



## Mercury Material Flow Analysis

## Background

## Requirement of the Minamata Convention on Mercury

Information on mercury use, emission and release at the national level is critical for the policy-making and to identify mercury. Under the Convention, Parties have several obligations relevant to inventory development and reporting. The information provided through reporting is used for the effectiveness evaluation 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)" since 2007, which contains comprehensive information on the flow of mercury in Japan.

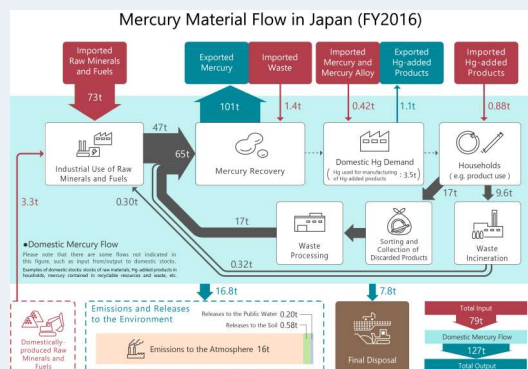
In order to develop the MMF, the Ministry of the Environment, Japan (MOEJ) took the lead in data collection, in cooperation with other governmental bodies and industries. MOEJ also established a Technical Committee with experts from the academia and industry, with various backgrounds.

In order to estimate the overall mercury flow in Japan and to estimate the emissions/releases to the environment, every piece of available information, such as those listed below were referred to.

- Statistical data
- Monitoring data
- Data provided by interview with industries
- Questionnaire surveys to local governments
- Literature review

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

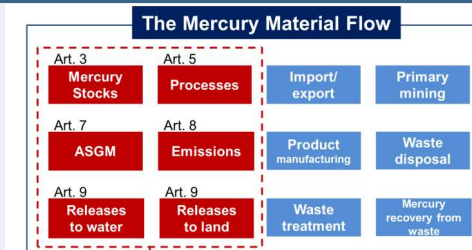
Year	Relevant activity
2007	Development of the FY2005-base MMF
2009	Active discussions and studies of the MMF initiated
2011	Update of the FY2005-base MMF to FY2010-base MMF
2017	Development of the FY2014-base MMF
2019	Submission of the FY2014-base MMF to the Secretariat of the Minamata Convention
2020	Development of the FY2016-base MMF
2023	Development of the FY2019-base MMF (under preparation)



## Advantages/Strengths

## Database Supporting the Policy Making and Reporting

Many countries are in the process of preparing a national mercury 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 process to develop the MMF gives a clear and accurate overall picture of mercury flow in the country with policy-makers, thereby help identify key sectors and mercury emission hotspots where prioritized actions are needed for mercury management must be improved on a priority basis.

Furthermore, the MMF also assists competent authorities in fulfilling their reporting obligations under the Article 21 of the Convention since it contains necessary information for submitting the report to the COP. The MMF could also be used to examine the impact and effectiveness of domestic policy measures if updated and upgraded periodically.

## Applicability

## Potential to develop MMF in your country

Developing a mercury inventory with 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 partner countries.

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



Training Programme in Tokyo, Japan (2019)

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

## 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](mailto:suigin@env.go.jp)  
<http://www.env.go.jp/en/chemi/mercury/mcm.html>