



**MINISTRY OF FORESTRY AND NATURAL RESOURCES  
ENVIRONMENTAL AFFAIRS DEPARTMENT**

**MALAWI REPORT  
MERCURY INITIAL ASSESSMENT UNDER THE  
MINAMATA CONVENTION ON MERCURY**

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## LIST OF ACRONYMS

ASGM	Artisanal and Small-Scale Gold Mining
COMESA	Common Market for Eastern and Southern Africa
EAD	Environmental Affairs Department
EMA	Environment Management Act
ESCOM	Electricity Supply Commission of Malawi
GEF	Global Environment Facility
Hg	Mercury
IEC	Information Education and Communication
MERA	Malawi Energy Regulatory Authority
MIA	Minamata Initial Assessment
MP	Member of Parliament
MoF	Ministry of Finance
MRA	Malawi Revenue Authority
SADC	Southern African Development Community
TA	Traditional Authority
UNEP	United Nations Environment Programme
UN	United Nations
VDC	Village Development committee
WHO	World Health Organization

## GLOSSARY

ASGM	Artisanal and small-scale gold mining means gold mining conducted by individual miners or small enterprises with limited capital investment and production;
Contaminated site	A contaminated site refers to soil, water, air, and sediment, at which mercury is present in the elemental or compound form, including waste, at which concentrations are above permissible levels (as defined in the convention) and pose or likely to pose an immediate or long term hazard to human health and the environment;
Mercury	Means elemental mercury (Hg (0), CAS No. 7439-97-6);
Mercury compound	Means any substance consisting of atoms of mercury and one or more atoms of other chemical elements that can be separated into different components only by chemical reactions;
Mercury-added product	Means a product or product component that contains mercury or a mercury compound that was intentionally added;
Mercury waste	Any unwanted mercury or mercury formulation generated from any process, which can cause danger to both human health and the environment;
Primary mercury Mining	Mining in which the principal material sought is mercury.

## **FOREWORD BY THE DIRECTOR OF ENVIRONMENTAL AFFAIRS**

Mercury is a substance that produces significant adverse neurological and other health effects, with particular concerns expressed about its harmful effects on infants and unborn children. Mercury also contaminates the atmosphere, oceans, lakes and rivers leading to food chain impacts and widespread contamination of fisheries. These impacts are significant for Malawi because the country has important water bodies such as Lake Malawi and Shire River. The communities around these water bodies depend on fish as a major source of protein.

In Malawi, mercury releases mainly occur from the consumption of petroleum products, combustion of coal, biomass and charcoal, cement and lime industries, disposal of waste from mercury-added products such as light bulbs, batteries, thermometers and skin lightening creams. This mercury is released to air, water and land affecting human health and environmental quality.

The Government of Malawi, with funding from the Global Environmental Facility (GEF), and technical assistance provided by the United Nations Environment Programme (UNEP), is implementing the Minamata Initial Assessment (MIA Project). The objective of the project is to assist Malawi in the ratification and early implementation of the Minamata Convention on mercury.

The project identified gaps, challenges and opportunities in the legal and institutional framework for the management of mercury in Malawi that will help in assessing the country's capacity to implement the Minamata Convention on Mercury. Furthermore, the project produced an inventory of mercury sources and releases in Malawi, and a communications and outreach strategy for awareness on mercury. The country is currently (as of May 2019) in the process of submitting instruments for the ratification of the Minamata Convention.

It is hoped that ratification of the Minamata Convention will bolster domestic management of the use of mercury, thereby protecting human health and safeguarding the environment in Malawi.

Tawonga Mbale-Luka

**Director of Environmental Affairs**

## EXECUTIVE SUMMARY

*The Government of Malawi, through the Environmental Affairs Department (EAD) under the Ministry of Natural Resources, Energy and Mining, with funding from the Global Environmental Facility (GEF), and technical assistance provided by UNEP, has implemented a Minamata Initial Assessment (MIA) project. The objective of the MIA Project stemmed from the Minamata Convention's Article 30 (paragraph 4), which states "Each State or regional economic integration organization" is encouraged to transmit to the Secretariat at the time of its ratification, acceptance, approval or accession of the Convention information on its measures to implement the Convention."*

*The MIA Project aimed to strengthen national decision-making toward ratification of the Minamata Convention on Mercury and build national capacity towards implementation of future obligations.*

*Malawi has produced this MIA report after successfully implementing all the components of the MIA project: establishment of a coordination mechanism; assessment of the national infrastructure and capacity for the management of mercury; development of a mercury inventory; identification of challenges, needs and opportunities to implement the Minamata Convention on Mercury; and information exchange, capacity building and knowledge generation.*

### **Summary of the Report**

*The inventory on mercury in Malawi identified energy consumption, materials production, use and disposal of products with mercury content, production of recycled metals, waste incineration, waste deposition/landfilling and waste water treatment, and crematoria and cemeteries as major mercury sources. The key mercury releases are to: air, water, land, general waste, and sector-specific waste treatment.*

*The assessment of the legal framework that was conducted during the project identified and assessed gaps in various policies and legislation related to mercury management and in terms of alignment to the standards set out in the Minamata Convention. The main policies and legislation reviewed include the National Environmental Policy 2004, Environment Management Act (EMA) 1996, Environment Management (Waste Management and Sanitation) Regulations 2008; Environment Management (Chemicals and Toxic Substances) Regulations 2008, Fisheries Conservation and Management Act No.25 of 1997, and Water Resources Act No.2 of 2013.*

*The project also identified Government ministries, agencies and institutions as well as non-government institutions, private sector stakeholders involved in chemicals management at various stages of the chemicals lifecycle ranging from production, import, transport,*

*distribution, marketing, use/handling, storage and disposal.*

*The project also identified populations at risk to mercury exposure and gender dimensions. It was revealed that the foetus, the new-born, and children are especially susceptible to mercury exposure due to the sensitivity of the developing nervous system. Populations at greater risk of mercury exposure included communities living near lakes and large rivers that consume large volumes of fish, people with dental amalgams, ASGM operators and scavengers on waste management sites in cities. On gender, women were found to be mostly exposed through use of skin lightening creams containing mercury; children are mostly exposed from scavenging on waste management sites*

*The project developed a communications matrix for awareness raising. The matrix identifies barriers to the communication of mercury issues, key messages to be communicated, the target audience and desirable communication channels. Although it was found that there is low awareness and understanding of mercury issues in Malawi, there are a number of opportunities, which can be explored. Among the opportunities are: the presence of a functional technical working group for the MIA Project that could be maintained to look into mercury issues once Malawi ratifies the convention. a vibrant Association of Environmental Journalists, a wide range of radio and television stations both at national and community level as well as availability of internet and increasing social media use, periodic education curriculum reviews and a robust National Environment and Climate Change Communication Strategy.*

*Finally, national priorities for mercury management in Malawi were identified and an implementation plan was drawn to ensure smooth implementation of the priorities. The priorities that were identified were: ratification of the Minamata convention on Mercury, strengthening institutional capacity on mercury management in Malawi including the capacity to manage mercury waste, conduct qualitative and quantitative scientific research studies in Malawi to have more and accessible information on mercury. (e.g. for Lake Malawi), conduct awareness raising activities on mercury targeting policy makers, technical personnel and the general public and, identify and remediate mercury-contaminated sites.*

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## **CHAPTER I: NATIONAL BACKGROUND INFORMATION**

### **1.1 Introduction**

Mercury is a highly toxic heavy metal, having adverse effects on the environment and human health. Once released into the environment (air, land and water), mercury adopts different physical and chemical forms. Globally, it is known that mercury can be released from a number of mercury-containing products, including dental amalgams, electrical applications (e.g. switches and fluorescent lamps), laboratory and medical instruments (e.g. clinical thermometers and barometers), batteries, seed dressings, antiseptic and antibacterial creams, and skin-lightening creams. Mercury is also released from other, more industrial activities, such as mining, cement manufacturing, and coal-fired electricity production. In Malawi, the said products and activities are synonymous. Health effects from mercury include negative impacts on foetal neurological development and it has been linked to lowered fertility, brain and nerve damage, and heart disease in adults who have high levels of mercury in their blood.

The Minamata Convention is a legally binding instrument to protect human health and the environment from human-made emissions and releases of mercury and mercury compounds. The UNEP Governing Council of 2009 agreed to develop a convention on mercury in order to prevent releases and emissions and to protect humans and the environment against the negative effects of mercury. The Convention provides controls and reductions across a range of products, processes and industries where mercury is used, released or emitted. In addition, it addresses issues of direct mining of mercury, export and import of the metal, and safe storage of waste mercury.

The Minamata Convention became open to parties for signing in October 2013, with Malawi becoming a signatory on 10 October 2013 at the Diplomatic Conference in Japan. Malawi is still in the process of ratifying the Convention

The Government of Malawi, through the Environmental Affairs Department (EAD) under the Ministry of Natural Resources, Energy and Mining, with funding from the Global Environment Facility (GEF), and technical assistance provided by UNEP, is implementing Mercury Initial Assessment (MIA Project).

### **1.2 Objectives of the MIA project**

The objective of the MIA stemmed from the Minamata Convention's Article 30 (paragraph 4), which states "*Each State or regional economic integration organization*" is encouraged to transmit to the Secretariat at the time of its ratification, acceptance, approval or

*accession of the Convention information on its measures to implement the Convention.”*

The MIA Project was aimed at strengthening national decision-making toward ratification of the Convention and build national capacity towards implementation of future obligations.

The MIA project provided an opportunity for Malawi to undertake a mercury inventory, determine and agree upon the measures it will take to implement the Convention, estimate associated costs, and communicate this information in a clear and concise manner.

The MIA project had six components:

1. Establishment of a coordination mechanism and organisation of the process
2. Assessment of the national infrastructure and capacity for the management of mercury, including national legislation
3. Development of a mercury inventory using UNEP’s mercury toolkit and strategies to identify and assess mercury contaminated sites
4. Identification of challenges, needs and opportunities to implement the Minamata Convention on Mercury
5. Preparation and validation of a national MIA report, implementation of awareness raising activities and dissemination of results
6. Information exchange, capacity building and knowledge generation

### **1.3 The Approach used to develop the MIA and Stakeholder Consultations**

The Environmental Affairs Department (EAD) facilitated the implementation of the project in collaboration with key stakeholders in the management of chemicals. The stakeholders included; the Ministry of Labour, Youth, Sports and Manpower Development, Ministry of Health, Ministry of Trade and Industry, Department of Mines, Department of Energy, major city councils, the University of Malawi (Chancellor College and The Polytechnic), Malawi University of Science and Technology, Mzuzu University, Lilongwe University of Natural Resources, Pesticides Control Board, Electricity Supply Corporation of Malawi Limited (ESCOM), Malawi Bureau of Standards and the National Commission of Science and Technology. The national Steering Committee for the Basel, Rotterdam and Stockholm Conventions was appointed as a National Coordinating Committee for the MIA Project, serving to bolster capacities of the committee and support cooperative work across chemicals and waste issues. Four technical working groups on Energy, Mercury Waste, Mercury Production, and Mercury-Added Products were formed to provide recommendations on technical matters to EAD and the National Coordinating Committee.

### **1.4 Country Profile<sup>[L]</sup><sub>[SEP]</sub>**

### **1.4.1 Geography and population**

Malawi is located in southern Africa and is bordered by Tanzania to the north, Mozambique to the east, south and southeast, and Zambia to the west (see Figure 1). The total area of Malawi is 11.85 million hectares, of which 2.43 million hectares is covered by water. About 60 percent of the country has been modified by human activity with only 36 percent under natural vegetation. It also has remarkably diverse flora and fauna, of which the uniquely rich and diverse fish resources stand out.

Administratively, the country is divided into three regions, namely the northern, central and southern regions. The country has 28 districts, which are further divided into traditional authorities (TA) ruled by chiefs. The TAs are sub-divided into villages, which form the smallest administrative units. There is a Village Development Committee (VDC), which is responsible for development activities. Politically, each district is divided into constituencies that are represented by Members of Parliament (MPs) in the National Assembly for the purposes of legislation.

Demographically, the country has an estimated population of 16.83 million people in 2016, with an average annual growth rate of 2.7 percent giving an estimated population of 20.35 million people by 2022. An estimated 84% of the population lives in rural areas, compared to 16% in urban centres. Malawi is predicted to experience an average annual urban population growth rate of 4.2% from 2013 to 2030. More than half of Malawi's population is under the age of 15 years, with 19% of the total population being under-five. Those aged 65 years and above represented 3% of the total population in 2017 and should continue to increase as life expectancy improves, which stood at 55.7 and 58.8 years in 2013 for males and females, respectively.

Figure 1. Map of Malawi



#### 1.4.2 Political, legal and economic profile<sup>[SEP]</sup>

For thirty years (from independence in 1964 to 1994) Malawi had a one party political system governing the country. A multi-party democratic government was introduced in 1994. In this system, the Head of Government is the President who is elected into office by majority popular vote, with a maximum of two consecutive 5-year terms.

There are three independent arms of government: the Executive (the President), Legislature

(the Members of Parliament), and Judiciary (the Courts). Each branch of government has its own distinctive functions as follows:

- i. The Executive initiates policies and legislation and also implements laws;
- ii. The Legislature enacts laws which reflect the interest of the people of Malawi;
- iii. The Judiciary interprets, protects and enforces the Constitution and all laws in an independent and impartial manner.

The National Assembly, under the Legislature, is made of parliamentarians from various parties elected from constituencies distributed throughout the country.

Malawi adopted a decentralized policy in 1997 and enacted the Local Government Act in 1998, which provides for political and administrative structures at district, town, municipal and city assembly levels. The Act provides for the creation of committees under the councils at Area, Ward or Village level to facilitate participation of the people in the council's decision-making in all matters. Following decentralization, some functions of the environment and health line ministries have been devolved to the local councils, including planning, implementation, public awareness, monitoring and inspection.

In addition to domestic politics, Malawi is a signatory and beneficiary of a number of bilateral and multilateral, international trade agreements. These include the African Free Trade Zone, the Common Market for Eastern and Southern Africa (COMESA), and the Southern African Development Community (SADC) trade protocol.

### **1.4.3 Profiles of economic sectors**

Malawi is predominantly an agricultural country. Agriculture accounts for 28 % of the GDP and more than 80% of export earnings (primarily from tobacco sales) and it supports more than 80% of the population<sup>1</sup>. Government plans to transit from an agricultural economy to an industrial and service-driven economy. Development aid has played a key role in stabilizing and improving the economy over the past 30 years. In addition, diaspora remittances increasingly contribute to the country's economy.

The mining sector is fast emerging as an important economic driver for Malawi, anchored by the mining of uranium ore in the northern district of Karonga in addition to coal mining. There are also prospects of mining of other important rare earth metals.

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<sup>1</sup><https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjBOL6zx8HiAhVdShUIHeMnAkwQFjAAegQIBBAB&url=https%3A%2F%2Fmw.one.un.org%2Fcountry-profile%2F&usg=AOvVaw0iIofXY-NbiW7Yi1VqfPNt>

Artisanal and small-scale gold mining (ASGM) is one of the largest sources of global mercury contamination, given that it can be used in the gold mining process. In Malawi, ASGM is one of the major sources for the release of mercury into the environment. ASGM are known to operate in Kasungu, Lilongwe, Mchinji, Ntcheu, Nkhatabay, Chitipa, Mzimba Mangochi, Balaka, and Neno Districts. The majority of the ASGM use mercury for gold amalgamation and others using panning method.

Malawi has a very vibrant cement industry. There are several cement producing companies, most notably are Shayona Cement, Cement Products Limited, and Lafarge Cement. The premises for cement production are the most likely mercury-contaminated sites. The production of fertilizers also releases small amounts of mercury into the environment, especially to air. In Malawi, premises for fertilizer producing companies such as Optic hem Malawi Limited can be considered as potential mercury contaminated.

#### **1.4.4 Environmental overview**<sup>[1]</sup><sub>SEP</sub>

Malawi has several environmental concerns about chemical production, import, export, storage, use, quality, treatment and disposal. These concerns have been prioritized based on various factors including: a comparison of socio-economic impacts posed by different types of chemicals; the severity and magnitude of effects of chemicals on people and the environment; the extent to which the impact is irreversible, and the permanence of the problems and associated effects. The identification of priority concerns related to mercury production, import, export and use indicated that Malawi is mostly concerned with the following issues, mercury waste and other hazardous waste, treatment and disposal, contamination of drinking water, occupational health and safety for the industrial sector including ASGM, mercury and other chemicals in food and ground water pollution.

Other environmental problems in Malawi stem from the overreliance of the population on natural resources for income and energy leading to overexploitation of resources and environmental degradation. These problems lead to soil erosion and siltation of rivers causing flash floods.

Malawi is a signatory and party to various Multilateral environmental agreements (MEA) that gives Malawi obligations that help the country deal with some of the environmental problems encountered. These MEAs include the United Nations Framework Convention on Climate Change (UNFCCC), Montreal Protocol, Basel Convention, Rotterdam Convention, Stockholm Convention, and the Convention on Biological Diversity. Malawi is a signatory to the Minamata Convention and it is hoped that ratification process will be completed soon.

Solid waste disposal sites and wastewater treatment plants are also potentially mercury-contaminated sites in Malawi. This is likely due to poor waste management, attributed to the lack of effective landfills and the absence of separation and segregation of waste at source, open burning and indiscriminate waste disposal. The common products of interest to this MIA report are disposed of in these dumpsites, including mercury batteries, healthcare equipment, mercury thermometers, florescent bulbs, and skin lightening cream containers. The potentially contaminated sites are dumpsites in Blantyre, Lilongwe, Mzuzu, and Zomba, and incineration facilities, and wastewater treatment plants in these four major cities in Malawi.

