



## United Nations Environment Programme

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**Lessons Learned Workshop of the Minamata  
Initial Assessment Project in Asia**  
Minamata, 30–31 May 2018

## Lessons Learned Workshop of the Minamata Initial Assessment Project in Asia

### Introduction

1. The Project on Development of Minamata Initial Assessment in three Asian countries was funded by the Global Environment Facility and has been implemented by International Environmental Technology Centre, Economy Division, United Nations Environment Programme since 2015. The project aimed at ratification and early implementation of the Minamata Convention by facilitating the use of scientific and technical knowledge and tools by national stakeholders in participating countries. The countries participating in this project were Cambodia, Pakistan and the Philippines, and they executed the project activities on 5 components: 1) Establishment of coordination mechanism and organization of process; 2) Assessment of the national infrastructure and capacity for the management of mercury, including national legislation; 3) Development of a mercury inventory using the UNEP mercury tool kit and strategies to identify and assess mercury contaminated sites; 4) Identification of challenges, needs and opportunities to implement the Minamata Convention on Mercury; and 5) Preparation and validation of National MIA reports and implementation of awareness raising activities and dissemination of results.

2. The Lessons Learned Workshop of the Minamata Initial Assessment Project in Asia was organised by International Environmental Technology Centre, Economy Division, United Nations Environment Programme, and hosted by the Minamata Environmental Academia, Minamata City on 30-31 May 2018 in Minamata City, Kumamoto, Japan. The workshop focused on sharing the project information and results among the participating countries and discussing how to effectively implement the convention and fully comply with all the provisions of the convention.

### I. Opening of the meeting

3. The meeting was opened at 9.00 a.m. on Wednesday, 30 May 2018 by Mr. Shunichi Honda, Programme Officer of International Environmental Technology Centre, Economy Division, United Nations Environment Programme.

#### A. Opening statements

4. Opening statements were delivered by H.E. Mr. Toshiharu Takaoka, Mayor, Minamata City, and Mr. Keith Alverson, Director, International Environmental Technology Centre, Economy Division, United Nations Environment Programme.

5. In his opening remarks, H.E. Mr. Takaoka welcomed all the participants to Minamata City. In order to share experiences in Minamata City for the Environment, the Minamata Environmental Academia was opened in 2016. At the Conference of the Parties to the Minamata Convention at the first session, the Japanese Minister of the Environment introduced Moyai Initiative to disseminate

experiences of Minamata disease. He requested participants to study how to overcome Minamata disease and to learn how Minamata City became the Environmental Capital City.

6. In his statement, Mr. Alverson thanked Minamata City, in particular the Minamata Environmental Academia, for hosting the workshop, the Global Environment Facility for funding and all the participants for their work on the project. He mentioned that Signatories and other countries came to Minamata City 2013 for the Conference of Plenipotentiary to celebrate the Minamata Convention; however, he mentioned that we came to Minamata this time to work together to take necessary actions for the convention. He expressed that the participants would share their knowledge on mercury management and learn Japan's experiences in overcoming mercury issues.

## **B. Keynote speech**

7. Mr. Minoru Koga, Director General, the Minamata Environmental Academia, Minamata City, provided his keynote speech. He explained the 60 year-history of Minamata City, in particular Minamata disease. In 1909, Chisso established its Minamata Factory and started producing acetaldehyde in 1932. Although it was a strange phenomenon as an unknown disease at that time in Minamata City, the cause of the unknown disease had not been confirmed until 1959. The government finally recognised that the cause of the unknown disease was organo-mercury poisoning. He explained the geological factors of Minamata City which was located in part of Yatsushiro Bay, and these geological factors unfortunately contributed to the outbreak of Minamata disease.

8. He introduced the mechanism of typical symptoms of Minamata disease. In the industrial process to produce acetaldehyde, mercury sulphate was used as the catalyst, and methylmercury was produced as a by-product which was discharged into Minamata bay. Humans consumed fish and shellfish which were exposed with mercury and methylmercury. Methylmercury in the human body is combined with cysteine, which chemically looks like Methionine known as amino acid. Methylmercury-Cysteine conjugate can pass the blood-brain barrier. As the circumstances, Minamata disease occurred in Minamata City.

