

Inception Workshop For Mercury Storage and Disposal Project in the Caribbean: Jamaica, Suriname and Trinidad and Tobago



12TH TO 13TH AUGUST 2015

THE TRINIDAD HILTON AND CONFERENCE CENTRE, PORT-OF-SPAIN, TRINIDAD AND TOBAGO.

BACKGROUND

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean Region (BCRC-Caribbean) in collaboration with the Chemicals Branch of the United Nations Environment Programme's Division of Technology, Industry and Economics (UNEP/DTIE) have received funding from the Norway Official Development Assistance (ODA) for the project "Mercury Storage and Disposal Project in the Caribbean: Jamaica, Trinidad and Tobago and Suriname". The project seeks to identify environmentally sound storage and disposal solutions for mercury, as recognized by the international community as a priority. Mercury supply is exceeding demand in many parts of the world as a result of the movement towards use of mercury free alternatives. This surplus must be managed and stored properly, thereby preventing its re-entry into the global market.

This project is a follow-up to the 2009 Norway funded project "Reducing Mercury Supply and Investigating Safe Long Term Storage Solutions", also known as "UNEP Mercury Storage Project". The project serves as a catalyst in the action towards ratification of the Minamata Convention and it is part of the continuing work to provide technical assistance to countries in search for environmentally sound storage and disposal for mercury, identified as a priority of governments. The project builds on GC 25/5 III decision that requested "UNEP Executive Director working through the Global Mercury Partnership and concurrently with the work of the Intergovernmental Negotiating Committee to develop a legally binding instrument on mercury, to continue and enhance as part of international action on mercury the existing work, including enhancing capacity for mercury storage".

The Mercury Storage and Disposal Project in the Caribbean seeks to implement within the framework of the Global Mercury Partnership, a series of activities designed to enhance capacities and promote the environmentally sound storage and disposal of surplus mercury in three selected countries (Jamaica, Suriname and Trinidad and Tobago) in the Caribbean. The objectives of the project include:

- to establish of an effective decision-making processes at a national level;
- to gain an understanding of mercury waste streams for national inventories;
- to review the regulatory framework and management options relevant for the environmentally sound management of mercury;
- to enhance countries' understanding of the mercury waste and commodity issues as these relate to surplus mercury at country level;
- to assist government to understand the key elements of a framework enabling the environmentally sound management of mercury waste, including through the development of national storage and waste management action plans;
- to support the three countries efforts towards the accession, ratification and early implementation of the Minamata Convention on Mercury; and
- to create awareness on the hazards and risks posed by mercury and mercury waste.

To initiate the project, the BCRC-Caribbean and UNEP/DTIE hosted a two day inception workshop attended by representatives of the relevant government agencies of the three countries, the CARICOM Secretariat, the BCRC-Caribbean and UNEP Chemicals Branch as well as an international consultant (Annex I). The workshop created the platform to allocate roles and responsibilities and established a detailed timeline for the implementation of the various project activities. Each country selected a representative for the overall coordination of the project and mechanisms of communication were put into place. The meeting also served as an opportunity for UNEP Chemicals Branch to present and explain the toolkit for the identification and quantification of mercury releases. The workshop was held at the Flamingo conference room, Trinidad Hilton and Conference Centre, Port-of-Spain, Trinidad and Tobago from 12th to 13th August 2015.

WORKSHOP PROCEEDINGS

The inception workshop consisted of technical presentations over the two day period. The presentations were made by UNEP's Chemicals Branch representative, Dr. Desiree Montecillo Narvaez, an external consultant, Mr. Steven Hoffman as well as representatives from each of the invited countries. The presentations gave an overview of the of the Mercury Partnership and Convention, the project mandate, background, objectives and expected outputs as well as a detailed explanation on the use of the "Sourcebook on Mercury Waste Storage and Disposal" (referred to as the Source Book) which is to be used for informational purposes for the project implementation.

All presentations done at the workshop were given to participants and the final agenda for the workshop is contained in Annex II.

