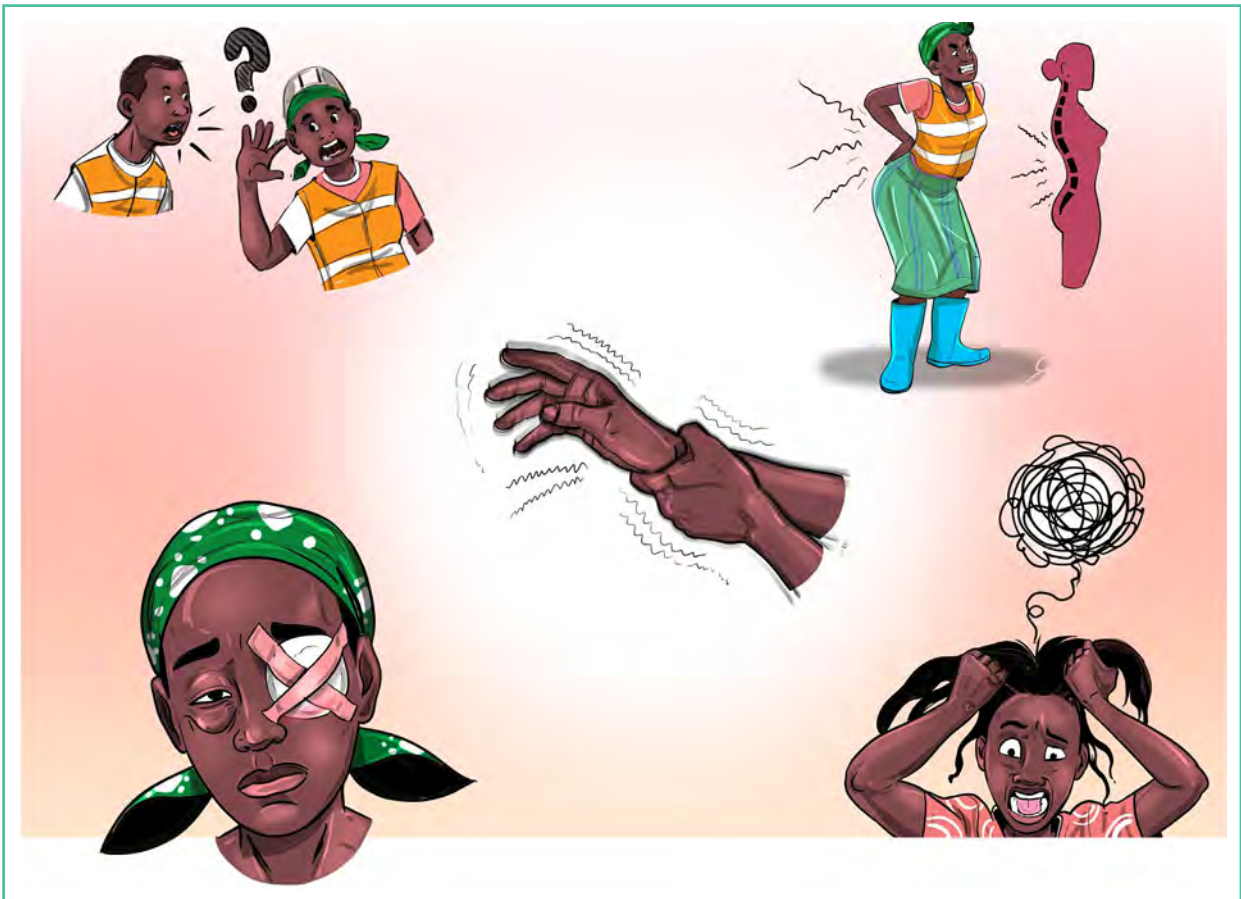


Image 11: Work related illnesses.

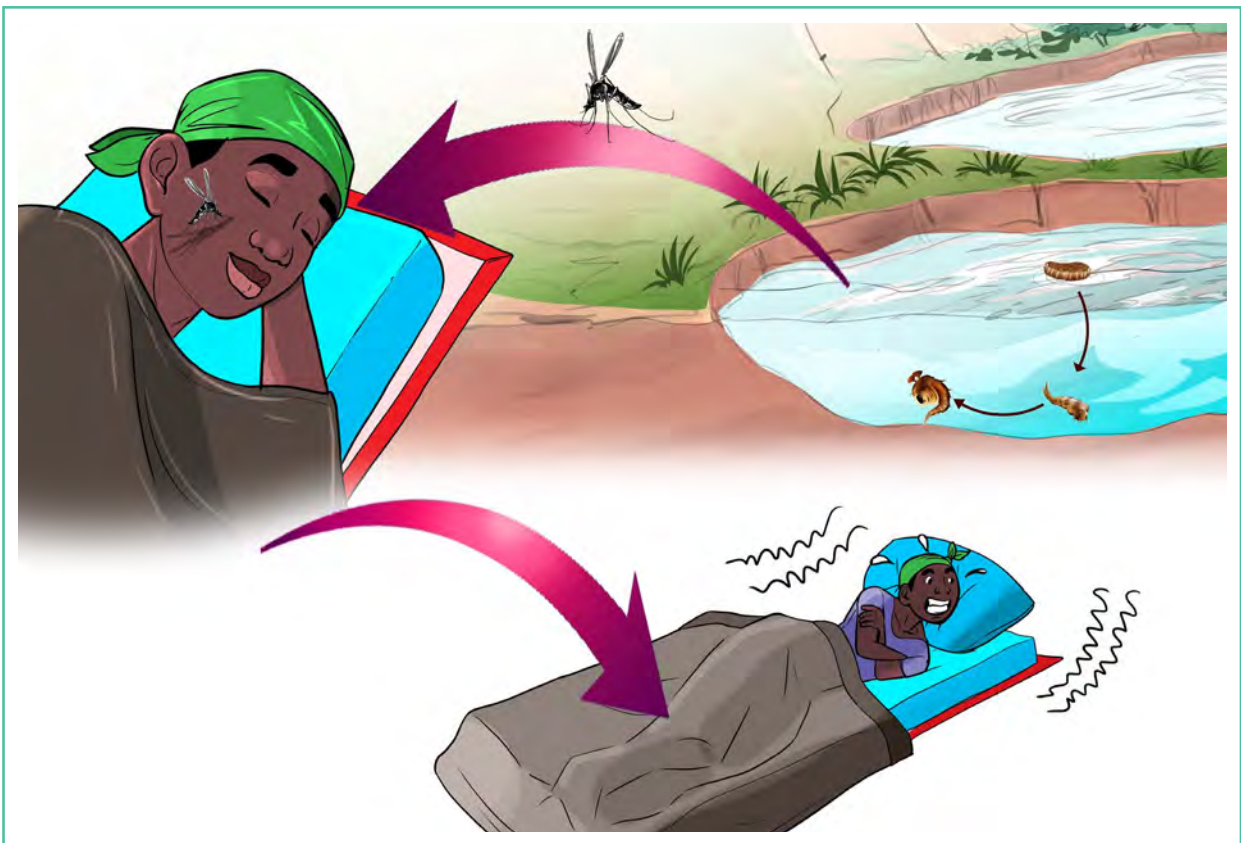


Image 12: Malaria at mining sites.



Image 13: Cholera or Typhoid at mining sites.



Image 14: How to address barriers to health care.



Image 15-A: Decrease risk for children at mine sites.



Image 15-B: Teach children basic safety rules.



Image 16: Condoms are one of the most effective ways to protect against sexually transmitted infections.



Image 17: At the mine site, consumption of alcohol and other intoxicating substances must be prohibited.



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MODULE 4: HOW TO IMPROVE HEALTH AND SAFETY AT MINE SITES

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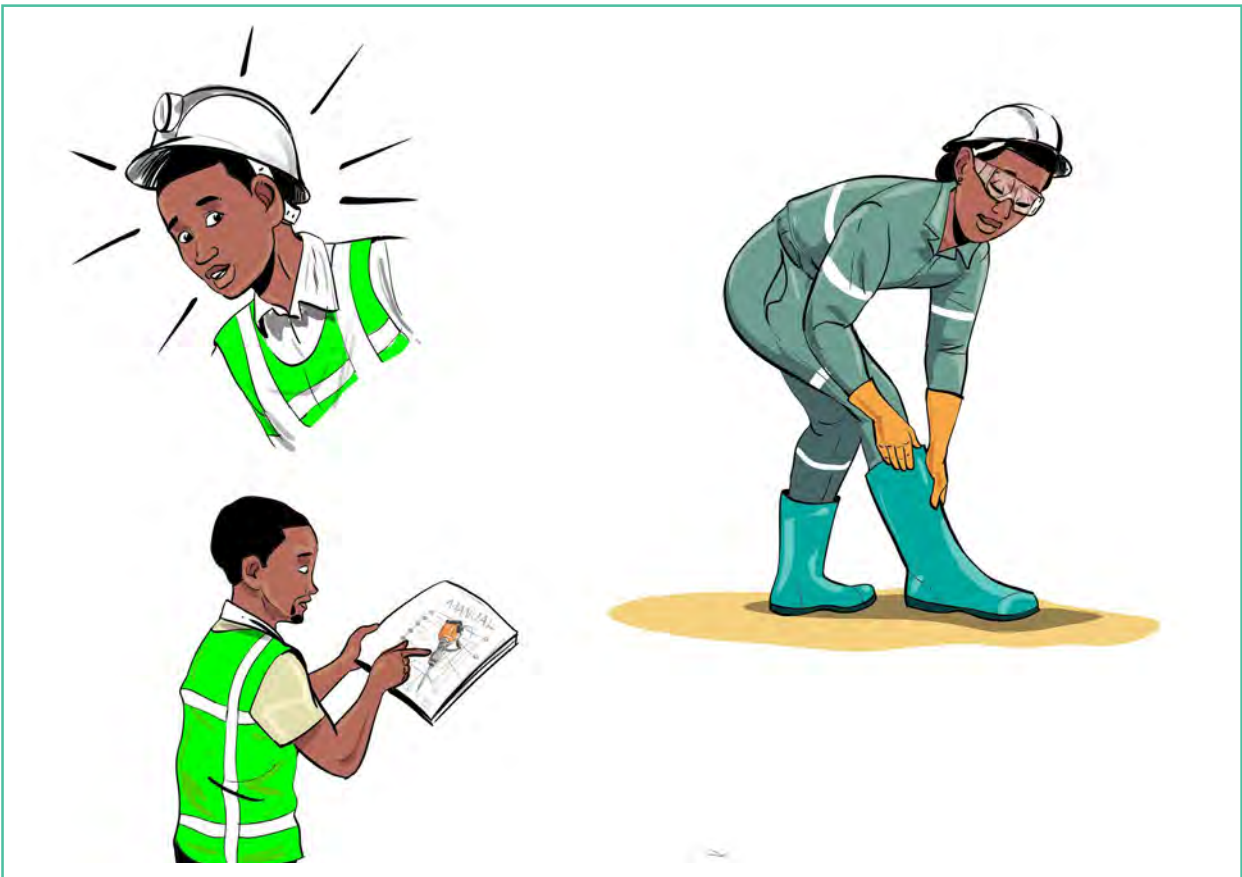


Image 1: Daily safety rules for miners.

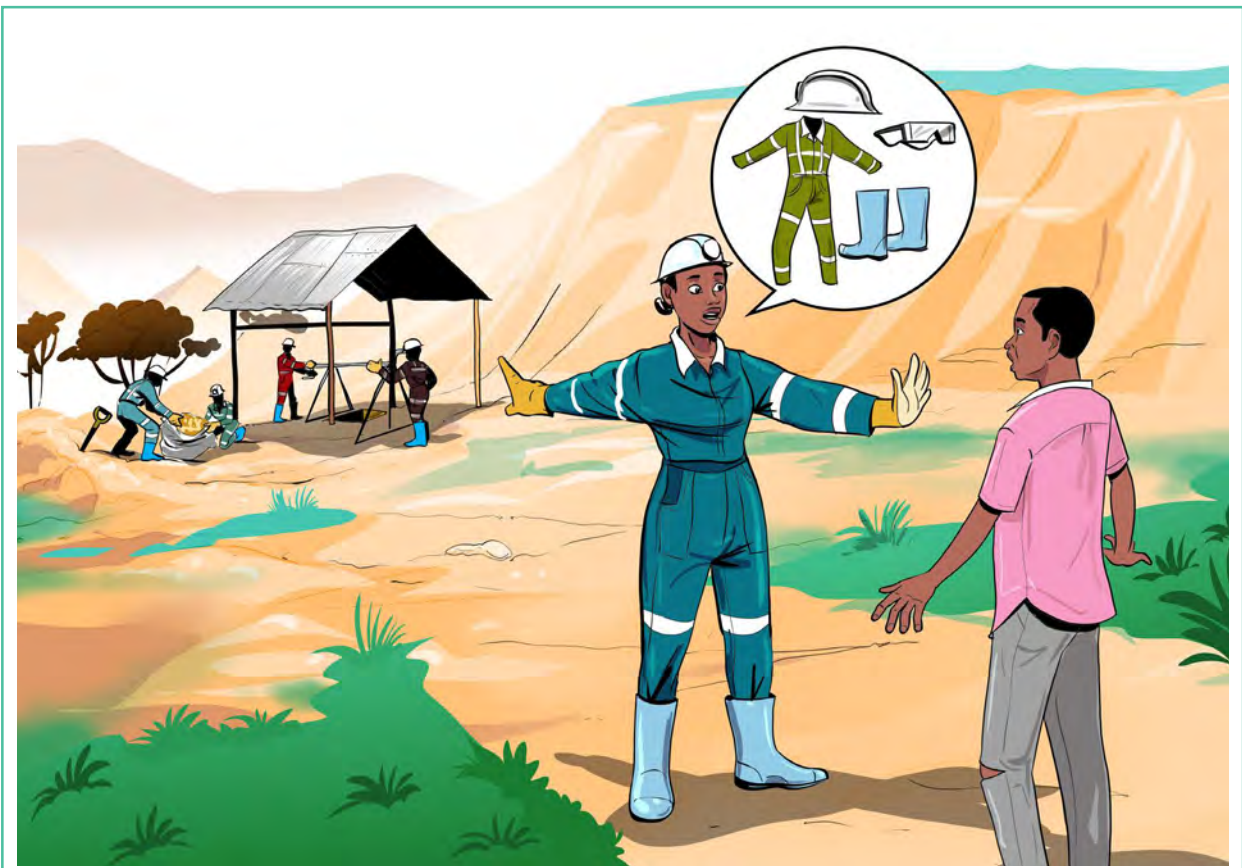


Image 2: No PPE, no work.



Image 3: A mine site should have a first aid kit which is kept in an accessible area.



Image 4: An accident reporting protocol should be in place instructing how an accident is reported and recorded to the mine leaders.

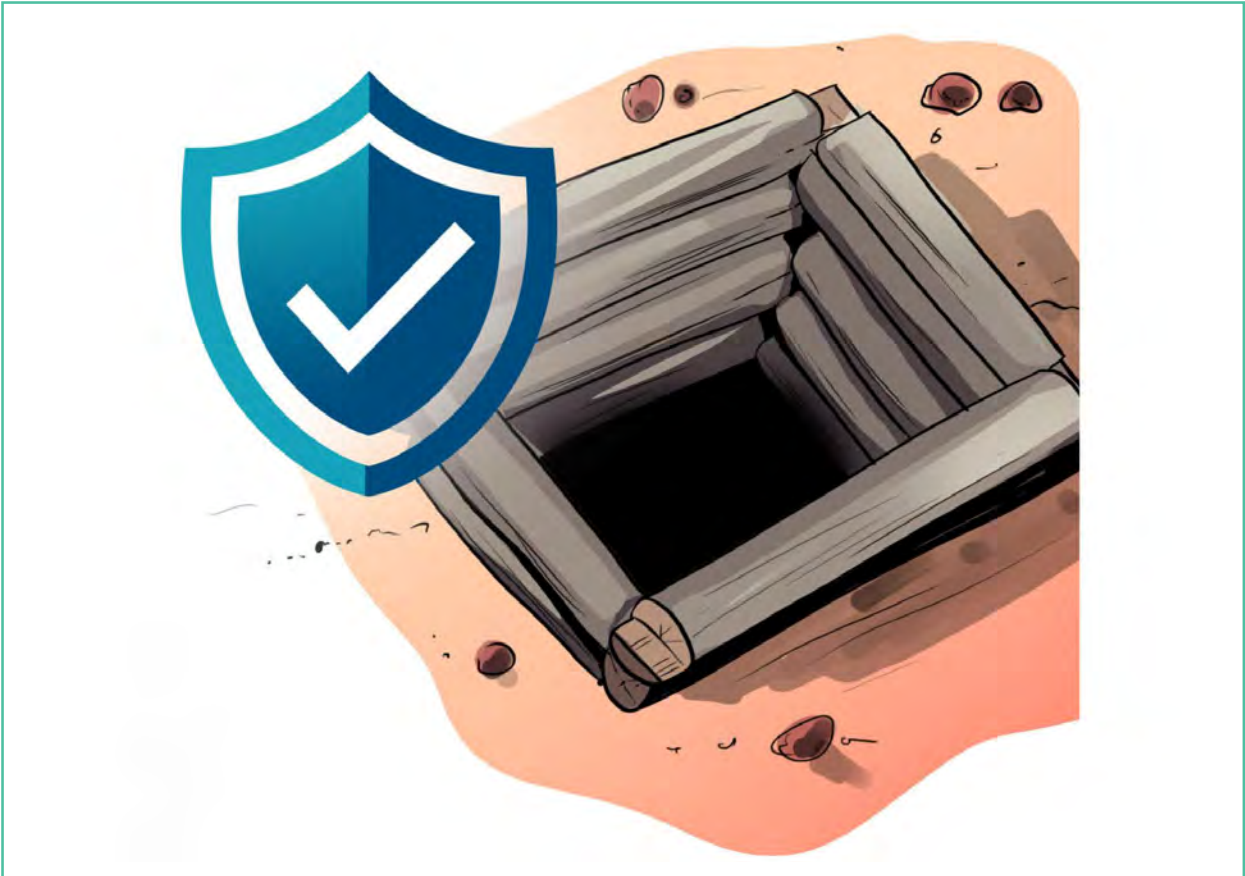


Image 5: Check the safety of the entrance or the point used to access the workplace.



Image 6: Safety talks are important to discuss key topics with all workers.

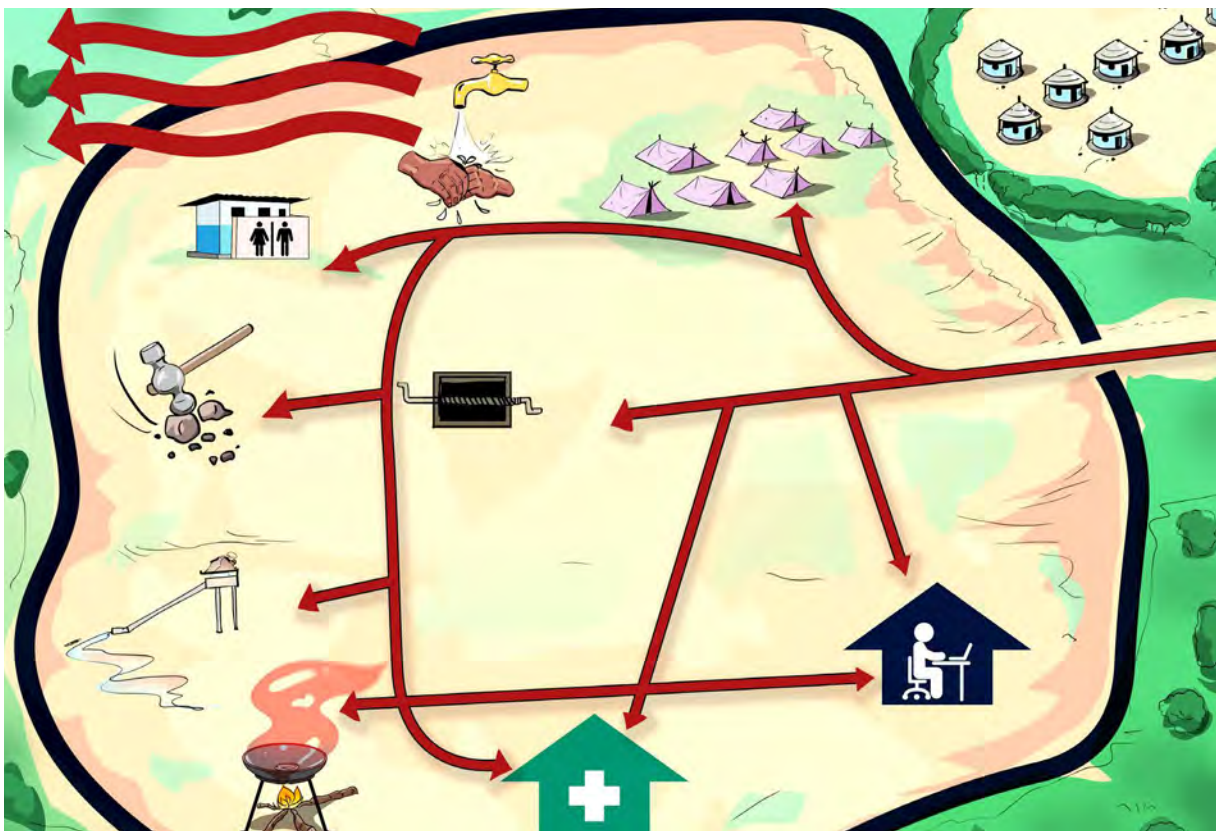


Image 7: Organize a mine site into different work zones with separate areas for different tasks such as extraction, processing, or burning amalgam.

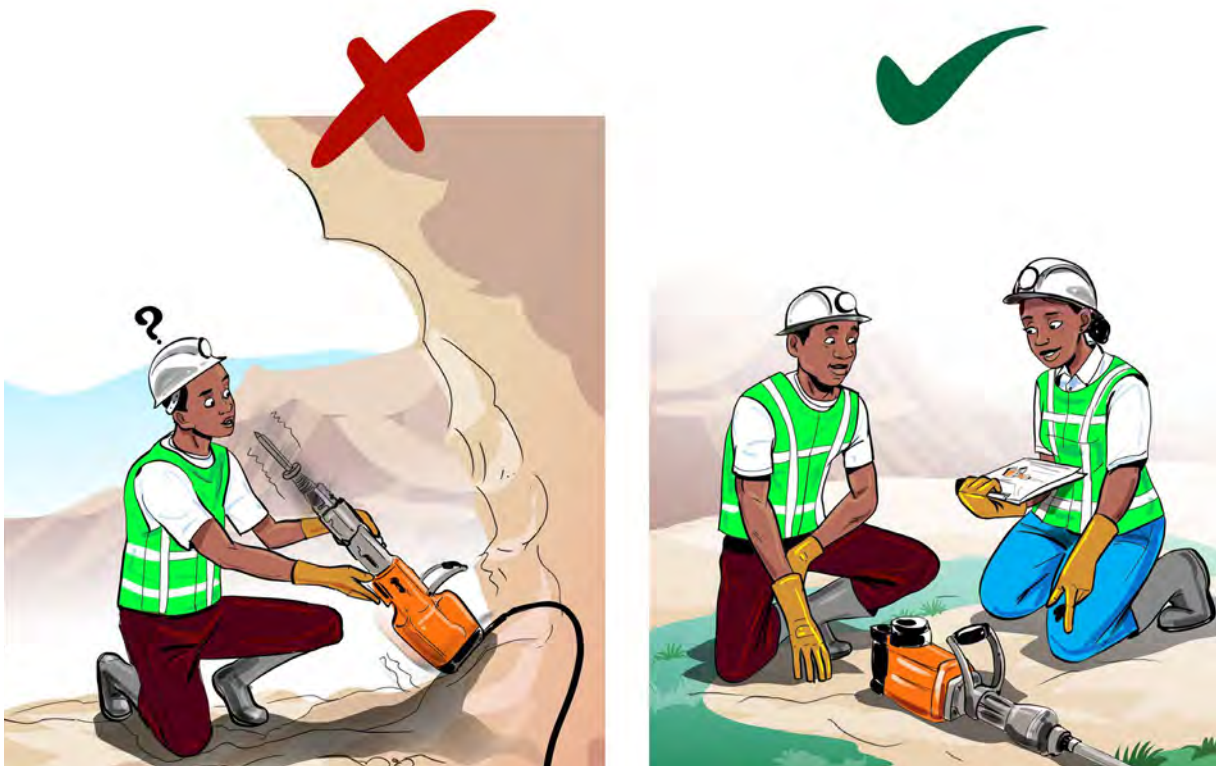


Image 8: Accidents can be caused by undertaking a task without proper knowledge or guidance.

