



Book - Unit 1 – Introduction

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Site: UNITED NATIONS INFORMATION PORTAL ON MULTILATERAL ENVIRONMENTAL AGREEMENTS

Course: Introductory Course to the Minamata Convention on Mercury

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1. Mercury

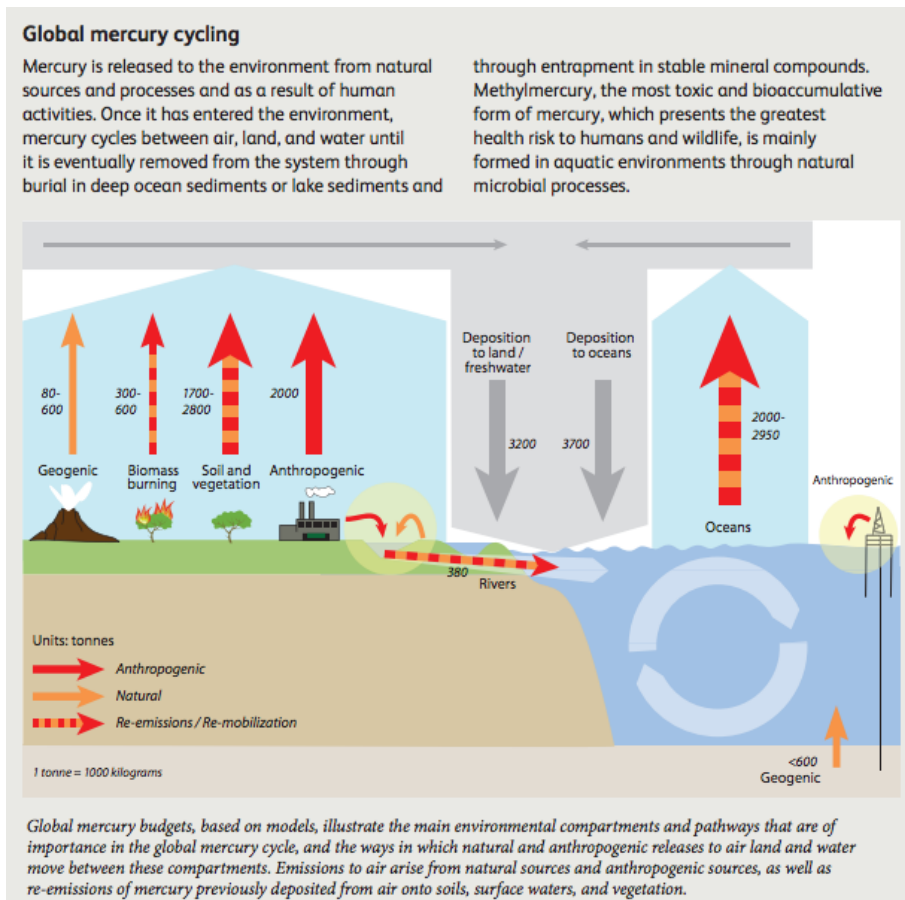
Mercury is a heavy metal that occurs naturally but can be released into air, water and soil through anthropogenic activity such as mining, metal and cement production, and combustion of fossil fuels. It is commonly used in electronic and measuring devices, cosmetics, lamps, batteries, and in several industrial processes.

Mercury is highly toxic and persistent in the environment. It can be transported in the atmosphere great distances, and can enter the food chain and accumulate in flora and fauna such as fish, terrestrial and marine mammals, and even, rice. Under certain conditions in the environment mercury can be converted to the even more toxic compound methylmercury, commonly found in fish and aquatic environments. Humans are exposed to methylmercury by eating fish, shellfish, and marine mammals that are contaminated with the toxin. Once methylmercury enters the human body, it accumulates in tissues and can be transferred to foetuses.

Mercury harms the environment and seriously impacts ecosystems, for example by affecting reproduction of birds and predatory mammals. It is also a serious human health risk. High exposure to mercury has been linked to a number of neurological and behavioural disorders. It negatively affects the development of foetuses and young children and can cause damages to the central nervous system, thyroid, kidneys, lungs, immune system, eyes, gums and skins.