## CHAPTER II: MERCURY INVENTORY AND IDENTIFICATION OF EMISSIONS AND RESOURCES

The inventory of mercury releases in Malawi was developed under the Mercury Initial Assessment (MIA) Project with funding from the Global Environmental Facility (GEF) through UNEP. The inventory was developed in 2018 between the months of June and December. The data used in the inventory compilation was for the year 2016. This inventory was developed with the use of the "Toolkit for identification and quantification of mercury releases" made available by the Chemicals and Health Branch of Chemicals. This inventory was developed with the Toolkit Inventory Level 2. The Toolkit methodology is based on mass balances for each mercury release source sub-category.

Mercury release sources within Malawi were identified and the source types were included in the quantitative assessment that was carried out. The mercury sources that were identified were categorised as follows: energy consumption, materials production, use and disposal of products with mercury content, production of recycled metals, waste incineration, waste deposition/landfilling and waste water treatment, and crematoria and cemeteries. The key mercury releases are to: air, water (marine and freshwater bodies), land, general waste, and sector-specific waste treatment. An additional output pathway is "by-products and impurities" which designate mercury flows back into the market with by-products and products where mercury has not been intentionally added, even if present.

*Table 1: Inventory level 2 - Mercury sources identified*

<b>Source category</b>	<b>Estimated Hg Inputs (Hg kg/yr)</b>
<b><i>Energy consumption</i></b>	
Other coal uses	<b>65</b>
Combustion/use of diesel, gasoil, petroleum, kerosene, LPG and other light to medium distillates	<b>1</b>
Biomass-fired power and heat production	<b>104</b>
Charcoal combustion	<b>28</b>
Gold extraction by methods other than mercury amalgamation	<b>59</b>
Gold Extraction using mercury amalgamation	<b>391</b>
<b><i>Other materials production</i></b>	
Cement production	<b>24</b>
Dental amalgam fillings ("silver" fillings)	<b>2525</b>
Thermometers	<b>126</b>

Electrical switches and relays with mercury	54
Light sources with mercury	54
Batteries with mercury	341
Skin lightening creams and soaps with mercury chemicals	1
Other manometers and gauges with mercury	8
Other laboratory and medical equipment with mercury	84
Production of recycled ferrous metals (iron and steel)	42
Incineration of hazardous waste	1
<i>Incineration and open burning of medical waste</i>	
Open fire waste burning (on landfills and informally)	680
Controlled landfills/deposits	107
Informal dumping of general waste	2700
Waste water system/treatment	750
Crematoria and cemeteries	341

## 2.1 Summary of mercury inputs to society

Mercury inputs to society are the mercury amounts made available for potential releases through socio-economic activities in the country.

This includes mercury intentionally used in products and that is mobilised via extraction and use of raw materials with trace concentrations of mercury such as thermometers, blood pressure gauges, and fluorescent light bulbs. The inventory exercise revealed the following source sub-categories as the largest contributors of mercury inputs to society in descending order:

- i. Dental amalgams (2525 kg/yr.)
- ii. Gold extraction by mercury amalgamation (391 kg/yr.)
- iii. Batteries with mercury (341 kg/yr.);
- iv. Cemeteries (340 kg/yr.); and
- v. Thermometers. (127 kg/yr.)

## 2.2 Summary of mercury releases

The key mercury releases are to: air (the atmosphere), water (marine and freshwater bodies) and land. An additional output pathway is "by-products and impurities" which designate mercury flows back into the market with by-products and products where mercury does not play an intentional role. It has been determined that the largest mercury releases are to the atmosphere. The graph below shows a summary of mercury releases to air:

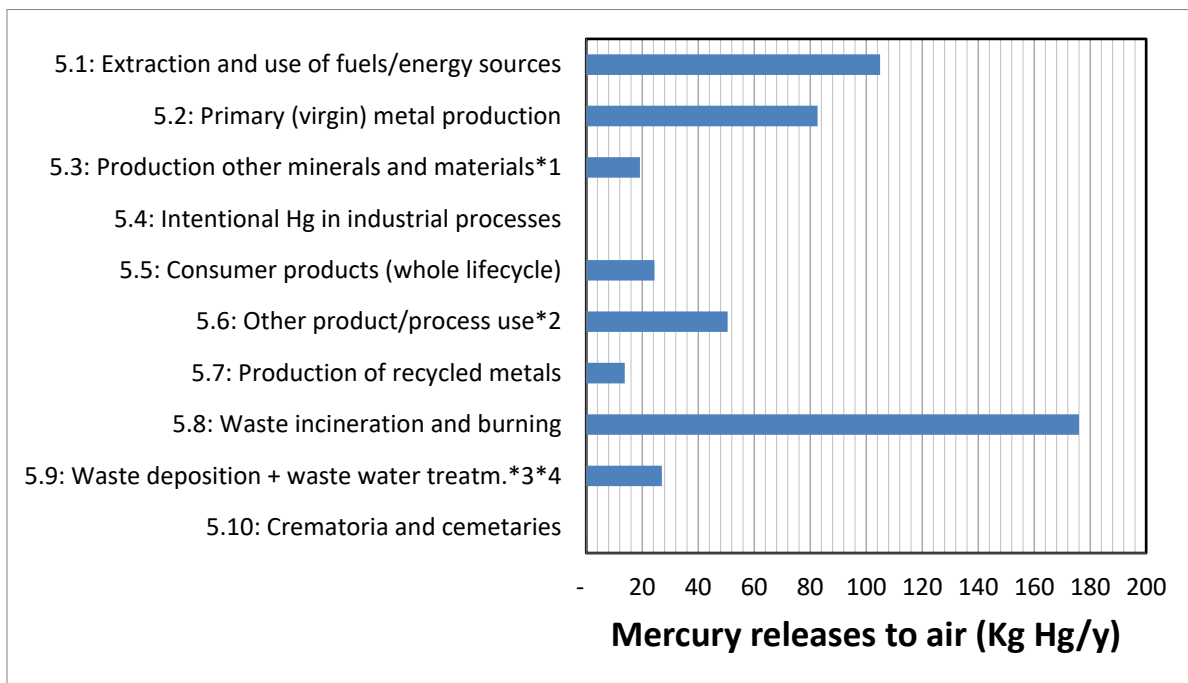


Figure 2: Mercury releases to air (Kg Hg/y)

## 2.3 Data and inventory on energy consumption and fuel production

### Energy Consumption

#### Coal Combustion

The majority of electricity generated in Malawi is hydroelectric. Furthermore, there are no power plants that consume coal as a source of energy. The main use of coal in the country is in the production industries that combust coal to produce heat required in various processes and also for heating water for steam production. There is however data on other coal uses category. This data was sourced from the Annual Economic Report for Malawi for the year 2016 prepared by the Ministry of Finance, Economic Planning and Development in conjunction with the Department of Mines.

Information from major coal mines in Malawi such as Mchenga, Malcoal, and Kaziwiziwi was collected to obtain the amounts of coal produced. These amounts were summed to get an estimate of coal production in Malawi that was close to the figure provided in the report that was 43,338 metric tonnes.

### ***Combustion of petroleum***

The combined total for combustion/use of diesel, gasoil, petroleum, kerosene, LPG, and other light to medium distillates was found to be 340,228 tonnes per year. The figure was sourced from the Malawi Energy Regulatory Authority (MERA, 2016).

### ***Biomass power and heat production***

In Malawi, the majority of the population live in rural areas, which are not connected to the electrical grid. People in these areas mostly use biomass for energy. The Data on biomass was sourced from the Annual Economic Report for Malawi for the year 2016.

### ***Charcoal Combustion***

In Malawi, most of the population uses charcoal as a significant source of energy due to unreliability of electricity and a lack of access. An estimated 300,000 metric tonnes of charcoal were combusted in 2016. This information was sourced from the Annual Economic Report for Malawi for the year 2016.

## **2.4 Data and inventory on domestic production of metals and raw materials**

### **2.4.1 Domestic Metal Production**

Within Malawi, mercury and other metals such as zinc, copper, lead or aluminium are neither primarily extracted nor initially processed. Artisanal gold mining is not regulated and therefore very difficult to find data on the actual volume of mercury releases from artisanal gold extraction.

It was established that most artisanal mining activities use mercury amalgamation. Most of the miners that were visited use gold panning methods to extract the gold. The data presented was an estimate of gold extracted per year by artisanal miners using methods other than gold amalgamation.

### **2.4.2 Cement Production**

Cement and lime release mercury during their primary production, and data that is presented for cement was sourced from the Annual Economic Report for Malawi for the year 2016 prepared by Ministry of Finance, Economic planning and Development in conjunction with the Department of Mines (Planning, 2016). The data from the report was compared and verified with data obtained from major cement producing companies in Malawi, such as Lafarge Cement, Nkope Cement and Shayona Cement Cooperation.

## **2.5 Data and inventory on domestic production and processing with intentional mercury use**

The products in this subcategory include mercury-containing thermometers, electrical switches and relays, batteries, manometers and gauges, biocides and pesticides. These are not produced within the country but merely imported as finished products or packaged in Malawi.

## **2.6 Data and inventory on waste handling and recycling**

### **2.6.1 Production of recycled materials**

In Malawi, the information was given in tonnes and it was roughly estimated that 1 car is equal to 1 tonne. The amount of recycled materials was 38000 tonnes. The data was sourced from iron and steel companies in Malawi, such as EHUD steel manufacturing and Macsteel, and from steel foundries.

### **2.6.2 Waste Incineration**

A large portion of waste is municipal waste and sewage sludge that is not incinerated due to lack of facilities. However, hazardous waste such as medical waste does have several incineration facilities in the country with 5 incinerators available in the whole country. Data on medical waste incinerated was obtained from health care facilities and approximated from municipal waste composition. Notable is the open fire waste burning (on landfills and informally) that is common in the country. However, it is difficult to accurately estimate quantities of the waste being burnt.

### **2.6.3 Waste Deposition/landfilling and Waste Water Treatment**

Landfilling of waste is not controlled and is informally dumped on uncontrolled dumping sites, roadsides, rivers and open spaces; this data was obtained from local authorities combined with calculations using a per capita waste generation rate of 0.5kg/capita/day (as provided in the UNEP inventory toolkit) from the national population of 3,072,006,075 kg.

## **2.7 Data and inventory on general consumption of mercury in products, as metal mercury and as mercury containing substances**

### **2.7.1 Dental amalgam fillings**

The data on the dental amalgam fillings was collected from the major hospitals and dental clinics in the country. The information collected comprised of data on the number of dental amalgam fillings utilized per month, which was extrapolated to provide an annual usage estimate.

### **2.7.2 Thermometers**

#### ***Medical mercury thermometers***

The data on medical mercury thermometers comprised of data sourced from major medical equipment suppliers and data collected from hospitals and clinics in the country. The data was then inferred to determine the percentage of this dataset to the overall estimate of the amount of mercury in these thermometers that could be present nationally.

#### ***Other glass mercury (Hg) thermometers (air, laboratories, dairy)***

Data on glass thermometers was sourced from suppliers of industrial and schools laboratory equipment. Information was also collected by visiting some industrial premises that utilize thermometers for checking temperatures during their various production processes. Some information was also collected from the Ministry of Labour, which monitors workplace conditions and work equipment utilized by various institutions. This information was used to give a representation of the use of other glass mercury thermometers in the country.

#### ***Engine control Hg thermometers and other large industrial/speciality Hg thermometers***

The information was collected from visiting industrial premises that utilize industrial thermometers in the major industrial areas in the main cities of the country. Information was also collected from the Ministry of Labour, which monitors the use of work equipment utilized by such institutions. This data was used to give an indication of the country situation.

### **2.7.3 Electrical switches and relays with mercury**

The data was sourced from the Ministry of Industry and Trade which monitors the trade of such equipment with additional information on imports of such equipment provided by the Customs and Excise Division of the Malawi Revenue Authority.

### **2.7.4 Light sources with mercury**

#### ***Fluorescent tubes***

The information on fluorescent tubes was obtained from the Ministry of Industry and Trade that monitors the trade of the goods; additional information was collected on imports from

the Customs and Excise Division of the Malawi Revenue Authority. The information was crosschecked and verified with ESCOM.

#### ***Compact fluorescent lamps***

The information on compact fluorescent lamps was obtained from the Ministry of Industry and Trade which monitors the trade in the goods and additional information was collected on imports from the Customs and Excise Division of the MRA. The information was crosschecked and verified with ESCOM.

#### ***Other mercury containing light sources***

The information on other mercury containing light sources was collected from the Ministry of Industry and Trade. Information on mercury containing light sources was also collected from the Customs and Excise Division of the Malawi Revenue Authority. ESCOM was also contacted to provide information on energy-saving light bulbs containing mercury, which were distributed as part of a project to reduce energy demand caused by use of incandescent light bulbs.

### **2.7.5 Batteries with mercury**

#### ***Mercury oxide button cells***

The data on mercury oxide button cells was sourced from the Ministry of Industry and Trade, which regulates trade in various commodities and monitors imports of such goods. The data was triangulated with data on imports from the Customs and Excise Division of the Malawi Revenue Authority. Twelve (12) tonnes of mercury-containing oxide button cells was imported in 2016 and an assumption is made that an equal amount is sold in the same year, as new imports serve to refresh supplies.

#### ***Other button cells***

This information was obtained from the Ministry of Industry and Trade and triangulated with data from the Customs and Excise Division of the MRA. Two (2) tonnes of other button cells was imported in 2016 and, similarly, it is assumed that the whole quantity was sold in the same year.

#### ***Other batteries with mercury***

The data on other batteries with mercury was collected from records of imports from the Ministry of Industry and Trade and was supplemented with other information from the Customs and Excise Division of the MRA. The information on batteries with mercury was also collected through observations using random sampling of retailers and distributors of various types of batteries. Labelling on the batteries and other available information and documentation was studied to establish mercury content. Two (2) tonnes of other batteries

with mercury was imported in 2016 and it is assumed that the whole quantity was sold in the same year.



Figure 3: Batteries with mercury content labelling

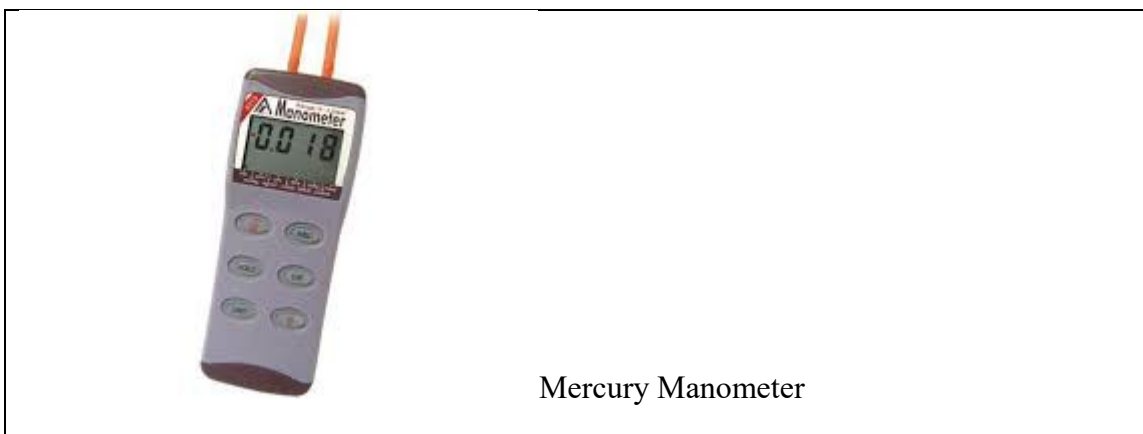
### 2.7.6 Skin lightening creams and soaps with mercury chemicals

Information on skin lightening creams and soaps with mercury was estimated from data on imports from the Ministry of Industry and Trade. This was done by analysing data on amounts of skin lightening creams and soaps imports and determining the percentage of these that is likely to contain mercury. The figure used for the percentage was deduced from conducting random observations of retail and cosmetic shops in the country and checking the information on labels of such products for their mercury content. This information was used to estimate the likely percentage of the imported skin lightening

creams and soaps that are likely to contain mercury considering that none of these products are produced in the country.

### **2.7.7 Other manometers and gauges with mercury**

In the inventory spreadsheet, the information is derived from the population of Malawi. To support this, the information correlated with data collected from records of imports from the Ministry of Industry and Trade on the imports of such equipment. The information was complemented with data from industrial equipment providers in the country and from the Ministry of labour which has information on various equipment used in workplaces, especially in industry. This data was then verified by random visits to industrial establishments during the inventory exercise to ascertain the presence of such equipment.



*Figure 4: Mercury Manometer*

### **2.7.8 Laboratory chemicals**

In the inventory spreadsheet, the information is derived from the population of Malawi. To back this up, the information was compared with data on the laboratory chemicals containing mercury available in the country. This information was collected from suppliers of laboratory equipment and chemicals, and from data on imports of such chemicals available at the Ministry of Industry and Trade.

### **2.7.9 Other laboratory and medical equipment with mercury**

Data on other laboratory and medical equipment with mercury was estimated using information from medical equipment suppliers and laboratory equipment suppliers in the country. Availability of such equipment was verified from import records from the Ministry of Industry and Trade.

## **2.8 Data and inventory on crematoria and cemeteries**

### **2.8.1 Crematoria**<sup>[L] [SEP]</sup>

Approximately 50 bodies per year are cremated in the country. The data was obtained from the crematoria run by the Hindu community.

### **2.8.2 Cemeteries**

Approximately 135,699 bodies per year are buried in the country. The data was obtained from the National Census Report using population of 16,832,910 for Malawi and a reported mortality rate of 8.1 per 1000. Local authorities do not keep data on deaths except for those that utilize formal cemeteries with usage fee.

