

ZMWG Framework for the Mercury Treaty

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Background

Mercury is a toxic metal harmful both to human health and the environment. In humans, it particularly targets the developing nervous system and hence is very dangerous to the fetus and young children. Mercury is also harmful to ecosystems and wildlife populations.

Mercury pollution has no respect for national or regional boundaries. It travels long distances through the atmosphere and can deposit far from its original source of emission. Once deposited, it transforms and travels up the food chain, contaminating fish, birds, and marine mammals, including animals that are important global food sources. Even the Arctic, which has no sources of mercury pollution, is experiencing dangerous levels of contamination in its marine mammals and other species that are part of the food supply.

Most people are exposed to mercury by eating contaminated fish. However, there are also important occupational exposures to metallic mercury, to miners and factory workers and to people recycling products that contain mercury. These workers sometimes experience acute impacts of high exposures and chronic impacts of low exposures to mercury and develop tremors, insomnia, memory loss, neuromuscular changes, and headaches. Kidney and thyroid function may also be affected.

In 2002, UNEP prepared a report on mercury that recognized it as a global pollutant. Since then, the UNEP Governing Council has deliberated on the need for a globally coordinated response to reduce this threat. In February 2009, the Governing Council agreed that a legally binding international treaty was needed to adequately control the use and release of this toxic metal in order to protect human health and the environment. The International Negotiating Committee (INC) will undertake this work and established a deadline of February 2013 for completion.

Sources of the mercury pollution problem

Most mercury pollution from human activities comes from:

- Burning of coal that contains mercury;
- The use of mercury in artisanal and small scale gold mining;
- Large-scale smelting and refining metal ores that contain mercury (particularly zinc, lead, and gold);
- Cement production (where coal is used as a fuel and/or the limestone contains mercury); and
- The intentional use in products and industrial processes.

Where does industry get the mercury it uses in products and industrial processes? What are the sources of supply?

Mercury is sold on the global market as a commodity metal. There are four major sources of supply:

- Primary mercury mines. Kyrgyzstan holds the last remaining primary mercury mine that produces mercury for export. China also mines large quantities of mercury, but only for domestic use. There may be some small-scale primary mercury mines remaining in a few countries, but the quantities involved are not reportedly significant.

- By-product from mining other metals, principally zinc, lead, and gold. This mercury co-occurs in the deposits and is separated during smelting and purifying.
- Previously used mercury such as that recovered from product recycling, industrial waste management, and the remediation of contaminated sites (such as mine tailings).
- Private stocks of mercury from the chlor-alkali industry, where large quantities of mercury become available when these facilities close or convert to non-mercury processes.

Who purchases all this mercury? What are the sources of demand?

The largest uses of mercury are artisanal and small scale gold-mining (ASGM), where mercury is used to amalgamate (collect) the gold, and as a catalyst to produce vinyl chloride monomer, a principal feedstock for producing PVC plastic, in one type of industrial process chemistry. Other substantial mercury uses include the manufacture of chlorine and caustic soda from salt using an outdated technique; the manufacture of measuring devices such as fever thermometers and blood pressure devices; and the production of switches and relays such as switches in thermostats and certain water pumps. Smaller but still important additional industrial uses include batteries, fluorescent light bulbs, dental amalgam, vaccines (as a preservative), skin-lightening creams, and antiseptics.

Many of these uses have been reduced significantly or eliminated in industrialized countries and substituted by equally effective non-mercury alternatives. However, these uses continue in large parts of the developing world, resulting in a disproportionately adverse impact on those populations.

Global Mercury Demand by sector (2005)	Metric Tones
Artisanal gold-mining	650 – 1,000
Vinyl Chloride Monomer (VCM) production /PVC	600 - 800
Chlor-alkali production	450 - 550
Batteries	300 - 600
Dental use	240 - 300
Measuring and Control Devices	150 - 350
Lighting	100 - 150
Electric and Electronic Devices	150 - 350
Other application (paints, laboratory, pharmaceutical, cultural/traditional uses, etc)	30 - 60
Total	3,000 – 3,900

Source: UNEP (2006), SUMMARY OF SUPPLY, TRADE AND DEMAND INFORMATION ON MERCURY

Recommended Framework for the Mercury Treaty

The mercury treaty should protect human health and the global environment from the release of mercury and its compounds by minimizing, with the goal of eliminating, global anthropogenic mercury releases to air, water and land.

