



Thematic Sessions on Implementing the Minamata Convention on Mercury

Context and Setting the Scene for the Thematic Sessions

Mercury is a recognized threat to human and environmental health, widespread and persistent in the environment. As the anthropogenic emissions and releases of mercury and mercury compounds are transported through different media, discussions on the presence of mercury in land, air and water set out to focus on the different contexts of the global mercury challenge.

Parties to the Minamata Convention on Mercury have committed to a set of measures which cover the lifecycle of mercury. These include measures to control the supply and trade of mercury (including setting limitations on certain specific sources of mercury such as primary mining) and to control mercury-added products and manufacturing processes in which mercury or its compounds are used. Measures specific to reducing the use of mercury in artisanal and small scale gold mining are also included. The Convention addresses emissions and releases with controls directed at reducing the levels of mercury while allowing flexibility to accommodate national development plans. Further, the Convention contains provisions on the environmentally sound interim storage of mercury and mercury wastes, as well as on contaminated sites.

The thematic sessions on Land (Monday, 25 September), Air (Tuesday, 26 September) and Water (Wednesday, 27 September), will each delve deeper into mercury emissions and releases, the transport of mercury between land, air and water, and the potential for exposure to humans, fish and animal life throughout this journey. The sessions will look at how coordinated implementation of the obligations of the Convention will address the risks of mercury to human health and our environment. The outcomes of each thematic session and its key messages will be transmitted to the High-Level Segment Ministerial Roundtables, to be held on Thursday, 28 September, as background for the Ministers' discussions.

At each thematic session a moderator will call on selected speakers to highlight key issues, opportunities and challenges in the implementation of the Minamata Convention as relevant to land, air and water respectively. This will be followed by an interactive discussion to consider national contexts and shared concerns, as well as possible solutions and approaches.



Thematic Session 1 (Monday, 25 September)

LAND – Mercury uses and the effects on life on land

Beginning with the uses of mercury, this session looks specifically at how the provisions of the Minamata Convention will help to bring about cleaner technologies for artisanal and small-scale gold mining, environmentally sound approaches to mercury waste, options for managing contaminated sites, and possibilities for moving away from the use of mercury in products and processes.

Context:

Mercury is a naturally occurring element. It can be released into the environment from natural sources but also from human activities. Due to its unique properties, mercury has been used in various products and processes for hundreds of years, such as to extract gold from ore, and is still extensively used in artisanal and small-scale gold mining. Mercury serves as a catalyst in the production of chlorine and PVC and can be found in many different products including cosmetics, pharmaceuticals, paints, and jewelry. Mercury is also released unintentionally from some industrial processes. It can be transformed into methylmercury by microorganisms, bioaccumulated and biomagnified along the food chain. Exposure to mercury occurs mainly through consumption of fish and other marine species contaminated with methylmercury. Mercury can also enter the environment through leakage into ground water from contaminated landfill and waste sites and can pollute soils through deposition from the atmosphere.

Discussion:

Participants in the thematic session on land will consider different processes where mercury is used or is present, from artisanal and small-scale gold mining to various products throughout their lifecycle, to industrial processes and will examine new technology possibilities to limit the use of mercury as well as for mercury free alternatives. The session will also look at experiences dealing with mercury waste and how to manage contaminated sites.

Key questions that may be considered include:

- To address products and processes containing mercury, how can we ensure availability and accessibility to viable, cost-effective and efficient alternatives?
- In the artisanal and small scale gold mining sector, how can we mitigate the socio-economic effects on populations?
- What options are there to formalize the informal and unregulated sectors that use mercury to more effectively address the health and environmental implications of those sectors?
- How can we identify, secure and prevent mercury contaminated sites?
- How can we ensure that mercury containing waste is disposed of and managed in an environmentally sound manner?
- How can waste separation and recycling programmes be promoted at the local level to reduce mercury releases?

Moderator: Ms. Marianne Bailey, United States Environment Protection Agency, Co-chair of the Global Mercury Partnership Advisory Group

Panelists (subject to confirmation):

- Mr. Bally Dominique Kpokro, Centre Africain pour la Santé Environnementale
- Ms. Gabi Eigenmann, UN Industrial Development Organization
- Ms. Elena Lymberidi-Settimo, European Environmental Bureau/ Zero Mercury Working Group
- Mr. Shunichi Honda, UN Environment
- Mr. Lee Bell, IPEN

Contact: Mr. Ludovic Bernaudat (e-mail: ludovic.bernaudat@un.org)



Thematic Session 2 (Tuesday, 26 September)

AIR -- Mercury emissions and transboundary movement

With coal burning as the major source of mercury emissions to air, this session focuses on the use of alternative technologies and improved pollution controls across a range of industries, also looking at enhanced combustion efficiency and best practices to reduce emissions under different national conditions. The discussion will also look at emissions from other sources, and further at how to address procedures for measuring mercury in air and the challenges of monitoring in a range of circumstances.