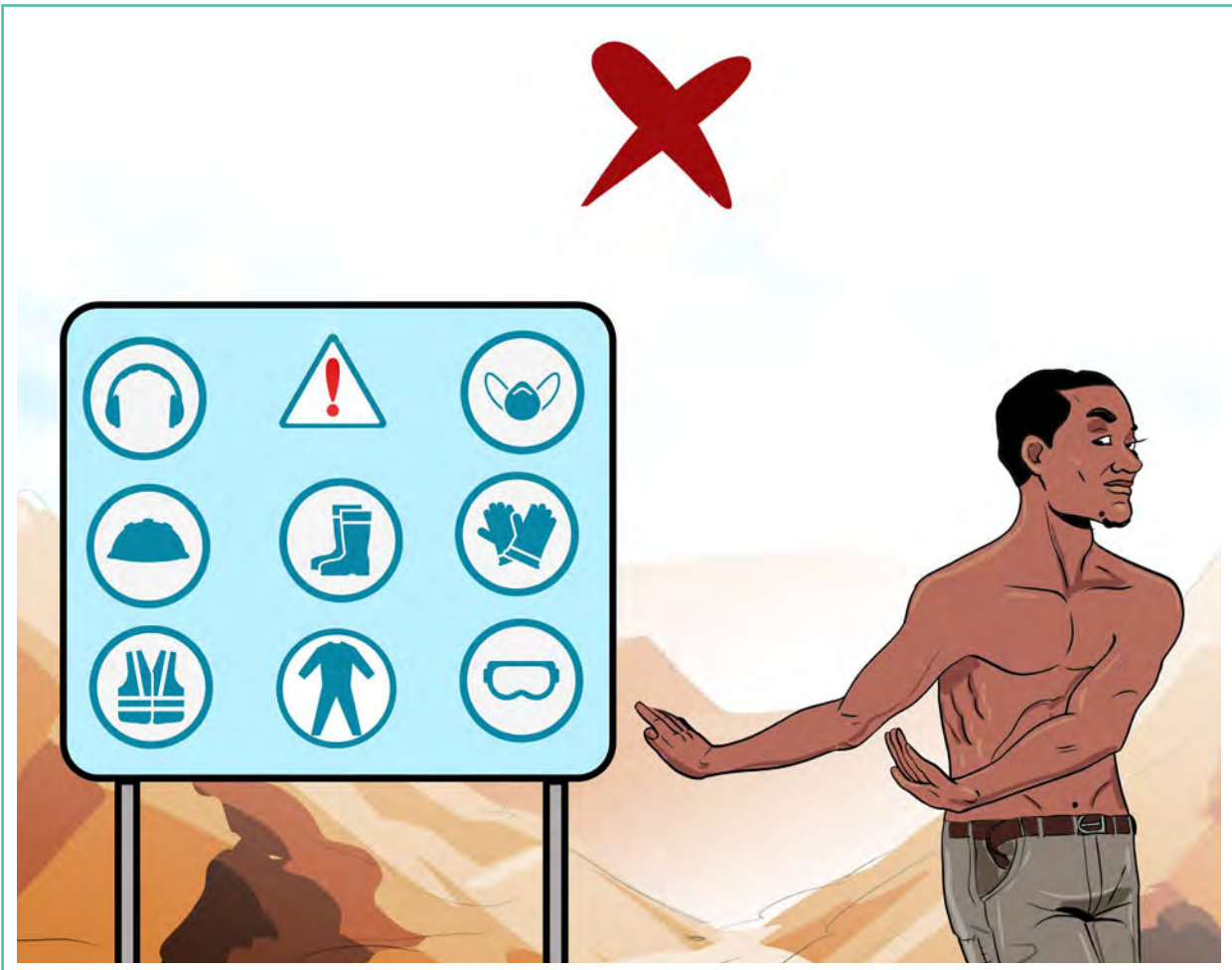


Image 9: Accidents can be caused by non-compliance with workplace health and safety rules.

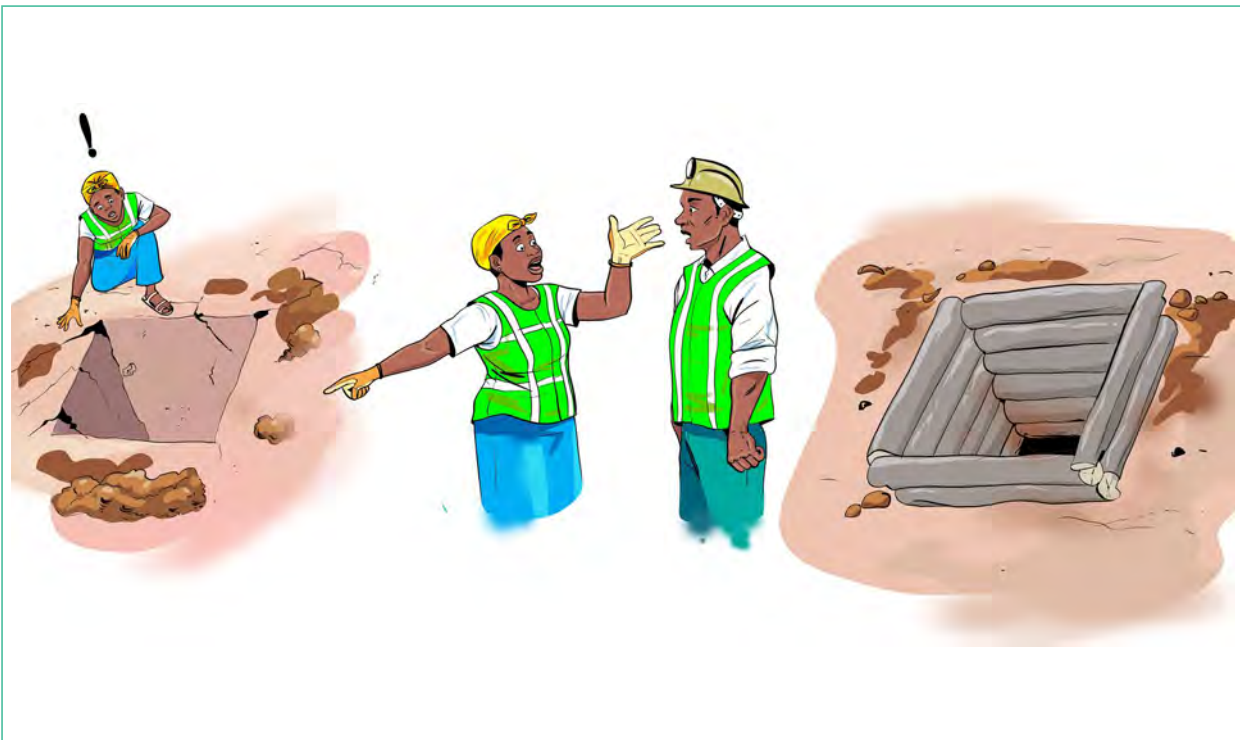


Image 10: Make it a routine to identify and report hazards.



Image 11: Different PPE.



Image 12: Wear a hard hat and safety boots when working underground.



Image 13: Wear a dust mask and eye protection when crushing rocks or in dusty areas.



Image 14: Wear a mask and use a retort when burning amalgam.



Image 15: Wear ear protection when working in a noisy area.

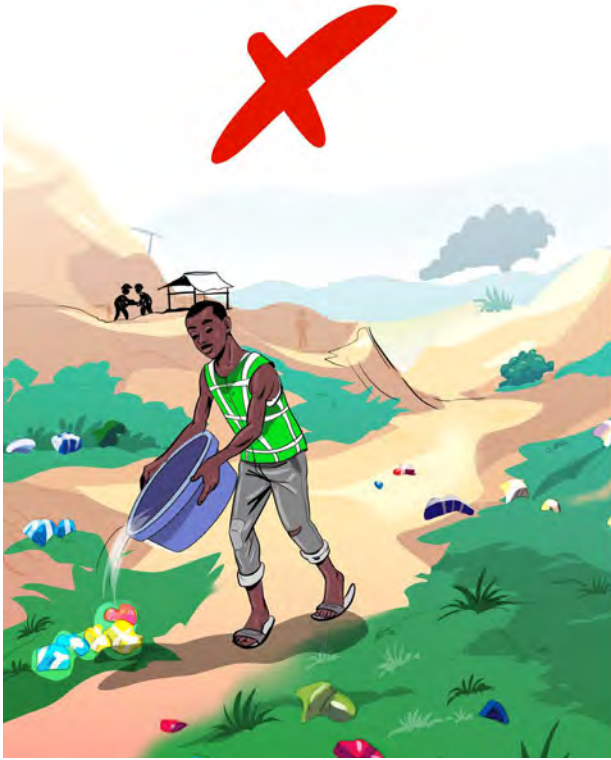


Image 16: Dispose of trash in designated pits.

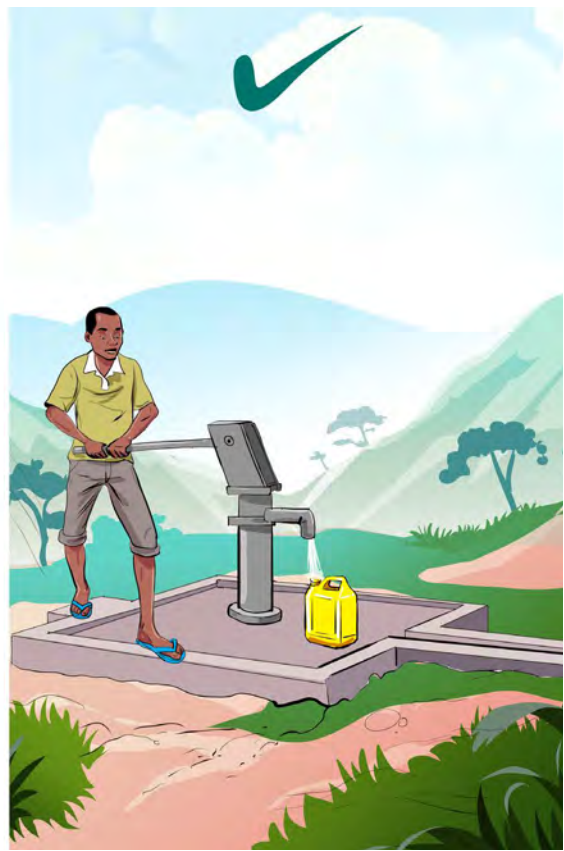


Image 17: Water for drinking or food preparation should be taken from protected safe sources like boreholes.



Image 18: Boil drinking water.



Image 19: Water should be poured directly from the container, rather than using a handleless cup.

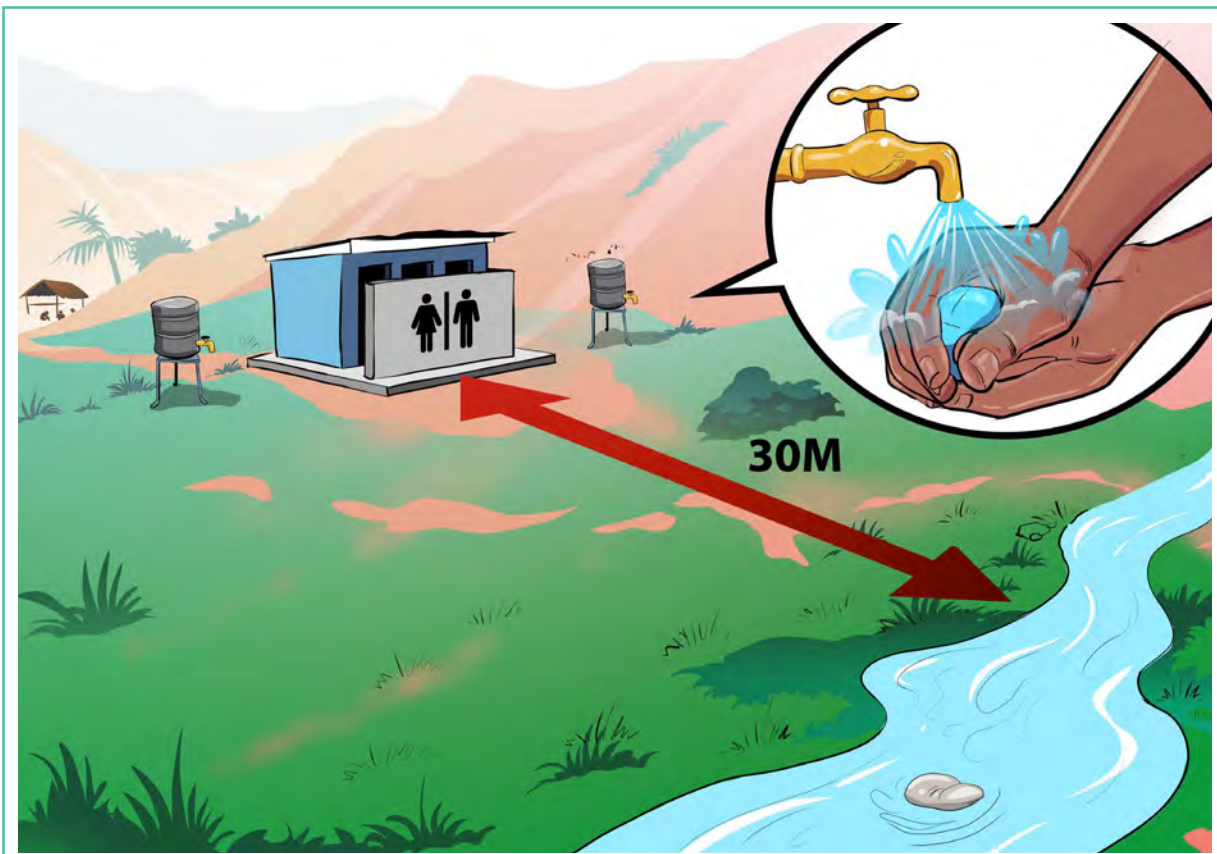


Image 20: Designate toilets or pit latrines, at least 30 metres away from water sources.



Image 21: Establish good storage of chemicals.

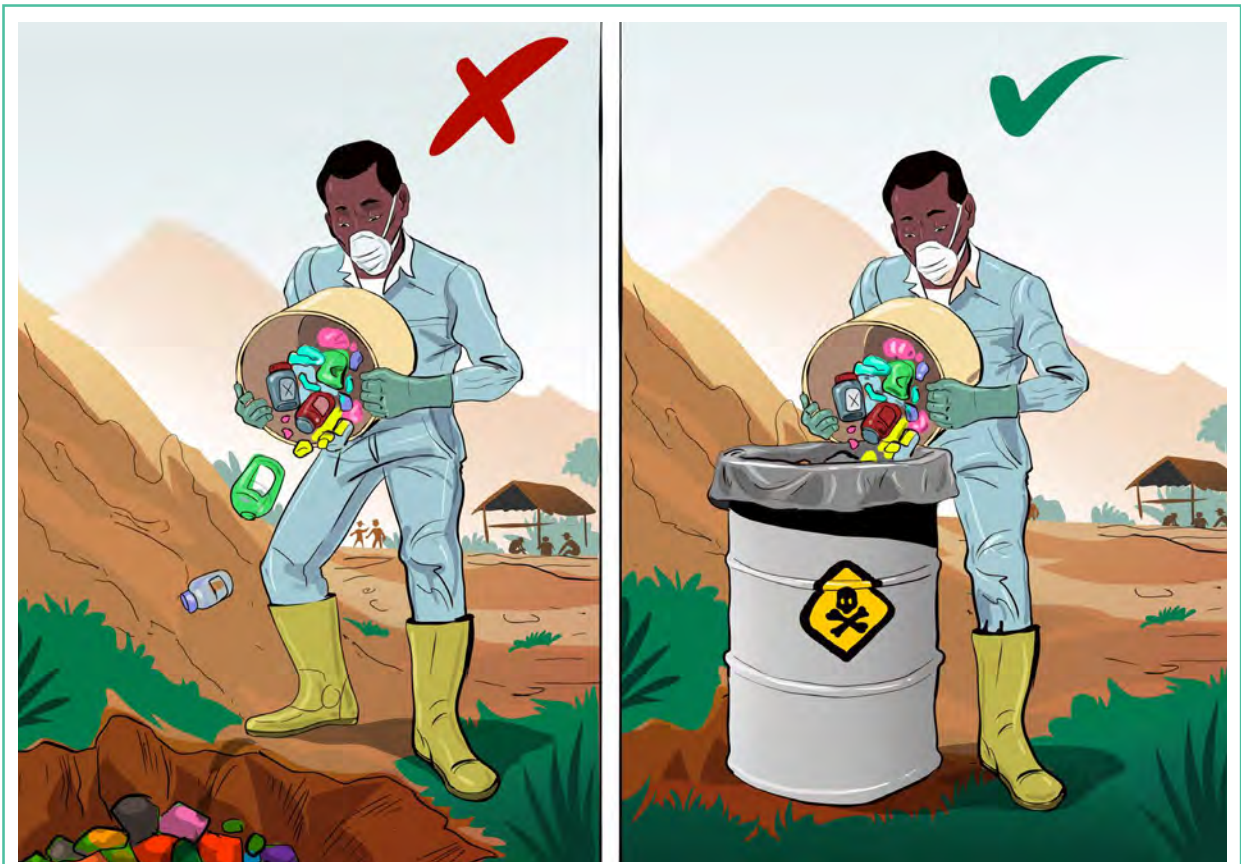


Image 22: Establish good disposal protocols for chemicals.



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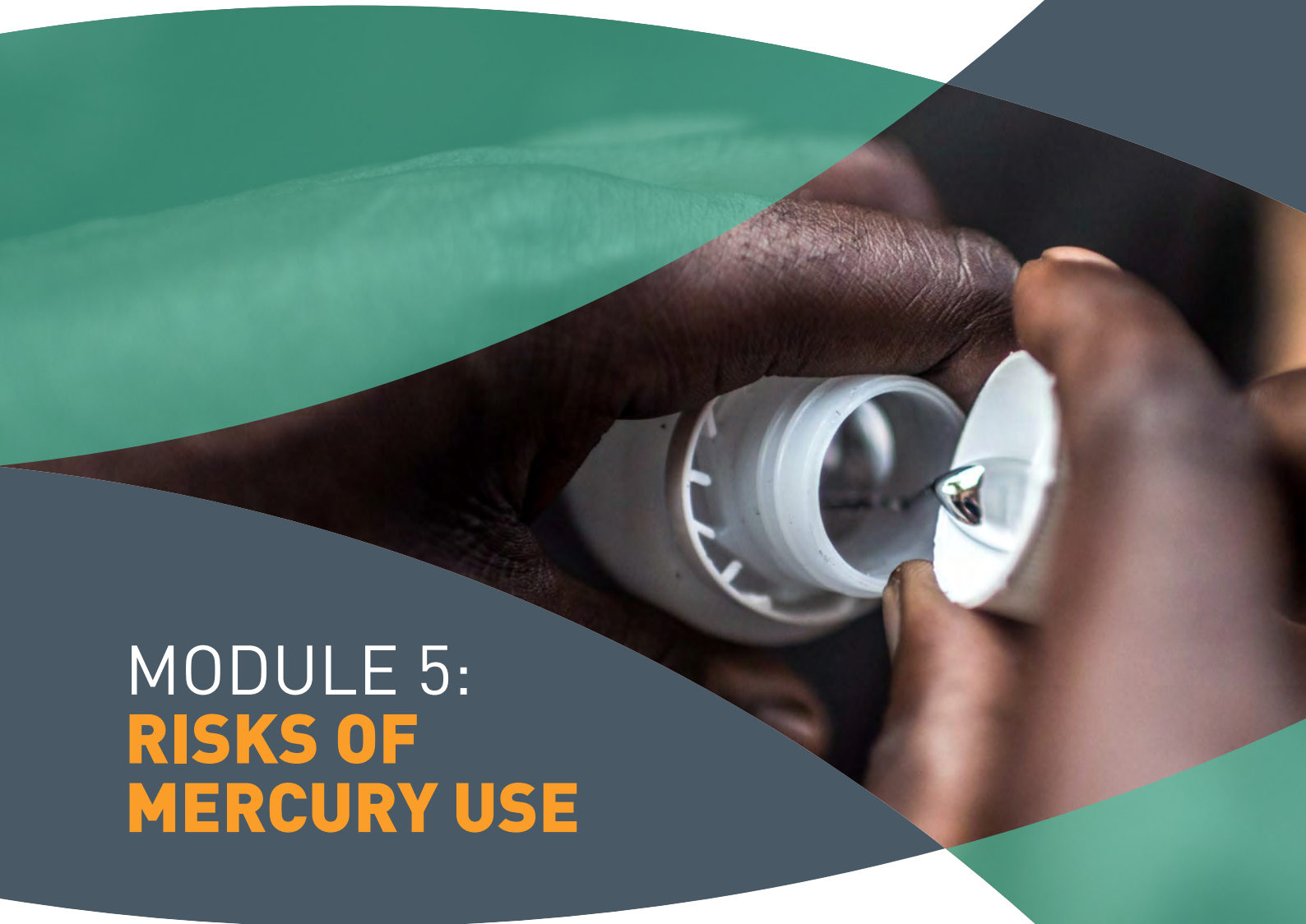
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MODULE 5: **RISKS OF MERCURY USE**

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Image 1: Mercury contaminates the mine site and the community.



Image 2: Mercury is used in different processes of gold mining.



Image 3: Countries have banned the use of mercury in artisanal gold mining.



Image 4: Symptoms and effects of mercury poisoning.

