

Small scale Gold Mining Sector and Mercury Use

Small scale gold mining is one of the major release/emission source in Zimbabwe. It is estimated that the sector is responsible for over 1 600 tonnes per year of mercury emissions to the air and on land.

Despite, the widespread usage of mercury by this sector, it plays a pivotal role in the Zimbabwean economy. In 2016, the sector produced 9.7 tonnes of gold which was 45% of the total Annual Gold Yield. With gold prices skyrocketing and other traditional livelihoods options such as farming becoming less and less economic viable due to climate change effects, artisanal and small scale mining sector will likely expand even more rapidly than before.

In view of the sector's contribution to the economy it is important that sustainable and viable alternatives be adopted to reduce, limit or even eliminate mercury use



Mercury free/limiting methods include:

Gravity Concentration methods:

- panning
- sluicing
- shaking tables
- vortex
- Centrifuges

Other concentration methods:

- Magnetic methods
- Flotation processes

Gold recovery:

- Direct smelting
- Chemical leaching
- Borax method

Why there is need for global Action on Mercury.

Mercury pollution is a global problem that requires global action. It moves with air and water, transcends political borders, and can be transported thousands of miles in the atmosphere.

The Minamata Convention on Mercury is an opportunity for the global community to address the challenges associated with individual and isolated efforts to reduce mercury use.

Implementation of the Minamata Convention will help reduce mercury pollution from the specific human activities responsible for the most significant mercury releases to the environment while at the same time maintaining or increasing gold production levels.



MERCURY AND ARTISANAL AND SMALL SCALE MINING SECTOR



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Zimbabwe Environmental Law Association (ZELA)



Background and Introduction

Mercury is a chemical of global and national concern owing to its long-range atmospheric transport, its persistence in the environment, its ability to bioaccumulate in ecosystems and its significant negative effects on human health and the environment. However, despite its negative environment and health effects in Zimbabwe and the world over mercury is widely used by artisanal and small scale gold miners and the sector is the major source of air and water mercury pollution. In the year 2014, it is estimated that Zimbabwe had approximately 500,000 artisanal miners, of which about 400,000 mined gold with a greater percentage using mercury in gold extraction.

Even though the use of mercury is widely practiced by artisanal and small scale miners, awareness of the environment and health impacts caused by mercury is still very low among the miners and the general public. Therefore in line with the Minamata Convention on Mercury which is a global treaty to protect human health and the environment from the adverse effects of mercury signed by the Government of Zimbabwe in October 2013 it is critical to implement integrated measures for minimizing mercury use and release from artisanal and small scale mining. Article 7 of the convention is dedicated to the ASM Sector which is responsible for around 60% of Zimbabwe's total annual gold yield. Reduction of Mercury and were possible elimination is the core message of Article 7.



What is Mercury:

Mercury is a highly toxic element that is found both naturally and as an introduced contaminant in the environment. Research has shown that mercury is a threat to the health of people and the environment.

It is considered by World Health Organisation as one of the top ten chemicals or groups of chemicals of major public health concern. The risk is determined by magnitude of exposure and the form of mercury present (some forms are more toxic than others).

Dangers of Mercury to Human Health

The effects of mercury exposure can be very severe, subtle, or may not occur at all, depending on factors such as the form of mercury, amount of exposure, age of exposed person, exposure period etc. Miners and their families who inhale mercury vapours can suffer from various health related challenges. The generalized dangers are:

- Permanent damage to the brain, heart, lungs and kidneys
- Toxic effects on the nervous, digestive and immune systems
- loss of peripheral vision
- "pins and needles" feelings, usually in the hands, feet, and around the mouth
- lack of coordination of movements
- impairment of speech, hearing, walking
- muscle weakness
- tremors
- emotional changes (such as mood swings, irritability, nervousness, excessive shyness)
- Insomnia.
- neuromuscular changes (such as weakness, muscle atrophy, twitching)
- Headaches
- Disturbances in sensations
- Changes in nerve responses.
- Poor performance on tests of mental function

Children are more susceptible to mercury poisoning than adults because their brains are still developing. Children poisoned by mercury may suffer from brain damage, mental retardation, blindness, seizures and inability to speak. For pregnant woman exposure to high levels of mercury can result in permanent damage to a developing foetus and causes miscarriages as well.

Because of this, and the fact that mercury can be transferred from a mother to her child during pregnancy, infants, children and pregnant woman are considered the most vulnerable populations.

Legal Framework

Zimbabwe signed the Minamata Convention on Mercury in October 2013. Section 73 of the Zimbabwe Constitution recognises environmental rights, particularly the right to a clean, safe and a healthy environment. In addition, the Environmental Management Act CAP 20:27 also outline key fundamental human rights which every citizenry should enjoy. The legal framework in Zimbabwe, recognises mercury as a hazardous substances whose transportation, use and storage is regulated.