9. Wastewater containing mercury and methylmercury discharged from the factory polluted Minamata bay. Minamata disease caused the serious health and environmental issues in Minamata city. 2,265 victims were officially certified as Minamata disease patients under the National Criteria. About 2 million square meters were treated to remove mercury from the seabed of Minamata bay. As of 1991, total compensation amounted about 12 billion Japanese Yen, and about 123 million Japanese Yen would be necessary for further treatment in coming years.

10. He enhanced lessons learned from Minamata disease. It was important to collect true information without any discrimination from people who were affected directly and indirectly by Minamata disease. Actions to prevent the effect of health and damage should be taken as the first priority. Based on lessons learned from Minamata disease, Minamata city started a local initiative, called Moyai-naoshi, which meant Minamata's regeneration. Based on the policy of Moyai-naoshi, Minamata City has been implementing various actions, including segregation of 22 categories (as of 1994. 24 categories in 2018) of municipal solid wastes, the Eco-town project, etc., since 1994. The Minamata Environmental Academia implements various activities to disseminate of Minamata's experiences domestically and internationally.

## **II. Minamata Initial Assessment Session**

### **A. Introduction**

11. Mr. Honda, United Nations Environment Programme, first thanked the officials working at the Minamata Environmental Academia for their support to organise the workshop at their premise. He introduced the coming two-day schedule. On 30 May 2018, the workshop focused on information sharing based on the draft MIA reports prepared by Cambodia, Pakistan and the Philippines and relevant knowledge on mercury by the experts. He explained that the participants would have an opportunity to visit some sites to study Minamata disease and environmental activities in Minamata City on 31 May 2018.

12. He enhanced one important meaning of the workshop in Minamata where all the countries visited in October 2013 as part of the Conference of Plenipotentiaries on the Minamata Convention on Mercury to celebrate the adoption of the convention; however, the countries were again invited to the workshop in Minamata this time to complete all the national steps toward ratification of the convention and to fully comply with all the provisions of the convention.

## **B. Minamata Initial Assessment projects**

13. Mr. Ludovic Bernaudat, Programme Officer, Global Environment Facility Team, Economy Division, United Nations Environment Programme, made his presentation on the Minamata Initial Assessment projects. The Minamata Initial Assessment projects were funded by the Global Environment Facility. He also enhanced the meaning of the workshop location that all the countries participated in the Conference of the Plenipotentiary visited in 2013.

14. He mentioned that the Global Environment Facility was one of the financial mechanisms under the Minamata Convention. 110 countries have been implementing the Minamata Initial Assessment projects, and the signatories had the opportunities to take necessary actions towards the ratification of the convention. These projects accelerated numbers of the ratification of the convention.

15. He explained the activities of the Minamata Initial Assessment projects, including coordination of national mechanism to implement the convention, developing and updating mercury inventory, reviewing existing legislations relating to the convention, raising awareness on mercury management and the convention.

16. The current cycle of the Global Environment Facility had provided 141 million to mercury activities. A new cycle, the Global Environment Facility 7<sup>th</sup>, would further provide funds to mercury activities, including mercury emissions and other priorities on mercury only for Parties to the Minamata Convention.

## **C. Country presentations on Minamata Initial Assessment Report**

17. Mr. Sophal Laska, Ministry of Environment, Cambodia, Mr. Babar Sohail, Ministry of Climate Change, Pakistan, made the presentations on the Minamata Initial Assessment Report.

18. Mr. Laska, Cambodia, made his presentation on the Minamata Initial Assessment Report in Cambodia. Minister, Ministry of Environment showed his green signal toward the ratification of the convention. The National Inception Workshop was organised in October 2016 in which relevant ministries participated. In order to collect relevant information, the national assessment, including stakeholder assessment, was conducted. The assessment found that there was a gap between the existing regulations, such as wastewater and mining regulations, and the convention's provisions. They updated the mercury inventory by using the toolkit level 2. It was found that about 30,956 kg of mercury would be emitted to the air. Majority of mercury emission to the air was 28,010 kg of primary metal production, particularly artisanal and small-scale gold mining. They recognised to improve the current regulation, to raise awareness on mercury among local people, to conduct an assessment of health impacts in artisanal and small-scale gold mining, etc. toward the ratification and implementation of the Minamata Convention.