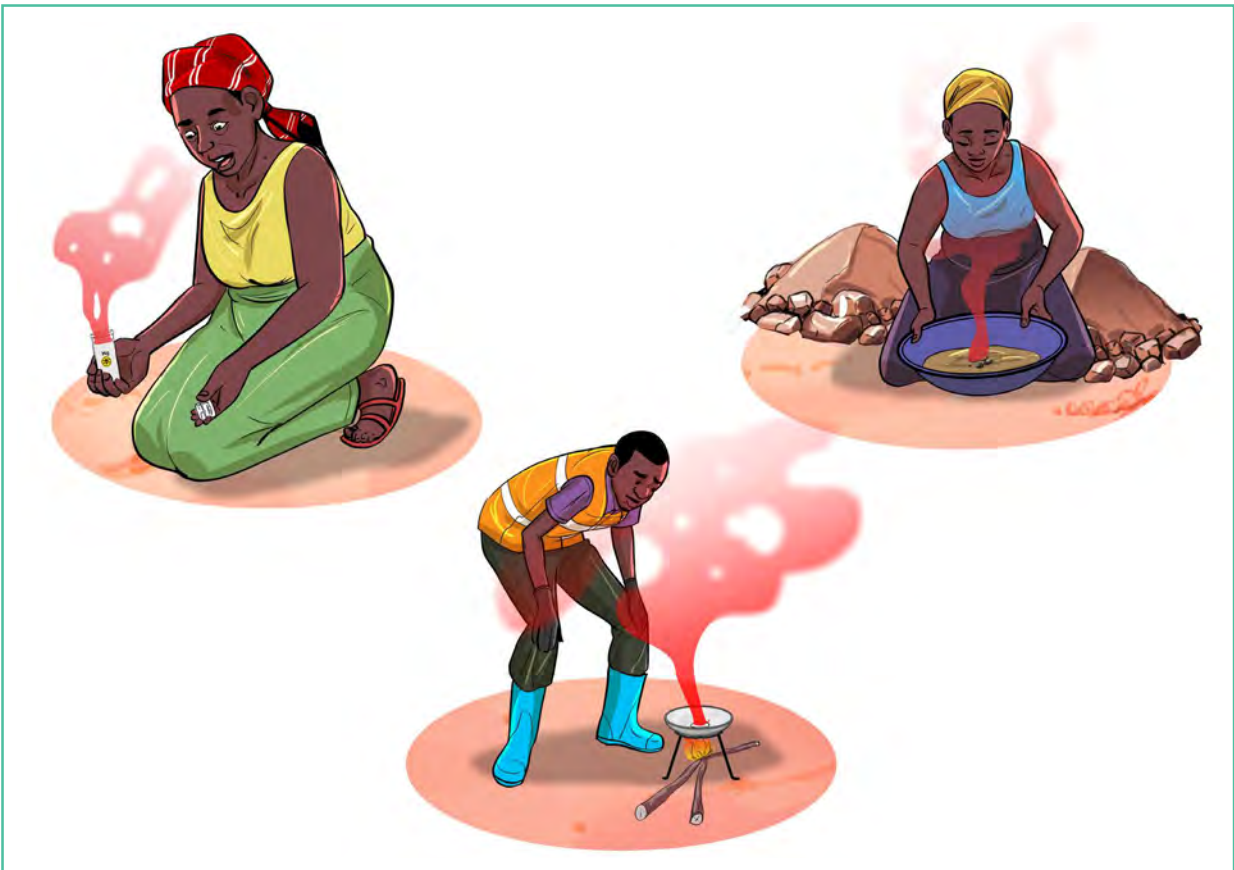


Image 5: Mercury exposure occurs by inhaling its vapours.

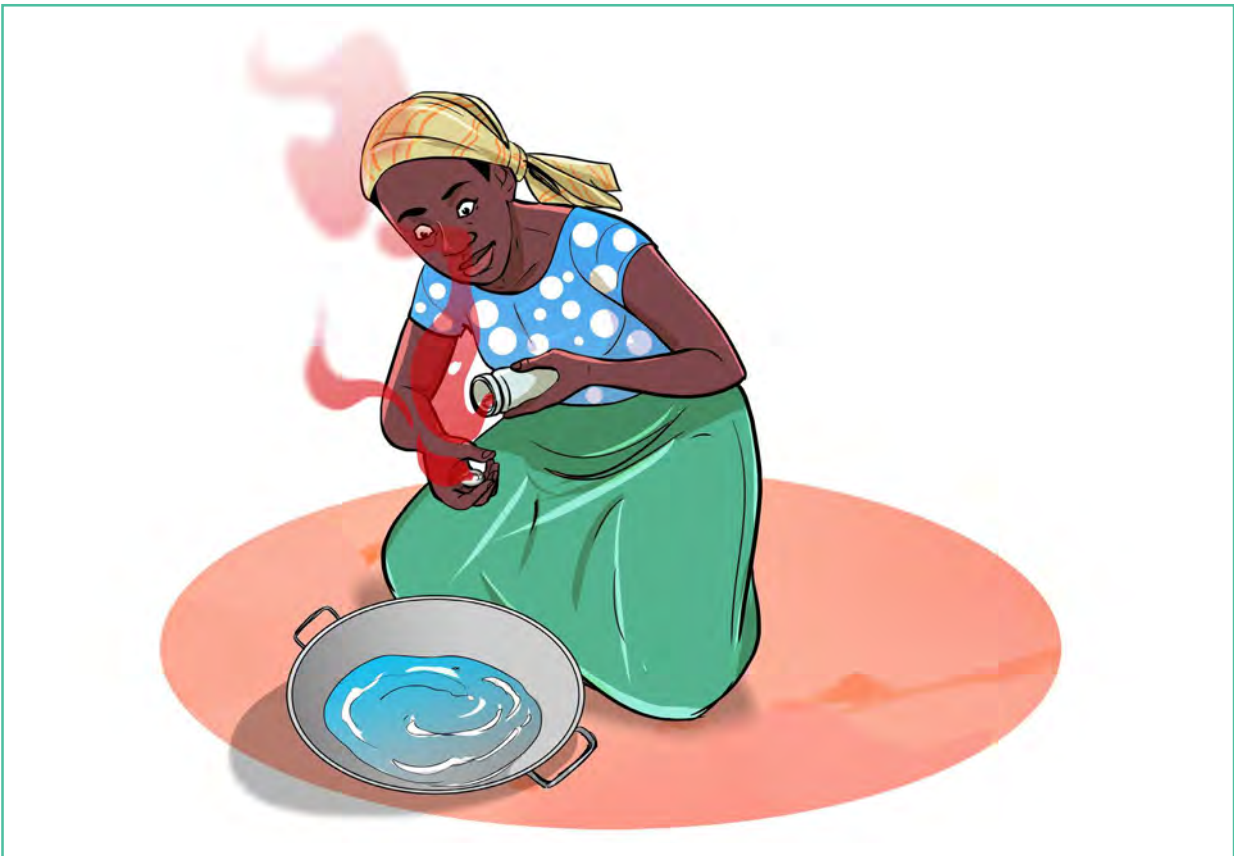


Image 6: Mercury exposure occurs by touching it with bare hands.



Image 7: Mercury exposure occurs by eating contaminated food.



Image 8: Mercury exposure occurs by drinking contaminated water.



Image 9: Mercury exposure occurs by working with contaminated tailings.

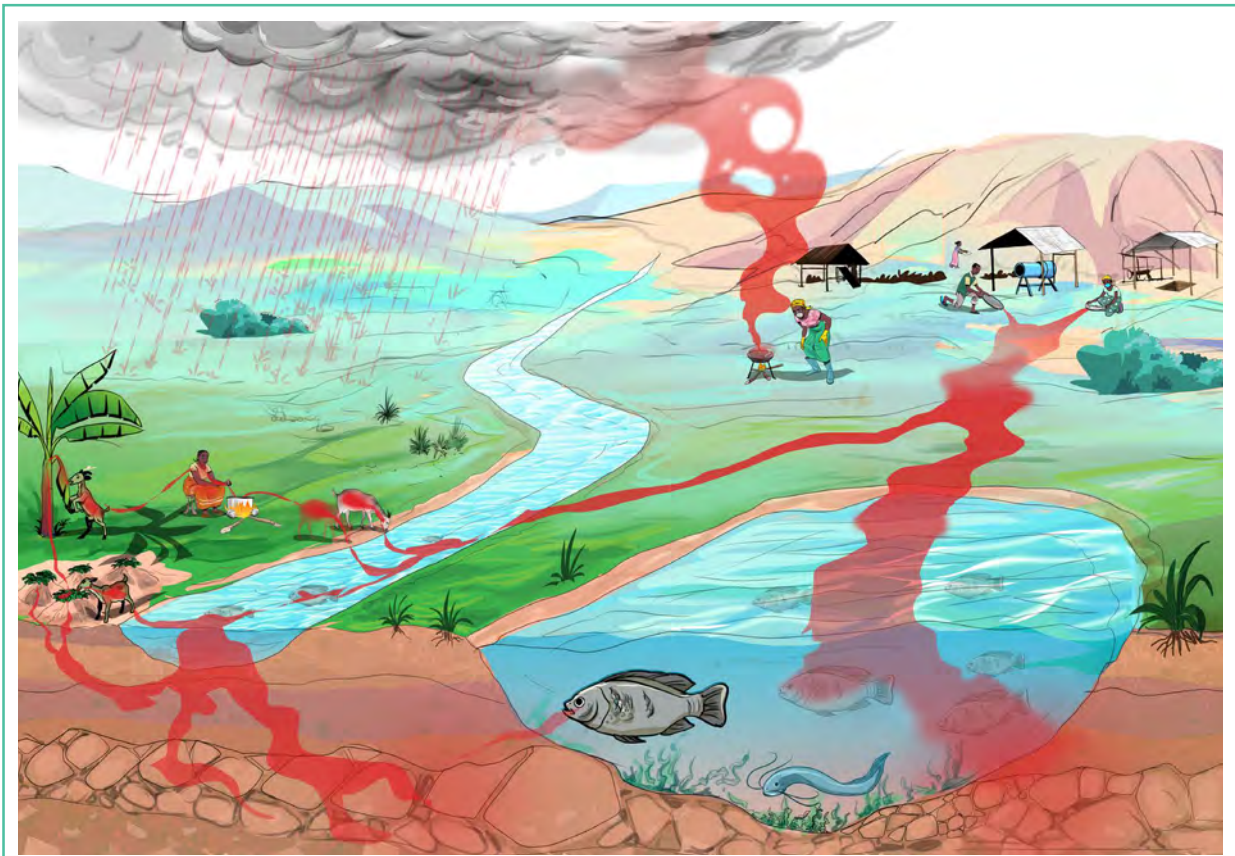


Image 10: Mercury contaminates the environment.

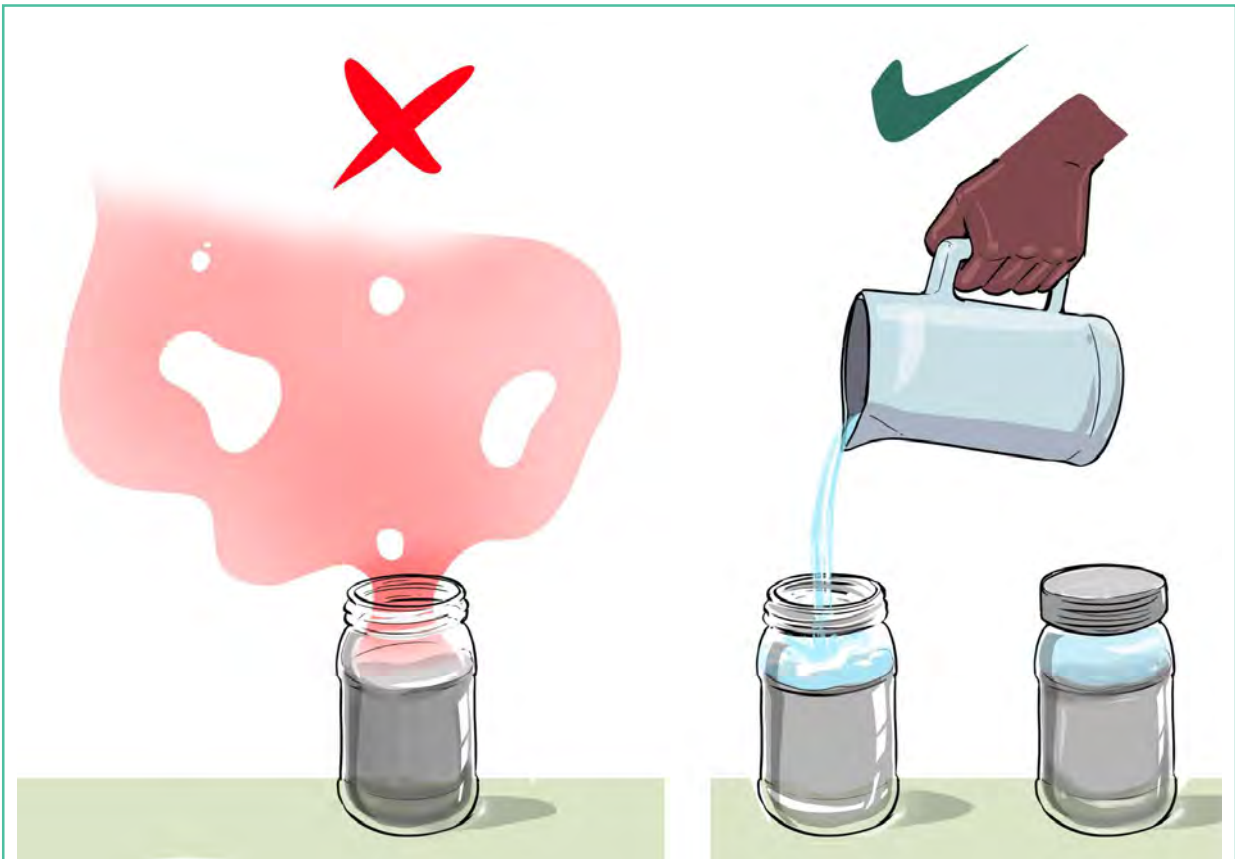


Image 11: Fumes will be released if not stored properly.



Image 12: Mercury exposure occurs when touching it with bare hands.



Image 13: When heated and burned, mercury gives off extremely dangerous vapours.

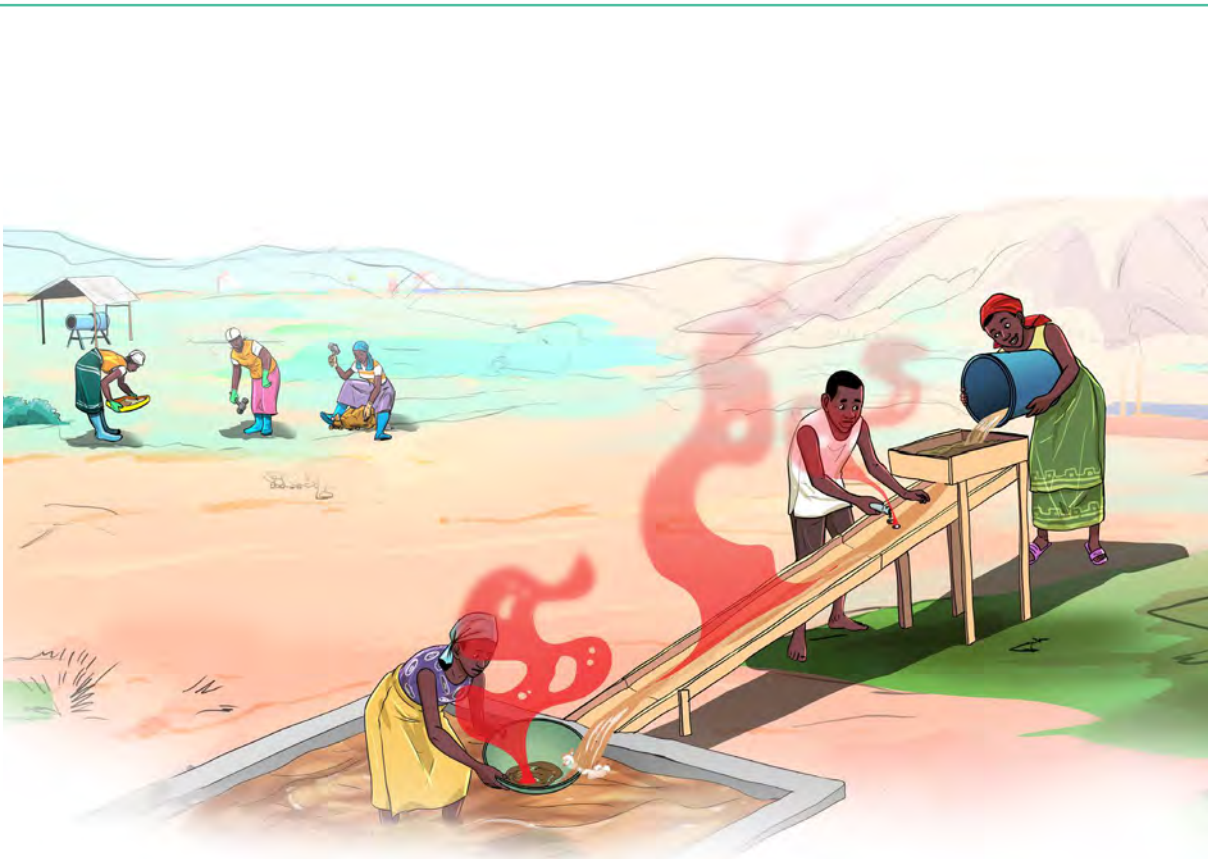


Image 14: Unsafe practice includes adding mercury to the mat of a sluice.



Image 15: Unsafe practice includes adding mercury to a centrifugal concentrator.



Image 16: Unsafe practice includes adding mercury to a wet pan mill.



Image 17: When heated and burned, mercury gives off extremely dangerous vapours.

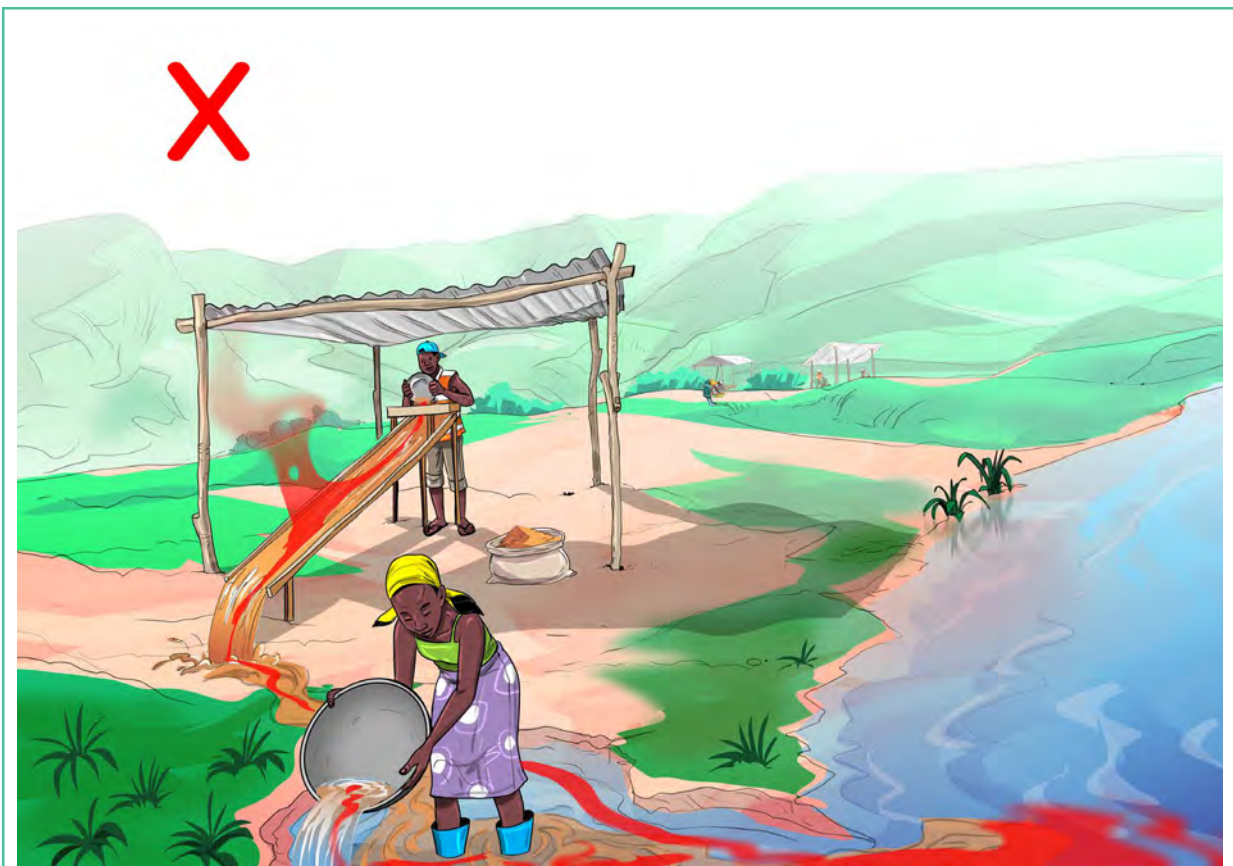


Image 18: Mercury contaminates the water, soil, and air.



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MODULE 6: **SAFER HANDLING OF MERCURY**

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Image 1: Using mercury in mining can contaminate the environment and air.



Image 2: Use of mercury in gold extraction such as open burning of amalgam leads to release of vapours.



Image 3: Properly dispose of mercury-contaminated tailings by burying them in a lined pit.



Image 4: Respirators or face masks filter out mercury vapors.

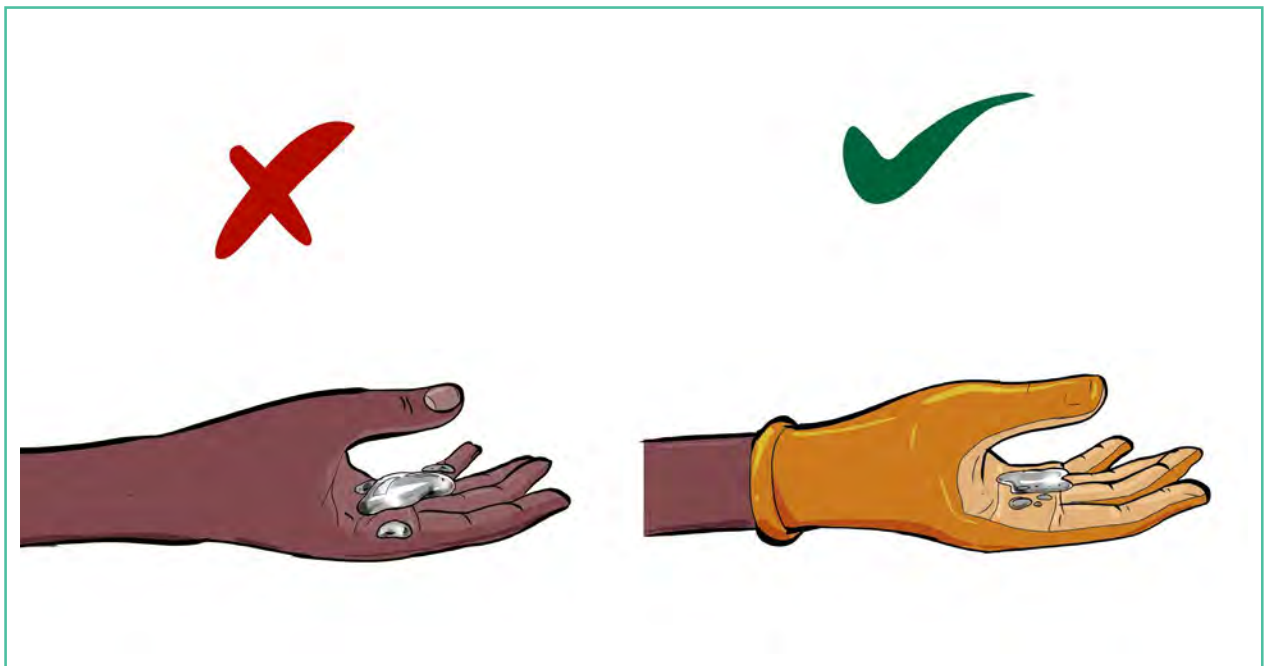


Image 5: Gloves avoid skin contact with mercury.