## **2.9 Impacts of mercury on human health and the environment**

Exposure to mercury and mercury compounds is harmful to human health, especially for foetuses and children at early stages of development. All forms of mercury are toxic for humans and the environment, but the pattern of toxicity and health effects varies with its chemical form (metallic, inorganic, organic), the route of exposure (inhalation, ingestion), the amount (even low concentrations can have an impact), the duration (acute and chronic), timing/life stage of exposure (exposure in early life is the most dangerous) and the vulnerability of the person exposed. <sup>2</sup>

Mercury in the form of methylmercury is persistent in the environment, highly bioaccumulative and can cause a variety of toxic effects including nephrotoxicity, teratogenicity and damage to the cardiovascular system. Endocrine-disruption and immunotoxicological properties are under scientific discussion. Clinical symptoms of exposure to different forms of mercury vary from nausea and abdominal pain to tremors, paralysis, memory loss and kidney damage. The Minamata disease, the so-called “mad hatter syndrome” and acrodynia are caused by chronic exposure to different organic and inorganic mercury compounds.

There are a number of sources of exposure to mercury by humans including pollution of the air, water and food and directly from mercury-containing products and wastes. Concentrations of mercury in occupational settings can be high and pose significant risks

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<sup>2</sup> <http://www.who.int/foodsafety/publications/risk-mercury-exposure/en><sup>[L]  
[SEP]</sup>

to human health. The main sources of air pollution come from releases of mercury in the course of industrial processes such as coal combustion, mercury-mining, manufacture of chlorine and caustic soda, artisanal and small-scale gold mining, metals processing, waste management and incineration. Through emissions into the atmosphere, mercury can be transported globally.

Mercury concentrations in surface and drinking waters are usually not high. However, in aquatic environments (including sediments), mercury is transformed into methyl mercury notably via the activity of microorganisms. Methyl mercury is known as the most harmful form of mercury because of its ability to bioaccumulate and biomagnify in the food chain. Contaminated fish and other seafood are sources of organic mercury. In addition, humans are exposed to inorganic mercury from dental amalgams and mercury-containing cosmetics. Specific attention should be paid to intentional and unintentional chemical spills and potential acute exposure to high concentrations of metallic mercury, especially if they happen in schools, hospitals or institutions for small children.

## **CHAPTER III POLICY REGULATORY ASSESSMENT**

### **3.1 Policies and legislation**

Malawi has a number of policies and legislation on or relating to chemicals (including mercury). Under the MIA Project, these policies and legislation were assessed to highlight their ability and shortcomings to accommodate mercury management in Malawi, in aligning to the standards set out in the Minamata Convention.

The main policies and legislation reviewed during the implementation of the MIA Project include the; National Environmental Policy 2004, Environment Management Act (EMA) 1996, Environment Management (Waste Management and Sanitation) Regulations 2008, Environment Management (Chemicals and Toxic Substances) Regulations 2008, Fisheries Conservation and Management Act No.25 of 1997, National Fisheries Policy (2012-2017), Water Resources Act No.2 of 2013, Water Works Act 1995, National Sanitation Policy of 2008, Control of Animal Diseases Act 1967, Pesticides Act 2002, Fertilizers, Farm Feeds and Remedies Act 1997, Pharmacy, Medicines and Poisons Act 1988, Public Health Act 1982, Dangerous Drugs Act 1982 as amended, Energy Regulation Act 2004, Electricity Act 2004, Liquid Fuel and Gas (Production and Supply) Act 2004, Occupational Safety, Health and Welfare Act 1997, Control of Goods Act 2018 Consumer Protection Act No. 14 of 2003, and the Malawi Bureau of Standards Act 1987 as amended in 2010. The following is a brief description of the legal instruments that relates to the Minamata Convention.

#### **3.1.1 National Environmental Policy 2004**

The government of Malawi adopted the National Environmental Policy (NEP) of 1996 in order to provide guidance and set standards for development of sector policies and legislations in environment and natural resources that were in alignment with the principles of sustainable development. However, the 1996 NEP was revised as a result of policy gaps, conflicts and duplication, which adversely affected effective implementation of the policy. The revision was also necessary to ensure that the NEP would remain current and responsive to new challenges, initiatives and incorporate lessons learned.

The 2004 revised NEP recognizes the importance of creating an enabling policy and legal framework for cross sector coordination, participation of non-state sectors, strengthening the enforcement machinery and decentralizing natural resources and environmental management and governance. The overall goal of the Policy is the promotion of sustainable, social and economic development through the sound management of the environment and natural resources.

## **Provisions**

Some of the goals of the policy include the following:

- Securing for all persons, now and in the future, an environment suitable for their health and well-being;
- Enhancing public education and awareness of various environmental issues and public participation in addressing them.
- Promoting local community, Non-Governmental Organizations (NGO) and private sector participation in environment and natural resources management.
- Promoting co-operation with other Governments and relevant regional and international organizations in the management and conservation of the environment.
- Facilitating development and regular review of policies and legislation to promote sustainable management of the environment and natural resources.

## **Observations**

The policy has general provisions dealing with environmental management and protection however it does not have provisions, which specifically refer to management of chemicals or to mercury. This can be considered a weakness of the policy or as strength since the objective of the environmental policy is to provide guidance and set standards for development of sector policies and legislation, including those on chemicals such as mercury.

Although the goals mentioned above are applicable to environmental issues in general, they can also be applied to chemicals and specifically to the management of mercury to ensure the protection of the environment and human health.

### **3.1.2 Environment Management Act (EMA), 1996**

The Environment Management Act No.23 of 1996 (EMA) was enacted to make provision for the protection and management of the environment and the conservation and sustainable utilization of natural resources.

## **Provisions**

The Act contains provisions for pollution control and regulation of waste. Specifically, (i) **Section 39** of EMA regulates the importation and exportation of hazardous waste. Under this Provision, no person shall import or export any hazardous waste or substance, except under a permit issued by the Minister subject to such conditions as the Minister may determine. It is also required that a written confirmation from an appropriate authority of

the receiving country that the hazardous waste or substance may be exported to that country is provided to the Minister.

**(ii) Section 40** deals with classifying of pesticides and hazardous substances including labeling, packaging, manufacture, importation and exportation, distribution, registration, storage, handling, monitoring and transportation. The section also gives provision to the Minister to put restrictions or banning of hazardous substances.

**(iii) Section 42** places the responsibility of preventing discharge or emission of any pollutant into the environment on the polluter, including the removal or disposal of any pollutant.

**(iv) Section 43** prohibits any person from discharging effluent or emitting any gas or gaseous substances into the environment except under a license issued by the Minister and subject to conditions. Failure to comply with the conditions may lead to the license being revoked.

**(v) Section 44** provides for a general ban on an individual to pollute or permit another to pollute.

### **Observations**

Section 39 refers to hazardous waste in general and does not specifically mention mercury. Hazardous waste has been defined as “waste, which is poisonous, corrosive, noxious, explosive, inflammable, radioactive, toxic or harmful to the environment”. Mercury waste can fall under this definition of hazardous waste.

Section 40 mentions hazardous substances which are defined as "any chemical, waste, gas or gaseous matter, medicines, drugs, plant, animal or microorganism which is injurious to human health or the environment." This can include mercury.

Sections 42, 43 and 44 refer to pollutants in general. Pollutants are defined by the Act as “any substance whether in a liquid, solid or gaseous form which directly or indirectly adversely alters or destroys the quality of the environment; or is dangerous or potentially dangerous to public health, plant or animal life, and includes objectionable odors, radioactive substances or particles, noise, vibration, or any substance or particle that causes temperature change or physical, chemical or biological change to the environment.” Mercury can also fall within this definition.

Despite the fact that none of the mentioned sections in the Act specifically concentrate on mercury management or regulation, the broad definitions given of ‘Hazardous substances, Hazardous waste and pollutants’ can be interpreted to include mercury. Therefore, the provisions in this act allow for the effective implementation of the obligations set out in Articles 3, 4, 8, 9 and 11 of the Minamata Convention.

The Act allows the Minister to develop regulations for the better carrying out of the purposes of the Act. Regulations have been developed for chemicals management but no specific regulations have been developed for management of mercury. In addition, the Act

enables the development of standards but so far none have been developed for mercury.

### **3.1.3 Environment Management (Waste Management and Sanitation) Regulations, 2008**

These Regulations provide for management of general or municipal solid and liquid waste, solid waste recycling and recycling facilities, management of hazardous wastes, transportation and storage of waste, waste disposal site or plant and trans boundary movement of wastes.

#### **Provisions**

Regulation 32, 34, 36 deals with hazardous waste management and disposal.

Regulations 57 to 59 deal with prior informed consent.

#### **Observations**

The provisions of these regulations do not refer to mercury wastes. The Regulations are based on the provisions of the Basel Convention on the Control of Trans boundary Movements of Hazardous Wastes and Their Disposal to which Malawi is a party.

According to Article 11.1 of the Minamata Convention the relevant definitions of the Basel Convention shall apply to wastes covered under this Convention for Parties to the Basel Convention. Article 11.3 of the Minamata Convention further provides that each Party shall take appropriate measures so that mercury waste is: (a) Managed in an environmentally sound manner, taking into account the guidelines developed under the Basel Convention; (b) Only recovered, recycled, reclaimed or directly re-used for a use allowed to a Party under this Convention or for environmentally sound disposal pursuant to paragraph 3 (a); and (c) For Parties to the Basel Convention, not transported across international boundaries except for the purpose of environmentally sound disposal in conformity with this Article and with that Convention. Therefore, in as far mercury waste is concerned the provisions of the Minamata Convention and Basel Convention apply.

### **3.1.4 Environment Management (Chemical and Toxic Substances) Regulations 2008**

The Regulations apply to any person in Malawi whose undertaking involves or includes the manufacturing, repackaging, importation, exportation, transportation, distribution, sale or other mode of handling toxic substances and chemicals and in respect of any activity in relation to toxic substances and chemicals which involves a risk of harm to human health or the environment.

#### **Provisions**

The Regulations define “chemical wastes” as any unwanted or waste chemical or chemical formulation generated from any process which can cause danger to both human health and the environment. A “chemical” is defined as a chemical substance in any form whether by itself or in a mixture or preparation whether manufactured or obtained from nature and includes such substances used as industrial chemicals, for consumer use but excludes pesticides and fertilizers, medicines and drugs and for the purposes of these Regulations includes toxic chemicals.

Regulations 4 to 9, 19, 22, 28, 29, 33 to 38, and 44 deal with management of toxic substances and chemicals with emphasis on the licensing requirements to engage in the business of manufacturing, repackaging, importing, exporting, transporting, distributing, sale or other mode of handling chemicals and toxic substances.

Regulations 15 provides for procedures for restricting the use a chemical product including an assessment of whether the chemical causes or is likely to cause adverse effects to human health, animals, plants or the environment.

Regulation 24 deals with safe keeping of registered chemicals. Regulation 25 provides for local authorities to make bylaws for management of chemicals and toxic substances and chemical wastes in their respective area of jurisdiction.

Regulation 25 requires every local authority to make by-laws relating to the management of toxic substances and chemical wastes in their respective area of jurisdiction. Such by-laws should ensure that the disposal method of chemical wastes is in an environmentally sound manner.

Regulation 26 places a duty on industries or medical facilities to not discharge any chemical wastes in any state into the environment unless such wastes have been treated in accordance with acceptable international methods that are approved by the Director of Environmental Affairs in consultation with the relevant local authority.

Regulation 29 provides that any person who has a license to own or operate a chemical waste or plant shall ensure that highly toxic or hazardous chemical wastes are disposed of or treated in accordance with conditions specified in the license or in accordance with any general guidelines issued by the Director of Environmental Affairs in consultation with the Director responsible for local government.

Regulation 32 requires every person who operates a toxic substance or chemical wastes disposal site or treatment plant to take all necessary measures to prevent pollution from sites or plants including the erection of necessary works and taking mitigation measures

Regulations 33 to 38 deal with prior informed consent procedure for toxic substances and chemicals under any convention or arrangement to which Malawi is a party, for the purpose of monitoring imports and exports and controlling the movement of toxic substances and chemicals in Malawi territory.

## **Observations**

The chemicals regulations do not specifically refer to mercury. However, these regulations contain the most comprehensive provisions on management of chemicals and toxic substances in Malawi. The provisions mentioned above on chemicals and toxic substances can be applied to mercury management including management of mercury waste.

### **3.1.5 National Fisheries Policy (2012-2017)**

The 2001 National Fisheries and Aquaculture Policy document guided management of the fisheries resources in Malawi up until 2012 when the National Fisheries Policy (2012-2017) was prepared with the support of the ACP Fish II in 2011 and UNDP in 2012. The development of the 2012 Policy was a response to policy shifts from natural resources conservation and management to promoting sustainable production of fish for food security as well as income generation. Furthermore, the need for strengthening monitoring and evaluation as well as utilizing Public-Private Partnerships (PPP) necessitated the review.

#### **Provisions**

The revised Policy focuses on increasing sustainable fish production from capture fisheries and aquaculture, enhancing fish quality and value addition for domestic and export trade to create wealth, promoting technology development and its transfer to the users, enhancing capacity for the sector's development and promoting social development, decent employment and fisheries governance through participatory resource management regimes.

The goal of the Policy is to promote sustainable fisheries and aquaculture development in order to contribute to economic growth in Malawi.

#### **Observations**

The provisions of the Policy are not specific to chemicals, including mercury.

### **3.1.6 Fisheries Conservation and Management Act No.25 of 1997**

The principal statute governing fisheries is the Fisheries Conservation and Management Act, 1997 (FCMA). The purpose of the Act is to make provision for the regulation, conservation and management of the fisheries of Malawi and any other related matters.

#### **Provisions**

Section 42 subsections 1 to 3 prohibit individuals from using, carrying or having in their possession or control any explosive, devices capable of producing an electric current, poison or other noxious substances or unlawful gear as a means to stun, disable or catch fish. Any individual that contravenes this section will be guilty of an offence and subject to a fine or imprisonment.

Section 43 provides for pollution, etc., of rivers, streams, lakes or other parts of the fishing

waters.

Section 43 (1) sets out prohibitions on polluting rivers, streams, lakes or other parts of the fishing water with any sawdust or sawmill refuse, oil, chlorinated hydrocarbon, biocide, pesticide, toxic or any other substance, heavy metal or material or rubbish which could lie on the bed of such waters.

Section 43 (2) to (4) make it an offence for any person to place, discharge, cause or permit to be placed or discharged any waste. It is also an offence if an individual neglects or refuses to remove the material within a reasonable time after having been ordered so to do by a fisheries protection officer.

### **Observations**

The provisions of the FCMA are not specific to mercury however they do prohibit pollution of water with “toxic or any other substances or heavy metal”. No definition for toxic substances or heavy metal has been given in the Act therefore more clarification is needed in this area.

Once mercury is fitted into this definition then the provision can complement the objectives set out in Article 9 of the Convention to control the releases of mercury compounds in water.

### **3.1.7 Water Resources Act No.2 of 2013**

Water resources in Malawi were regulated by the Water Resources Act 1969 and its subsidiary Water Resources (Pollution Control) Regulations. However, the Water Resources Act was repealed by the Water Resources Act of 2013. The purpose of the Water Resources Act, 2013 is to provide for the management, conservation, use and control of water resources for the acquisition and regulation of rights to use water.

### **Provisions**

Sections 88 and 89 of the Act provide for the prevention and control of water pollution. Section 89 provides that anyone who owns, controls, occupies or uses land on which an activity or process is or was performed and which, unless authorized by this Part, causes, has caused or is likely to cause pollution of a water resources, should take such measures as may be necessary to prevent any such pollution from occurring, continuing or recurring.

### **Observations**

The provisions of the Act do not specifically mention mercury. Section 89 does refer to “an activity or process that has caused or is likely to cause pollution to water sources” this could allow for the implementation of Article 5 of the Minamata Convention that aims to regulate the manufacturing process that use mercury compounds by restricting them or taking measures to address the release of mercury compounds from those facilities. The Act is also relevant to article 9 of the Minamata Convention on controlling and, where

feasible, reducing releases of mercury and mercury compounds to water.

### **3.1.8 Water Works Act, 1995**

Malawi has a Water Works Act of 1995 which is the main authority that established water supply and water borne sanitation delivery services.

#### **Provisions**

Section 29 (1) (b) of the Act restricts the disposal of certain chemical refuse or waste steam which can interfere with the functioning of the sewerage system.

#### **Observations**

The Act is not specific to mercury waste however the provision mentioned above could be applicable to mercury waste.

### **3.1.9 National Sanitation Policy of 2008**

The National Sanitation Policy was developed to help in shaping the development of sanitation interventions in Malawi in line with the Malawi Growth and Development Strategy (MGDS). The Policy gives guidance and harmonization to all players in the sector on just what the country needs in the sanitation and hygiene sector.

#### **Provisions**

One of the objectives of the Policy is to ensure safe disposal of hazardous and non-hazardous liquid and solid health care waste in order to protect health care workers, the general population and environment. One strategy to achieve this objective is strategy 3.5.3.3 which is the segregation of health care waste at source into non-hazardous and hazardous waste according to internationally accepted color coding of receptacles.

Another objective of the Policy is 3.2.2 which is to promote improved sanitation, safe hygiene practices, proper waste disposal and recycling of wastes in rural areas and one strategic intervention for doing this is 3.2.3.9 which is to ensure safe transportation, storage, disposal and treatment of industrial and hazardous waste.

#### **Observations**

The policy does not specifically refer to mercury waste.