19. Mr. Sohail, Pakistan, made his presentation on the Minamata Initial Assessment Report in Pakistan. He pointed out some difficulties to take necessary actions to manage mercury, such as diversity of the population throughout the country, low awareness on the environment and current economic matters. The national inception project meeting was held in 2016 and all the relevant organizations, including private sectors, and ministries were invited. In order to develop mercury inventory, the universities and other researchers provided relevant data and information based on research papers and other literatures. Due to lack of information on mercury related health issues, it was necessary to take further action on mercury health issues among researchers. It was difficult to collect data and relevant information to develop mercury inventory data from local governments and others. Further analysis of accuracy of mercury inventory data was needed to identify the needs and challenges for the Minamata Convention. They organised a series of disseminating meetings on mercury management to the public in order to raise people's awareness on mercury issues.

20. Furthermore, Mr. Teddy Monroy, the mercury expert, made his presentation on the Minamata Initial Assessment Report in the Philippines. There were several challenges to develop a Minamata Initial Assessment Report, such as no legal definition of sites contaminated with mercury, availability of data and information, etc. The national project team visited some sites contaminated with mercury, such as Palawan Quicksilver Mine, due to mercury mining and artisanal and small-scale gold mining. Mercury inventory report was updated; however, they needed more time to evaluate its accuracy of the draft report. As interim report, main mercury emission sources included primary metal mining, in particular artisanal and small-scale gold mining, waste management sectors, etc. They would plan to further discuss with private sectors, including mining sectors, for further relevant data and information. They also developed a national strategic plan for artisanal and small-scale gold mining under the Minamata Convention. A validation workshop of a Minamata Initial Assessment report will be ready in July 2018.

### **III. Expert session**

#### **A. Introduction**

21. Mr. Mick Saito, Japanese Ministry of the Environment, Mr. Kohji Marumoto, National Institute for Minamata Disease, and Mr. Kevin Telmer, Executive Director, Artisanal Gold Council, made presentations on their expertise relating to mercury.

#### **B. Expert presentations**

22. Mr Saito, Japanese Ministry of the Environment, made his presentation on the development of the Mercury Material Flow in Japan. The material flow identified that amount of mercury emission to the air was about 17 tonnes, and mercury export was 84 tonnes. This meant that Japan would need to consider how to dispose of such 84 tonnes of mercury as waste in Japan and to consider mercury export regulations. The case of the development of mercury material flow did not include data of primary mining, artisanal and small-scale gold mining and manufacturing process using mercury and mercury compounds because there were no industries on these activities in Japan. In order to develop mercury material flow, they used relevant existing statistics data, such as trade, and interviewed the stakeholders, including industrial associations, to estimate mercury material flow. Material flow provided the broad picture of the domestic flow of mercury and would be useful information to develop and implement the policy measures.

23. Mr. Marumoto, National Institute for Minamata Disease, made his presentation on mercury monitoring. National Institute for Minamata Disease academically focused on all the kind of mercury issues. He explained his mercury monitoring research work, including transportation and deposition of mercury in the air. He used the continuous monitoring system on speciated mercury. The Global Mercury Monitoring System is currently used to monitor mercury level in the air around the world. In Japan, both National Institute of Minamata Disease and National Institute for Environmental Studies work for mercury monitoring, and there were several monitoring stations in Japan. Many of the mercury monitoring stations that also detected mercury in the air came from China as part of the long-range transportation of mercury in the air. Asia-Pacific Mercury Monitoring Network was the regional mercury monitoring network in Asia initiated by the Environmental Protection Agency of the United States of America and Taiwan the Environmental Protection Administration of Taiwan.

24. Mr. Telmer made his presentation on artisanal and small-scale gold mining. Artisanal Gold Council specially focused on mercury situation, behaviour and analysis at artisanal and small-scale gold mining. He shared his visit to Itomuka Plant and was impressed by the facilities, including stabilization and interim storage at the plant. 100 million people in 81 countries were involved in artisanal and small-scale gold mining activities around the world. They produced 500 tonnes of gold, they account for 90% of gold workforce. However, this sector was the largest source of mercury pollution, involving rural livelihoods and huge concerns of maternal and child health. The Global Mercury Assessment 2013, and its technical background report were developed based on data and information available in 2010, and a next version of the Global Mercury Assessment would be issued in 2018. The 2018 version would be mainly based on data in 2015. The draft 2018 version showed that the most mercury emission was generated in East and Southeast Asia. In 2015 data, mercury emission from artisanal and small-scale gold mining was higher than that of 2010, and it identified that artisanal and small scale gold mining in South America was the main source of mercury emission to the air. He pointed out that many countries tended not to share any of data and information on mercury emission in the past; however, they now tended to share data and information because of the Minamata Convention. He also discussed the relationship between artisanal and small-scale gold mining and international imperatives, such as the Minamata Convention on Mercury, Due Diligence in the Gold Supply Chain of the Organisation for Economic co-Operation and Department, the Sustainable Development Goals, etc.