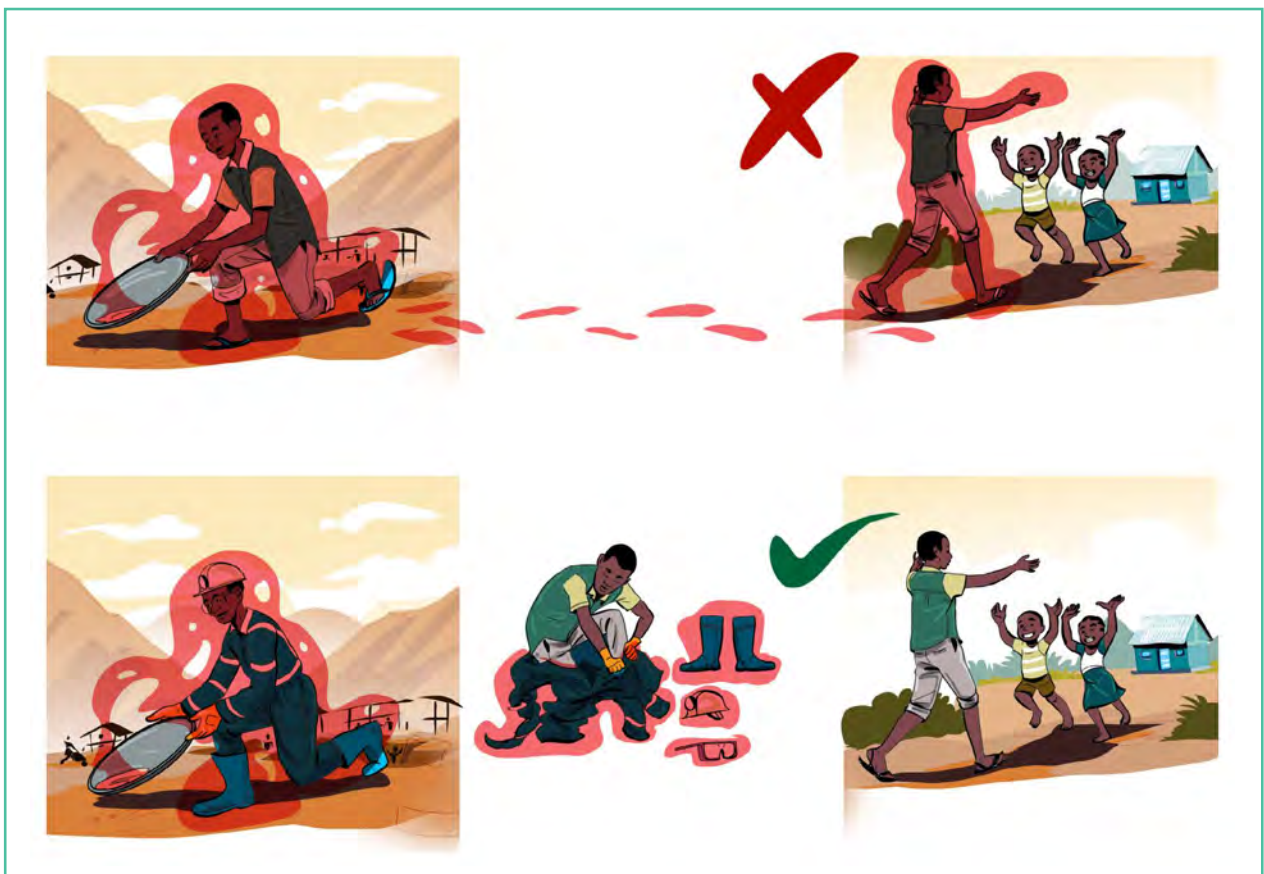


Image 6: Protective clothing prevent mercury from contaminating regular clothes.

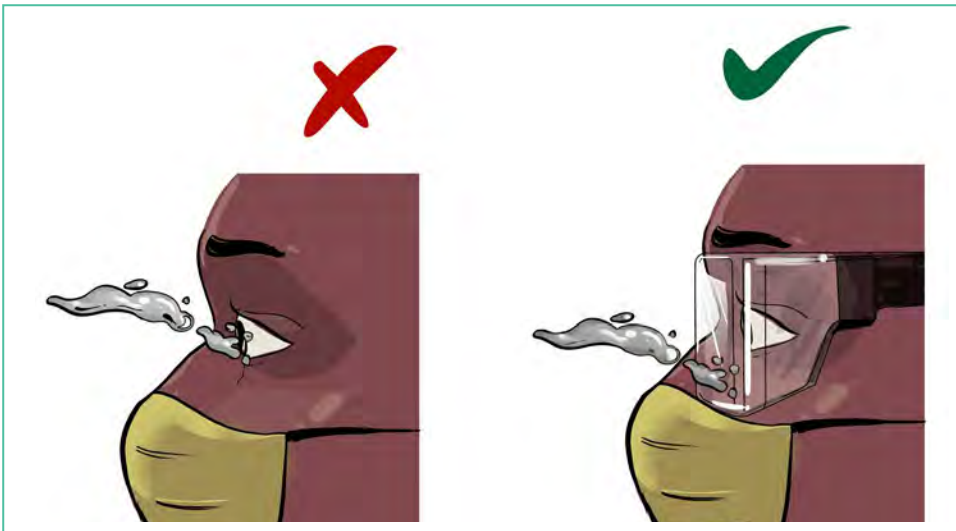


Image 7: Wear eye protection, such as goggles, to prevent mercury splashing in the eyes.



Image 8: Ensure that all PPE is in good condition and fits the user properly.

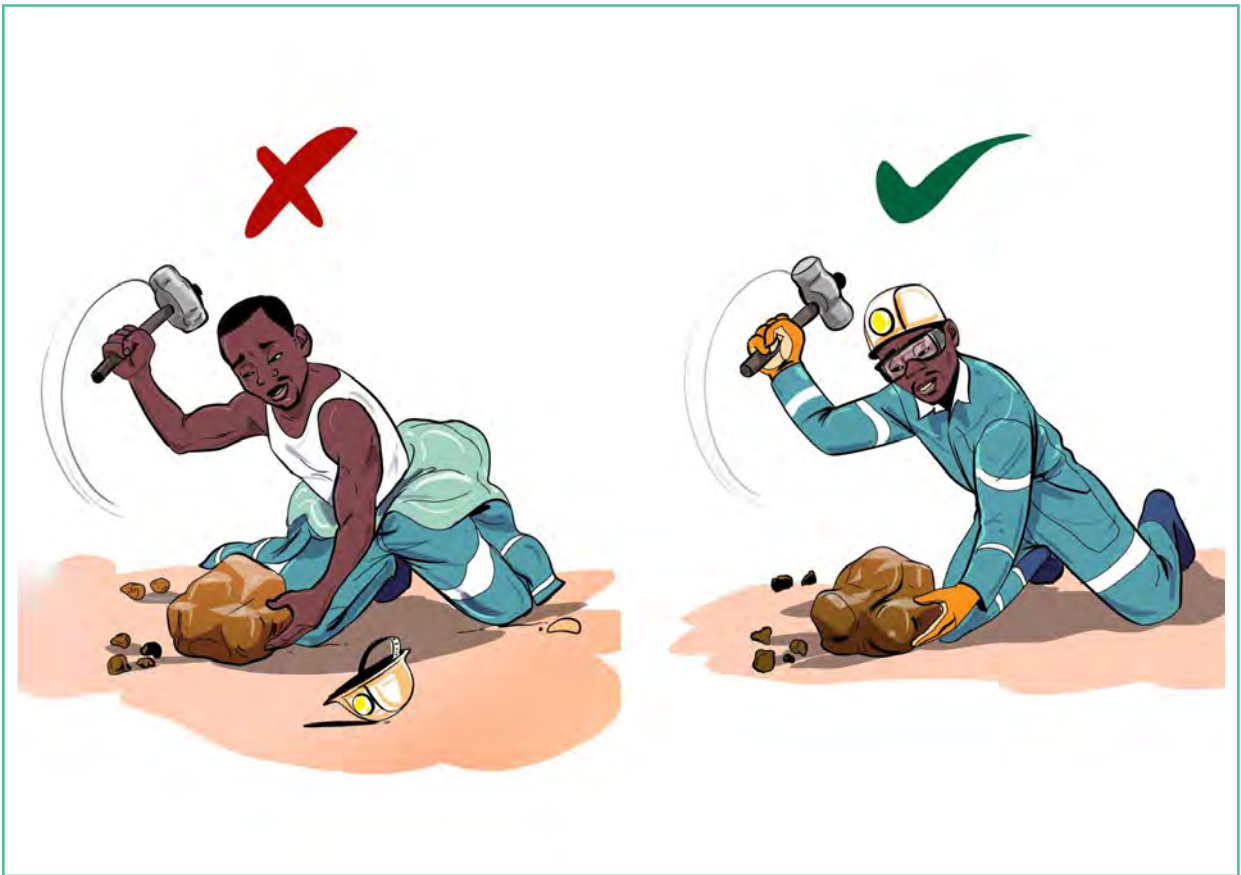


Image 9: Train miners on the correct way to wear, use, and maintain their PPE.

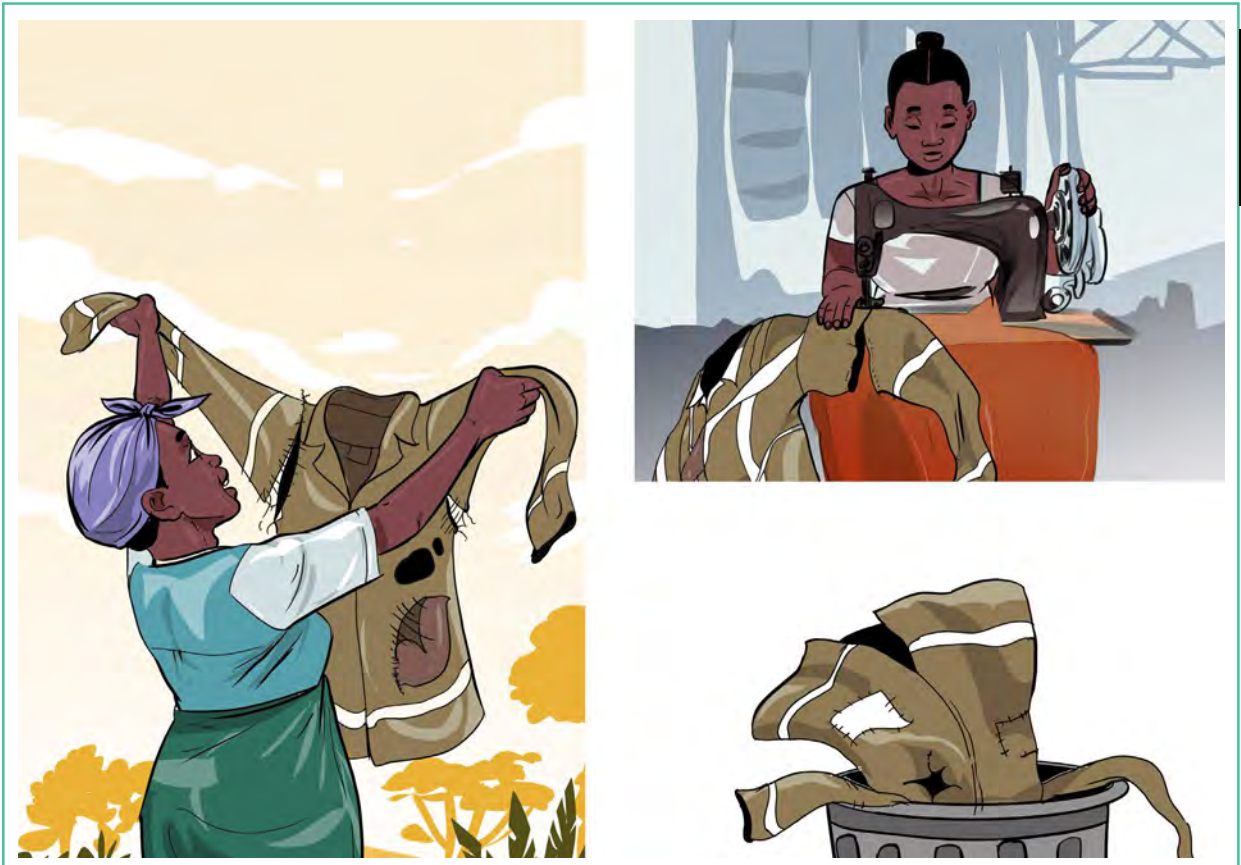


Image 10: Regularly inspect and replace PPE as needed to maintain its effectiveness.

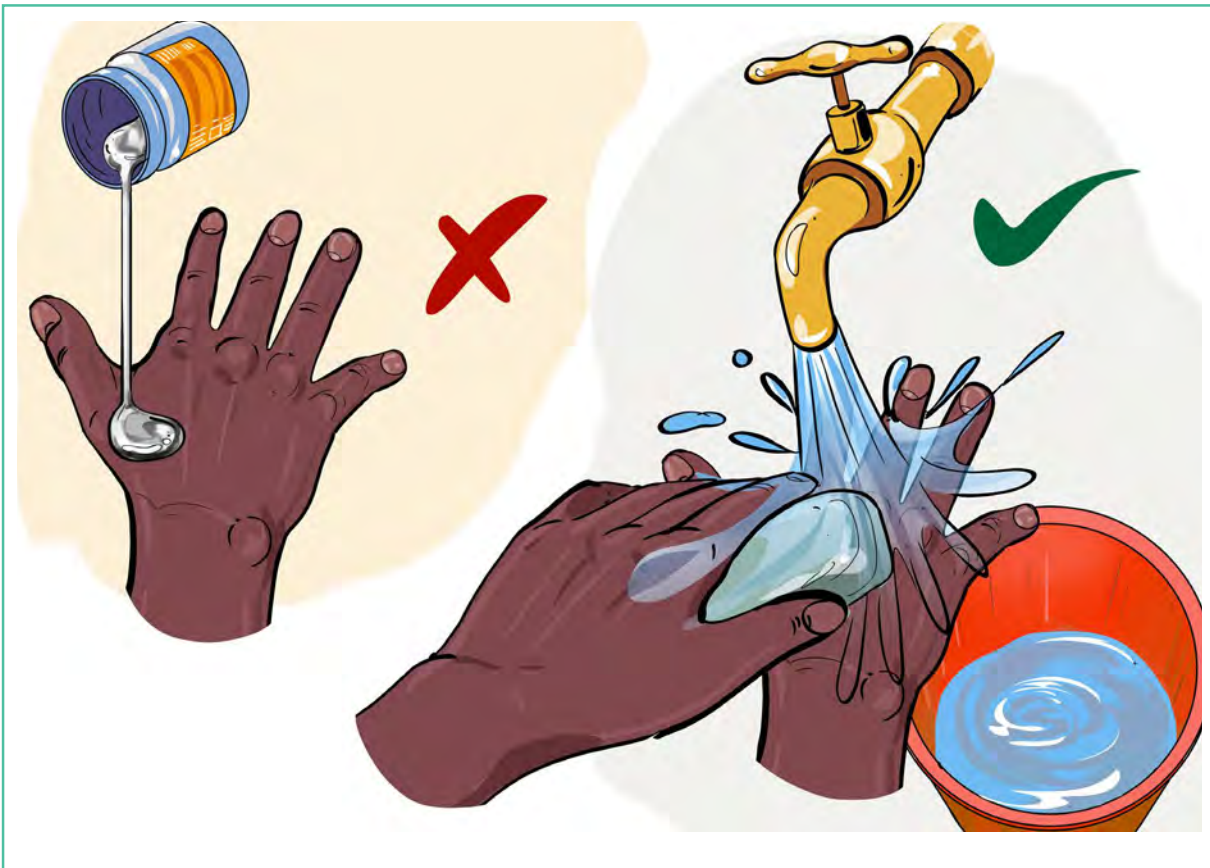


Image 11: Miners who have skin contact with liquid mercury should immediately and thoroughly wash exposed body surfaces with soap or a mild detergent and water.



Image 12: Preparing food, eating, drinking and smoking should not be permitted in areas where mercury is used or stored.

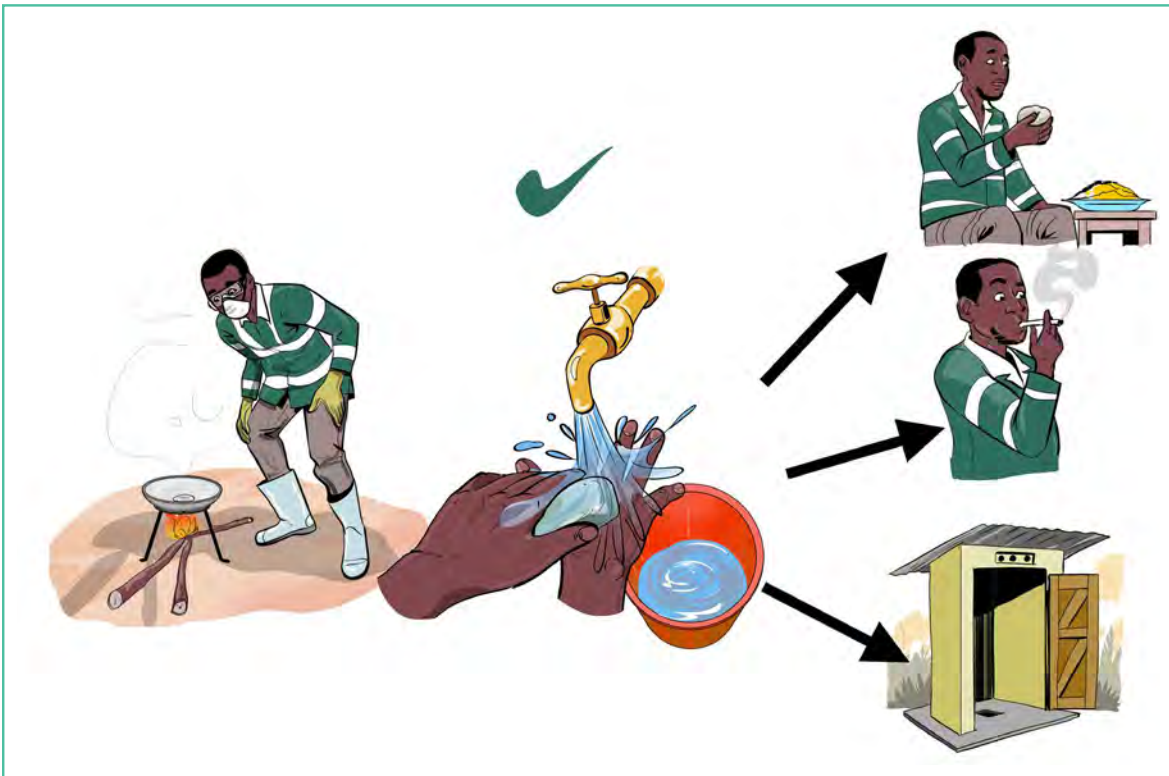


Image 13: Miners who use or are exposed to mercury should wash their hands thoroughly with soap or mild detergent and water before preparing food, eating, smoking, or using toilet facilities.

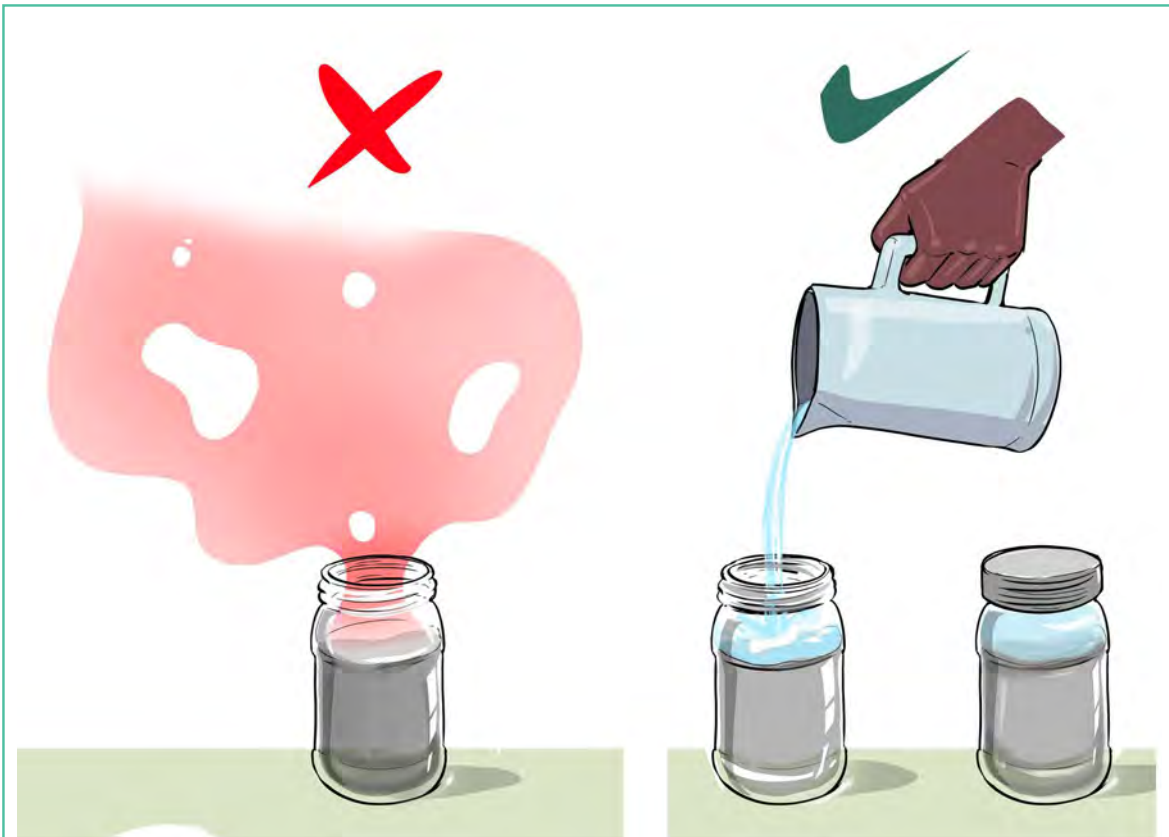


Image 14: Mercury should be stored in closed airtight containers covered with a centimetre of water.



Image 15: Do not dump mercury on the ground or in water.



Image 16: Children and pregnant women should not participate and be removed from all mercury-related activities.

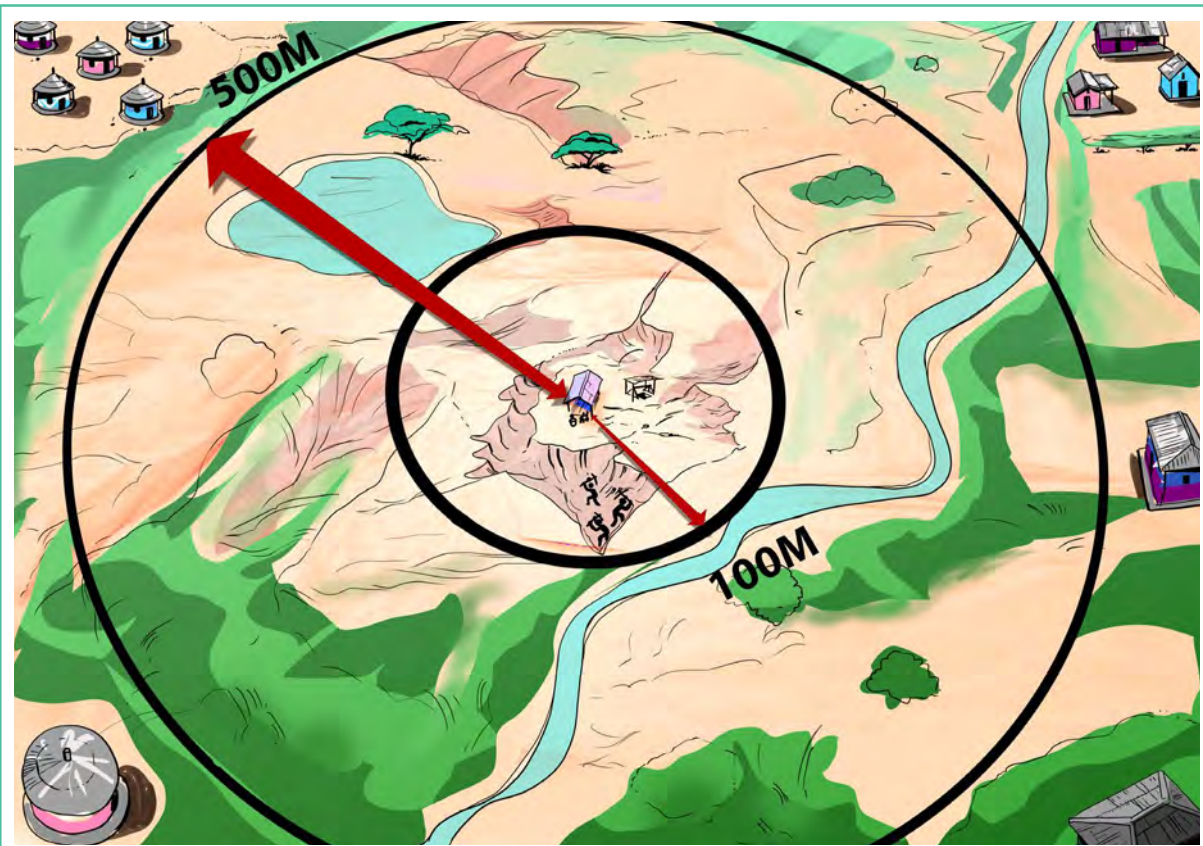


Image 17: Amalgamation and retorting should only be conducted in designated sites at least 500 m from any inhabited place and 100 m from any water sources.