Context:

Major point sources of mercury emissions are identified within the Minamata Convention, in particular coal-burning (in power plants and industrial boilers), smelting and roasting processes used in the production of non-ferrous metals, waste incineration and cement clinker production facilities. Controls on these sources are emphasized in the Convention, with different levels of control needed for new and for existing facilities.

The mercury emitted from these sources can be transported long distances, before being deposited in locations remote from the source. Through climatic forces, deposited mercury can be re-emitted to the atmosphere and re-deposited further afield, making it a truly global pollutant. From the deposition, it can be transformed into methyl-mercury by micro-organisms and thereby enter the food chain, causing adverse effects in humans and the environment. Determining the level of mercury in the environment has been important to identify key concerns, and will be needed as one of the measures of effectiveness of the Convention.

Discussion:

Participants in the thematic session on air will consider the key sources of emissions to air, and the reduction and management strategies. In addition, the challenges of emission control, as well as the applicability of control techniques across different sources will be discussed. The issue of monitoring atmospheric levels in a range of locations will also be addressed.

Key questions that may be considered include:

- How do you identify the key sources of emissions that need to be controlled?
- What control measures are practical and feasible, and can be introduced over time?
- Do I need different types of controls for different facilities?
- How will we know whether controls are working and whether they are making a difference to the environment?

Moderator: Ms. Abiola Olanipekun, Chief of the Scientific Support Branch, Secretariat of the Basel, Rotterdam and Stockholm Conventions

Panelists (subject to confirmation):

- Mr. Peter Nelson, Macquarie University, Australia
- Mr. Simon Wilson, Arctic Monitoring and Assessment Programme
- Ms. Shuxiao Wang, Tsinghua University, China
- Mr. Alexander Romanov, Scientific Research Institute for Atmospheric Air Protection, Russia
- Mr. Ilia Ilyin, European Monitoring and Evaluation Programme of the Convention on Long-range Transboundary Air Pollution

Contact: Ms. Sheila Logan (e-mail: Sheila.logan@un.org)



Thematic Session 3 (Wednesday, 27 September)

WATER – Aquatic environments, livelihoods and food

Water and the aquatic environment are the transformation path and reservoir of mercury released and emitted from various sources. Bioaccumulation through the food chain and biomagnification are a major source of adverse human health effects from mercury, primarily through the consumption of contaminated fish. This session will examine how measures to reduce and control emissions and releases of mercury that end up in water bodies can relieve the environment of its mercury burden and decrease human exposure to mercury.

Context:

Owing to anthropogenic activities, mercury concentration in the biosphere has tripled since the industrial revolution. Water bodies are the primary environmental reservoirs for mercury emitted to the air and released onto lands and eventually deposited into water bodies. Mercury in water poses serious environmental and health risks due to the formation of highly toxic methylmercury, which bioaccumulates in fish and biomagnifies up the food chain. As a result, methylmercury in seafood is the most dominant human exposure pathway to mercury. Direct releases of mercury to water occur from artisanal and small scale gold mining wastewater, metal production, industrial activities, run offs, soil and rocks erosion, and leaching from contaminated sites. These releases contribute to the contamination of fresh and ground waters with mercury. Furthermore, agricultural run-off, and climate change can exacerbate mercury pollution at the base of the food chain through changes in the organic concentration in the aquatic environment.

Discussion:

Participants in the thematic session on water will consider the adverse impacts of mercury in water on human and marine wildlife as well as the technological means to reduce and/or control the emission and release of mercury into water bodies. Participants might also consider the challenges faced regarding controlling emissions and releases of mercury given its transboundary nature and movement through multiple media, which requires broad spectrum legislation covering many environmental aspects.

Key questions that may be considered include:

- How does mercury pollution impact marine biota?
- Are there options to limit mercury exposure to humans through modifying consumption practices?
- What are possible measures to cope with mercury biomagnification and its impacts on the marine life and human health?
- What technologies are required to reduce mercury releases and emission through control of point sources, watersheds and emission to air from industries?
- How can the latest scientific findings be integrated into new policies to mitigate water pollution by mercury?

Moderator: Ms. Ligia Noronha, Director, Economy Division, UN Environment

Panelists (subject to confirmation):

- Ms. Susan Keane, National Resources Defense Council
- Mr. Alejandro Nario, Director of Uruguayan Environment Directorate
- Mr. David Evers, Biodiversity Research Institute
- Ms. Imogen Ingram, Island Sustainability Alliance Cook Islands
- Ms. Eva Kruemmel, Inuit Circumpolar Council

Contact: Mr. Eisaku Toda (e-mail: eisaku.toda@un.org)