Severe mercury poisoning can cause Minamata disease, named after the city of Minamata in Japan where inhabitants were poisoned by eating fish from Minamata Bay after a chemical factory released methylmercury in its waters from 1932 to 1968. Symptoms include ataxia, numbness in the hands and feet, general muscle weakness, narrowing of the field of vision, damage to hearing and speech and, in extreme cases, insanity, paralysis, coma and death.

How mercury can enter our environment



Source : UNEP, 2013. Global Mercury Assessment 2013: Sources, Emissions, Releases and Environmental Transport.

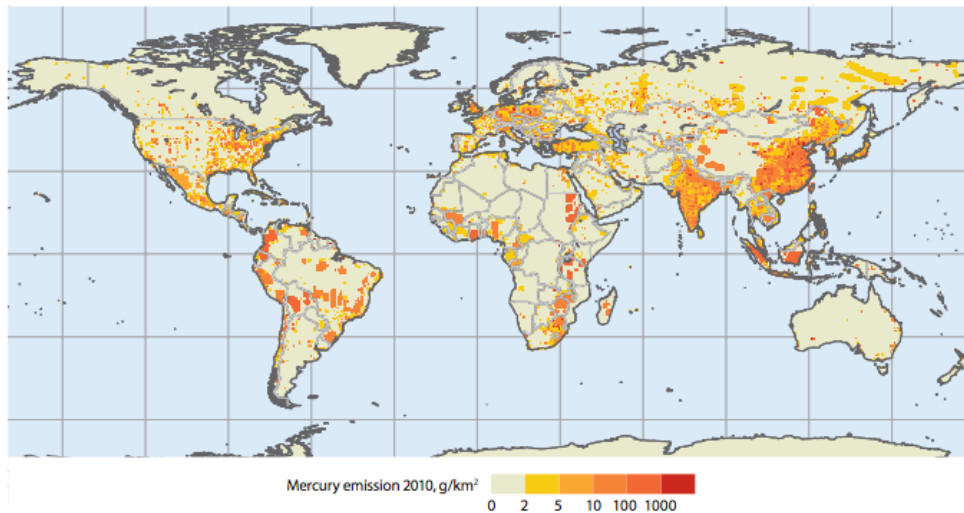
UNEP Chemicals Branch, Geneva, Switzerland

Emissions

Anthropogenic sources of mercury emissions account for about 30% of the total amount of mercury entering the atmosphere each year. Major emitters and consumers of mercury are located in East and South East Asia, with about 40% of global anthropogenic emissions.

The main industrial sources of atmospheric mercury are coal burning, mining, industrial activities that process ore to produce various metals or process other raw materials to produce cement. In these activities, mercury is emitted because it is present as an impurity in fuels and raw materials. In these cases, mercury emissions and releases are sometimes referred to as ‘by product’ or ‘unintentional’ emissions or releases.

A second category of sources includes sectors where mercury is used intentionally. Artisanal and small-scale gold mining is the largest of these, in which mercury emissions and releases result from the intentional use of mercury to extract gold from rock, soils and sediments. Other intentional-use release sectors include waste from consumer products (including metal recycling), the chlor-alkali industry, and the production of vinyl-chloride monomer.



Global distribution of anthropogenic mercury emissions to air in 2010.

Emissions from various regions, in tonnes per year with the range of the estimate, and as a percentage of total global anthropogenic emissions. Note: These numbers cannot be compared directly with those presented in the 2008 assessment (see Chapter 4, Trends in mercury emissions to the atmosphere).

Region*	Emission (range), tonnes**	%
Australia, New Zealand & Oceania	22.3 (5.4 - 52.7)	1.1
Central America and the Caribbean	47.2 (19.7 - 97.4)	2.4
CIS & other European countries	115 (42.6 - 289)	5.9
East and Southeast Asia	777 (395 - 1690)	39.7
European Union (EU27)	87.5 (44.5 - 226)	4.5
Middle Eastern States	37.0 (16.1 - 106)	1.9
North Africa	13.6 (4.8 - 41.2)	0.7
North America	60.7 (34.3 - 139)	3.1
South America	245 (128 - 465)	12.5
South Asia	154 (78.2 - 358)	7.9
Sub-Saharan Africa	316 (168 - 514)	16.1
Undefined (global total for emissions from contaminated sites)	82.5 (70.0 - 95.0)	4.2
Grand Total	1960 (1010 - 4070)	100