Image 18: Amalgamation pond.



Image 19: Kitchen bowl retort.

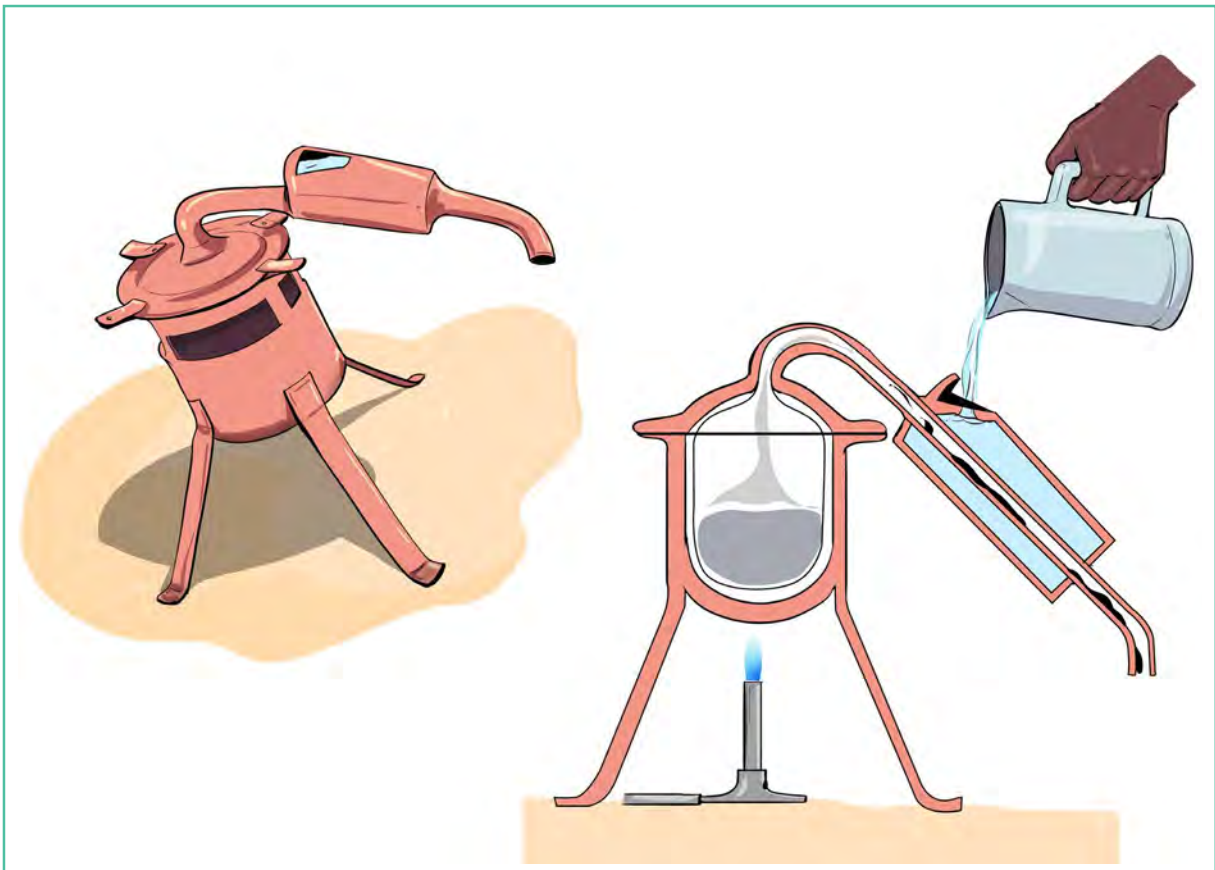


Image 20: Classic retort.

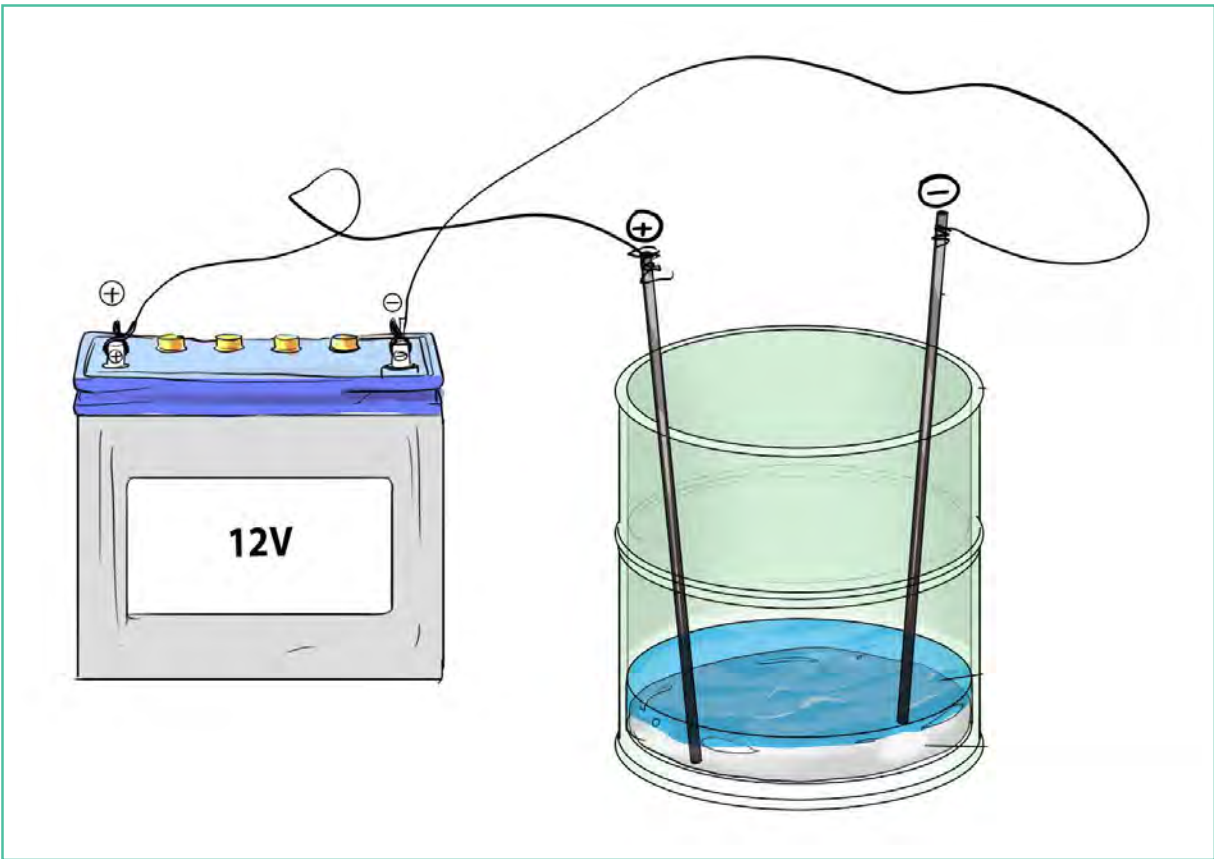


Image 21: Mercury recharging.



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MODULE 7: **TECHNIQUES TO ELIMINATE MERCURY**

PARTICIPANT'S GUIDE
**Supporting Best Practices at
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Photos: Miléquém Diarassouba (pgs. 1, 2) in Cote d'Ivoire and Ibrahim Biko (pg. 4) in Uganda

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Image 1: Unsafe practice includes adding mercury to the mat of a sluice.



Image 2: Unsafe practice includes adding mercury to a centrifugal concentrator.

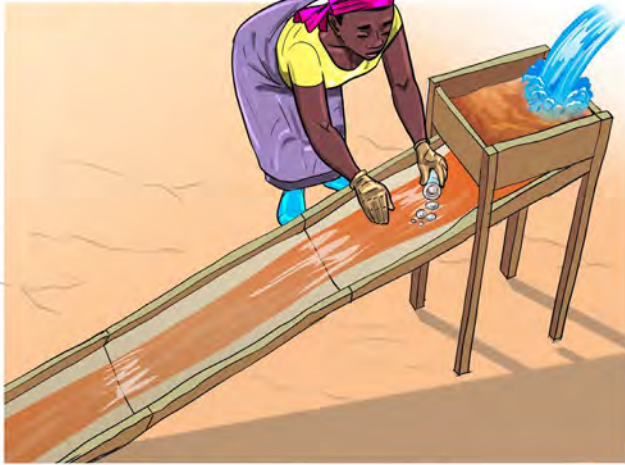


Image 3: Unsafe practice includes adding mercury to a wet pan mill.



Image 4: Adding mercury only in last stage of gold recovery results in more profits.

✗



✓



Image 5: Worst practice is whole ore amalgamation. Add mercury only to concentrates.

✗



✓



Image 6: Worst practice is open burning of amalgam. Use a retort.



Image 7-A: Worst practice is burning amalgam in residential areas.

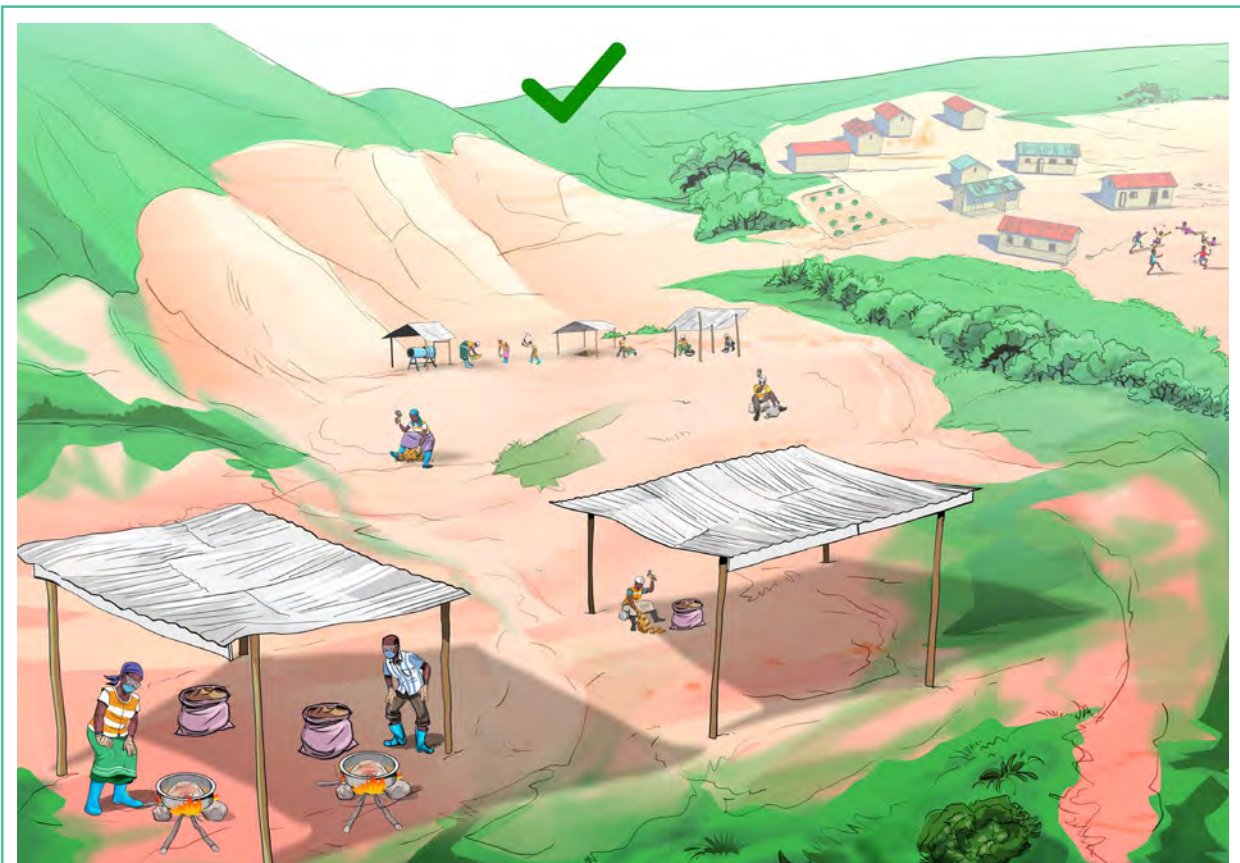


Image 7-B: Process mercury in designated work areas.



Image 8-A: Worst practice is to dispose of mercury into local water sources.



Image 8-B: Use designated amalgamation pond.

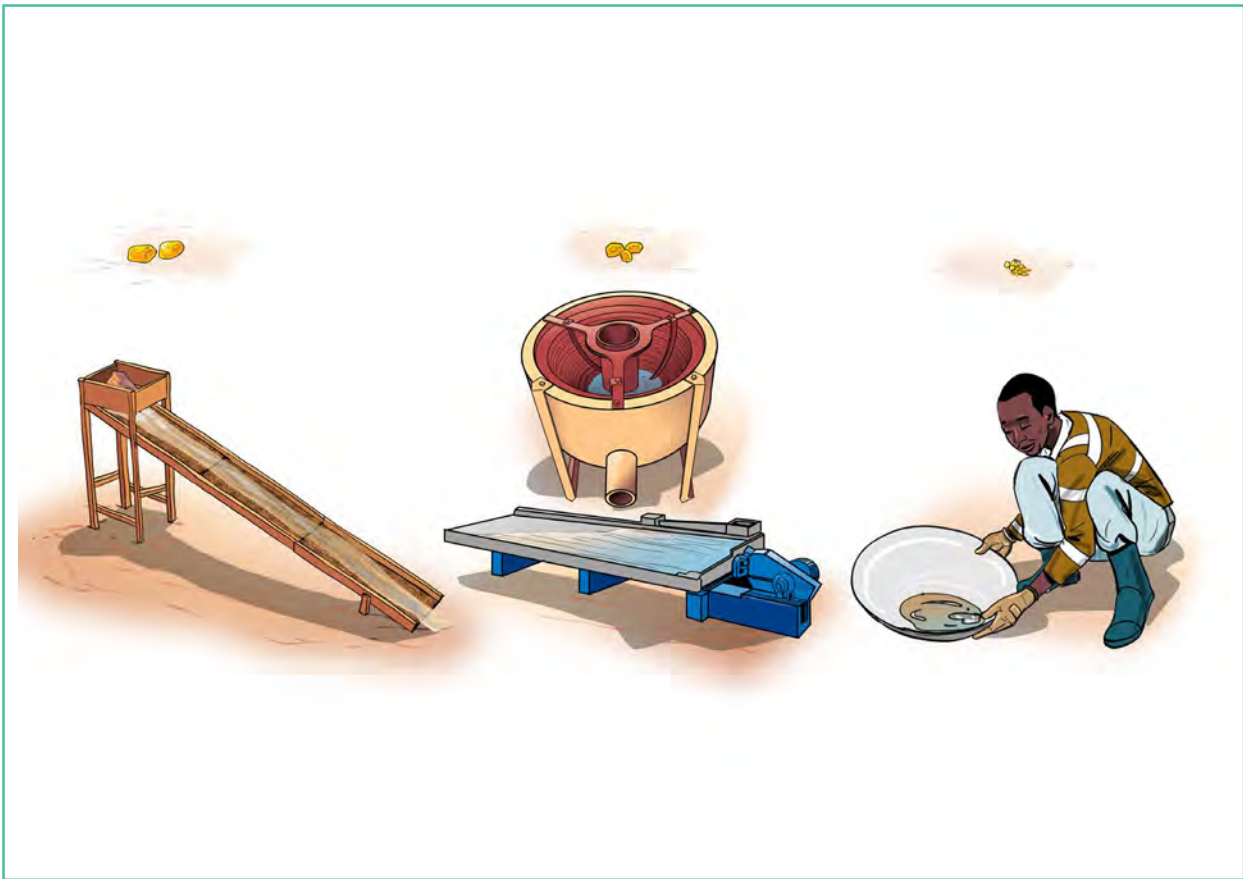


Image 9: Use technologies in different combinations to achieve high gold recovery.



Image 10: Dry processing.

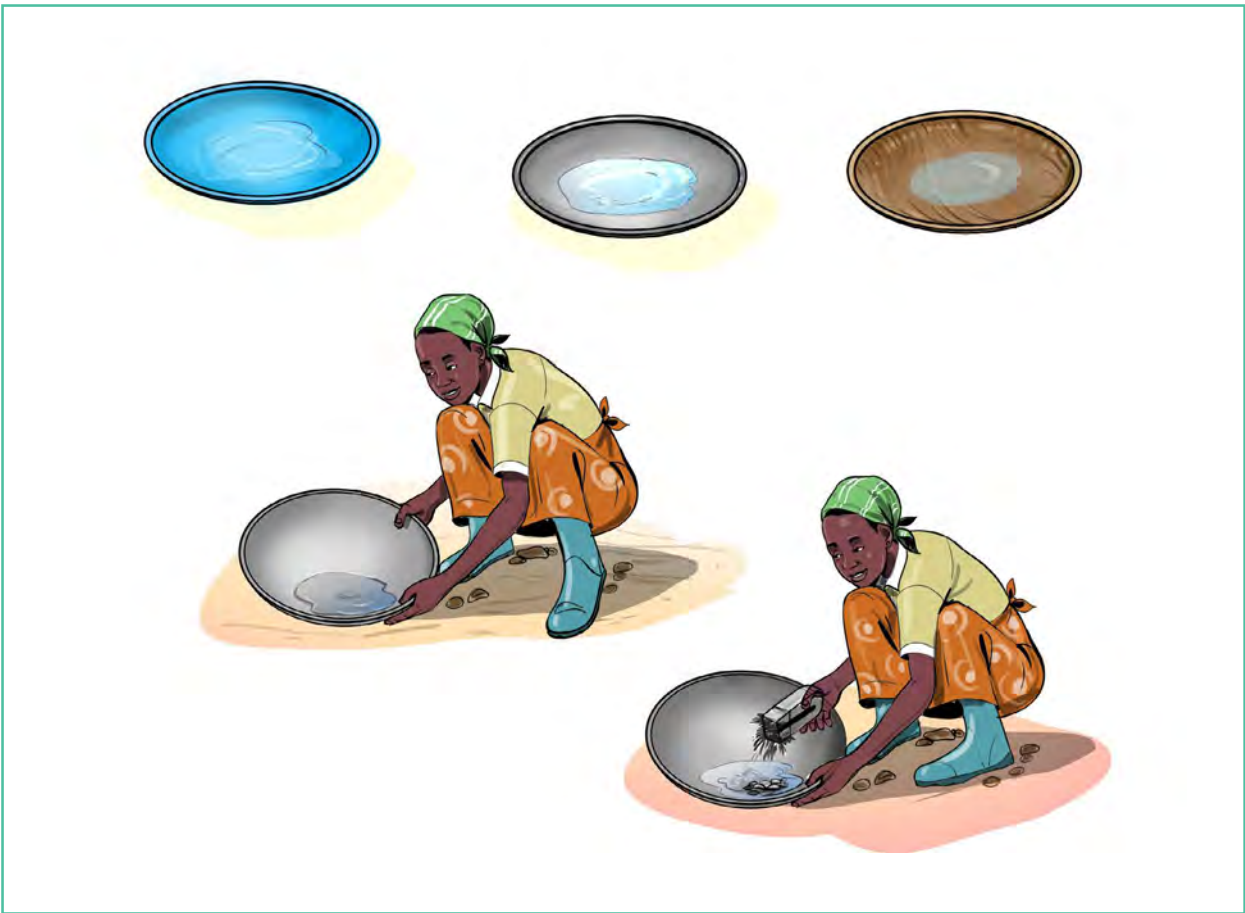


Image 11: Panning.



Image 12-A: Upgraded sluice.

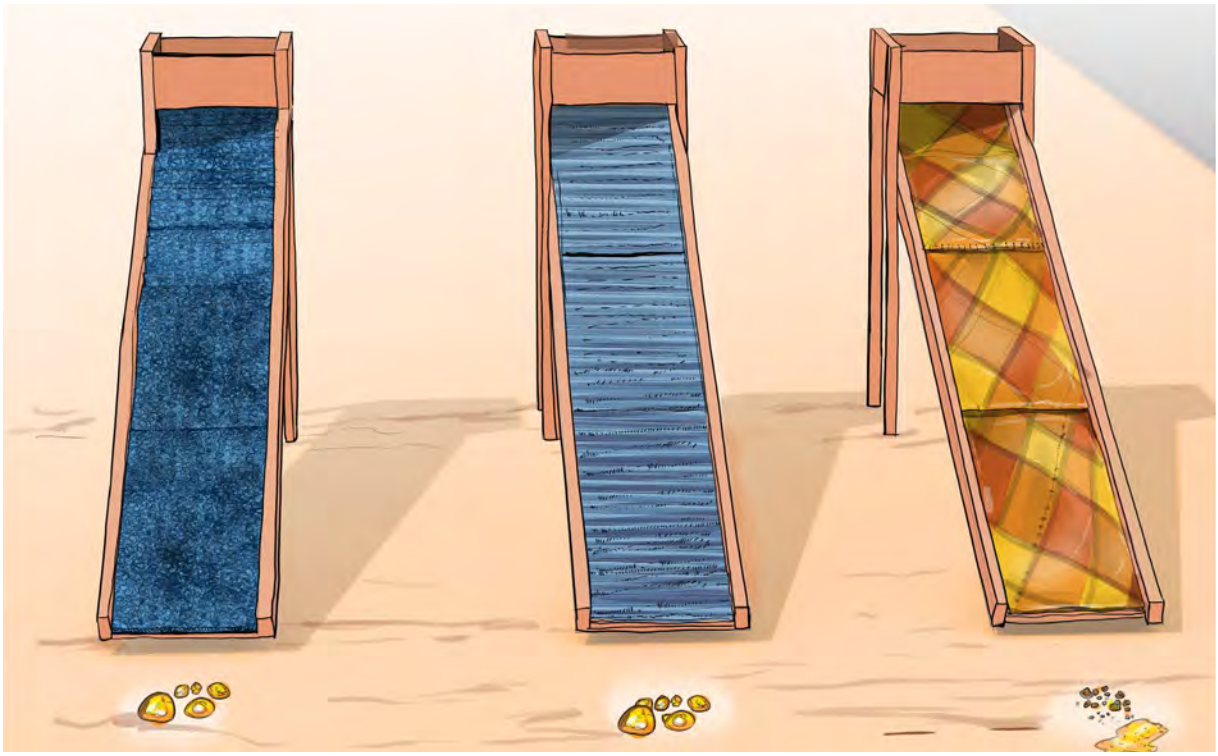


Image 12-B: Matting used depends on the particle size of gold being recovered.



Image 13: Gold Cube.

