

Mercury Material Flow Analysis

Background

Requirement of the Minamata Convention on Mercury

Baseline information of mercury use and its emission and release is essential for national policy-making, and for identifying the mercury emission hotspots in the respective countries. Under the Convention, Parties have several obligations relevant to inventory development and reporting. The information obtained through reporting is used for evaluating the effectiveness of the Convention.

Article 8 (Emissions) and Article 9 (Releases)

Parties shall establish and maintain thereafter, an inventory of emissions/release from relevant sources.

Article 19 (Research, Development and Monitoring)

Parties shall endeavor to cooperate and develop/improve inventories including information of the use, consumption, and anthropogenic emissions into the atmosphere, and releases to the water and land of mercury and mercury compounds.

Article 21 (Reporting)

Parties shall include the information as called for in Articles 3, 5, 7, 8 and 9 of this Convention in its reporting.

Article 22 (Effectiveness Evaluation)

The Conference of the Parties (COP) shall evaluate the effectiveness of this Convention. Evaluation shall be conducted on the basis of available information, including those obtained from: (a) reports and other monitoring information provided to the COP; and (b) reports submitted pursuant to Article 21.

Overview of the Technology

Japanese Experience of Mercury Material Flow Development.

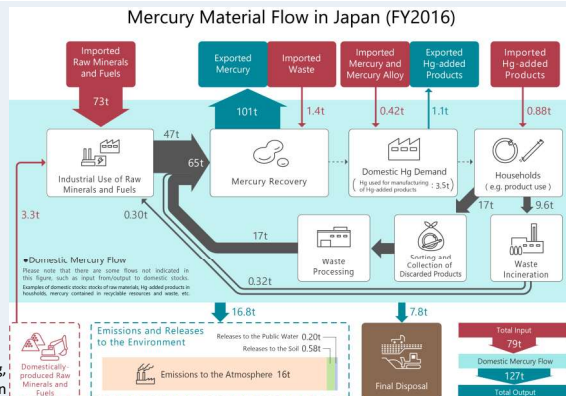
Japan has developed and upgraded the "Mercury Material Flow (MMF)", which contains comprehensive information on the flow of mercury in Japan through its life cycle, since 2007.

In order to develop the MMF, the Ministry of the Environment, Japan (MOEJ) took the lead in data collection, in cooperation with other governmental bodies and industries. MOEJ also established a Technical Committee with experts from the academia and industry, with various backgrounds.

In order to estimate the overall mercury flow in Japan and to estimate the emission/dischARGE to the environment, MMF utilizes all available information, such as those listed below.

- Statistical data
- Monitoring data
- Data obtained from interview with industries
- Questionnaire surveys to local government
- Research results

Year	Relevant activity
2007	Development of the FY2005-base MMF
2009	Active discussions and studies of the MMF initiated
2011	Update of the FY2005-base MMF to FY2010-base MMF
2017	Development of the FY2014-base MMF
2019	Submission of the FY2014-base MMF to the Secretariat of the Minamata Convention
2020	Development of the FY2016-base MMF

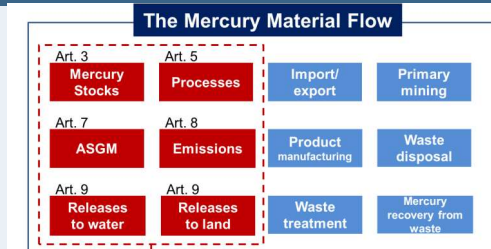


*No operation of primary mining, ASGM, Manufacturing process in Japan

Advantages/Strengths

Database Supporting the Policy Making and Reporting Process

Many countries are in the process of preparing a national mercury emission inventory as part of the "Minamata Initial Assessment (MIA)", using the "Toolkit for identification and quantification of mercury releases" developed by UNEP. This is an effective tool for countries at the initial stage of developing a preliminary inventory.



Information required to be reported to COP (Art.21 para2)

Japan's MMF, however, also covers other sectors not covered by the UNEP Toolkit, and visually presents the life-cycle flow of mercury in the country by integrating relevant information. Moreover, the MMF provides more accurate estimate of mercury flow compared to the Toolkit since it is based on actual country-specific information. The method used for developing MMF assists policy makers to obtain a clear and accurate understanding of the overall picture of the mercury flow and to identify the key sectors and mercury emission hotspots where mercury management must be improved on a priority basis.

Furthermore, the MMF also assists the competent authorities in fulfilling their reporting obligations since it contains all the information required to report to the COP, pursuant to Article 21 para2 of the Convention. If updated and upgraded periodically, the MMF could also be used to examine the impact and effectiveness of domestic policy measures.

Applicability

Potential to develop MMF in your country

Mercury inventory to be developed using UNEP Toolkit is a good initial step for countries to understand their current situation of mercury emissions. Japan is able to share its expertise to develop a more comprehensive MMF after this initial step, if there is need from the partner countries.

Japanese experts have shared their know-how and experiences in developing MMF at a series of workshops organized by MOEJ in ten partner countries. Since 2019, stakeholders from some countries have been invited to participate in a training workshop aimed at the preparation of MMF. The next step would be the consultation with the stakeholders to obtain useful information such as the monitoring data and reports published by international organizations for the partner countries.

The lack of information/data is a common challenge for developing countries. Japan's support to developing countries in searching appropriate methodologies to collect or develop data/ information will provide the most relevant basis on the circumstances of each country.



Training Programme in Tokyo, Japan (2019)

Further Reading

MOEJ, Outcomes of Mercury Material Flows Analysis (Japanese only) (<http://www.env.go.jp/chemi/tmms/materialflow.html>)

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Office of Mercury Management
Environmental Health Department
Ministry of the Environment, Japan
1-2-2 Kasumigaseki, Chiyoda-ku Tokyo, 100-8975, Japan
Tel: +81-(0)-3-5521-8260, E-Mail: suigin@env.go.jp
<http://www.env.go.jp/en/chemi/mercury/mcm.html>