To achieve this goal the treaty should:

- sequester mercury from the global marketplace and place it into long-term, environmentally sound storage, and
- phase-out most mercury demand by substituting non-mercury alternatives in products and industrial processes.

The treaty must also aggressively control releases of mercury from coal combustion, metal smelting and refining, and other priority anthropogenic sources.

The treaty should promote the development of non-mercury technologies where suitable alternatives are not available.

The treaty should be constructed in a manner that:

- o Incorporates the Precautionary Principle, the Polluter Pays Principle, and other relevant Rio Principles.
- o Recognizes vulnerable populations such as children, women of childbearing age, Indigenous Peoples, island dwellers, Fisher Folk, the poor, workers, other disproportionately affected populations, as well as workers occupationally exposed to mercury and its compounds.
- o Recognizes the role and importance of public interest, health and environmental stakeholders, as well as Indigenous people.
- o Provides technical and financial assistance to the developing world to facilitate compliance.

Specific Elements Recommended for the Treaty

We recommend the following specific elements be included for a successful binding international agreement to reduce mercury.

Mercury supply, demand, and trade

1. Reduce the global *mercury supply* by:

- i. Phasing-out primary mercury mining, including a prohibition on new primary mining and a phase-out of existing primary mining; and
- ii. Banning the export/trade of mercury and related mercury compounds from other sources.

2. Address the need for environmentally safe long-term mercury storage by:

- i. Promoting best available techniques and practices for long-term storage and
- ii. Promoting the development of adequate mercury storage capacity (to be defined) to sequester mercury from further use

3. Reduce *mercury demand in products*, by

- i. Prohibiting new uses of mercury.

- ii. Phasing-out mercury use in the manufacture of products which have appropriate safe alternatives.
 Mercury use in the manufacture of many products such as switches and relays, measuring devices, batteries, paints and pesticides can be phased out promptly, since non-mercury alternatives are available and already used widely in the world.
- iii. Phasing out the trade in mercury products where mercury use in manufacturing is prohibited, so that these products cannot be dumped into the developing world.
- iv. Requiring periodic review for those products which do not have obvious immediate substitutes, to determine whether functional substitutes have become available.
- v. Establishing mercury content limits for mercury products still allowed under the treaty and/or labelling requirements to inform consumers that they contain mercury
- vi. Promoting the development of non-mercury alternatives, including quality control measures as needed to ensure the alternatives are safe and effective.

4. Reduce *mercury demand in industrial processes*, by:

- i. Prohibiting new uses of mercury.
 - a. The treaty should specifically prohibit the construction of new production facilities and also restrict the trade of production equipment needed in mercury-based production to achieve this goal.
- ii. Phasing-out existing mercury uses in processes (e.g. chlor-alkali and vinyl chloride) based upon the availability of safe alternative processes.
- iii. Establishing low-use or mercury-free techniques to reduce the demand for mercury in other processes (if any) currently without mercury free alternatives.
- iv. Protecting workers occupationally exposed to mercury and its compounds.

5. Reduce the use of mercury in artisanal and small scale gold mining by reducing the global mercury supply (as discussed above), and developing mechanisms aimed at minimizing and/or eliminating mercury use in this sector, including phasing out the three worst practices in this industry:

- i. Whole ore amalgamation
- ii. Use of open burning without retort/capture
- iii. Processing of mercury-rich tailings with cyanide

Mercury releases

6. Minimize, with the goal to eliminate, releases of mercury derived from priority anthropogenic sources such as coal combustion, ore processing, cement production, and waste incineration.

Mercury-containing Wastes

7. Address the environmentally sound management of wastes containing mercury, by:

- i. Promoting best available techniques and practices for the safe collection and separation of mercury-containing wastes as well as safe treatment and recycling.
- ii. Evaluating opportunities for synergies with other Conventions and programs in the context of maximizing the effectiveness of such measures.

Contaminated sites 8. Provide opportunities to facilitate the effective remediation of contaminated sites, by:

- i. Developing and implementing strategies and tools for identifying, assessing, prioritizing and remediating contaminated sites.
- ii. Promoting best available techniques and practices for preventing mercury contamination from spreading and for controlling and remediating contaminated sites.

