



## **Project Results Workshop**

### **“Mercury Storage and Disposal in Mexico and Panama”**



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**Mexico City, 3-4 July 2013**

## Contents

1. Introduction .....	3
2. Workshop objectives .....	3
3. Workshop proceedings.....	4
3.1. Opening session .....	4
3.2. Presentations .....	<b>¡Error! Marcador no definido.</b>
3.2.1. Project mandate .....	4
3.2.2. Project methodology and activities, and challenges encountered .....	5
3.2.3. Project results: Legal framework .....	6
3.2.4. Project results: Inventory of waste streams .....	8
3.2.5. Project results: Possible temporary storage sites .....	10
3.2.6. Decision-making process .....	11
3.2.7. Basel Convention Technical Guidelines on Environmentally Sound Management of Mercury-Containing Waste .....	13
3.2.8. Assessment of basic management options .....	14
3.2.9. Proposals for the National Action Plan on Mercury Storage and Disposal .....	14
3.2.10. Project summary and analysis .....	17
3.3. Roundtable discussion – Planning for each country’s next steps .....	18
3.4. Closing session .....	<b>¡Error! Marcador no definido.</b>

## ANNEXES

- I. Agenda
- II. List of participants
- III. Photographic record

## 1. Introduction

The international community recognizes that identifying solutions for the environmentally sound storage of mercury is a major priority. In many parts of the world, mercury supply is exceeding demand, as a result of mounting pressure for substituting mercury-free alternatives. This excess supply must be managed and stored in an appropriate manner that prevents its reintroduction to the global market. In the Latin American region, storage of mercury in underground facilities is not a viable near-term solution, whereas proper above-ground storage constitutes a better alternative for environmentally sound management of surplus mercury. Effectively meeting this challenge requires specialized expertise and the appropriate infrastructure. Moreover, technical standards for environmentally sound management, as well as the relevant institutional capacities, need to be enhanced.

The importance of mercury storage was acknowledged at the second session of the Intergovernmental Negotiating Committee on Mercury (INC2) on 24-28 January 2011, in Chiba, Japan. At that meeting, there was broad agreement by participants that the problem of mercury storage was extremely important and was intrinsically related to the problem of supply and demand. The delegates expressed the need to establish plans for short-term temporary storage, while long-term plans and policies were being developed. At INC3, representatives from the Latin American and Caribbean (LAC) region voiced their concern regarding the lack of information on developing countries' capacity to effectively and economically store mercury over the long term.

The present study is a follow-up to the "Reducing Mercury Supply and Investigating Safe Long-term Storage Solution" project, funded by Norway in 2009, also known as the "UNEP Mercury Storage Project" – part of the ongoing process of providing technical assistance to countries in seeking environmentally sound long-term methods of storing elemental mercury, a priority goal for governments.

The project is patterned after the mercury storage and disposal project initiated in Uruguay and Argentina in June 2011. Given the success of that effort, a decision was made to replicate the project in Mexico and Panama, bringing to bear the experience gained in the prior project.

## 2. Workshop Objectives

- Provide participants with information on the results of the mercury storage and disposal project carried out in Mexico and Panama.
- Present the draft National Action Plan on mercury storage and disposal in each country, demonstrating that the plan is applicable and viable on a nation-wide basis.

## 3. Workshop Proceedings

### 3.1. Opening Session

Arturo Gavilán, Director of Research on Chemical Substances and Ecotoxicological Risks at the National Institute for Ecology and Climate Change (Instituto Nacional de Ecología y Cambio Climático, or INECC), welcomed the workshop participants, and introduced the members of the presidium: Dolores Barrientos Alemán, United Nations Environment Programme (UNEP) Representative for Mexico, Luis Eduardo de Avila Rueda, Director General of Integral Management of Hazardous Materials and Activities, of Mexico's Secretariat of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales, or SEMARNAT), and Desiree Narváez, UNEP Programme Officer for Mercury and Other Metals. Each of these members made brief introductory remarks, emphasizing the importance of binational collaboration with Panama and thanking those involved in developing this project. In addition, all cited, and stressed the importance of, the history of mercury management at the international level.

Dr. Gavilán provided an overview of INECC's participation in – and international cooperation on – these issues, and cited the importance of the information and results generated in recent years, based on studies regarding the safe management of mercury.