DAY 1 PROCEEDINGS

Opening Session

The participants were welcomed to the workshop by Dr. Ahmad Khan, Director of the BCRC-Caribbean. This was followed by an audio safety briefing explaining the evacuation procedure for the Hilton Hotel and Conference Centre. Dr. Khan (BCRC-Caribbean) then explained the importance of the workshop and spoke briefly on the mercury storage and disposal initiative under the Chemicals branch of UNEP. Dr. Narvaez (UNEP Chemicals) briefly discussed the context of the project, the Source Book and the use of the UNEP mercury waste inventory toolkit intended to aid countries in conducting their mercury inventories. She explained that a demonstration of the toolkit would be conducted over the next two days. Dr. Yarde (CARICOM Secretariat) then addressed the participants on the recent reduction in the rate of the ratification for multilateral agreements (MEAs) amongst the Caribbean countries. She explained that this should not be seen as the loss of interest from the CARICOM countries but that

countries are putting more focus on implementation on a national level before ratification is considered. The participants then introduced themselves.

Presentations

Presentation 1: Overview of the Mercury Process - Context of the Project, Global Mercury Partnership, Minamata Convention (status of ratification) - Dr. Narvaez (UNEP Chemicals)

The presentation began with an overview of the Global Mercury Partnership discussing its mandate, objectives and major partnership areas. The relationship between the Global Mercury Partnership and the Minamata Convention was explained making reference to Article 14 of the Convention. Dr. Narvaez (UNEP Chemicals) stated that Article 14 of the Minamata Convention mentioned partnership as an important means to deliver the capacity building, technical assistance and technology transfer needed by Parties to implement the new Convention, and the Global Mercury Partnership from the basis for the introduction of the Convention's text. The types of mercury inventories were mentioned as well as the tools available for the execution of these inventories. Dr. Narvaez (UNEP Chemicals) also discussed some of the latest developments within the Minamata Convention and the mechanisms needed for ratification and implementation of the Convention. The methods by which support can be provided to Governments in the implementation of the Minamata Convention were also shared. Activities such as artisanal small scale gold-mining (ASGM) and coal combustion were highlighted together with relevant projects implemented in some countries to deal with mercury waste.

Questions and Comments

- There were no questions and comments

Presentation 2: Mercury Projects and Initiatives in Jamaica, Suriname and Trinidad and Tobago

Jamaica - Ms. Lewis and Ms. Marston (National Environment and Planning Agency, Jamaica)

Jamaica's presentation comprised of their proposed roadmap for mercury, and the past and current projects related to mercury reduction. The roadmap assessed the national situation for managing mercury in terms of legislative, political and institutional capacities. The country's proposed steps for implementing the Convention was also discussed.

Questions and comments

- There were no questions and comments.

Suriname - Mr. John Courtar (Labour Inspectorate, Suriname)

Suriname's presentation gave an overview of the mercury inventories conducted in country within the mining and ASGM industries, as these sectors were identified as the major generators of mercury waste. Dr. Courtar then discussed challenges faced by the Government for managing mercury waste, highlighting the lack of communication with the ASGM industries as well as the regulatory measures currently in place for dealing with mercury wastes in Suriname. Dr. Courtar (Suriname) recommended

the need for proper legislation to monitor and control hazardous waste in Suriname, plans for the identification and design of a storage facility, and he discussed achieving the status of “Green Gold” due to the environmentally sound management of mercury in the near future.

Questions and Comments

- There were no questions and comments

Trinidad and Tobago – Ms. Tricia Beejai (Environmental Management Authority (EMA), Trinidad and Tobago)

Trinidad and Tobago’s presentation gave an overview of the mercury projects and initiatives both past and present, as well as current activities related to mercury pollution reduction in Trinidad and Tobago. The presentation started with an overview on a national hazardous waste inventory, highlighting electrical maintenance (changing of fluorescent bulbs) as the largest generator of mercury waste in the country. Ms. Beejai (Trinidad and Tobago) discussed regulatory control measures for mercury, mercury disposal and the presence of mercury in the aquatic environment within Trinidad and Tobago. Trinidad and Tobago’s status with respect to the implementation of the Minamata Convention was also mentioned.