### **3.1.10 The Pesticides Act, 2002**

The Pesticides Act No.12 of 2002 provides for the control and management of the importation, exportation, manufacture, distribution, storage, disposal, sales, repackaging

and use of all pesticides in Malawi.

### **Provisions**

The Act defines a pesticide as “any substance or mixture of substances intended to be administered on animals, plants, or humans for preventing, destroying or controlling any pest and includes any substance intended for use as a plant growth, regulator, defoliant, desiccant or agent for thinning fruit or preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport”.

**Section 17 to 27** of the Pesticides Act deal with issues of registration and licensing of pesticides. Section 17(1) stipulates, “No person shall import, manufacture or sell a pesticide, which has not been registered under this Act”.

**Section 31** prohibits and restricts the use of certain pesticides products and establishes standards on maximum residue limits of pesticides in food and feed products.

**Section 37** prohibits the disposal of any pesticides container or packaging in a manner that is unduly hazardous to human or animal health or the environment or that is contrary to any written law.

**Section 52** enables the Pesticides Control Board to issues pest emergency permits.

### **Observations**

The Act does not specifically refer to pesticides that have mercury in them. However, a list of mercury-added products has been given in Annex A of the Minamata Convention in which pesticides have been included. Therefore, the provisions in this Act can be used to implement Articles 3, 4, 5, 9, 11 and 12 of the Convention.

#### **3.1.11 Fertilizers, Farm Feeds and Remedies Act, 1997**

The Fertilizers, Farm Feeds and Remedies Act provides for the control of the sale of fertilizers and feeds.

### **Provisions**

Section 3 places restrictions on the sale and import of remedies. A “remedy” means any substance which is intended or offered (a) for the destruction of any noxious plant or insect; or (b) in regard to poultry, domestic animals, livestock or plants, for the prevention, treatment or cure of any disease, infestation or other unhealthy or unfavorable condition, or for the maintenance of health, but does not include any substance prescribed by a veterinarian for a specific patient or group of patients.

### **Observations**

The policy does not specifically refer to mercury.

### **3.1.12 The Pharmacy, Medicines and Poisons, 1988**

The Pharmacy, Medicines and Poisons Act No.15 of 1988 provides for the establishment of the Pharmacy, Medicines and Poisons Board and for the registration and disciplining for pharmacists, pharmacy technologists and pharmacy technicians.

#### **Provisions**

The Act refers to ‘substances’ which are defined as “any natural or artificial substance, whether in solid or liquid form or in the form of gas or vapor”. The Act also refers to ‘medicinal products’, which are defined as a substance or article administered to a human being or animal for a medicinal purpose, that is, to treat, prevent, or diagnose disease; for contraception; or to induce anesthesia.

**Sections 34 to 44** provide regulations for medicinal products more specifically on issues pertinent to licensing. The Act provides that a license is required for the sale, supply, export, import, or manufacture of any medicinal product except in certain cases.

**Sections 45 to 49** are provisions related to dealings in medicinal products, focused on placing restrictions on the sale of medicinal products.

**Sections 55 to 57** are provisions that regulate poisons. Section 55 establishes a poison list whilst sections 56 and 57 place restriction on the sale of certain poisons stated in the list and establish a Poison Committee to overlook the implementation of these provisions.

#### **Observations**

The Act does not specifically mention mercury. However, the broad definitions for “substances” and “medicinal products” can cover mercury and mercury compounds. More specifically medicinal products can include dental amalgams that incorporate mercury. Therefore, the regulations mentioned above will help facilitated the obligations set out in Articles 3, 4 and 5 of the Convention.

### **3.1.13 The Public Health Act, 1982 as amended**

The Public Health Act, 1982 as amended creates the legal framework for the protection of public health in Malawi and provides for powers of the administration to regulate and control issues such as animal and food production and handling, food and water supply and sewerage.

#### **Provisions**

Part 9 deals with sanitation and housing and contains provisions prohibiting nuisances. A nuisance, according to section 62, includes;

- Any noxious matter, or waste water, flowing or discharged from any premises, wherever situated, into any public street, or into the gutter or side channel of any street, or into any gully, swamp, or watercourse or irrigation channel not approved for the reception of such discharge;
- Any collection of water, sewage, rubbish, refuse, odor, or other fluid or solid substances which are offensive or which are dangerous or injurious to health or which permit or facilitate the breeding or multiplication of animal or vegetable parasites of men or domestic animals, or of insects or of other agents which are known to carry such parasites or which may otherwise cause or facilitate the infection of men or domestic animals by such parasites;
- Any factory or trade premises causing or giving raise to smells or effluvia, which are injurious or dangerous to health;

Part 10 of the Act provides for the conservation of water, drainage, and sewerage. Part 13 deals with water and food supplies, and contains provisions placing a duty on local authorities to take measures for preventing any pollution dangerous to health, of any supply of water which the public within its district has right to use, and does use for drinking or domestic purposes; and to take measures against any person so polluting any such supply or polluting any stream so as to be a nuisance or danger to health.

### **Observations**

The Act is not specific to mercury. However, the provisions are broad enough to enable mercury management.

### **3.1.14 Dangerous Drugs Act, 1982 as Amended**

The Dangerous Drugs Act controls the importation, production, possession, sale, distribution, and use of dangerous drugs.

### **Provisions**

The Act does not have any provision specifically for mercury. Furthermore, no definition of a “dangerous drug” has been given and all the drugs covered in the Act that are listed in the schedule do not contain any mercury or mercury compounds or are mercury added products.

### **Observations**

In order for this Act to aid in implementing articles in the Convention, drugs that have mercury compounds will need to be classified and identified in the Act as “dangerous drugs”. Currently, this Act does not have the capacity to allow for effective management of mercury in a drug form.

### **3.1.15 Energy Regulation Act, 2004**

The Energy Regulation Act, 2004 establishes the Malawi Energy Regulatory Authority to regulate the energy sector, to define the powers and functions of the Authority and to provide for licensing of energy undertakings.

#### **Provisions**

Sections 28 -31 provides restrictions on energy related activities without a licenses.

Section 37 gives authority to an appointed person to make enquiries and inspections on the supply of energy.

#### **Observations**

The Act has a very broad definition of Energy as “sources of renewable and non-renewable energy” and does not refer to any chemicals or mercury. Under Annex A of the Convention a list of mercury added products such as batteries, switches, compact fluorescent lamps can all be linked to sources of non-renewable energy.

### **3.1.16 Electricity Act, 2004**

The objective of the Act is to regulate the generation, transmission, distribution, sale, import, export, use and safety of electricity.

#### **Provisions**

The Act does not have any provisions that apply to chemicals or mercury.

#### **Observations**

The Act does not have any provisions that apply to chemicals or mercury.

### **3.1.17 Liquid Fuel and Gas (Production and Supply) Act, 2004**

The purpose of the Liquid Fuel and Gas (Production and Supply) Act, 2004 is to provide for production, extraction, conversion, importing, transforming, transporting, storing, distributing and selling of liquid fuels and gas in a liberalized market.

#### **Provisions**

Section 9 provides that the following production activities should be licensed; (a) the production of crude oil and gas; (b) the refining of crude oil into refined products; (c) the production of ethanol fuel; and (d) the production of bio-diesel.

#### **Observations**

The Act is not specific to mercury. It is also important to note that currently there are no refineries in Malawi.

### **3.1.18 The Occupational Safety, Health and Welfare, 1997**

The Occupational Safety, Health and Welfare Act of 1997 contains provisions regulating the control, use, handling and processing of chemicals in the workplace, including, hazardous substances.

#### **Provisions**

Section 13(1) places a duty on every employer to ensure the safety, health and welfare of all his employees at work. Section 13(2)(6), requires the employer to make arrangements for ensuring safety, and absence of risks to health, in connection with the use, handling, storage and transportation of articles and substances.

Section 51(1) requires manufacturers, importers and suppliers of hazardous substances used at workplaces, including those in the agricultural section, to provide sufficient information on such substances as well as the precautions to be taken. Section 51(3) requires hazardous substances to be clearly labeled giving their relevant characteristics and instruction on their use. Section 51(4) requires containers of hazardous substances to carry, or be accompanied by, instructions for the safe handling of the contents and procedures to be followed in case of spoilage.

Sections 66 and 68 are on notification of accidents, dangerous occurrences and industrial diseases. Schedule II lists industrial diseases, which include mercurial diseases.

#### **Observations**

The Act specifically refers to mercury by including mercurial diseases as an industrial disease.

### **3.1.19 Consumer Protection Act No. 14 of 2003**

The Consumer Protection Act protects the rights of consumers and addresses their interests and needs.

#### **Provisions**

Section 4 of the Act places a duty on the Government to make an undertaking to the consumers in terms of policies, laws and administrative measures including the adoption, maintenance and enforcement of standards. The Act provides for Consumer Protection Council whose mandate is to oversee the enforcement of this legislation.

Section 41 is on warning of use of harmful technology and goods.

## **Observations**

The Act does not specifically refer to mercury.

### **3.1.20 Malawi Bureau of Standards Act**

The Ministry of Industry and Trade through the Malawi Bureau of Standards (MBS) implements the Act. Its objectives include providing for the testing of locally manufactured or imported commodities with a view to determining whether such commodities comply with the Provisions of the Act, the Merchandise Marks Act or any other law relating to standards of quality. Thus, the Bureau inspects, tests, and certifies imports and exports of all commodities including chemicals.

## **Provisions**

The MBS under section 26 (2) have the authority to establish and implement standards. Section 27 of the MBS Act may by General Notice published in the Gazette, declare or publish any specification or code of practice framed, developed or prepared by the Bureau to be a Malawi Standard and shall in like manner give notice of any replacement or abolition of a Malawi Standard so declared. The Malawi Bureau of Standards has therefore the duty and obligation to develop standards that will prohibit production and use of chemicals.

## **Observations**

The Act does not specifically mention setting standards for the mercury or mercury added products. However, the role of the MBS is vital to implementing the Articles in the Convention specifically those that require restrictions on quantities of mercury that should be handled in manufacturing processes or trade.

### **3.1.21 Mines and Minerals Policy of Malawi, 2007**

The Mines and Minerals Policy is aimed at guiding the exploration and exploitation of the mineral resources within the framework of the Macro-economic policy of the country. The Policy also aims at encouraging the development of mining in Malawi, following Government's realization that the mining sector has the potential to contribute substantially to our export earnings if properly organized. The Policy stresses private sector participation and the need to attract investment for large-scale mining.

## **Provisions**

Section 2.8 of the Policy is on Artisanal and Small-Scale Mining. The section recognizes that ASM activities in Malawi have grown considerably in recent years and are a source of livelihood for many families in rural areas and that ASM has been identified as a key area to encourage economic growth to reduce poverty.

The Policy provides that ASM operations often operate illegally and receive little supervision or support from the local or central government authorities. Their operations are labor intensive, low paying, hazardous, and largely unregulated. ASM cause significant damage to public health and the environment by destroying the landscape and spreading pollutants.

The main Policy statement with regard to ASM is that Government, with collaborating partners and stakeholders, will establish an enabling environment to develop the ASM sub-sector using various strategies, which are mentioned in the Policy document.

### **Observations**

The provisions of Article 7 of the Minamata Convention on artisanal and small-scale gold mining and processing in which mercury amalgamation is used to extract gold from ore are complimentary to what is stated in the Mines and Minerals Policy of Malawi in as far as general ASM mining is concerned. Malawi is not a major gold mining country but majority use gold while a few small-scale gold mining does occur using the panning method. However, a comprehensive inventory of release sources will provide information on the kinds of gold mining that occur in the country.

#### **3.1.22 The Mines and Minerals Act, 1981**

The Mines and Minerals Act governs a wide variety of mining issues including the exploration for and exploitation of all minerals other than petroleum, water and soil. In Malawi no person can carry out reconnaissance, prospecting or mining operations, except under and in accordance with a Mineral Right, a non-exclusive prospecting license, a claim or a mineral permit.

### **Provisions**

Part VII of the Act contains provisions on the protection of the environment for mineral rights or licenses. Section provides that mineral rights may have conditions on the prevention, limitation or treatment of pollution and the minimization of the effects of mining on adjoining or neighboring areas and their inhabitants.

### **Observations**

The provisions in Part VII of the Act are more applicable to the formal mining sector than to the informal sector where most artisanal gold mining takes place. However, Article 7 of the Minamata Convention on artisanal and small-scale gold mining is relevant to the Mines and Minerals Act of 1981.

#### **3.1.23 Mining (Safety) Regulations 1981**

The Mining (Safety) Regulations give effect to the provisions of the Act and focus primarily on issues of mine safety including assignment of responsibilities, reporting

systems, Personal Protective Equipment etc. The Regulations apply to all mining and prospecting operations including quarrying and opencast mining.

### **Provisions**

Part II of the Regulations deals with Health, Safety and Accidents. Regulation 25 on Safeguards for poisonous or injurious water provides that water containing poisonous or injurious substances shall be retained in an area or receptacle which shall be fenced or closed in such a manner that

Neither persons nor animals can have easy access to it, and adequate notices shall be displayed warning against the use of such water.

### **Observations**

The provisions in Regulation of Part II seem to be targeting mines other than artisanal mines which are informal in nature and do not necessarily have necessary reporting and safety systems in place. Article 7 of the Minamata Convention on artisanal and small-scale gold mining is applicable to the Regulations.

### **3.1.24 National Decentralization Policy, 1998**

The policy devolves administration and political authority to the district level; integrates governmental agencies at the district and local levels into one administrative unit, through the process of institutional integration, manpower absorption, composite budgeting and provision of funds for the decentralized services; diverts the center of implementation responsibilities and transfers these to the districts; assigns, functions and responsibilities to the various levels of government; and promotes popular participation in the governance and development of districts.

### **Provisions**

Section 4 of the Policy sets out the structure for the local government system, which is made up of District Assemblies. Cities, Municipalities and Towns are considered districts in their own right. The District Assemblies have powers to create committees at Area, Ward or Village level for purpose of facilitating participation of the people in the Assembly's decision-making.

Section 6 sets out the functions of the District Assemblies, which include making policy, and decisions on local governance and development for the District. Some of the functions that have been assigned to District Assemblies include; a) Environmental Services such as refuse disposal; and Sewerage removal and disposal; b) natural resources management c) fisheries d) water e) agriculture and f) land resources.

### **Observations**

The Policy is important for purposes of this desk study because it shows that local

authorities have been assigned responsibilities for local governance of various issues, including issues that affect mercury management.

### **3.1.25 The Local Government Act, 1998**

The Local Government Act consolidates the law relating to local government.

#### **Provisions**

Section 14 of the Act provides that the District Assembly shall establish various committees including a committee on Health and the Environment.

Section 2 of Schedule 2 sets out additional functions of the District Assembly including those relating to the environment. These include; establishing, maintaining and managing services for the collection and removal and protection treatment of solid and liquid waste, and the disposal thereof whether within or without it its area and may compel the use of its services by anybody of persons to whom the services are available.

Section 2 (3) of the Schedule 2 provides that an Assembly may prohibit or control any noxious or offensive trade within the meaning of the Public Health Act and the use of premises, which may be a source of nuisance, danger, discomfort or annoyance to the neighborhood.

Other additional functions of the District Assembly include responsibility for; draining, cleansing and sanitation of its area and the prohibition and control of pollution of any water in any river or stream and for this purpose may prohibit or regulate the use of any of such river or stream and any riverbank or stream bank.

Section 22 of the Second Schedule provides for other functions of the District Assembly, which include environmental sanitation.

Section 22 (n) of the Second Schedule also states that the District Assembly shall assist Government to preserve the environment through protection of forests, wetlands, lake shores, streams and prevention of environmental degradation;

#### **Observations**

The Act sets out the specific functions and responsibilities of the local authorities over various sectors including the environment and natural resources, which caters for its protection from chemicals such as mercury substances. The Act also refers to human health issues and specifically empowers District Assemblies to prohibit any noxious or offensive trade in accordance with the Public Health Act, which could by interpretation include trade involving mercury substances.

### **3.1.26 Control of Goods Act, 2018**

The Act regulates the import into and export out of Malawi, of certain classes of goods. The Act defines “goods” as ‘all kinds of movable personal property including anything capable of being exported or imported, any kind of manufactured or unmanufactured commodity and any kind of animal or plant life.’

Section 4 (1) provides that the Minister by notice published in the gazette make orders to regulate the import and export of goods in Malawi by prescribing that (a) goods of a specified class may not be imported into or exported from Malawi (b) goods of a specified class may not be imported into or exported from Malawi for a specified duration and (c) goods of a specified class may not be imported into or exported from Malawi, except under the authority of a licence.

The reasons why the Minister may make such an order include public interest reasons, specified in section 4 (3), including the protection of public health or safety and of the environment. In making such a decision the Minister is required to verify with relevant authorities that the thresholds that require intervention on the grounds of public interest have been reached and require measures to be taken under the Act.

Section 5 provides that an interested party may in the prescribed manner and form and on submission of evidence make an application to the Minister to consider making an order under section 4 (1)

Section 6 requires the Minister to consult interested parties before a final decision is made on the order in section 4.

**Observations**

The provisions of the Act apply to goods in general, which can include chemicals such as mercury and is central tool to the implementation of Articles 3 and 4 of the Convention.

Table 1 is a summary of references to existing legal instruments, which address the management of mercury in Malawi, and identifies gaps in relation to articles of the Minamata Convention<sup>3</sup>.