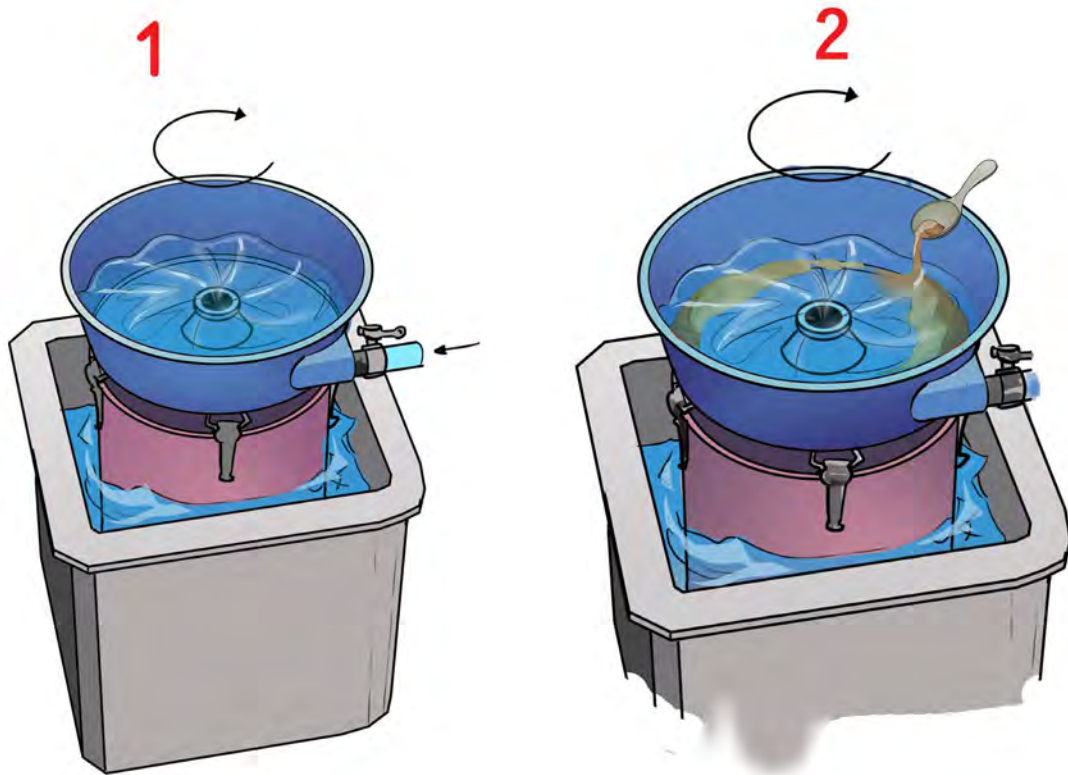


Image 14-A: Vortex Concentrator.

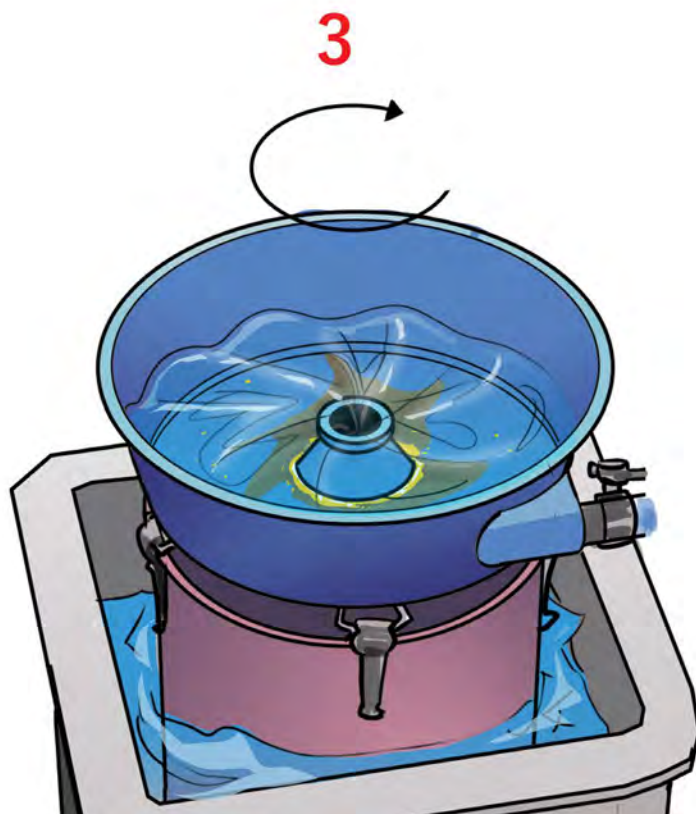


Image 14-B: Vortex Concentrator.

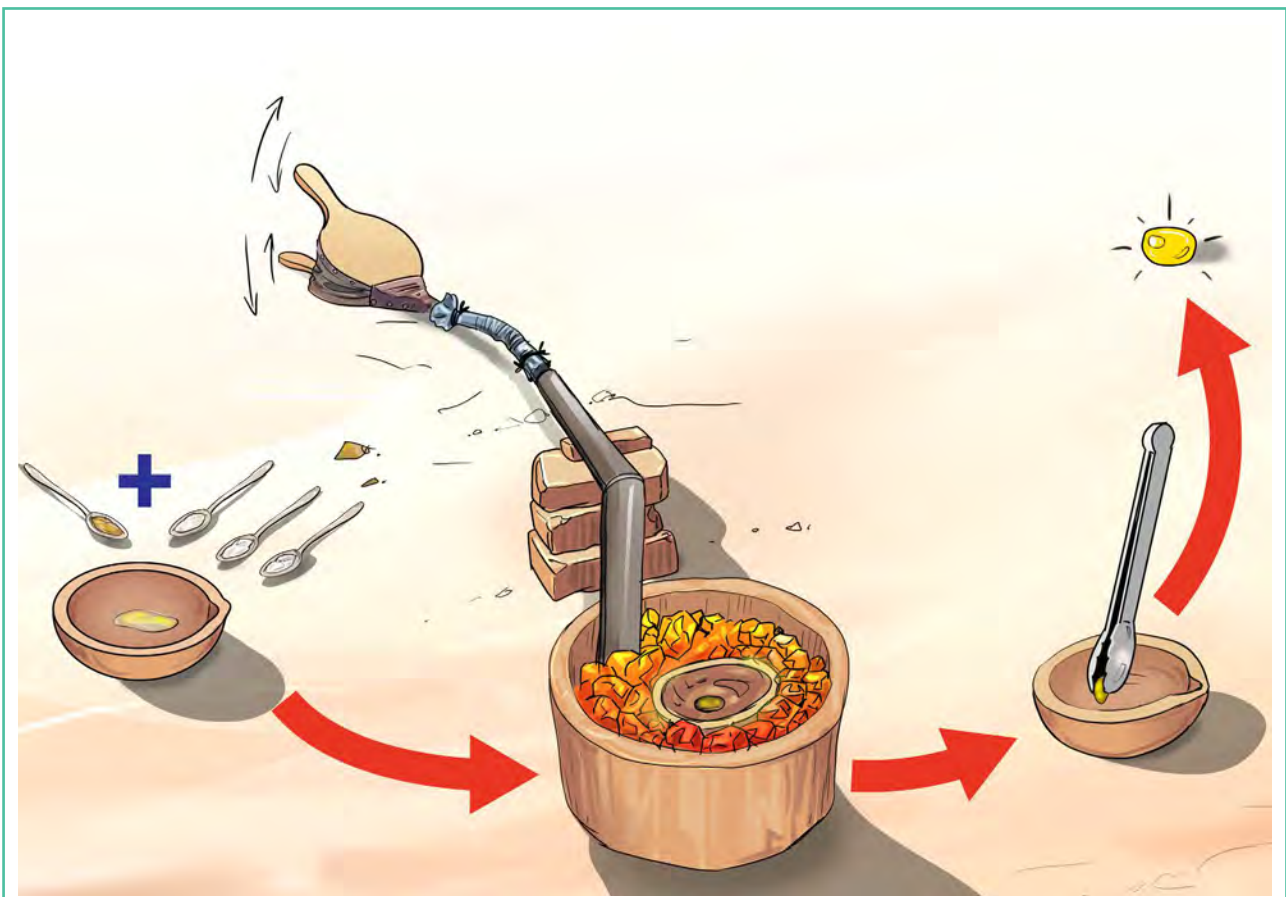


Image 15: Direct smelting.



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MODULE 8: **BASIC MINING TECHNIQUES TO IMPROVE EFFICIENCY AND SAFETY**

PARTICIPANT'S GUIDE **Supporting Best Practices at Artisanal Gold Mines Toolkit**

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Managing Editor: Zuzia Danielski

Illustrations and Graphic Design: Pencil Line Media

Photos: Miléquém Diarassouba (pgs. 1, 35) in Cote d'Ivoire and Media Factory (pgs. 2, 4) in Uganda

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Image 1: Prospecting.



Image 2: Gold mining.

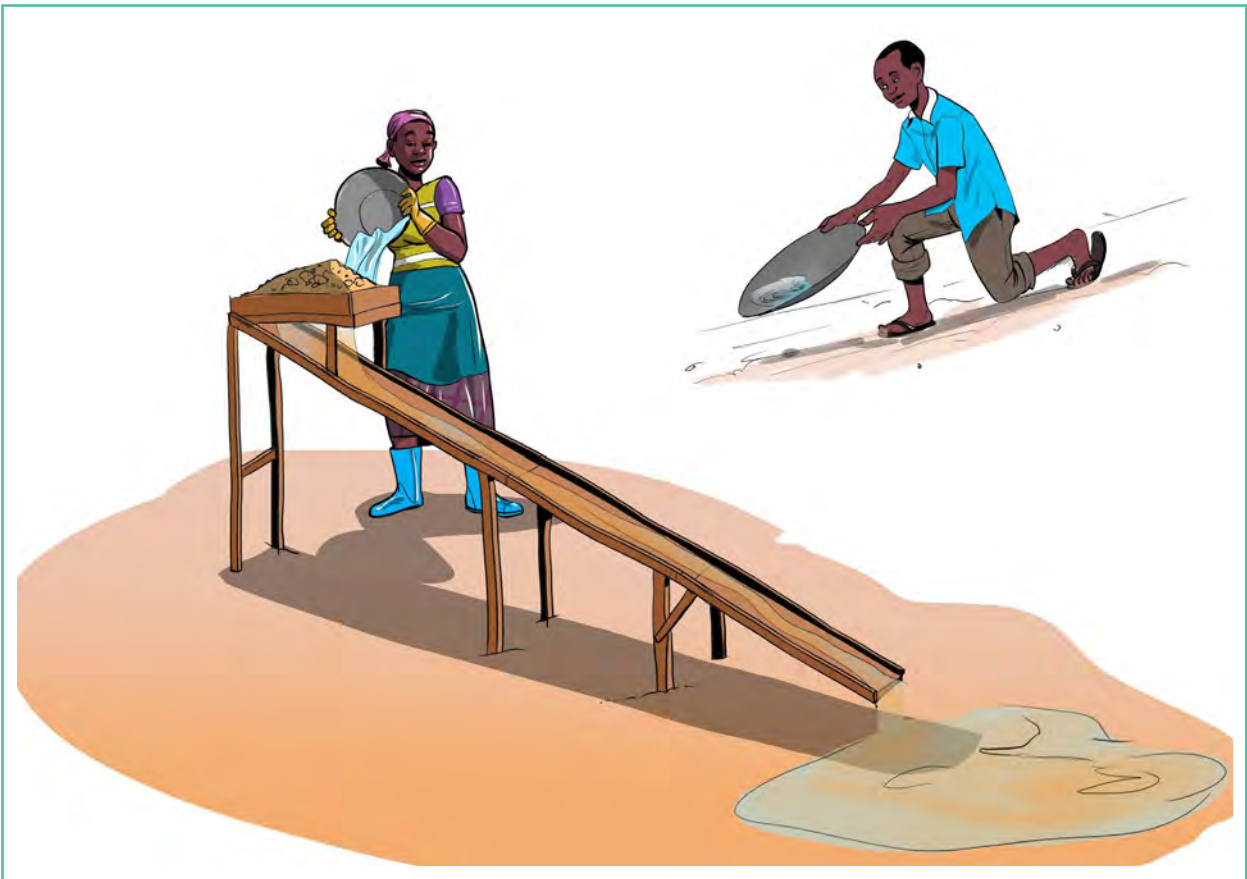


Image 3: Processing.

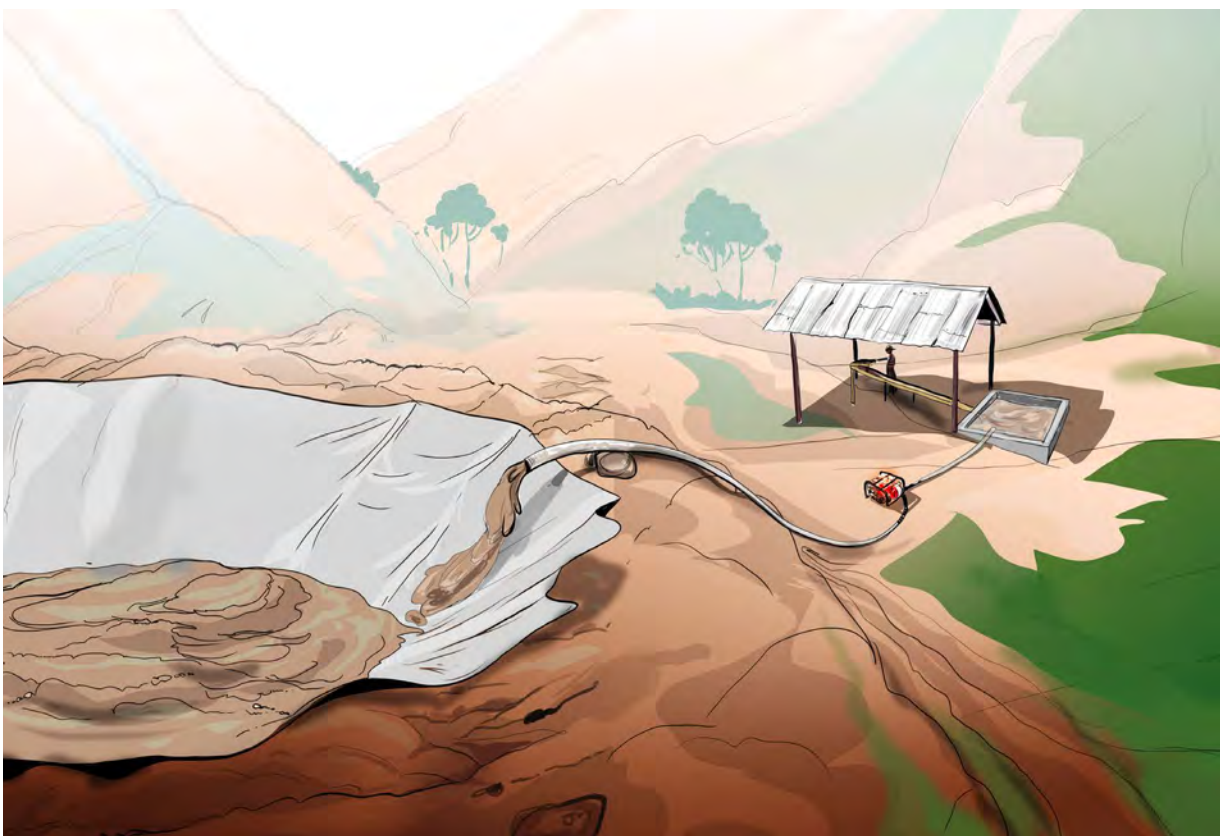


Image 4: Tailings disposal.



Image 5: Open-pit mining.

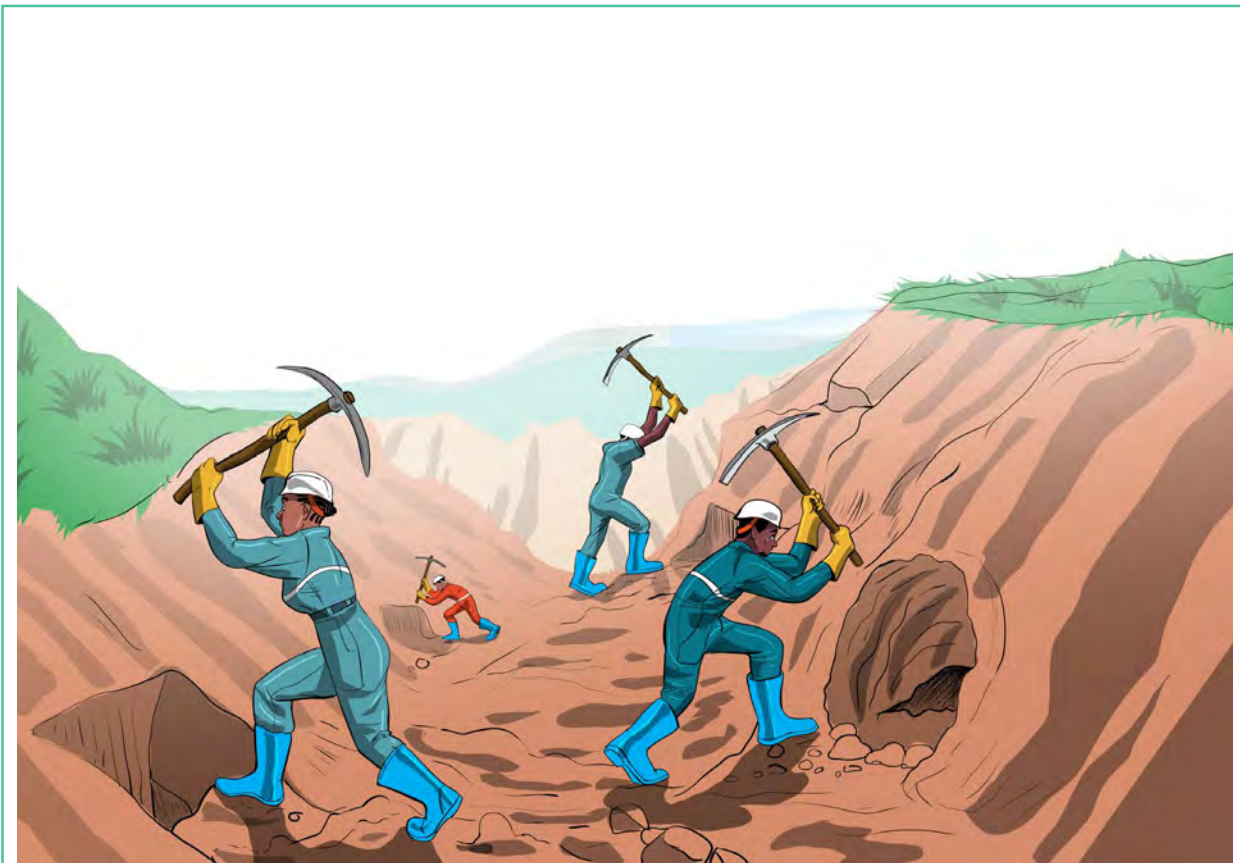


Image 6: Alluvial mining.



Image 7: Tailings recovery.



Image 8: To prevent accidents mining needs to be done correctly without leaving steep walls or undercutting.

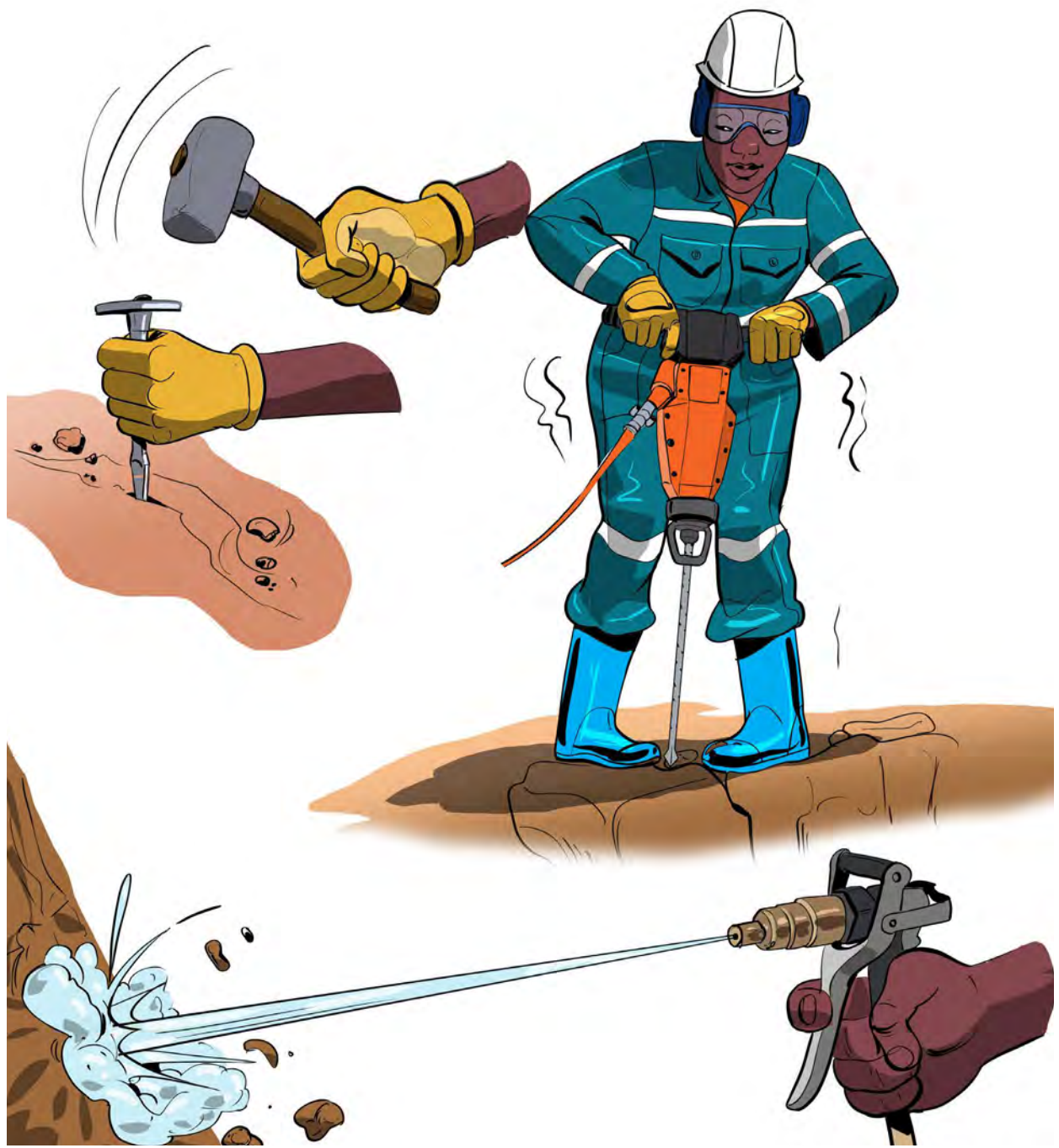


Image 9: Equipment for breaking ground or rock.

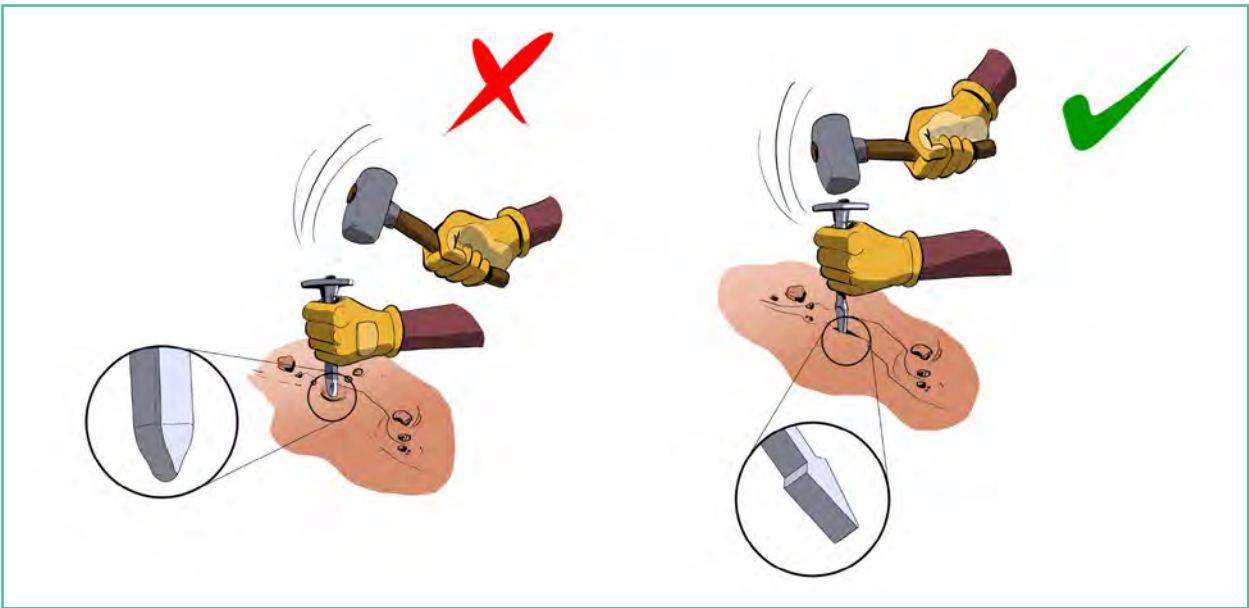


Image 10: Use a chisel that has been properly sharpened.