Raising awareness

9. Establish and maintain a global fish and marine mammal monitoring network for the purposes of providing appropriate advice to populations regarding the consumption of aquatic food sources and monitoring treaty effectiveness.
 - i. Awareness-raising should target populations particularly at risk: women, children, Indigenous Peoples, Fisher Folk, consumers of fish, occupationally exposed workers and the least educated.
 - ii. Consumers and users of products containing mercury should also be targeted.

Implementation Elements Critical For Success Of The Mercury Treaty

10. Include strong, fair and balanced mechanisms to support transparency in data collection and reporting systems, and monitoring treaty compliance and effectiveness

11. Develop mechanisms for providing information exchange, capacity building, technical assistance, and financial support to Parties in need of such help.

- i. The financial and technical assistance mechanisms should include the creation of a dedicated fund to help support the incremental costs to developing nations of achieving compliance with the control measures in the Convention.
- ii. The fund should operate in a manner which facilitates compliance and discourages non-compliance with Convention obligations. Accordingly, the dedicated fund and the Convention's non-compliance mechanism and procedures must be adopted together, as part of a complementary assistance and accountability package and as part of the Treaty text.

Frequently Asked Questions Concerning the Treaty

Why is it important to reduce the supply of mercury?

Restricting supply will raise the price, which will make mercury use less economically appealing and therefore lower demand. Making mercury more difficult and expensive to obtain is particularly important for uses like artisanal and small-scale gold mining where formal legal restrictions are difficult to enforce.

Restricting supply through trade restrictions is very practical. Mercury flows primarily from a few developed countries to a large number of developing countries. Export controls are an efficient and effective way to reduce global supply, since there are far fewer mercury supply sources than potential users.

Why do we need to phase out mercury in products/processes as soon as possible?

The manufacture and use of mercury in products, and its use in industrial processes, results in emissions of mercury in the environment, and in some cases cause direct human exposure to mercury. In addition, when these products are disposed, the mercury is released rapidly if they are incinerated, but also over time when they are land disposed. There is extensive exposure

to mercury in disposed products in the developing world, from poorly controlled waste management operations.

Many products are already largely phased out in many parts of the world and have readily available substitutes, and thus can be phased out quickly. Other mercury products and processes that do not currently have alternatives should be the subject of regular re-evaluation so that they too can be phased out as soon as alternatives are available.

If we can phase out supply and products and processes using mercury, then why do we need to also control mercury releases?

The largest mercury releases in the world are caused by unintentional uses, such as emissions from coal combustion in coal fired power plants, industrial boilers, and residential heating, where mercury is a natural contaminant of the coal. These practices are ubiquitous in both the industrialized and developing world. Mercury is also found as an impurity of certain metal ores and can therefore be mobilized and emitted during ore processing of gold, lead and zinc. Mercury is also released during cement production.

What are our goals regarding transparency in implementation and opportunities for involvement by all stakeholders?

Because a wide range of stakeholders are affected by global mercury pollution, the treaty should provide opportunities for these stakeholders to participate in implementation, to monitor compliance and effectiveness, and to voice their concerns if the treaty is failing to meet its objectives. To support such active participation by a range of stakeholders, the collection and analysis of information and actions taken in response to information collection must be wholly transparent. Information gathered or reported under this Convention should be collected in a common, understandable format. Such data should be fully publicly available and accessible through the Convention website; and there should be opportunities for NGOs and other non-COP members to contribute high quality information relevant to treaty performance.

Why are data collection and management important for monitoring treaty implementation and effectiveness?

Relevant, valid, and consistent data on mercury trading, use, emissions and concentrations in the environment are necessary to monitor the progress of the Convention, to ensure that Parties are in compliance, and to evaluate whether existing treaty provisions are meeting the objectives of reducing global mercury pollution.

How should the financial and technical assistance be designed to maximize the treaty effectiveness?

A dedicated fund governed by the treaty parties will provide the following advantages:

- Commitments by donor countries to provide sufficient new and additional resources consistently over time.
- An ongoing and flexible ability to direct the disbursement of funds according to the substantive priorities of the program at the time, and strong representation from the developing world on those mechanisms developed under the treaty to guide the disbursement of funds.
- An ongoing ability to link the availability of funds to a Party's compliance with the terms of the treaty.