*Table 2. Summary of Policy and Regulatory Measures in Place and Remaining Gaps*

<b>Article 3 - Mercury supply sources and trade</b> - restricts potential mercury supplies from primary mercury mining and decommissioning chlor-alkali plants, and seeks to identify any remaining large stocks of mercury	
<b>Summary of</b>	<ul style="list-style-type: none"> <li>• Prohibits new primary mercury mining</li> </ul>

<sup>3</sup>  
<http://www.mercuryconvention.org/Portals/11/documents/Booklets/COP1%20version/Minamata-Convention-booklet-eng-full.pdf>

<p><b>provisions relevant to Malawi</b></p>	<ul style="list-style-type: none"> <li>• Prevents the import and use of mercury from primary mercury mining for artisanal and small-scale gold mining (ASGM)</li> <li>• Prohibits the import of mercury without government consent, to ensure both the mercury source and proposed use are allowed under the Convention (and applicable domestic law)</li> </ul>
<p><b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b></p>	
<p><b>Title and reference/number of relevant Policy and Regulatory Measure,</b></p>	<p>The Mines and Minerals Act of 2018 and Environment Management Act of 2017 will be used to prevent new primary mercury mining.</p> <p>The Environment Management (Chemical and Toxic Substances) Regulations 2008 will be used to prevent the import and use of mercury from primary mercury mining for ASGM. The regulations apply to any person in Malawi whose undertaking involves or includes the manufacturing, repackaging, import, export, transport, distribution, sale or other mode of handling toxic substances and chemicals and in respect of any activity in relation to toxic substances and chemicals which involves a risk of harm to human health or the environment.</p> <p>These Regulations are currently being updated through amendment.</p> <p>The Environment Management Act of 2017 and Environment Management (Chemical and Toxic Substances) Regulations 2008 will be used to prevent the import of mercury without government consent, to ensure both the mercury source and proposed use are allowed under the Convention.</p> <p>Sections 4,5 and 6 of the Control of Goods Act will be used to regulate the import of mercury into the country.</p>
<p><b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention’s provisions (only in relation to binding provisions):</b></p>	
<ul style="list-style-type: none"> <li>•</li> </ul>	

<p><b>Article 4: mercury-added products</b></p> <p>Controls mercury in products by setting a phase-out date for some, and specifying measures to be taken in allowing continued use for others.</p>
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<p><b>Summary of provisions relevant to Malawi</b></p>	<p>Not to allow, by taking appropriate measures, the manufacture, import or export of mercury-added products listed in Part I of Annex A after the phase-out date specified for those products, except where an exclusion is specified in Annex A or the Party has a registered exemption pursuant to Article 6.</p> <p>Take measures like phasing down dental amalgam for the mercury-added products listed in Part II of Annex A in accordance with the provisions set out therein</p> <p>Take measures to prevent the incorporation into assembled products of mercury-added products the manufacture, import and export of which are not allowed for it under this Article.</p>
<p><b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b></p>	
<p><b>Title and reference/number of relevant Policy and Regulatory Measure</b></p>	<p>The Environment Management Act of 2017, Environment Management (Chemical and Toxic Substances) Regulations 2008, Public Health Act, Pesticides Act can be used to address the Article 4 provisions relevant to Malawi because they contain measures to be taken if there is non-compliance in-terms of continued use of phased out chemicals</p> <p><b>Sections 4,5 and 6 of the Control of Goods Act will be used to regulate the import of mercury into the country.</b></p>
<p><b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (<i>only in relation to binding provisions</i>):</b></p>	
<p>N/A</p>	

<p><b>Article 7: Artisanal and small-scale gold mining</b></p>	
<p>Establishes the measures to be taken by Parties where activities of Artisan small scale gold mining are undertaken</p>	
<p><b>Summary of provisions</b></p>	<p>Take steps to reduce, and where feasible eliminate, the use of mercury and mercury compounds in, and the emissions and releases</p>

<b>relevant to Malawi</b>	to the environment of mercury from, such mining and processing.
<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b>  The Mines and Minerals Act of 2018, the Environment Management Act of 2017, and the Environment Management (Chemical and Toxic Substances) Regulations 2008 shall be used to eliminate the use of mercury and mercury compounds in, and the emissions and releases to the environment of mercury from, such mining and processing.
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention’s provisions (only in relation to binding provisions):</b>	
<ul style="list-style-type: none"> <li>• Mines and Minerals Regulations, which are currently under development. The regulations Should include provision for the regulation of Artisanal Small-Scale Mining that is currently missing. It should be noted that when addressing the issue of mercury use, a study on feasible alternative methods should be conducted, to make sure the steps to reduce or eliminate mercury use do not negatively affect people’s livelihoods</li> </ul>	

<b>Article 8: Emissions - controlling and, where feasible, reducing emissions of mercury and mercury compounds, often expressed as “total mercury”, to the atmosphere through measures to control emissions from the point sources falling within the source categories listed in Annex D.</b>	
<b>Summary of provisions relevant to Malawi</b>	Require one or more measures identified in Article 8.5 to control/reduce mercury emissions from existing sources listed in Annex D, which shall be operational at the source within 10 years <sup>25</sup> ” (NRDC Checklist)  For its new sources, each Party shall require the use of best available techniques and best environmental practices to control and, where

	<p>feasible, reduce emissions, as soon as practicable but no later than five years after the date of entry into force of the Convention for that Party.</p> <p>Establish, as soon as practicable and no later than five years after the date of entry into force of the Convention for it, and maintain thereafter, an inventory of emissions from relevant sources.</p>
<p><b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b></p>	
<p><b>Title and reference/number of relevant Policy and Regulatory Measure</b></p>	<p>Environment Management Act of 2017 and the Environment Management (Waste Management and Sanitation) Regulations 2008 and the Local Government Act and bylaws shall be used to control emissions and prepare a national plan setting out the measures to be taken to control emissions from waste incineration and also for new sources in the form of waste incineration facilities that may be constructed within this period.</p> <p>The Energy Regulation Act of 2004, the Liquid Fuel and Gas (Production and Supply) Act 2004 and Regulations, and the Mines and Minerals Act of 2018 may be used for emissions and prepare a national plan setting out the measures to be taken to control emissions for emissions from coal fired power plants.</p>
<p><b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention’s provisions (<i>only in relation to binding provisions</i>):</b></p>	
<ul style="list-style-type: none"> <li>• Mines and Minerals Regulations which are currently under development and are to cover issues of ASM</li> <li>• Environment Management (Waste Management and Sanitation) Regulations 2008, which are, currently being revised to ensure that they regulate mercury.</li> </ul>	

<p><b>Article 9: Releases - controlling and, where feasible, reducing releases of mercury and mercury compounds, often expressed as “total mercury”, to land and water from the relevant point sources not addressed in other provisions of this Convention.</b></p>	
<p><b>Summary of provisions</b></p>	<p>No later than three years after the date of entry into force of the Convention for a Party and on a regular basis thereafter, identify the</p>

<p><b>relevant to Malawi</b></p>	<p>relevant point source categories.</p> <p>If a party has relevant sources take measures to control releases and may prepare a national plan setting out the measures to be taken to control releases and it's expected targets, goals and outcomes. Submit the plan to the Conference of the Parties within four years of the date of entry into force of the Convention for that Party.</p> <p>Establish, as soon as practicable and no later than five years after the date of entry into force of the Convention for a Party, and maintain thereafter, an inventory of releases from relevant sources.</p>
<p><b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b></p>	
<p><b>Title and reference/number of relevant Policy and Regulatory Measure</b></p>	<p><b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b></p> <p>Environment Management Act of 2017 that places the responsibility of preventing discharge or emission of any pollutant into the environment on the polluter, including the removal or disposal of any pollutant. And prohibits any person from discharging effluent or emitting any gas or gaseous substances into the environment except under a licenses issued by the Minister and subject to conditions</p>
<p><b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (<i>only in relation to binding provisions</i>):</b></p>	
<ul style="list-style-type: none"> <li>• Mines and Minerals Regulations are currently under development, The amended regulations can include provisions regulating ASMGGM to ensure that mercury cannot be used in the process.</li> </ul>	

**Article 10: Environmentally sound interim storage of mercury, other than waste mercury - applies to the interim storage of mercury and mercury compounds**

<b>intended for a use allowed to a Party under the Convention</b>	
<b>Summary of provisions relevant to Malawi</b>	<p>Take measures to ensure that the interim storage of such mercury and mercury compounds intended for use allowed to a Party under this Convention is undertaken in an environmentally sound manner, taking into account any guidelines, and in accordance with any requirements, adopted pursuant to paragraph.</p> <p>Cooperate, as appropriate, with other Parties and with relevant intergovernmental organizations and other entities, to enhance capacity-building for the environmentally sound interim storage of such mercury and mercury compounds.</p>
<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<p><b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b></p> <p>Public Health Act 1982, Environment Management (Chemicals and Toxic Substances) Regulations 2008, Mines and Minerals Act of 2018 that contain provisions for the requirements for storage of chemicals and licensing of storage facilities.</p>
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (<i>only in relation to binding provisions</i>):</b>	

<b>Article 11 : Mercury Wastes - the management of Mercury Wastes which should also be in accordance with the Basel Convention on the Transboundary Movement of Hazardous and Other Wastes</b>	
<b>Succinct summary of provisions relevant to</b>	<p>Take appropriate measures so that mercury waste is:</p> <p>(a) Managed in an environmentally sound manner, taking into account the guidelines developed under the Basel Convention and in accordance with requirements that the Conference of the Parties shall</p>

<b>Malawi</b>	<p>adopt in an additional annex in accordance with Article 27.</p> <p>(b) Only recovered, recycled, reclaimed or directly re-used for a use allowed to a Party under the Convention or for environmentally sound disposal pursuant to paragraph 3 (a);</p> <p>(c) For Parties to the Basel Convention, not transported across international boundaries except for the purpose of environmentally sound disposal in conformity with this Article and with that Convention.</p> <p>Use a definition of mercury waste consistent with Article 11.2</p>
<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<p><b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b></p> <p>Environment Management Act of 2017, Environment Management (Waste Management and Sanitation) Regulations of 2008 that deal with transboundary movement of waste and touches on prior informed consent.</p>
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):</b>	

<b>Article 12: Contaminated sites - the development of appropriate strategies for identifying and assessing sites contaminated by mercury or mercury compounds</b>	
<b>Summary of provisions relevant to Malawi</b>	<ol style="list-style-type: none"> <li>1. Endeavour to develop appropriate strategies for identifying and assessing sites contaminated by mercury or mercury compounds.</li> <li>2. Any actions to reduce the risks posed by such sites shall be performed in an environmentally sound manner incorporating, where appropriate, an assessment of the risks to human health and the environment from the mercury or mercury compounds they contain.</li> </ol>

<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b>  Environment Management Act of 2017, Environment Management (Waste Management and Sanitation) Regulations of 2008 contain provisions for proper/ sound disposal of chemical wastes.
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):</b>	
Environment Management (Waste Management and Sanitation) Regulations of 2008 are currently under review. Amendments to the Regulations will include specific provision for the disposal of mercury waste.	
<ul style="list-style-type: none"> <li>• Article 16: Health Aspects - relates to the protection of human health from effects of mercury.</li> </ul>	
<b>Summary of provisions relevant to Malawi</b>	<ol style="list-style-type: none"> <li>1. It encourages Parties to promote the development and implementation of strategies and programmes to identify and protect populations at risk</li> <li>2. It encourages Parties to adopt and implement science-based educational and preventive programmes on occupational exposure to mercury and mercury compounds.</li> <li>3. Encourages Parties to promote appropriate health-care services for prevention, treatment and care for populations affected by the exposure to mercury or mercury compounds.</li> <li>4. Encourages Parties to establish and strengthen institutional and health professional capacities</li> </ol>
<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b>  Public Health Act 1982. Prevention of infectious diseases, sanitation and housing, sewerage and drainage  Environmental Management (Chemicals and Toxic Substances

<b>Measure</b>	Management) Regulations 2008 Regulations 15 provides for procedures for restricting the use a chemical product
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):</b>	
The public Health Act does not have any provisions that apply to chemicals or mercury or on consumption of foods contaminated with mercury	
Article 17: Information exchange - relates to information exchange and encourages Parties to share information on mercury	
<b>Summary of provisions relevant to Malawi</b>	<ul style="list-style-type: none"> <li>▪ Collect and disseminate information on annual quantities of mercury and mercury compounds emitted, released, or disposed; and other information specified in Article 18</li> <li>▪ Share information on the health and safety of humans and the environment as non-confidential, in accordance with Article 17</li> <li>▪ Report to the COP on progress in implementing Convention obligations under Article 21</li> </ul>
<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b>  Environment Management Act of 2017, the Environmental Affairs Department is the focal point for the Minamata Convention and responsible for information exchange.
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):</b>	
Malawi is yet to ratify the Minamata Convention.	
Article 18 Public information, awareness and education	
Promotes provision to the public available information on The health and environmental	

effects of mercury and mercury compounds and alternatives to mercury and mercury compounds;	
<b>Summary of provisions relevant to Malawi</b>	<ul style="list-style-type: none"> <li>• Collect and disseminate information on annual quantities of mercury and mercury compounds emitted, released, or disposed; and other information specified in Article 18</li> <li>• Share information on the health and safety of humans and the environment as non-confidential, in accordance with Article 17.5</li> <li>• Report to the COP on progress in implementing Convention obligations under Article 21</li> </ul>
<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<p><b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b></p> <p>Consumer Protection Act 2003 Section 41 is on warning of use of harmful technology and goods</p> <p>Environment Management Act of 2017, EAD has Education and Outreach Division for dissemination of information on hazardous substances</p>
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):</b>	
The legal instruments do not specifically make provisions on public information on mercury but on environmental issues generally.	
Article 19: Research, development and monitoring	
The development of research on mercury including monitoring of trends	
<b>Summary of provisions relevant to Malawi</b>	<p>Parties shall endeavour to cooperate to develop and improve</p> <ol style="list-style-type: none"> <li>1. Develop Inventories of use, consumption, and anthropogenic emissions to air and releases to water and land of mercury and mercury compounds;</li> <li>2. Modeling and geographically representative monitoring of</li> </ol>

	<p>levels of mercury and mercury compounds in vulnerable populations and in environmental media</p> <ol style="list-style-type: none"> <li>3. Assessments of the impact of mercury and mercury compounds on human health and the environment</li> <li>4. Build on existing monitoring networks and research programmed in undertaking the activities identified in paragraph 1.</li> </ol>
<p><b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b></p>	
<p><b>Title and reference/number of relevant Policy and Regulatory Measure</b></p>	<p><b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b></p> <p><b>The Minamata provision is not a strong binding requirement but rather it encourages parties to cooperate.</b></p> <p>Environment Management Act of 2017 contain provision on research and monitoring.</p> <p>Water Resources Act. Address issued of water quality monitoring</p>
<p><b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (<i>only in relation to binding provisions</i>):</b></p>	
<p>Environment Management (Waste Management and Sanitation) Regulations of 2008 are currently under review. Amendments to the Regulations will include specific provision research and monitoring of mercury and mercury waste.</p>	
<p>Article 21: Reporting</p> <p>Provides mechanisms for reporting on measures parties have taken to implement the provisions of the Minamata Convention.</p>	
<p><b>Summary of provisions relevant to Malawi</b></p>	<p>Each Party shall report to the Conference of the Parties, through the Secretariat, on the measures it has taken to implement the provisions of this Convention and on the effectiveness of such measures and the possible challenges in meeting the objectives of the Convention.</p> <p>Each Party shall include in its reporting the information as called for</p>

	in Articles 3, 5, 7, 8 and 9 of this Convention.
<b>Policy and regulatory measures in place that enable the country to comply with the above listed provisions:</b>	
<b>Title and reference/number of relevant Policy and Regulatory Measure</b>	<b>Explanation on what aspects of the above provisions are being addressed by policy/regulatory measure:</b>  Environment Management Act of 2017  Environment Management Act of 2017, the Environmental Affairs Department is the focal point for the Minamata Convention and responsible for information exchange.
<b>Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (<i>only in relation to binding provisions</i>):</b>	
Malawi is yet to ratify the minamata convention.	

### 3.2 Institutional Assessment

In order to ensure effective implementation of the Minamata Convention through coordinated actions from institutions and stakeholders in the country, the project identified Government ministries, agencies and institutions as well as non-government institutions and private sector stakeholders relevant in mercury management. The project also assessed their respective roles and responsibilities.

The project identified the various institutions, which are mandated to manage chemicals. These institutions are involved in chemicals management at various stages of the chemicals lifecycle ranging from production, import, transport, distribution, marketing, use, handling, storage and disposal. These institutions include;

#### 3.2.1 Environmental Affairs Department

The Environment Management Act 1996 provides for the creation of regulations on all aspects of environmental management including chemicals such as mercury. The Environmental Affairs Department is also responsible for licensing of various chemicals, compliance monitoring and enforcement. In addition the Department is the focal point for the Basel, Rotterdam, Stockholm Conventions, and Strategic Approach to Chemicals Management and will be focal point for the Minamata Convention if Malawi ratifies.

### **3.2.2 Ministry of Agriculture**

The mandate for Ministry of Agriculture includes provision of advisory services in the use of fertilizers and pesticides with regard to efficient usage for farmers to maximize crop yields. In the case of pesticides, the Ministry in conjunction, with farmers jointly conducts sprays for migratory pests such as locusts and armyworms. The role and responsibility of the Ministry includes the provision of advice and information to users and farmers on the lifecycle management of chemicals and pesticides including disposal.

### **3.2.3 Pesticides Control Board**

The mandate of the Board is derived from the Pesticides Act No. 12 of 2000. The Board is responsible for the importation, exportation, manufacture, distribution, storage, disposal, sales, repackaging and use of all pesticides in Malawi. Other responsibilities include registering pesticides, maintaining a register of pesticides, and issuing of certificates and permits. The role of the Board includes the provision of information on pesticide quantities, usage, incidents and case studies.