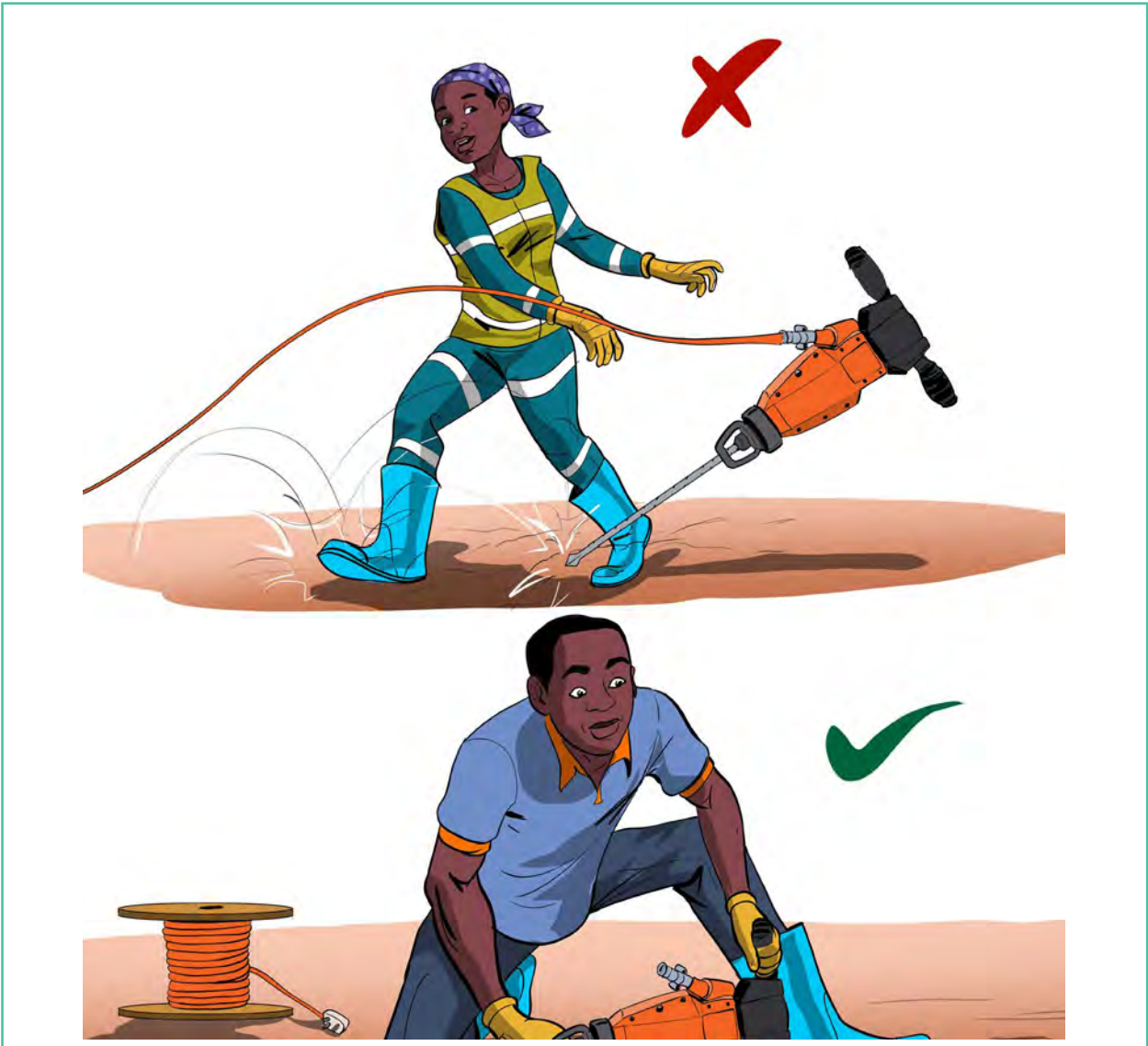


Image 11: Don't throw the equipment from one point to another.

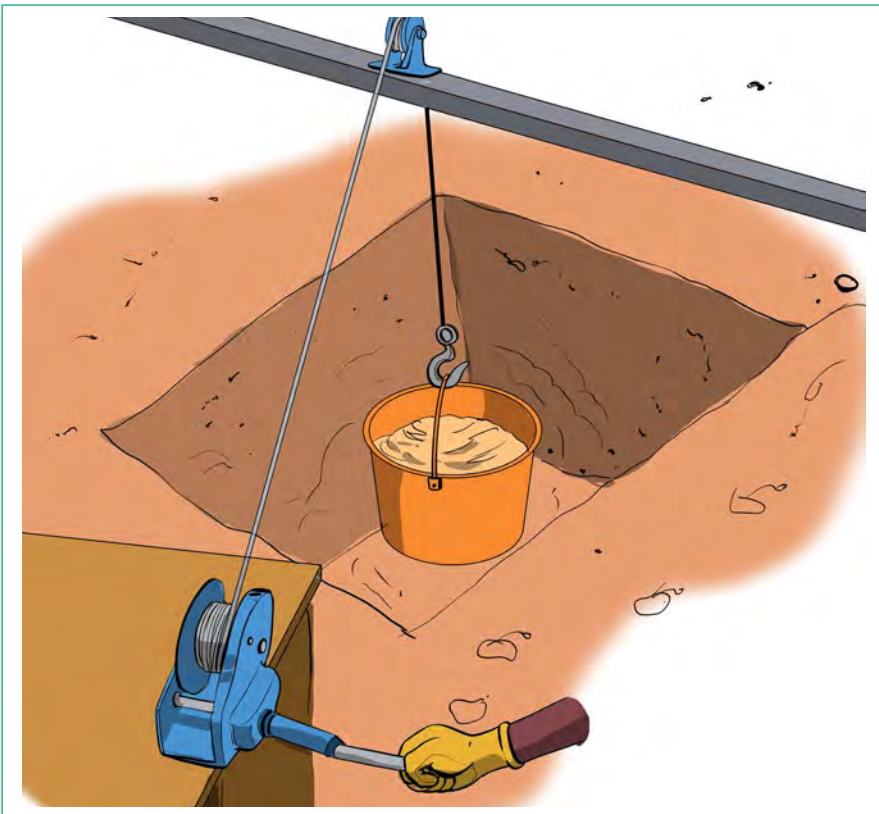


Image 12: Equipment for loading and hauling.

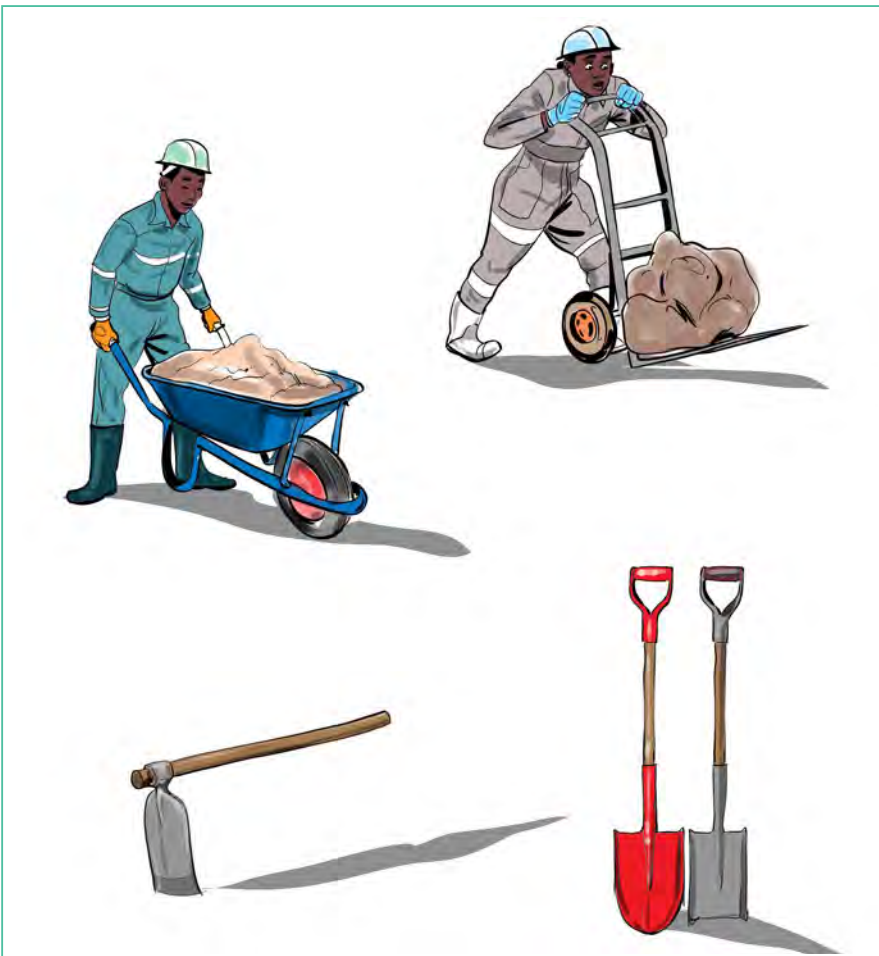


Image 13: Equipment for loading and hauling.



Image 14: Clean the equipment properly after use.

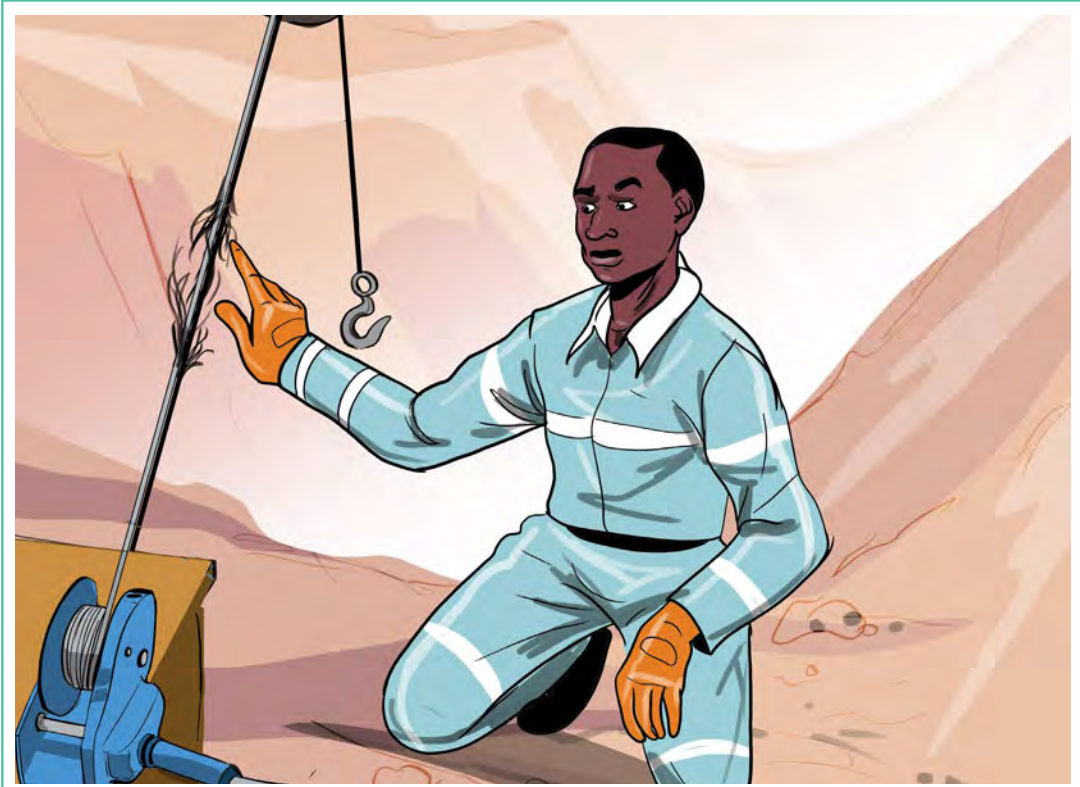


Image 15: Check the winch hoisting rope for breakages and replace if necessary.

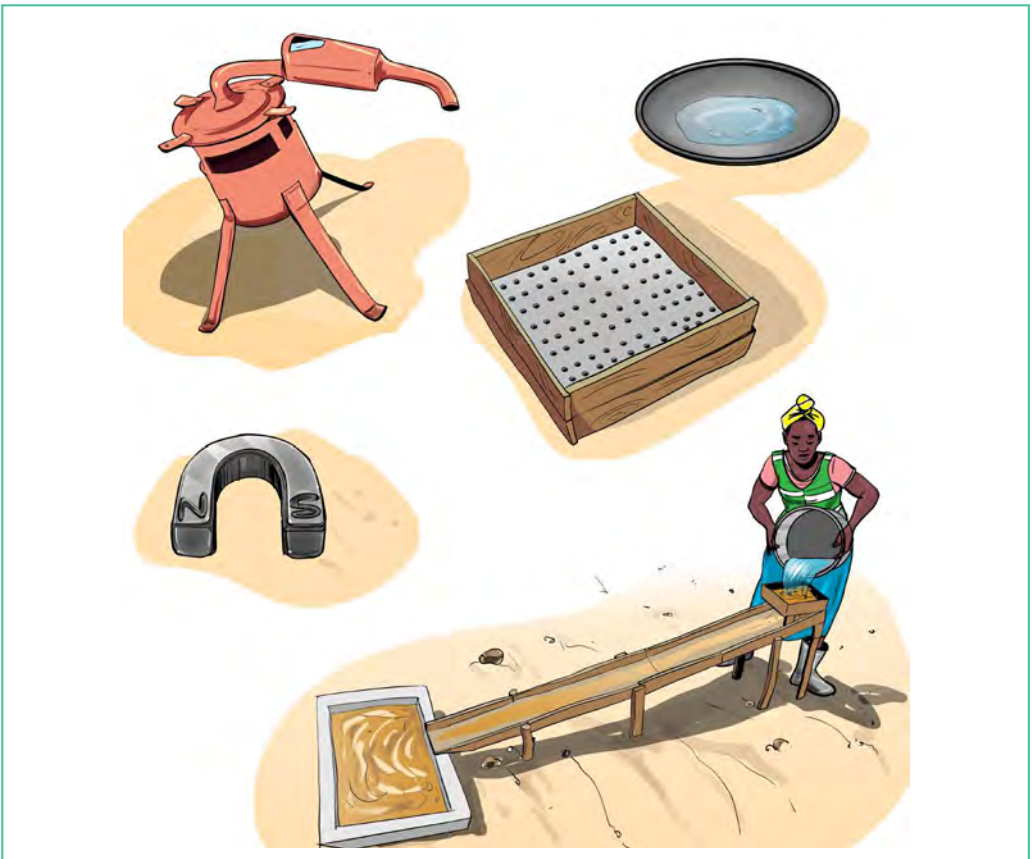


Image 16: Equipment for processing.



Image 17: Equipment for processing.

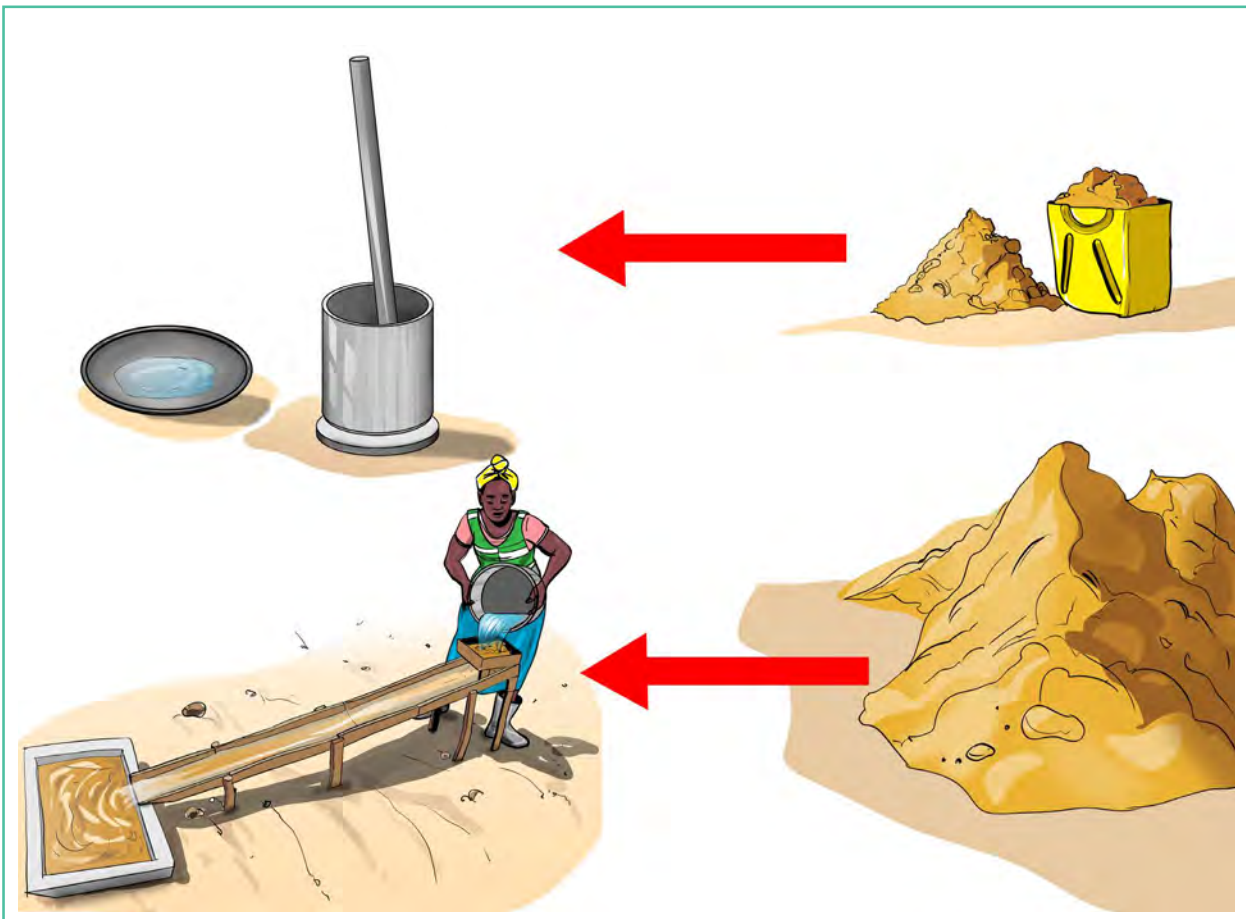


Image 18: Use the correct equipment for the type and size of ores you need processed.



Image 19: Motor pump.



Image 20: Size reduction.



Image 21: Sorting of minerals.

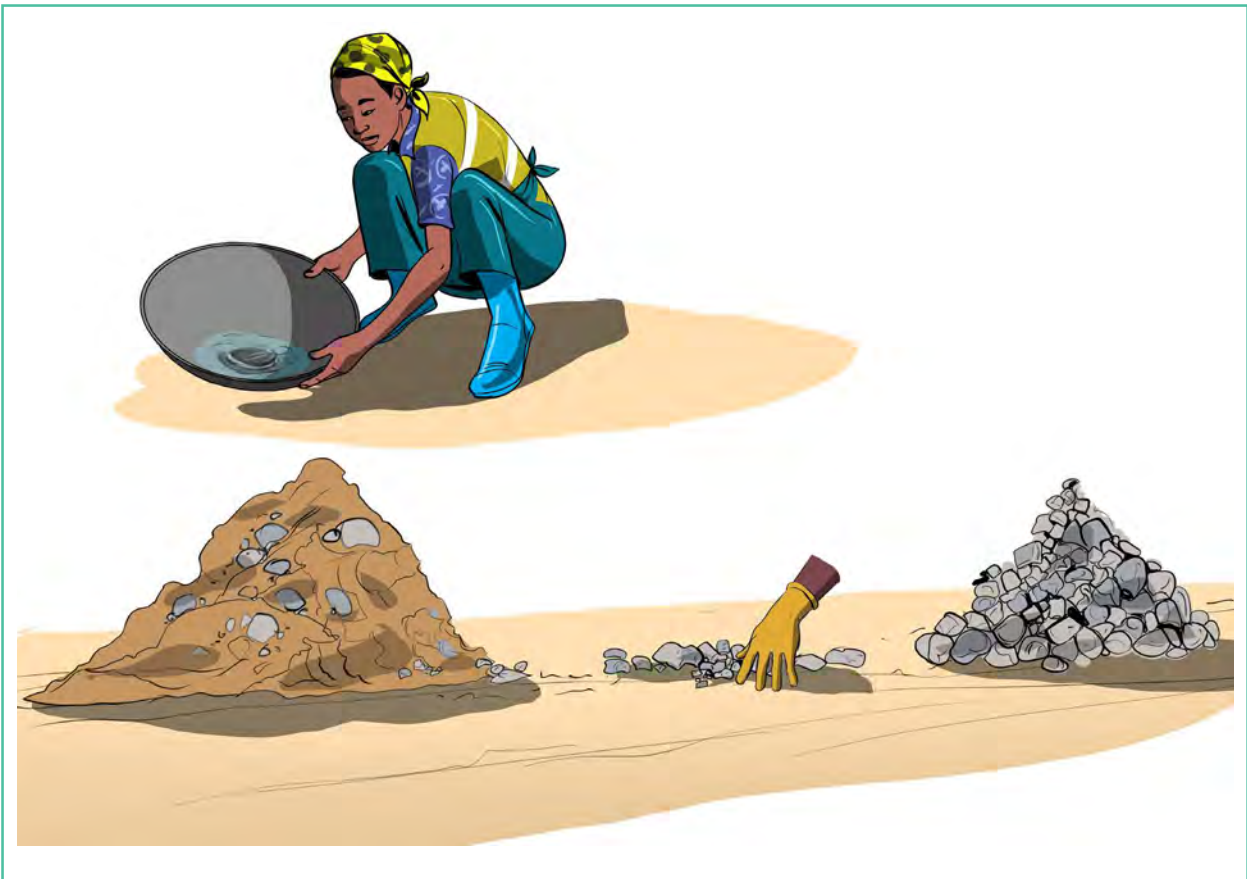


Image 22: Sorting of minerals and panning.



Image 23: Sluicing.