### 3.2. Presentations

#### Day 1

#### 3.2.1. Project Mandate

In this portion of the meeting, Dr. Desiree Narváez presented a general outline of the Global Mercury Partnership, which has more than 200 official members and an advisory group, with UNEP serving as the group's coordinator. She also remarked that, since 2001, there have been international efforts to improve mercury management, resulting, in 2013, in agreement by various governments on the text of the Minamata Convention. The speaker included a detailed description of the natural and intentional sources of mercury, as set forth in the latest Global Mercury Assessment report. She commented on the estimates of sector-specific emissions, as well as on worldwide mercury use and consumption. Dr. Narváez emphasized the need to understand the life cycle of mercury and, based on its properties, to provide for appropriate storage and management of mercury waste. She provided several examples of international technologies for stabilizing mercury. Moreover, she indicated that Article 10 of the Convention deals with the environmentally sound temporary storage of mercury, expressing the hope that the present project will bolster compliance with the articles related to management of mercury waste (Articles 10 and 11).

Next, the speaker presented some of the major results of the Argentina and Uruguay experiences. Lastly, she detailed the expected results of the Mexico and Panama project.

**Remarks:**

Alejandro Merín, of Química Wimer, asked about the demand for mercury products for which there is no existing substitute, and posed the question of what mercury-management policies would apply in circumstances where there are no specifically designated mercury disposal sites. Dr. Narváez replied that the Convention takes into account certain exceptions for products that do not have mercury-free substitutes. She also stated that, particularly in the case of primary mining, eliminating the use of mercury was the goal in countries that are signatories to the Convention.

Questions were also raised as to whether there were studies on mercury costs, fluctuations in its market value, and its originating sources. In reply, Dr. Narváez stated that such data were indeed available, and that the cost of mercury had increased due to the scarcity of available supply, and offered to share this information with the Mexican government. As an example, she mentioned that there are data on the economic ramifications of water pollution caused by the use of mercury amalgams.

José Castro indicated some figures on the price of mercury obtained from mining, citing the approximate figure of US\$100/kg.

**3.2.2. Project methodology and activities, and challenges encountered****Mexico**

Dr. Mario Yarto, a project consultant for Mexico, opened the discussion, explaining that the project is modeled on the Argentina and Uruguay experiences. He mentioned that the work was carried out in two phases, over a total of five months. The first phase consisted of conducting a thorough review of available legal instruments and identifying potential temporary storage sites. The second phase included a review of records of mercury waste streams and releases in the country, as well as an examination of the literature related to potential storage sites. The speaker commented that the report proposes the elements of an action plan on mercury storage and disposal in Mexico. He added that preliminary results of the project would be detailed during the workshop, and that one of the final tasks would be to finalize the English version so that the text would be available for review in other countries.

In terms of the constraints encountered, Dr. Yarto mentioned that, in the case of some of the chapters, such as the one on disposal sites, the relevant sectors did not respond in time to include the appropriate information, and that some of the reference documents contained uncertainties on the data they provided. He indicated that the project serves as a basic input for promoting mercury management in the country, and emphasized the need to identify existing challenges and information gaps.

**Remarks:**

Fernando Bejarano, of the Centre for Analysis and Action on Toxic Substances and Their Alternatives (Centro de Análisis y Acción sobre Tóxicos y sus Alternativas, or CAATA), noted that in

order to issue any commentary, particularly regarding disposal sites, the report needed to first be completed, and inquired as to the date on which it would be finalized. Arturo Gavilán responded that a series of steps was needed to produce a report that could be shared with the rest of the working group. He also called for cooperation in sharing the information required to complete the study, pointing out that, at previous meetings, comments were made based on information that had not been updated or that was incomplete.

## **Panama**

Augusto Mendoza, project consultant for Panama, remarked on the steps being taken for rolling out the project in Panama. He indicated that a working plan was prepared summarizing the activities and establishing various groups, each of which held meetings during the course of the project. Data were also compiled and processed to determine which information could have a bearing on mercury issues. Subsequently, a validation process was carried out by the working groups themselves. Mr. Mendoza stated that visits were conducted at a number of sites that handled mercury. An inventory was made of mercury releases, and attempts were made to prepare an action plan on the storage and disposal of mercury and mercury-containing waste, along with preparation of a preliminary and final report. The speaker emphasized that Panama was attempting to bring together work from a previous Risk Plan with work on the present proposed plan. Mr. Mendoza stated that the challenges encountered were similar to those cited in the case of Mexico, namely, the difficulty of obtaining information and the low level of participation by members.

## **Remarks:**

Fernando Bejarano, of CAATA, requested more information on the Mercury Risk Plan, to which the representative from Panama's Ministry of Health replied that the country's use of mercury is very low compared to that of Mexico, and that the focus is not on industry but, rather, on preventing certain practices in mercury management. The Plan was carried out by means of a workshop and a national inventory.

Dr. Desiree Narváez raised a question about the issue of obtaining information, to which María Inés Esquivel, from the Ministry of Health, responded that requests had been submitted to the relevant entities, but that they had not provided the information in an official form, but only via telephone. Much of the information was obtained from the websites.