### **3.2.4 Ministry of Labour**

The mandate of this Ministry is the administration and enforcement of the provisions of the Employment Act of 2000, Workman's Compensation Act of 2000, Occupational Safety, Health and Welfare Act of 1997 through the Occupational Safety and Health Directorate. Some of the responsibilities include protecting workers against occupational accidents and diseases. This is promoted through systematic and ad hoc inspections of all workplaces. The role of the Ministry includes the protection of workers.

### **3.2.5 Ministry of Trade**

This Ministry is responsible for the promotion of both internal and external trade. Apart from other functions it is responsible for the administration of the Control of Goods Act, 2018 that regulates importation and exportation of certain goods including chemicals.

### **3.2.6 Ministry of Industry**

The Ministry develops policies that create economic regulatory environment that would be conducive to promoting. The Ministry is mandated to empower Malawians including small and medium enterprises (SMES) and cooperatives to participate in economic activities.

### **3.2.7 Ministry of Health**

The Ministry seeks to achieve health for all Malawians by delivering health services and

disseminating health information to the general public. The mission of the Ministry is to raise the level of health status of all Malawians. The Ministry seeks to promote health, prevents, reduces and cures disease, protects life and fosters general well being and increased productivity. It also provides preventive health and medical services.

### **3.2.8 Pharmacy, Medicines and Poisons Board**

The Pharmacy, Medicines and Poisons Board regulate the pharmacy profession and traders in medical products and raw materials in the field of pharmacy. The Board ensures that medical products and raw materials are authorized and disposed of properly.

### **3.2.9 Malawi Bureau of Standards**

The Malawi Bureau of Standards is mandated to promote standardization of commodities and of their manufacture, production, processing or treatment; and further to deal with any matters connected with standardization. Some of the objectives of MBS are:

- Providing facilities for the examination and testing of commodities and any material or substance from or with which they may be manufactured, produced processed or treated, and of the manner in which this may be done; and
- Providing for the testing of locally manufactured or imported commodities with a view to determining whether such commodities comply with the provisions of the Malawi Bureau of Standards Act of 1972 or any other law relating to standards of quality.

### **3.2.10 Ministry of Justice**

The Ministry of Justice is responsible for the provision of legal services to all government ministries and departments. The main functions of the Ministry in relation to chemicals management pertain to its responsibility to provide legal advice to, and draft legislation, regulations and agreements on behalf of all government institutions.

### **3.2.11 Ministry of Local Government (City Councils)**

The Ministry of Local Government is responsible for local authorities. Local Authorities refer to City, Municipal, Town and District Councils. These organizations offer a range of services within their areas of jurisdiction. Among the services offered under the Local Government Act and waste bylaws is the control and management of wastes. The Ministry will ensure proper and safe disposal of wastes arising from chemicals.

### **3.2.12 Ministry of Gender, Disability Affairs and Community Development**

The Ministry is mandated to promote gender equality and protect the welfare of Malawian

women, men, girls and boys to become self-reliant and active participants and beneficiaries of the national development agenda.

### **3.2.13 Ministry of Department of Mines**

The Ministry ensures sustainable development, management and utilisation of minerals and monitoring geo-hazards for the socio-economic development of Malawi. It regulates the mining industry including Artisanal and Small Scale Gold Mining.

### **3.2.14 Ministry of Energy**

The Ministry is responsible for policy formulation on all matters related to energy in Malawi.

### **3.2.15 Malawi Energy Regulatory Authority**

The Malawi Energy Regulatory Authority is a corporate body established under the Energy Regulatory Act No. 20 of 2004 as the Energy Sector Wide Regulator. Our mandate is to regulate the energy sector in Malawi in a fair, transparent, efficient and cost effective manner for the benefit of the consumers and operators.

### **3.2.16 Department of Meteorological Services**

The Department is mandated to monitor, predict and provide information on weather, climate and climate change that would contribute towards the socio-economic development of the country.

### **3.2.17 Malawi Confederation of Chambers of Commerce and Industry**

The responsibilities of MCCCCI include providing business and economic information to its members and the entire business community for decision-making. The role of MCCCCI includes encouraging its members and the entire business community to invest in the chemicals and waste sector.

### **3.2.18 Water Resources Department**

The purpose of this Department is to develop and manage water resources in the country for use by all sectors. The Department is responsible for monitoring, assessment, conservation, management and development of surface water resources; exploitation and management of ground water resources; monitoring, assessment and management of water quality and pollution control; administration of Water Resources Act; and implementing regional and international agreements and obligations on trans boundary water courses.

### **3.2.19 Ministry of Local Government**

The Ministry of Local Government is responsible for local authorities. Local Authorities refer to City, Municipal, Town and District Councils. These organizations offer a range of services within their areas of jurisdiction. Among the services offered under the Local Government Act and waste bylaws is the control and management of wastes. The role of the Ministry in the Project will be to ensure proper and safe disposal of wastes arising from chemicals.

### **3.2.20 Ministry of Finance**

This Ministry has the mandate manage government financial and material resources

### **3.2.21 The Ministry of Economic Planning**

This Ministry is mandated to formulate economic and fiscal policies and instruments and too provide strategic guidance on economic and development planning based on accurate and reliable statistics for the attainment of socio-economic development.

### **3.2.22 Ministry of Information**

The Ministry of Information is mandated to provide policy guidance and direction on all matters concerning the media, access to public information, broadcasting, telecommunication, postal services, civic education and information communication technology.

### **3.2.23 Department of Geological Surveys**

Geological Survey Department is a Government department responsible for the acquisition, dissemination and storage of geo-scientific information used in the mineral sector of Malawi and other sectors, which need such information. Activities for the Department include: mineral exploration, geological mapping, geophysical and geochemical investigation, and environmental geology. Environmental Geology includes geo-hazard assessment; training local people in the utilization of indigenous geological resources.

### **3.2.24 Ministry of Foreign Affairs and International Corporation**

The Ministry of Foreign Affairs and International Cooperation acts as the main link between Malawi and the International Community. In performing its function, the Ministry works in close liaison with other ministries, departments, parastatal organizations, non-governmental organizations and the private sector in the country. While the ministries,

departments and other organizations carry out their technical and professional work under their mandates, the Ministry of Foreign Affairs and International Cooperation plays a facilitating and coordinating role between these instructions and other countries and international organizations. It is the organ that is responsible for formulating, implementing and monitoring the foreign policy of the Government of the Republic of Malawi.

### 3.2.25 Ministry of Justice

The Ministry of Justice is mandated to provide policy guidance and direction to Government on all legal and constitutional matters. The Ministry exists to promote the rule of law, justice and democracy, transparency and accountability by, amongst other things, providing legal advice to the Government, prosecuting criminal offenders and preparing and drafting legislation, contracts, agreements and other legal instruments on behalf of government.

Table 2 presents a summary assessment of existing national institutions and stakeholders, their roles and an analysis of possible gaps in aspects such as capacities and institutions needed for the implementation of the Minamata Convention and to ensure the sound management of mercury.

Table 3. Existing National Institutional Capacity and Remaining Gaps

<b>Article 3 - Mercury supply sources and trade</b>	
<b>Summary of provisions relevant to the country</b>	<ul style="list-style-type: none"> <li>▪ Prohibit new primary mercury mining</li> <li>▪ Prevent the import and use of mercury from primary mercury mining for artisanal and small-scale gold mining (ASGM)</li> <li>▪ In accordance with Article 3.5(b), restrict the import and use of excess mercury from decommissioning chlor-alkali plants, and require environmentally sound disposal</li> <li>▪ Obtain information on stocks of mercury or mercury compounds exceeding 50 metric tons (MT), and mercury supply generating stocks exceeding 10 MT/yr.</li> <li>▪ Not allow the export of mercury unless the importing country provides written consent, the mercury is for an allowed use or environmentally sound storage, and all other conditions of Article 3.6 are met</li> <li>▪ Prohibit the import of mercury without government consent, to ensure both the mercury source and proposed use are allowed under the Convention (and applicable domestic regulations)</li> </ul>

<b>Relevant national stakeholder:</b>		
<p>1. Ministry of Industry</p> <p>2. Ministry of Trade</p> <p>3. Customs Division</p>	<p>Role:</p> <ul style="list-style-type: none"> <li>▪ Control of import and export</li> </ul>	<p>Institutional capacity:</p> <ul style="list-style-type: none"> <li>▪ Systems for control of import and export of goods</li> </ul>
<p>4. Ministry of Mines</p>	<p>Role with respect to the above listed provisions:</p>	<p>Relevant institutional capacity in place to comply with the above listed provisions:</p>
	<ul style="list-style-type: none"> <li>▪ Regulate mining industry</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regulatory system in place</li> </ul>
<p>5. Environmental Affairs Department</p>		
	<ul style="list-style-type: none"> <li>▪ Regulate import, export, possession, distribution, use and disposal of chemicals</li> </ul>	<ul style="list-style-type: none"> <li>▪ Focal point for Minamata Convention on Mercury</li> <li>▪ Established permitting system</li> <li>▪ Expertise</li> </ul>
<p>6. Ministry of Home Affairs</p>	<ul style="list-style-type: none"> <li>▪ Enforcement action for smuggled products</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> </ul>
<p>7. Ministry of Information</p>	<ul style="list-style-type: none"> <li>▪ Outreach to the community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Experience</li> <li>▪ Systems in place</li> </ul>
<p>8. Malawi Revenue Authority (Customs)</p>	<ul style="list-style-type: none"> <li>▪ Enforcement</li> </ul>	<ul style="list-style-type: none"> <li>▪ Systems in place</li> </ul>
<p>9. Malawi Bureau of Standards</p>	<ul style="list-style-type: none"> <li>▪ Control quality of goods entering the country</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
<p>10. Department of Geological Surveys</p>	<ul style="list-style-type: none"> <li>▪ Geo-mapping of mercury mines</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> <li>▪ Trained personnel</li> </ul>
<p><b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b></p>		
<ul style="list-style-type: none"> <li>▪ Personnel not trained on issues of chemicals trade including mercury</li> </ul>		
<p><b>Article 4 – Mercury-Added Products</b></p>		

<b>Summary of provisions relevant to the country</b>	<ul style="list-style-type: none"> <li>▪ Prohibit the manufacture, import, and export of products listed in Part I of Annex A not otherwise excluded following the phase out date listed in the Annex</li> <li>▪ Phase down the use of dental amalgam through two or more measures listed in Part II of Annex A</li> <li>▪ Take measures to prevent the incorporation of products listed in Part I of Annex A (i.e., switches and relays, batteries) into larger, assembled products</li> <li>▪ Discourage the manufacture and distribution of new mercury product types</li> </ul>	
<b>Relevant national stakeholder:</b>		
<b>1.</b> Ministry of Industry <b>2.</b> Ministry of Trade <b>3.</b> Ministry of Finance (Customs Division)	Role with respect to the above listed provisions: <ul style="list-style-type: none"> <li>▪ Prohibition of import of relevant mercury-added products in line with Convention phase-out dates</li> <li>▪ Control of import and export of cosmetics with a mercury content</li> </ul>	Relevant institutional capacity in place to comply with the above listed provisions: <ul style="list-style-type: none"> <li>▪ Systems for control of import and export of goods</li> <li>▪ Trained personnel</li> </ul>
<b>4.</b> Ministry of Health	Role with respect to the above listed provisions: <ul style="list-style-type: none"> <li>▪ Phase down the use of dental amalgams</li> <li>▪ Introduce mercury free measuring equipment where there are alternatives</li> </ul>	Relevant institutional capacity in place to comply with the above listed provisions: <ul style="list-style-type: none"> <li>▪ System in place</li> <li>▪ Trained personnel</li> </ul>
<b>5.</b> Ministry of Energy	Role with respect to the above listed provisions: <ul style="list-style-type: none"> <li>▪ Switch to non-mercury containing light bulbs</li> </ul>	Relevant institutional capacity in place to comply with the above listed provisions: <ul style="list-style-type: none"> <li>▪ Systems in place</li> <li>▪ Trained personnel</li> </ul>
<b>6.</b> Pesticides Control Board	Role with respect to the above listed provisions: <ul style="list-style-type: none"> <li>▪ Phasing down of pesticides, biocides, and topical</li> </ul>	Relevant institutional capacity in place to comply with the above listed provisions: <ul style="list-style-type: none"> <li>▪ Regulatory system in place</li> <li>▪ Trained personnel</li> </ul>

	antiseptics containing mercury	
7. Department of Meteorological Services	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Introduce mercury-free measuring equipment where there are alternatives</li> <li>▪ Ensure phase out and sound management of old equipment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regulatory system in place</li> <li>▪ Trained personnel</li> </ul>
8. Malawi Bureau of Standards	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Monitoring and implementation of standards on measuring equipment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regulatory system in place</li> <li>▪ Trained personnel</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of reference to chemicals including mercury in the Control of Goods Act and in the list of goods that are subject to authorization from the relevant institution.</li> <li>▪ Personnel not trained on issues of chemicals trade including mercury</li> </ul>		
<b>Article 5 – Manufacturing Processes</b>		
<b>Summary of provisions relevant to the country</b>	<ul style="list-style-type: none"> <li>▪ Restrict (as specified in the Annex) the use of mercury in the processes listed in Part II of Annex B</li> <li>▪ Not allow new facilities from using mercury in the processes listed in Annex B, except facilities using mercury catalysts to produce polyurethane</li> <li>▪ For facilities with processes listed in Annex B, identify and obtain information on mercury or mercury compound use; and control mercury emissions to air, and releases to land and water</li> <li>▪ Discourage new uses of mercury in industrial processes</li> </ul>	
<b>Relevant national stakeholder:</b>		

1. Malawi Investment and Trade Services	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Provide information on products</li> </ul>	<ul style="list-style-type: none"> <li>▪ Systems in place</li> <li>▪ Trained personnel</li> </ul>
2. Malawi Bureau of Standards	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Monitoring equipment and manufacturing processes</li> <li>▪ Develop Standards on mercury</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regulatory system in place</li> <li>▪ Trained personnel</li> </ul>
3. Ministry of Industry	<ul style="list-style-type: none"> <li>▪ Licensing</li> <li>▪ Regulating manufacturing processes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Systems in place</li> <li>▪ Expertise</li> </ul>
4. Ministry of Trade		
5. Ministry of Labour	<ul style="list-style-type: none"> <li>▪ Occupational exposure monitoring and enforcement</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of adequate skills and knowledge</li> <li>▪ Financial constraints</li> <li>▪ Lack of policies and Guidelines</li> </ul>		
<b>Article 7 – Artisanal and Small-scale Gold Mining</b>		
<b>Description of Article:</b>		
<b>Summary of provisions relevant to the country</b>	<ul style="list-style-type: none"> <li>▪ Take measures to reduce, and where feasible, eliminate mercury and mercury compound use, emissions (to air), and releases (to land and water) associated with ASGM</li> </ul>	
<b>Relevant national stakeholder:</b>		
1. Ministry of Mines	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Regulate ASGM</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> </ul>
2. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:

	<ul style="list-style-type: none"> <li>▪ Monitor mining operations to minimise environmental impact</li> </ul>	<ul style="list-style-type: none"> <li>▪ Established monitoring system</li> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
3. Malawi Chamber of Mines	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Promote use of mercury-free alternative technology</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> </ul>
4. Department of Geological Surveys	<ul style="list-style-type: none"> <li>▪ Geo-mapping of mercury mines</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> <li>▪ Trained personnel</li> </ul>
5. Ministry of Labour	<ul style="list-style-type: none"> <li>▪ Occupational exposure monitoring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> <li>▪ Trained personnel</li> </ul>
6. Ministry of Gender, Disability Affairs and Community Development	<ul style="list-style-type: none"> <li>▪ Assessment for children working in the mines</li> </ul>	<ul style="list-style-type: none"> <li>▪ Systems in Place</li> <li>▪ Trained personnel</li> </ul>
7. Ministry of Trade	<ul style="list-style-type: none"> <li>▪ Monitoring trade in gold</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> </ul>
8. Ministry of Industry		
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of regulatory standards, policies and information regarding ASGM activity in Malawi.</li> </ul>		
<b>Article 8 – Air Emissions</b>		
<b>Summary of provisions relevant to the country</b>		
<ul style="list-style-type: none"> <li>▪ Require best available techniques/best environmental practices (BAT/BEP) or associated emission limit values (ELVs) for new (as defined in Article 8.2(c)) sources listed in Annex D (coal-fired power plants, coal-fired industrial boilers, non-ferrous metal smelting and roasting processes, waste incineration, and cement production)</li> <li>▪ Require one or more measures identified in Article 8.5 to control/reduce mercury emissions from existing sources</li> </ul>		