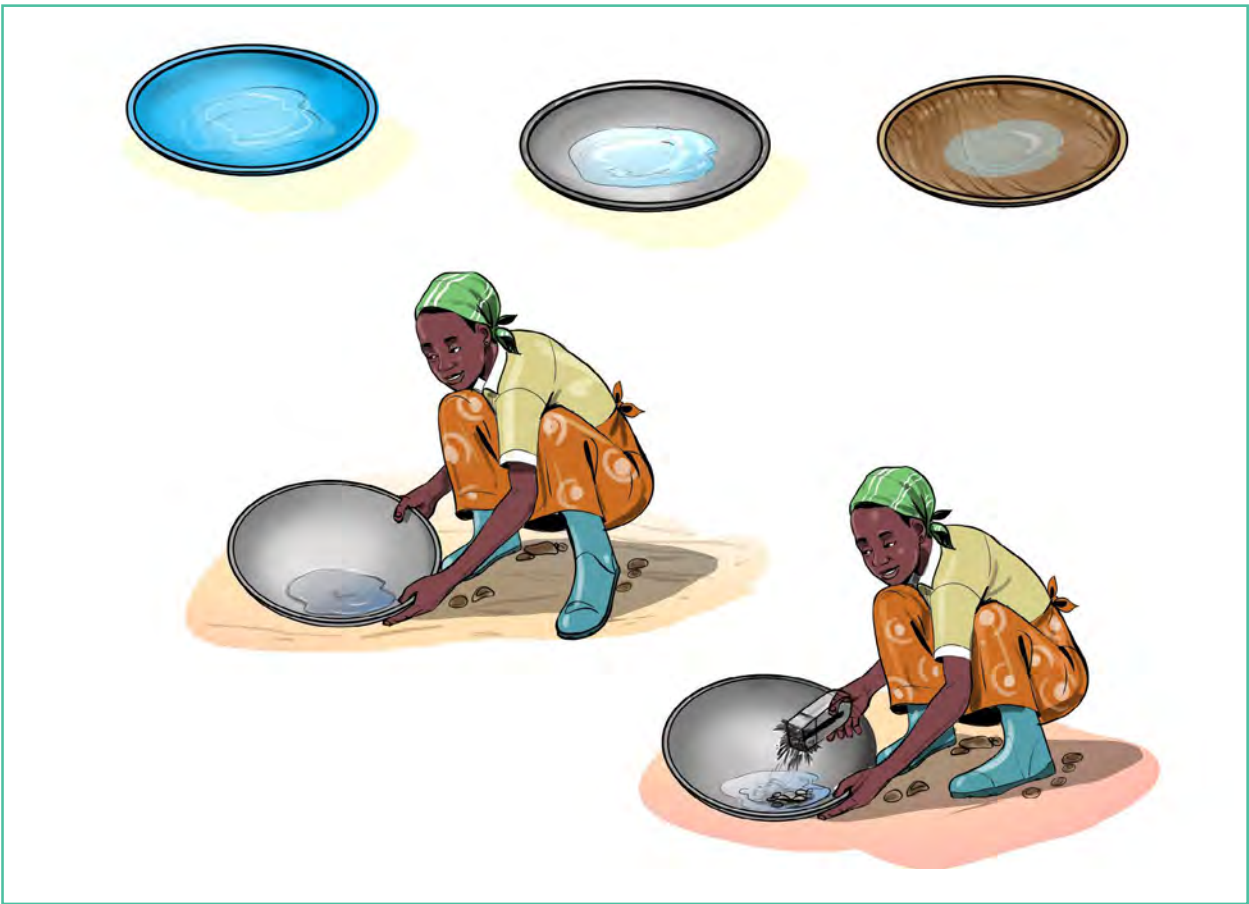


Image 24: Panning.

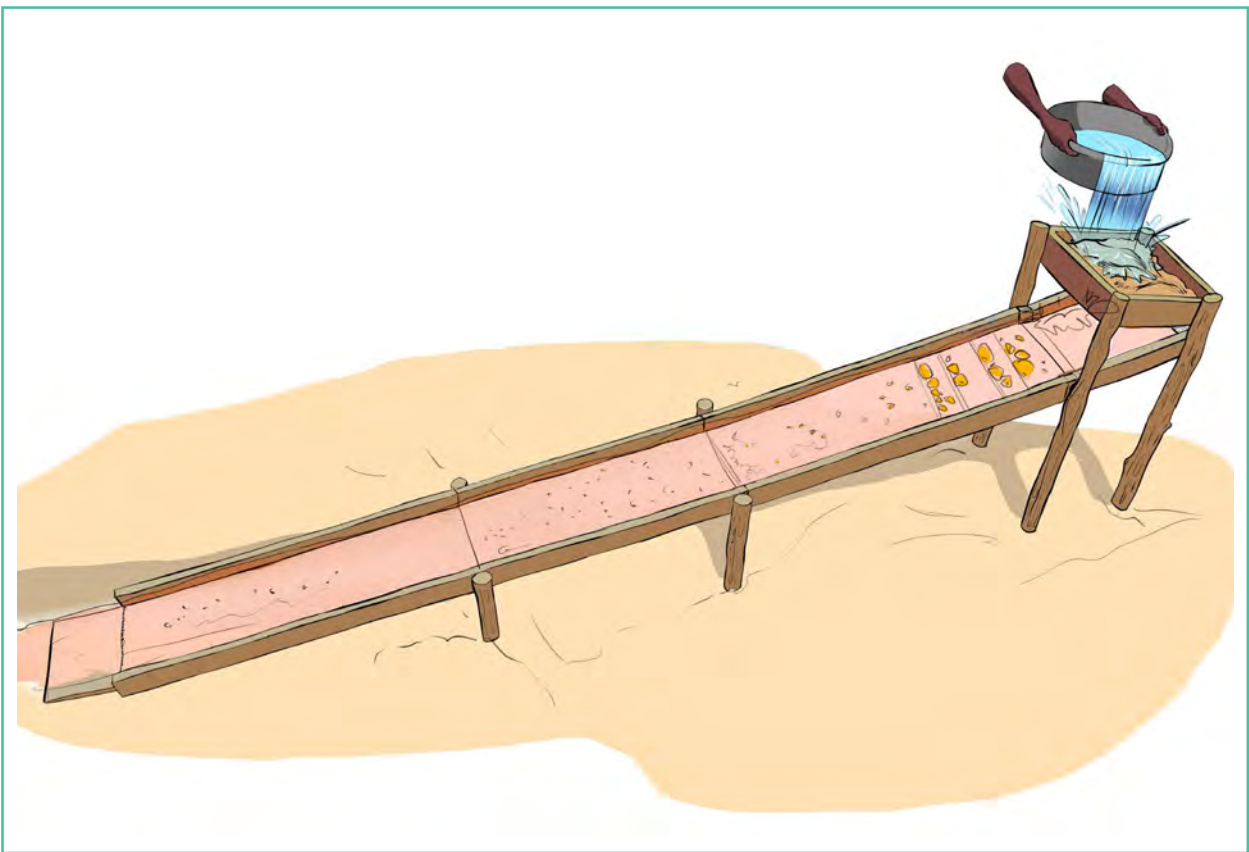


Image 25: Sluice.

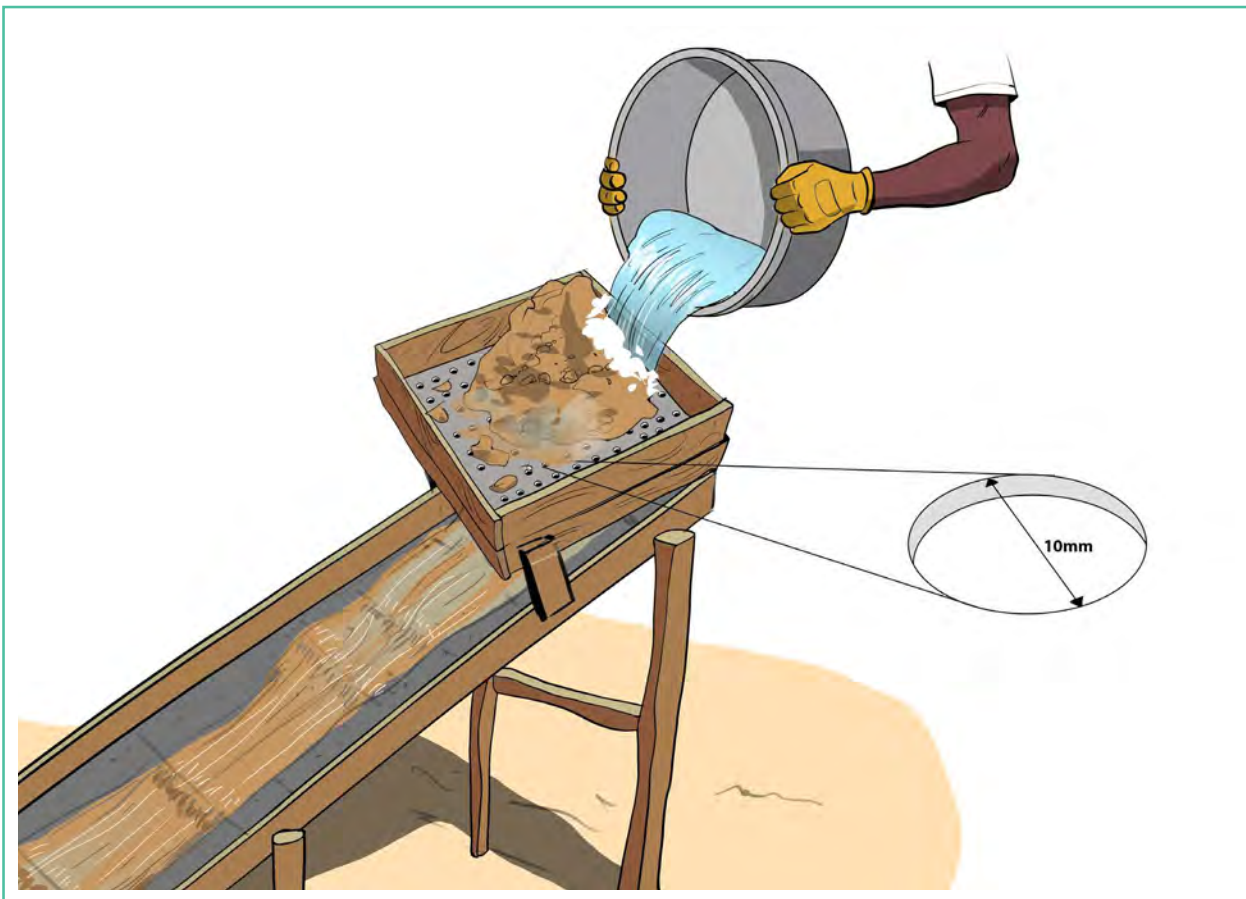


Image 26: Sluice with screen.

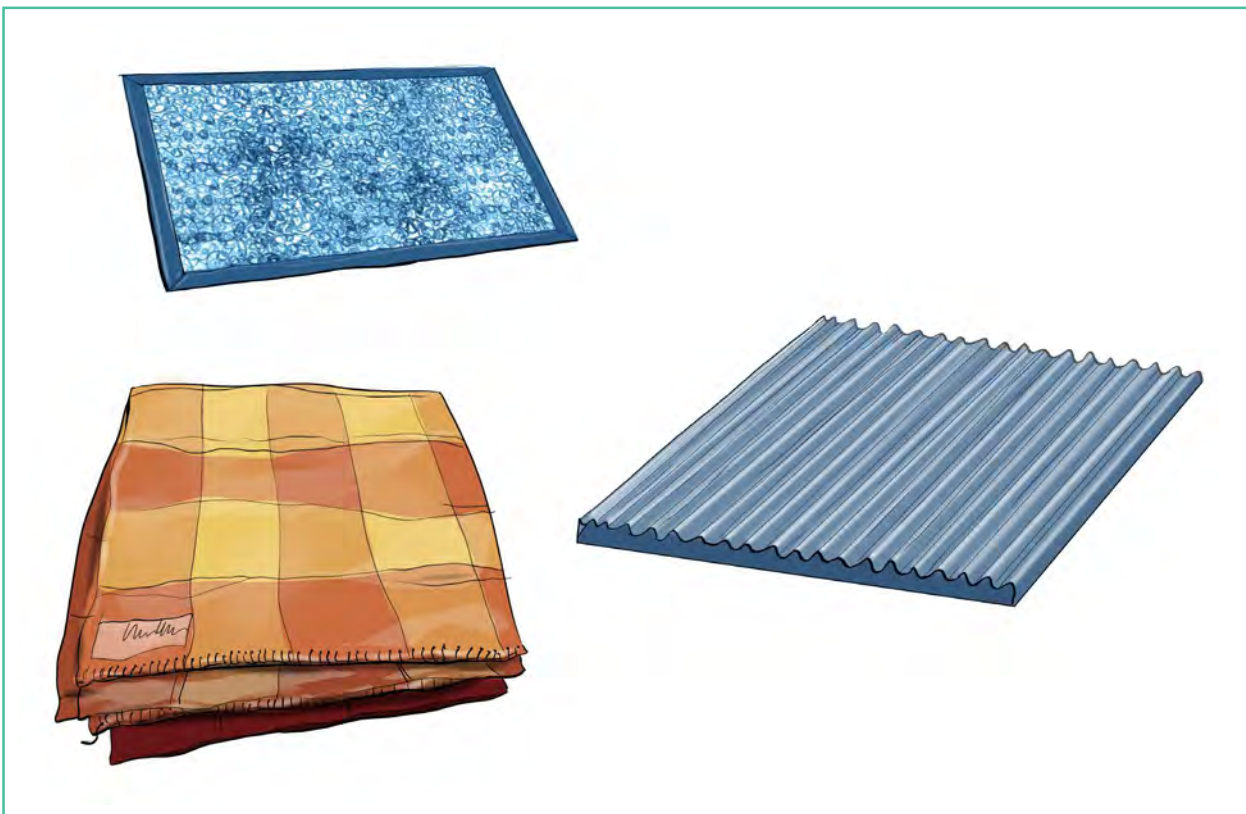


Image 27: Different sluice mats: vinyl fiber, corduroy blanket, and corrugated rubber mat.

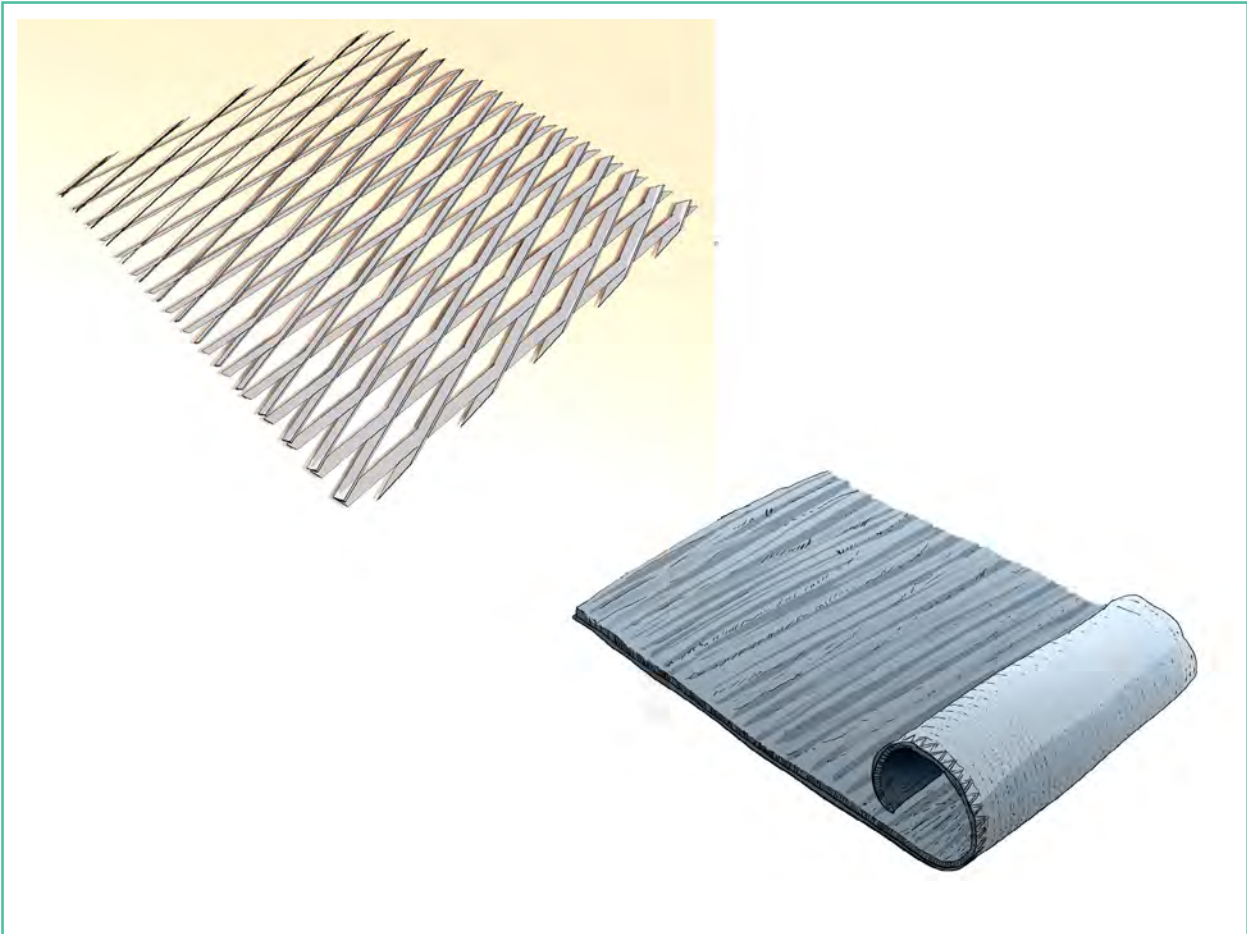


Image 28: Metallic riffles and riffled woolen mats.

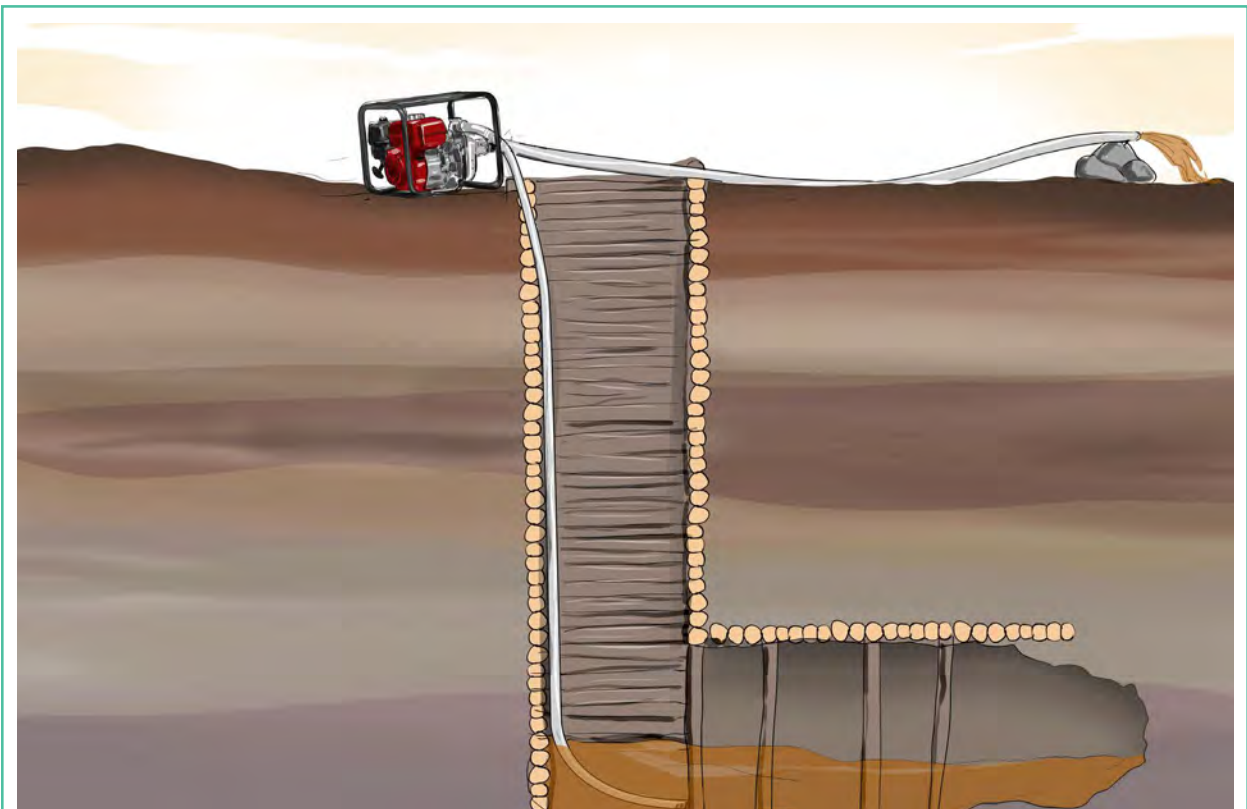


Image 29: Motor pump used to dewater a mine shaft.



Image 30: Motor pump used to break loose ground.



Image 31: Motor pump supplies process water for sluicing.

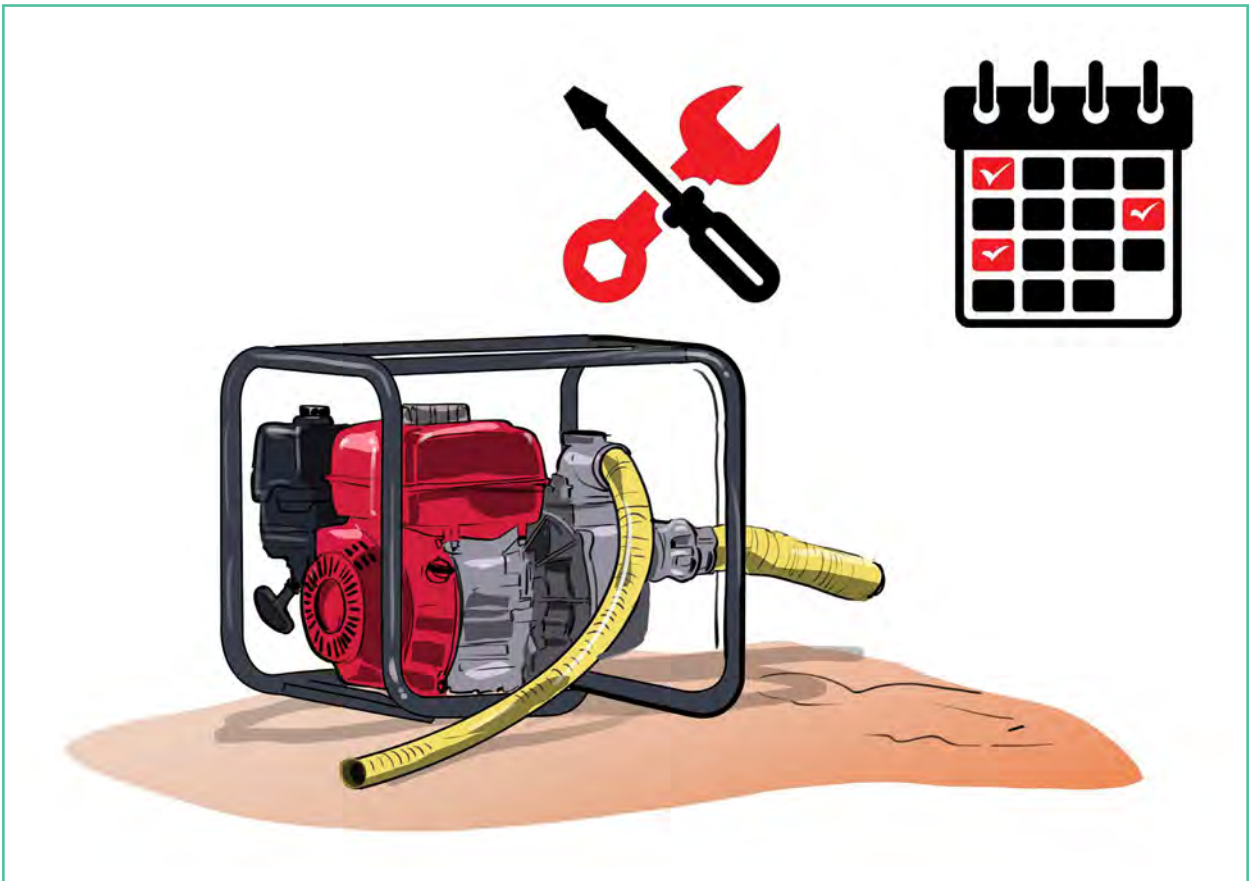


Image 32: Regular maintenance will prolong the life of the motor pump.



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