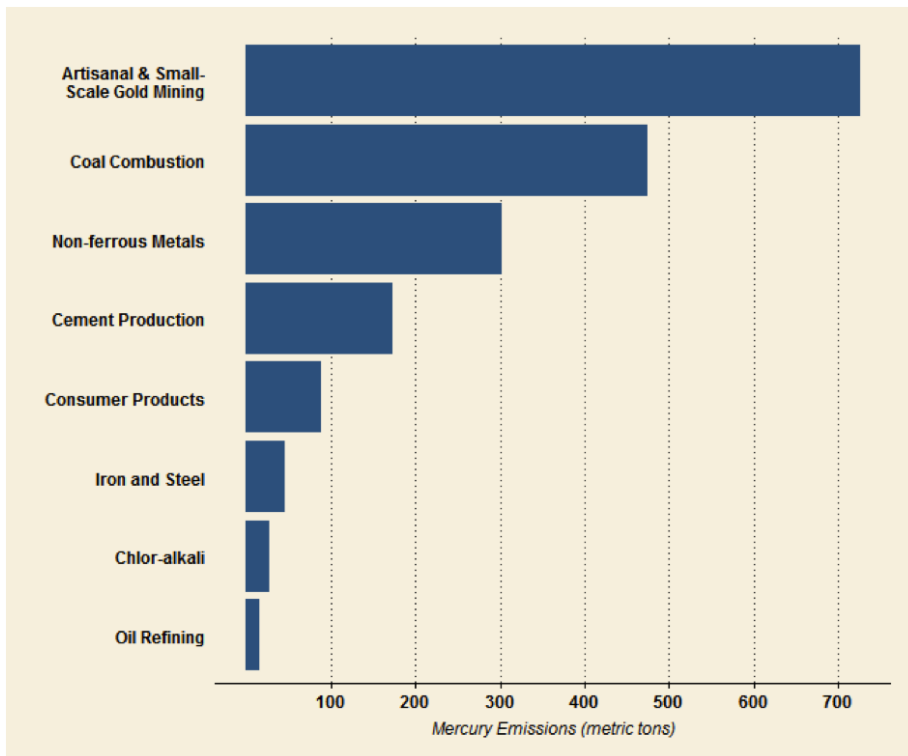
* See figure on the following page for map with specification of regions.
 **Values rounded to 3 significant figures.

Source : UNEP, 2013. Global Mercury Assessment 2013: Sources, Emissions, Releases and Environmental Transport.

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Consumption

With the exception of artisanal and small-scale gold mining and the production of vinyl chloride monomer, the global mercury demand has steadily decreased due to higher awareness of risks, global action and affordable alternatives.



Source : UNEP, 2013. Global Mercury Assessment 2013: Sources, Emissions, Releases and Environmental Transport.

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2. The origins of the Minamata Convention on Mercury

In 2001, UNEP Governing Council initiated a multilateral discussion on the threats posed to human health and the environment by the emissions and releases of mercury and mercury compounds. In 2007, an ad hoc open-ended working group (OEWG) was established to review and assess options for enhanced voluntary measures and new or existing international legal instruments. In 2009 and after several meetings of the OEWG, the UNEP Governing Council requested UNEP Executive Director to prepare for and convene an international negotiating committee for a legally-binding instrument on mercury. The committee, which consisted of representatives from almost all UN member states, met five times before adopting the Minamata Convention on Mercury (“Minamata Convention”) in October 2013.

As of March 2015, 128 countries have signed the Convention and 10 countries have ratified the Convention. It will enter into force ninety days after the date of deposit of the fiftieth instrument of ratification, acceptance, approval or accession.

The objective of the Minamata Convention to protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds (Article 1). It establishes specific measures for each stage of the lifecycle of mercury, from mining to storage and waste management, including a phase-out of primary mercury mining. It also addresses mercury emissions from sources such as coal combustion and cement production.