	<p>listed in Annex D, which shall be operational at the source within 10 years</p> <ul style="list-style-type: none"> <li>▪ Require monitoring/reporting and otherwise establish a mercury emissions inventory for sources listed in Annex D</li> </ul>	
<b>Relevant national stakeholder:</b>		
1. Environmental Affairs Department	<p>Role with respect to the above listed provisions:</p>	<p>Relevant institutional capacity in place to comply with the above listed provisions:</p>
	<ul style="list-style-type: none"> <li>▪ Adopt and promote best available techniques/best environmental practices (BAT/BEP)</li> <li>▪ Develop and enforce emission limit values (ELVs)</li> <li>▪ Monitoring and reporting of emissions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Established monitoring system</li> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
2. Ministry of Health	<p>Role with respect to the above listed provisions:</p>	<p>Relevant institutional capacity in place to comply with the above listed provisions:</p>
	<ul style="list-style-type: none"> <li>▪ Implement programmes to reduce use of and remove mercury-containing products in the healthcare system</li> <li>▪ Adopt and use best available techniques/best environmental practices (BAT/BEP) in the incineration of medical waste</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> </ul>
3. Ministry of Local Government	<p>Role with respect to the above listed provisions:</p>	<p>Relevant institutional capacity in place to comply with the above listed provisions:</p>
	<ul style="list-style-type: none"> <li>▪ Adopt and use improved approaches, including striving for best available techniques/best environmental practices (BAT/BEP) in the</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> </ul>

	incineration of municipal waste	
4. Malawi Bureau of Standards	<ul style="list-style-type: none"> <li>▪ Adopt and promote BAT/BEP in collaboration with relevant institutions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Systems in place</li> </ul>
5. Ministry of Mines	<ul style="list-style-type: none"> <li>▪ Monitoring compliance with BAT/ BEP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of equipment for monitoring emissions to air</li> <li>▪ Lack of standards for monitoring mercury emissions from boilers and coal powered plants</li> <li>▪ Insufficient numbers of trained personnel</li> </ul>		
<b>Article 9 – Releases to Land and Water</b>		
<b>Summary of provisions relevant to the country</b>		
	<ul style="list-style-type: none"> <li>▪ Require reporting or otherwise obtain information as needed to identify significant sources of mercury/mercury compound releases to land or water, and to maintain an inventory of releases from the sources identified</li> <li>▪ Take one or more measures specified in Article 9.5 to control/reduce mercury and mercury compound releases to land and water from significant sources it identifies</li> </ul>	
<b>Relevant national stakeholder:</b>		
1. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
2. Local councils	<ul style="list-style-type: none"> <li>▪ Develop and enforce limit values for releases to land and water</li> <li>▪ Adopt and promote best available techniques/best environmental practices (BAT/BEP)</li> <li>▪ Monitoring, maintaining inventory and reporting on releases</li> </ul>	<ul style="list-style-type: none"> <li>▪ Established monitoring system</li> <li>▪</li> </ul>
3. Water Resources Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:

	<ul style="list-style-type: none"> <li>▪ Identify sources of mercury releases, maintain an inventory and reporting</li> <li>▪ Water quality monitoring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Established regulatory system</li> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
4. Malawi Bureau of Standards	<ul style="list-style-type: none"> <li>▪ Set/upgrade water quality standards in collaboration with relevant institutions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> <li>▪ Experience</li> </ul>
5. Ministry of Mines 6. Academia 7. Research institutions	<ul style="list-style-type: none"> <li>▪ Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> <li>▪ Trained personnel</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of municipal waste incineration facilities</li> <li>▪ Lack of equipment for monitoring releases</li> <li>▪ Lack of quality monitoring equipment</li> </ul>		
<b>Article 10 – Interim Mercury Storage</b>		
<b>Summary of provisions relevant to the country</b>	Take measures to ensure interim mercury storage is conducted in an environmentally sound manner, taking into account guidelines to be developed by the Conference of the Parties (COP)	
<b>Relevant national stakeholder:</b>		
1. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
2. Department of Buildings	<ul style="list-style-type: none"> <li>▪ Adopt and promote best available techniques/best environmental practices (BAT/BEP)</li> <li>▪ Monitoring and reporting on storage locations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Established monitoring system</li> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
3. Ministry of Industry 4. Ministry of Trade	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Control of imported or exported quantities</li> <li>▪ Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Established regulatory system</li> <li>▪ Trained personnel</li> </ul>

		<ul style="list-style-type: none"> <li>▪ Expertise</li> </ul>
5. Ministry of Mines	<ul style="list-style-type: none"> <li>▪ Monitoring implementation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of facilities for interim storage</li> <li>▪ Lack of expertise for handling storage</li> </ul>		
<b>Article 11 – Mercury Waste Management</b>		
<b>Summary of provisions relevant to the country</b>	<p>Use a definition of mercury waste consistent with Article 11.2</p> <ul style="list-style-type: none"> <li>▪ Take measures to manage mercury wastes in an environmentally sound manner, taking into account guidelines developed under the Basel Convention and in accordance with COP requirements to be developed.</li> <li>▪ Take measures to restrict mercury derived from the treatment or re-use of mercury waste to allowed uses under the Convention or environmentally sound disposal</li> <li>▪ Require transport across international boundaries in accordance with the Basel Convention, or if the Basel Convention does not apply, consistent with international rules, standards, and guidelines.</li> </ul>	
<b>Relevant national stakeholder:</b>		
1. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Adopt and promote best available techniques/best environmental practices (BAT/BEP)</li> <li>▪ Monitoring and reporting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Focal point for Basel Convention</li> <li>▪ Established regulatory system</li> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
2. Ministry of Local Government	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Adopt and use best available techniques/best environmental practices (BAT/BEP) in the handling of mercury waste</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> </ul>

3. Ministry of Health	<ul style="list-style-type: none"> <li>▪ Adopting BAT/BEP for health equipment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> </ul>
4. Private Sector	<ul style="list-style-type: none"> <li>▪ Mercury storage and waste management</li> </ul>	No capacity
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Best available techniques/best environmental practices (BAT/BEP) for Basel Convention not adapted although the technical guidelines are available.</li> </ul>		
<b>Article 12 – Contaminated Sites</b>		
<b>Summary of provisions relevant to the country</b>		
	<ul style="list-style-type: none"> <li>▪ Develop strategies for identifying and assessing mercury/mercury compound contaminated sites</li> <li>▪ If risk reduction activities are taken at contaminated sites, they are taken in an environmentally sound manner, incorporating risk assessment where appropriate</li> </ul>	
<b>Relevant national stakeholder:</b>		
1. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
2. Department of Mines	<ul style="list-style-type: none"> <li>▪ Identify, assess and inventory contaminated site</li> <li>▪ Recommend remediation measures for sites</li> <li>▪ Monitoring and reporting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Personnel</li> </ul>
3. Councils		
4. Academia	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Assist identification of contaminated sites</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of technical and infrastructural capacity to identify and assess contaminated sites</li> <li>▪ Limited personnel and expertise</li> <li>▪ Lack of clear guidance and best practice to remediate sites</li> <li>▪ Lack of equipment</li> </ul>		

<b>Article 16 – Public Health</b>		
<b>Summary of provisions relevant to the country</b>	<ul style="list-style-type: none"> <li>▪ Promote the development and implementation of strategies to identify and protect populations at risk, such as developing fish consumption guidelines</li> <li>▪ Promote occupational exposure educational and prevention programmes</li> <li>▪ Promote prevention, treatment, and care services for affected populations</li> </ul>	
<b>Relevant national stakeholder:</b>		
<b>1. Ministry of Health</b>	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Develop and implement strategies to identify and protect populations at risk</li> <li>▪ Develop material and conduct awareness on mercury exposure health hazards</li> <li>▪ Promote prevention, treatment, and care services for affected populations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Personnel</li> <li>▪ Expertise</li> <li>▪ Infrastructure</li> </ul>
<b>2. Ministry of Labour</b>	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Promote occupational exposure educational and prevention programmes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> <li>▪ Personnel</li> </ul>
<b>3. Consumer Association of Malawi</b>	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Conduct awareness on consumer products containing mercury</li> </ul>	<ul style="list-style-type: none"> <li>▪ Expertise</li> <li>▪ Personnel</li> </ul>
<b>4. Civil Society Organizations</b>	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Conduct public awareness on mercury</li> </ul>	<ul style="list-style-type: none"> <li>▪ Personnel</li> <li>▪ Expertise</li> </ul>

<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Unavailability of awareness material</li> <li>▪ Poor understanding on mercury-related health hazards</li> <li>▪ Limited specialization capacity of personnel on mercury issues</li> </ul>		
<b>Article 13 – Financial Resources and Mechanism</b>		
<b>Summary of provisions relevant to the country</b>		
<ul style="list-style-type: none"> <li>▪ Access domestic resources as may be needed to implement Convention obligations</li> <li>▪ Access financial resources available under the Convention financial mechanism and other resources available from multilateral, regional, and bilateral funding sources</li> </ul>		
<b>Relevant national stakeholder:</b>		
1. Ministry of Finance	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Identify and provide domestic resources as may be needed to implement Convention obligations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Established regulatory system</li> <li>▪ Personnel</li> <li>▪ Expertise</li> </ul>
2. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Access financial resources available under the Convention financial mechanism and other resources available from multilateral, regional, and bilateral funding sources</li> <li>▪ As focal point for the Minamata Convention, ensure multi-stakeholder and multi-sector engagement in the topic</li> </ul>	<ul style="list-style-type: none"> <li>▪ Focal Point for Minamata Convention</li> <li>▪ Trained personnel</li> <li>▪ Technical Expertise</li> </ul>

3. NGOs	<ul style="list-style-type: none"> <li>▪ Resource mobilization</li> </ul>	<ul style="list-style-type: none"> <li>▪ Experience</li> <li>▪ Systems in place</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Inadequate domestic resources needed to implement obligations of conventions</li> <li>▪ Financial sustainability after project lifespan ends</li> </ul>		
<b>Article 17 – Information Exchange/Awareness-Raising</b>		
<b>Summary of provisions relevant to the country</b>	<ul style="list-style-type: none"> <li>▪ Collect and disseminate information on annual quantities of mercury and mercury compounds emitted, released, or disposed; and other information specified in Article 18</li> <li>▪ Share information on the health and safety of humans and the environment as non-confidential, in accordance with Article 17.5</li> <li>▪ Report to the COP on progress in implementing Convention obligations under Article 21</li> </ul>	
<b>Relevant national stakeholder:</b>		
I. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
	<ul style="list-style-type: none"> <li>▪ Collect and disseminate information on annual quantities of mercury and mercury compounds emitted, released, or disposed; and other information specified in Article 18</li> <li>▪ Share information on the health and safety of humans and the environment in accordance with Article 17.5</li> <li>▪ Report to the COP on progress in implementing Convention obligations under Article 21</li> </ul>	<ul style="list-style-type: none"> <li>▪ Focal Point for Minamata Convention</li> <li>▪ Inventory conducted for this MIA project, with expertise available for continued inventory work</li> <li>▪ Trained personnel</li> <li>▪ Technical Expertise</li> </ul>

2. Ministry of Information	▪ Dissemination of information	▪ Systems in place
3. Academia	▪ Publications and presentations	▪ Expertise
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
▪ Lack technical expertise to relate health conditions to mercury exposure		
<b>Article 23– Conference of Parties</b>		
<b>Summary of provisions relevant to the country</b>		
	<ul style="list-style-type: none"> <li>▪ Fully participate as a Party to the COP, including voting, if and when required</li> <li>▪ Participate in one of the dispute resolution processes specified if needed, under Article 25 of the Convention</li> <li>▪ Determine how future Convention annex amendments will be ratified under Article 30.5 of the Convention</li> </ul>	
<b>Relevant national stakeholder:</b>		
1. Environmental Affairs Department	Role with respect to the above listed provisions:	Relevant institutional capacity in place to comply with the above listed provisions:
2. Ministry of Health	<ul style="list-style-type: none"> <li>▪ Fully participate as a Party to the COP, including voting, if and when required</li> <li>▪ Participate in one of the dispute resolution processes specified if needed, under Article 25 of the Convention</li> <li>▪ Determine how future Convention annex amendments will be ratified under Article 30.5 of the Convention</li> <li>▪ Share information on the health and safety of humans and the environment as non-</li> </ul>	<ul style="list-style-type: none"> <li>▪ Focal Point for Minamata Convention</li> <li>▪ Trained personnel</li> <li>▪ Technical Expertise</li> </ul>
3. Ministry of Labour		

	<p>confidential, in accordance with Article 17.5</p> <ul style="list-style-type: none"> <li>▪ Report to the COP on progress in implementing Convention obligations under Article 21</li> </ul>	
4. Ministry of Foreign Affairs and International Corporation	<ul style="list-style-type: none"> <li>▪ Facilitating ratification</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
5. Ministry of Justice	<ul style="list-style-type: none"> <li>▪ Facilitating ratification</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trained personnel</li> <li>▪ Expertise</li> </ul>
<b>Remaining Capacity Gaps at National Level that need to be addressed before provisions can be met:</b>		
<ul style="list-style-type: none"> <li>▪ Lack of adequate financial resources to participate at COP</li> </ul>		

## CHAPTER IV: IDENTIFICATION OF POPULATIONS AT RISK AND GENDER DIMENSIONS

This chapter presents an overview of the assessment of populations at risk to mercury exposure, the potential health risks of mercury on the populations and an assessment of the potential gender dimensions related to mercury exposure and its associated effects.

### 4.1 Preliminary review of potential populations at risk and potential health risks

All humans are exposed to some low levels of mercury. The factors that determine the occurrence and severity of adverse health effects include: the chemical form of mercury; the dose; the age or developmental stage of the person exposed (the foetus is considered to be the most susceptible); the duration of exposure; and the route of exposure (inhalation, ingestion, and dermal contact).<sup>4</sup>

Dietary patterns can increase exposure to a fish-eating population when fish and seafood are contaminated with methylmercury. The primary impacts from toxicity of mercury and mercury compounds are on the nervous system, the kidneys, and the cardiovascular system. It is generally accepted that developing organ systems are the most sensitive to toxic effects of mercury; the developing central nervous system of the foetus is currently regarded as the main system of concern as it demonstrates the greatest sensitivity. Furthermore, other systems that may be affected include the respiratory, gastrointestinal, hematologic, immune, and reproductive systems.

Effects on the nervous system (especially the developing nervous system) appear to be the most sensitive toxicological endpoint observed following exposure to elemental mercury and methylmercury, while damage to the kidneys is the key end-point in exposure to inorganic mercury compounds.

*Those who are more sensitive to the effects of mercury:*

Mercury exists in various forms, and people are exposed to each in different ways. Generally, there are two susceptible sub-populations, namely, those who are more sensitive to the effects of mercury and those who are exposed to higher levels of mercury. The foetus, the new-born and children are especially susceptible to mercury exposure because of the

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<sup>4</sup> <http://www.who.int/foodsafety/publications/risk-mercury-exposure/en/>

sensitivity of the developing nervous system. A substantial portion (up to 33 percent) of a woman's chemical burden, such as mercury, can be passed on to her baby during gestation (through the placenta). In addition to in-utero exposures, new-borns can be further exposed by consuming breast milk that has traces of mercury. Thus, it is important for all family members to be particularly aware of the potential danger of methylmercury to new mothers, pregnant women, and women who might become pregnant. Individuals with diseases of the liver, kidney, nervous system, and lung are also at higher risk of suffering from the toxic effects of mercury.

*Those with high exposure levels:*

The other subpopulation that may be at greater risk to mercury toxicity are those exposed to higher levels of methylmercury due to fish and seafood consumption, occupational exposure and consumption of mercury products.

Communities that eat significantly more quantities of fish than the general population such as subsistence fishers, as well as those who regularly eat large amounts of fish may be exposed to much greater mercury contamination than the general population. In Malawi therefore people living along the shores of Lake Malawi and other water bodies including big rivers could be regarded as populations at risk of mercury exposure.

Individuals with dental amalgams and dental professionals generally have greater exposure to elemental mercury than those who do not. Other populations with potential for higher than average exposure are workers with high occupational exposure such as people practising ASGM in parts of Mangochi, Ntcheu, Balaka and Neno Districts. Another exposure pathway is through handling of waste containing mercury. Scavengers on solid waste disposal of Blantyre, Lilongwe, Mzuzu and Zomba cities could be exposed to mercury. Individuals who use various consumer products that contain mercury (such as some skin lightening creams and soaps) such as young women would also be at a higher risk of mercury exposure than the general population.

It is important for future implementation of the Convention to understand in greater detail how each of these groups is affected and what plans can be put in place to more appropriately manage the situations.

#### **4.2 Assessment of potential gender dimensions related to the management of mercury.**

Gender mainstreaming has been defined by the United Nations Economic and Social Council as “*a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of the policies*

*and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated”.*<sup>5</sup>

In practice, gender mainstreaming means identifying gaps in gender equality through the use of sex-disaggregated data, developing strategies to close those gaps, putting resources and expertise into implementing strategies for gender equality, monitoring implementation, and holding individuals and institutions accountable for results. Gender mainstreaming is not an end in itself; it is a process whose ultimate goal is **to achieve** gender equality (Millennium Development Goal 3). Furthermore, it is prominent in the 2030 Agenda for Sustainable Development (Sustainable Development Goal 5: Achieve gender equality and empower all women and girls) and the African Union’s Agenda 2063 (Aspiration 6: An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children).

Level of exposure to toxic chemicals as well as the resulting impacts on human health are determined by social, cultural and biological factors. Social and cultural factors, primarily stereotypical gender-based occupational roles, have a direct impact on human exposure to toxic chemicals, including the kinds of chemicals encountered as well as the level and frequency of such exposures. Biological factors (considered as “sex” rather than “gender”), notably size and physiological differences between women and men, and between adults and children, also influence susceptibility to health damage from exposure to toxic chemicals. Children are especially at high risk to mercury exposure as they scavenge on waste management sites.

#### **4.2.1 Differences in workplace exposures**

The level of mercury exposures at the workplace often differs by gender because women and men often undertake different tasks. Depending on social circumstances in particular communities, men may be at greater risk of exposure to mercury for instance in artisanal gold mining where mercury vapours are released when gold is extracted from ore. Other potentially high mercury exposure risk industries to men include cement production and coal fired plants. This is the case because more men work in these industries than women. Women are also exposed through household chores such as washing of clothes or personal protective equipment worn by other members of the family who might have been exposed to mercury.