### **IV. Closing session**

25. Closing remarks were delivered by Mr. Koga, Minamata Academia, and Mr. Alverson, United Nations Environment Programme.

26. In his closing remarks, Mr. Koga thanked all the participants to come to Minamata. He enhanced that the Minamata Environmental Academia hoped to have further opportunities to work with many countries and organizations not only for the Minamata Convention on Mercury but also for other environmental issues. He said that Minamata City would be able to share the successful story to overcome Minamata disease at the workshop.

27. In his closing remarks, Mr. Alverson also thanked the Minamata City Government, in particular the Minamata Environmental Academia, and the participants in the workshop. He mentioned that all the participants had the great opportunity to share the lessons learned from the project activities in three countries and to learn the experiences of Minamata disease in Minamata City. He hoped to take further actions to fully implement the Minamata Convention on Mercury.

28. Mr. Honda, United Nations Environment Programme, declared the meeting closed at 3:45 p.m. on Wednesday, 30 May 2018.

#### **IV. Minamata Excursion**

29. The workshop participants visited JNC Corporation, the Minamata High School, Minamata Disease Museum, Eco Park Minamata and National Institute for Minamata Disease on 31 May 2018.

**Annex I****Workshop Agenda: Lessons Learned Workshop of the Minamata Initial Assessment Project in Asia**

<b>30 May 2018</b>	
<b>1. Opening session</b>	
09:00-09:10	Opening remarks <ul style="list-style-type: none"> <li>• H.E. Mr. Toshiharu Takaoka, Mayor, Minamata City</li> <li>• Mr. Keith Alverson, Director, International Environmental Technology Centre, Economy Division, UN Environment Programme</li> </ul>
09:10-09:20	Photo session
09:20-09:50	Keynote speech <ul style="list-style-type: none"> <li>• Mr. Minoru Koga, Director General, Minamata Environmental Academia, Minamata City</li> </ul>
<b>2. Minamata Initial Assessment Session</b>	
09:50-10:00	Introduction <ul style="list-style-type: none"> <li>• Mr. Shunichi Honda, Programme Officer, International Environmental Technology Centre, Economy Division, UN Environment Programme</li> </ul>
10:00-10:15	Minamata Initial Assessment projects <ul style="list-style-type: none"> <li>• Mr. Ludovic Bernadat, Programme Officer, Global Environment Facility Team, Economy Division, UN Environment Programme</li> </ul>
10:15-10:30	Break
10:30-11:30	Country presentations on Minamata Initial Assessment Report <ul style="list-style-type: none"> <li>• Cambodia</li> <li>• Pakistan</li> <li>• Philippines</li> </ul> Q&A and discussion
11:30-12:00	Discussion on Minamata Initial Assessment
12:00-13:30	Lunch
<b>3. Expert session</b>	
13:50-15:30	Presentation by experts <ul style="list-style-type: none"> <li>• Mr. Mick Saito, Deputy Director, Office of Mercury Management, Environmental health and Safety Division, Environmental Health Department, Japanese Ministry of the Environment</li> <li>• Mr. Kohji Marumoto, Chief, Environmental Chemistry Section, Department of Environment and Public Health, National Institute for Minamata Disease</li> <li>• Mr. Kevin Telmer, Executive Director, Artisanal Gold Council</li> </ul> Q&A and discussion
<b>4. Closing session</b>	
15:30-15:45	Closing remarks <ul style="list-style-type: none"> <li>• Mr. Minoru Koga, Director General, Minamata Environmental Academia, Minamata City</li> <li>• Mr. Keith Alverson, Director, International Environmental Technology Centre, Economy Division, UN Environment Programme</li> </ul>
18:00-19:30	Reception

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<b>31 May 2018</b>	
<b>Excursion</b>	
09:00-10:00	JNC Corporation
10:45-12:25	Workshop with the Minamata High School – How Should We Apply SDGs for Local Societies?
12:25-13:30	Lunch
13:30-14:30	Minamata Disease Museum (Museum tour and Storyteller's talk)
14:30-15:00	Eco Park Minamata
15:30-17:00	National Institute for Minamata Disease

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