## **3.2.3. Project Results: Legal Framework**

### **Mexico**

Dr. Mario Yarto cited Mexico's regulatory framework as one of the results of the project. First, he spoke of the international context, mentioning the forums – such as UNEP, the Organisation for Economic Co-operation and Development (OECD), the Rotterdam Convention, etc. – dedicated to hazardous chemicals. He elaborated on these instruments and/or collaborations, alluding to their importance in relation to mercury issues and international trade in mercury products. In particular, with regard to the Rotterdam Convention, he commented that the Federal Commission for the

Protection Against Sanitary Risk (known by its Spanish acronym COFEPRIS) has provisions regulating the importation and exportation of certain types of substances. In addition, there is the General Law on Ecological Balance and Environmental Protection (Ley General del Equilibrio Ecológico y la Protección al Ambiente, or LGEEPA) and the General Law for the Prevention and Integral Management of Hazardous Waste (Ley General para la Prevención y Gestión Integral de los Residuos, or LGPGIR), which provide a framework for managing waste. The speaker indicated that, according to the LGPGIR, hazardous waste falls within the federal government's authority. Mexico has a series of official rules specifically related to waste management. Article 31 of the LGPGIR cites mercury-containing waste, such as batteries and fluorescent lamps, which are subject to specific handling requirements. Dr. Yarto mentioned that there are 15 lists of firms authorized by SEMARNAT to handle hazardous waste. He pointed out that there is a comprehensive legal framework in place – though certain gaps in the system have been identified – and that there is a range of general laws and regulations that strengthen the management of mercury in Mexico.

**Remarks:**

It was pointed out that the period of consultation for rules on hazardous waste management plans had just concluded, with publication soon to follow.

Dr. María Eugenia Rodríguez, of the Secretariat of Health, asked whether the official rules are consistent with international conventions, given that many of them were published before the signing of these conventions. Group participants commented that in the five-year review, all updates are taken into account, and that it would probably be necessary to revise the date on which the updating of these rules is carried out. SEMARNAT confirmed the need to update the rules.

**Panama**

Augusto Mendoza indicated that there is no regional policy on the management of hazardous chemicals; however, there is, he pointed out, a Regional Agreement on the Cross-border Movement of Hazardous Waste (Law No. 13). At the national level, there are general environmental laws (e.g., Law 41 of 1994) setting forth various policies related to waste management and hazardous waste. The speaker also noted that, while there is no framework for the integral management of hazardous waste, an initiative is currently in the evaluation stage. One of the outcomes of the workshop will be the implementation of organic and common laws and regulations, as well as national and regional conventions. The collected regulatory information was validated and, with the assistance of the international consultant, an analysis of the instruments and their scope of application was carried out. Mr. Mendoza pointed out that there is no regulation on the registry and transfer of pollutants – this being the major gap in the legal framework – though it is possible that such a regulation will be established through the Rotterdam Convention.

**Remarks:**

José Castro inquired regarding the development of standards for storage. In response, it was noted that resolutions issued by Panama provide guidelines for constructing and operating disposal sites.

Dr. Arturo Gavilán asked whether, after the analysis was carried out, the legal framework was deemed to be sufficient, or whether it would require any additions. The response given was that what was important was the implementation of existing laws, and that it was not believed to be necessary to add any provisions to the regulatory framework in order to have a comprehensive framework for managing mercury waste.

A question was also raised on the contemplated time period for storing mercury waste. In response, it was stated that although the storage was temporary, no set time period had been determined. Currently, the firm involved establishes the length of time the site is to be in operation, but as yet there is no regulation in that regard.

### 3.2.4. Project Results: Inventory of Waste Streams

#### Panama

Augusto Mendoza commented on the Inventory of Waste Streams, mentioning that Panama is a service provider, but is neither a primary nor secondary producer of mercury; thus, all mercury enters the country through imports. A list was presented showing sources of mercury releases that had been identified, organized according to the Toolkit for Identification and Quantification of Mercury published by UNEP in 2011. The speaker indicated that the information used to update the inventory was obtained primarily from websites such as that of Customs. Results of updates to the national inventory of mercury releases in Panama were also presented, indicating that the major source of mercury was batteries, which end up in informal dumps or controlled landfills. In the health sector, mercury follows a similar route after the end of the useful life of the mercury-containing equipment. In the mining sector, no mercury amalgamation process is used.

#### Remarks:

Gustavo Solórzano, international consultant for both projects, asked whether an increase in waste streams had been observed in the recent inventory update. Mr. Mendoza responded that there had indeed been an increase, particularly in the production of cement, due to increased construction activity, though there was also an overall increase across all categories.

Gustavo Solórzano further inquired whether there were problems in duplication of data regarding

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