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<sup>5</sup> [http://www.undp.org/content/undp/en/home/librarypage/environment-energy/chemicals\\_management/chemicals-management-the-why-and-how-of-mainstreaming-gender.html](http://www.undp.org/content/undp/en/home/librarypage/environment-energy/chemicals_management/chemicals-management-the-why-and-how-of-mainstreaming-gender.html)

#### **4.2.2 Differences in use of products**

Women and girls also tend to use more cosmetics and personal care products than men, and so are more likely to be affected by any dangerous ingredients or adulteration of such products. Mercury is added to cosmetic products such as skin lightening creams used by women.

#### **4.2.3 Differences in physiological susceptibility**

Men, women, and children vary in their physiological susceptibility to the effects of exposure to toxic chemicals. Women often experience relatively higher physiological susceptibility to the impacts of toxic chemical exposure, especially in connection with reproductive cycles. At particular stages of their lives, such as pregnancy, lactation, and menopause, women's bodies undergo rapid physiological change, making them more vulnerable to health damage from toxic chemicals.

## **CHAPTER V: AWARENESS/UNDERSTANDING OF WORKERS AND THE PUBLIC; AND EXISTING TRAINING AND EDUCATION OPPORTUNITIES OF TARGET GROUPS AND PROFESSIONALS**

This chapter provides an overview of awareness/understanding of workers and the public on mercury issues as well as the existing training and educational opportunities of target groups and professionals in Malawi.

From the MIA Project, it is evident that Malawi is affected by exposure to mercury in a number of sectors. The assessment further revealed that there are low levels of awareness among workers and the general public on the exposure, threats, potential sources, and health effects of mercury. The report indicates that there were a number of data gaps in categories such as artisanal small-scale gold mining, mercury in products (such as facial creams and cosmetics), waste incineration and open burning, waste water systems/treatment, fuel production, primary metal production and domestic production and processing of mercury. These data gaps compounded the lack of initiatives to monitor and regulate the presence of mercury in the sectors, and the lack of messages on the dangers of using products from those sectors is a sign that the general public and authorities are not conscious of mercury issues. Therefore, there is a need to increase awareness and understanding of the issues.

### **5.1 Awareness Opportunities**

Despite the fact that there is low awareness and understanding of mercury issues in Malawi, there are a number of opportunities, which can be explored to increase the levels of understanding. Among the opportunities are; the presence of a functional technical working group that supported the Minamata Initial Assessment (which itself is built on a committee of stakeholders on chemicals and waste issues), the vibrant Association of Environmental Journalists, a broad range of radio and television stations both at the national and community level, as well as the availability of internet and increasing social media use, periodic education curriculum reviews and a robust National Environment and Climate Change Communication Strategy.

#### **5.1.1 Technical Working Groups**

Under the MIA project, Malawi established a multi-sectorial Technical Working Group (TWG) to foster implementation of mercury activities in the country. The TWG is an opportunity for developing and implementing awareness strategies and activities across all relevant sectors in the country. Sectors in the TWG include the Environmental Affairs Department under the Ministry of Natural Resources Energy and Mining, as the lead implementer, Ministry of Labour, Youth, Sports and Manpower Development, Ministry of

Health and Population, Ministry of Trade and Industry, Department of Mines, Department of Energy Affairs, City Councils, University of Malawi, Muzzy University and Malawi University of Science and Technology as key stakeholders. Each stakeholder is tasked with raising awareness of mercury management within their organizations and networks, to disseminate further.

### **5.1.2 The Media and Association of Environmental Journalists in Malawi**

The media plays a key role in increasing awareness to the general public in Malawi. Acknowledging the fact that not all journalists are in a position to report on issues of health and the environment, the Association of Environmental Journalists in Malawi was formed with the objective of bringing together a specialised group of journalists to report on the environment. The association provides a forum from which this particular group of journalists can be easily trained and motivated to report on environmental issues. The association plays a vital role in opening up society, holding a range of actors accountable, and educating and challenging the public through story telling. Considering the gravity of the mercury problem, the association is a good opportunity to raise awareness on mercury issues in the country.

A range of radio and television stations, and social media is another opportunity to increase understanding and awareness of mercury issues in the country. Electronic channels such as radio and television have a high impact as they combine audio (sound) and visuals (picture, sound, colour and motion) and are thus the closest medium to reality. With proper management, they can be used extensively and thus reach larger audience with messages on mercury issues. Additionally, the Environmental Affairs Department has a website which can be used to disseminate information.

### **5.1.3 Periodic education curriculum reviews**

Malawi realises the importance of integrating environment and climate change management issues in the education curriculum. As such the Government through the Malawi Institute of Education reoriented the education curriculum to include issues of environment and climate change management. Periodic education curriculum reviews are undertaken to include emerging issues in different subjects. This is an opportunity to bring issues of mercury management in the school curriculum to enhance understanding of the learners on the issues.

### **5.1.4 National Environment and Climate Change Management Communication Strategy**

Malawi developed a National Environment and Climate Change Management Communication Strategy to increase awareness on environment and climate change

management issues. The strategy provides guidance on how key issues affecting environment and climate change management can be communicated for popular participation and behavioural change. Issues of mercury management are among key focus areas of the strategy.

Table 4. Issue-Based Communication Matrix for Mercury Awareness Raising and Training in Malawi

	<b>Problem issue</b>	<b>Barrier contributing factor</b>	<b>Desired Behaviour</b>	<b>Communication Objective</b>	<b>Target Audience</b>	<b>Key Messages</b>	<b>Communication channels</b>
1	Lack of awareness on the dangers of using mercury in mining (particularly gold mining)	Limited information dissemination on mercury	Awareness on dangers of mercury	To increase awareness on the toxicity of mercury	Artisanal gold miners, local leaders, traders, general public	Mercury is a health hazard  Beware of mercury toxicity	Community sensitization meetings Drama performances T-shirts Newspapers Electronic media (TV, Radio/Community radio, Social media)
		Limited knowledge on alternative recovery methods  <i>Designs and standards on mercury production devices/factor ies</i>	Switching to safer alternatives for recovering gold	To promote the use of alternative gold recovery methods	Artisanal gold miners, local leaders, traders, general public	Use safer alternatives for longer life	Community sensitization meetings T-shirts Electronic media Newspapers Training workshops

2.	Lack of awareness on mining authorization	Limited institutional capacity	Increased institutional capacity in mining authorization	To reduce the number of unauthorized gold miners	Regulatory authorities (Mines, EAD, Lands, Energy, MRA, Customs, Ministry of Transport)  General Public	Say no to illegal mining No space to illegal mining  No safety in illegal mining	Press release Policy brief MoUs TV Radio(community/national) Social media
3.	Emissions and wastes from cement factories	Poor design of kilns	Designs that are compliant with environmental standards	To promote efficient kilns	Regulatory authorities Cement manufacturers Academia Private Sector	Promote eco-friendly kiln designs	Workshops Newspapers/Magazines Symposiums
		Improper treatment of wastes from cement factories	Proper management of waste from cement factories	To promote proper management of cement waste	Regulatory authorities Cement manufacturers Academia	Cement manufacturers, invest in proper waste management	Workshops Newspapers/Magazines Symposiums

4.	Increased charcoal production and use	Inadequate alternative energy sources (e.g. low power supply and connectivity)	A population that prefers other energy sources rather than charcoal	To educate charcoal producers on the dangers of producing the commodity  To increase access to electricity in all communities, and reliability of supply	Local leaders Producers Policy makers Local authorities	Cutting down trees is detrimental to the environment  Electricity is cheaper and safer to health than charcoal	Radio, Newspapers, community films, Posters, Fliers, Community gatherings. Stakeholder workshops, Policy briefs
		Poverty	Entrepreneurial change	To promoting alternative sources of livelihood	producers Policy makers	Invest in alternative entrepreneurial activities	Radios, community gatherings, Desk and Wall Calendars, Policy. Stakeholder workshops for Policy makers.
		Inadequate knowledge on cost comparisons to electricity.	A public that is knowledgeable of the availability of cheaper and cleaner energy sources such as electricity	To increase public awareness on electricity tariffs for sound decision making	General public Electricity suppliers	Electricity is cheaper and safer to health than charcoal	Stakeholder workshops, Capacity building trainings, Calendars, Policy briefs

5.	Biomass-fired power and heat generation	Inadequate energy provision from the national grid	A population that uses electricity and other cleaner sources of energy	To increase access to the national grid and other alternative energy sources e.g. solar	Policy makers Factories	Invest in cleaner energy sources	Stakeholder workshops, Policy briefs

	<b>Problem /issue</b>	<b>Barrier contributing factor</b>	<b>Desired Behaviour</b>	<b>Communication objective</b>	<b>Target audience</b>	<b>Key messages</b>	<b>Communication channels</b>
6.	Risk to human health and environment from use of Mercury containing products	Lack of information on mercury free alternatives	Use of products which do not contain mercury	To increase awareness on the types of mercury-free products	Importers	Stop importation of skin lightening products containing mercury	Radio, Newspapers, community films, Posters, Fliers
					General public	Stay Healthy, stop use of mercury containing skin	Radio, Newspapers, community films, Posters, Fliers, community gatherings

						lightening creams	
					Retailers	Selling of skin lightening products containing mercury kills the nation	Radio, Newspapers, community films, Posters, Fliers
8.	Improper disposal of mercury containing products	Inadequate awareness on dangers of using mercury- containing batteries	Use of mercury--free batteries	To raise awareness on proper disposal of mercury- containing batteries	General public	Mercury containing batteries are dangerous to human health. Handle and dispose properly	Radio, Newspapers, community films, Posters, Fliers
					Recycling companies	Mercury containing are dangerous. Handle with care	Radio, Newspapers, Posters, Fliers
		Inadequate awareness on dangers of using mercury-	Use of mercury-free bulbs	To raise awareness on proper disposal of mercury- containing bulbs	General public	CFL Bulbs are dangerous to human health. Switch to use of LED Bulbs	Radio, Newspapers, community films, Posters, Fliers

		containing bulbs					
9.	Lack of restrictions on mercury-containing products	Porous borders / smuggling	Increased surveillance of mercury-containing products at ports of entry	To advocate for increased surveillance of borders	Enforcement personnel, Policy makers	Confiscate mercury-containing products once caught	Policy briefs, documentaries, Leaflets, Trainings
					Smugglers	Smuggled mercury-containing products, once caught, will attract stiffer penalties	

10.	Crematoriums to have proper air pollutant control measures	Culture and religious	Proper management cremation process  Proper incinerators	To increase awareness of their responsibilities for crematorium ash	Individuals, families and communities practising cremation (burning of bodies)	Beware of mercury contamination after cremation	Leaflets, Posters, meeting with Hindu community

11.	Improper management of waste	Lack of awareness		To awareness on the proper management of wastes	City, Town, District Councils, EAD	Waste segregation at the source, proper disposal of mercury containing wastes	Radios, Meetings, posters,
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## CHAPTER VI: IMPLEMENTATION PLAN & PRIORITIES FOR ACTION

The MIA project has revealed a lot of challenges in the management of mercury. The country will therefore face difficulties during the implementation of the Minamata Convention. The key challenges that the country is facing include; lack of capacity to manage mercury: lack of proper waste disposal facilities that can handle mercury containing waste; lack of and awareness on effects of mercury both for public officers and the general public; and lack of information of mercury contaminated sites and level of contamination.

Malawi has established the following six priority areas for action in order to effectively implement the convention and to protect human health and the environment from the effects of mercury:

1. Ratification of the Minamata Convention on Mercury
2. Strengthening institutional capacity on mercury management in Malawi including the capacity to manage mercury waste
3. Conduct qualitative and quantitative scientific research studies in Malawi to have more and accessible information on mercury. (e.g., for L. Malawi)
4. Conduct awareness raising activities on mercury targeting policy makers, technical personnel and the general public
5. Identify and remediate mercury contaminated sites
6. Conduct capacity building for relevant personnel from Ministry of Trade and Customs Department as frontline officers in the control of import of mercury containing products

*Table 5. Implementation plan for mercury management in Malawi*

<b>Priority</b>	<b>Proposed actions</b>	<b>Lead Institution</b>	<b>Budget</b>	<b>Time Frame</b>
1. Ratification	Preparation of ratification instruments	EAD, Ministry of Foreign Affairs	2,000	May-June 2021
	Consultation meetings	EAD	10,000	July – Sept 2021
	Submission to the Convention	Foreign Affairs		October 2021

	Ratification of the Convention	Foreign Affairs		October/Nov 2021
<b>2. Institutional capacity</b>	Identify sources of funding for capacity building (proposals)	EAD, Academia	10,000	2021-2022
	Build the capacity of chemistry labs in selected universities and research institutions	EAD, Academia	1,000,000	2020-2023
	Provide technical training in the management of mercury and mercury waste	Development Partners EAD	200,000	2020-2023
	Provide appropriate waste disposal facilities that can handle mercury containing waste	EAD Development partners Councils	2,000,000	2020-2023
<b>3. Awareness raising</b>	Development of messages (radio programmes, documentaries)	EAD Media	20,000	2021
	Air programmes/documentaries on TV, Radio	EAD, Media	50,000	2021-2023
	Conduct awareness campaigns (road shows, public lectures, meetings/workshops)	EAD Media	100,000	2021-2023
<b>4. Research</b>	Identify sources of funding for research on mercury in 2023-- Malawi (Write Proposals)	EAD	10000	2021-2020
	Conduct research studies on mercury in Malawi	Academia Research Institutions	2,000,000	2021-2023
	Develop database for research results and publish results	EAD	20,000	2021-2022
<b>5. Identify remediate</b>	Identify potentially	EAD, Mines,	50,000	2021-

contaminated sites	contaminated sites	Councils		2023
	Initial Site Screening and Detailed Site Investigation	EAD, Mines, Councils	100,000	2021-2022
	Develop database for contaminated sites	EAD	20,000	2022
	Site Remediation and other risk reduction activities	EAD, Mines, Councils	5,000,000	2022-

**Annex 1 Implementation plan for the Identification and remediation of Mercury Contaminated Sites for Malawi**

<b>IMPLEMENTATION MATRIX FOR THE STRATEGY FOR IDENTIFICATION AND ASSESSMENT OF MERCURY CONTAMINATED SITES</b>										
Strategic objective/ Activities	Key Performance Target	Key Performance Indicators	Timeframe (Yr.)					Output	Key Institutions	Budget (USD)
			1	2	3	4	5			
<b>Strategic Objective 1: Identify Potentially Contaminated Sites</b>										
Conduct stakeholder consultations	4 consultation meetings 1 stakeholder from each of the key groups: Labour, Agriculture, Environment, Health, Trade	<ul style="list-style-type: none"> <li>▪ Number of meetings</li> <li>▪ Number of stakeholders engaged</li> </ul>						<ul style="list-style-type: none"> <li>▪ Stakeholders consulted/ Sensitized</li> <li>▪ List of potentially contaminated sites</li> </ul>	EAD, City Councils, Mines Dept. Academia, MoH, MoIT	35,000
Conduct preliminary site inspections of potentially contaminated sites	20 site inspections	<ul style="list-style-type: none"> <li>▪ Number of sites inspected</li> <li>▪ Reports from sites inspected</li> <li>▪ Observed adverse health and</li> </ul>						<ul style="list-style-type: none"> <li>▪ Assessment report of preliminary site inspections</li> </ul>	EAD, City Councils, Mines Dept. Academia, MoH, MoIT	15,000

		environmental effects							etc. (Task Team)	
<b>Strategic Objective 2: Initial Site Screening and Detailed Site Investigation</b>										
		<ul style="list-style-type: none"> <li>Biological samples (human and animal), and air, water, soil and plant samples collected and analysed</li> </ul>						Samples collected and analysed for mercury contamination	Academia	
Review history of identified potentially contaminated sites		<ul style="list-style-type: none"> <li>Current and historical aerial photographs</li> <li>Previous development plans</li> </ul>								
<b>Strategic Objective 3: Develop a Database for mercury contaminated sites in Malawi</b>										
Train webhost on populating of database	1 training session	Number of people trained						Webhosts trained	EAD, City Councils, Mines Dept. Academia, MoH	
<b>Strategic Objective 4: Site Remediation and Other Risk-Reduction Activities</b>										
Conduct remediation of heavily contaminated	75% of Contaminated	Percentage of sites remediated						Contaminated sites remediated	EAD, City Councils,	

sites (with support from Development Partners)	sites remediated								Mines Dept. Academia, MoH	
Monitoring of contamination	5 sites monitored	Number of monitoring visits						5 sites monitored	EAD, City Councils, Mines Dept. Academia, MoH	
<b>Strategic Objective 5: Public Awareness on Contaminated Sites</b>										
Working session to develop and package messages	2 working sessions	Number of sessions conducted						Messages developed and packaged	EAD, City Councils, Mines Dept. Academia, MoH	15,000
Produce information, education and communication (IEC) material	5 types of IEC material produced	Types of IEC materials produced						IEC material produced	EAD, City Councils, Mines Dept. Academia, MoH	35,000
Disseminate IEC material	5 channels of communication	Channels used						IEC material disseminated	EAD, City Councils, Mines Dept. Academia, MoH	50,000

## ANNEX 2: Stakeholder Engagement process

The following is a contact list of all institutions and persons interviewed and engaged with during the preparation of the MIA Report, Mercury Inventory, and other aspects of the MIA project.

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Minamata Convention Text

<http://www.mercuryconvention.org/Convention/tabid/3426/Default.aspx>

Minamata Convention Website: <http://www.mercuryconvention.org>

Report on Assessment Of The National Legislation, Infrastructure And Capacity For The Management Of Mercury (EAD, 2016)

Toolkit for Identification and Quantification of Mercury Releases (UNEP)

<http://www.unep.org/chemicalsandwaste/Metals/MercuryPublications/GuidanceTrainingMaterialToolkits/MercuryToolkit/tabid/4566/language/en-US/Default.aspx>