Questions and comments

- Ms. Elias-Samlalsingh (Atlantic, Trinidad) inquired about initiatives to enforce legislations and regulations by participating countries as it pertained to mercury and mercury waste in the country. She agreed that workshops such as this one are great, but there need to be support from law enforcement in order to ensure that their benefits can be maximised.
- Ms. Elias-Samlalsingh (Atlantic, Trinidad) asked about the date of enactment for the country’s draft Waste Management Rules. She expressed her concern that some companies may not be as environmentally conscious as Atlantic to ensure that the CEC requirements are fulfilled in the management of their waste. In response Ms. Beejai (EMA, Trinidad) explained that when CECs are issued to the applicant, the EMA assigns compliance officers to monitor the conditions written in the CEC application. She assured the participants that the drafts Waste Management Rules are currently being revised but there is no scheduled date for its enactment.
- Mr. Hoffman (Consultant) emphasised the need for a document of due diligence by manufacturers to whom mercury waste is returned. He indicated that the document should contain information such as the company’s name, a description of the intended process for waste treatment or disposal and how the company intends to follow compliance rules. He stated that countries which are signatories to the Basel Convention are also required to provide further information on the export document such as storage, handling and labelling of the waste. He stated that the auditing of the export documents would be left to the discretion of Governments as they may see fit. Mr. Hoffman (Consultant) also shared some of his past experience as a former Federal Enforcement Officer at the United States Environmental Protection Agency (EPA). He stated that due to the large quantity of stocks received daily,

monitoring was conducted randomly. However, within the Caribbean, these numbers would be significantly less and as such monitoring could be performed more periodically.

- Mr. Hoffman (Consultant) highlighted the importance of insurance companies within the management framework of waste including mercury. He stated that insurance companies have a major influence on the regulations for waste management which, may or may not align with the stipulations of the country. He encouraged Governments to have discussions with large scale insurance companies to determine the type of activities they may be conducting locally.

Presentation 3: Project Mandate, Background, Objectives, Activities and Expected Output - Dr. Narvaez (UNEP Chemicals)

The presentation started with an overview of the minimum and maximum expected global quantities of excess mercury by 2050. An overview of the project background for the Latin American and Caribbean (LAC) region and its mandates were then presented, inclusive of the assessment of excess mercury supply in LAC and options analysis for the safe and long term storage of excess mercury within the region. Lessons learnt as well as recommendations from previous projects on mercury storage and disposal in Uruguay, Argentina, Panama and Mexico were discussed. The objectives, institutional arrangements, activities and expected outputs for the mercury storage and disposal project for the Caribbean region were stated.

Questions and Comments

- Dr. Courtar (Suriname) inquired on the justification for Mexico's participation as part of countries chosen for this project. Dr. Narvaez (UNEP Chemicals) clarified that Mexico was classified under the grouping of Latin America and the Caribbean and added that the assessment was for the entire region including the Caribbean.
- Dr. Courtar (Suriname) then asked about the type of containers used in Argentina for mercury storage. Dr. Narvaez (UNEP Chemicals) responded that a fixed container, not a mobile one was used.

Presentation 4: Overview of the Practical Sourcebook on Mercury Waste, Storage and Disposal – Mr. Stephen Hoffman (Consultant)

This presentation gave an overview of the practical sourcebook on 'Mercury Waste Storage and Disposal'. An explanation was given on the origin of the sourcebook, its purpose and format. A summary of each chapter of the sourcebook was specified which included the following:

- Chapter 1 – types and sources of mercury wastes;
- Chapter 2 – environmentally sound management of mercury wastes;
- Chapter 3 – Storage of mercury wastes;
- Chapter 4 – recovery operations for mercury wastes;
- Chapter 5 – disposal operations for mercury wastes;
- Chapter 6 – export of mercury wastes; and
- Chapter 7 – management of sites contaminated with mercury wastes.

Questions and comments

- Mrs. Elias-Samlalsingh (Atlantic, Trinidad) sought advice on measures to be implemented and actual examples of actions taken by countries for uncontrolled landfills. Mr. Hoffman (Consultant) responded that there is a categorical ban on a whole range of mercury-bearing end of life products which are prohibited from entering landfills in the EU. In the United States however, household waste and household hazard waste such as turpentine for paint stripping and batteries can be disposed as regular household waste as they are not deemed hazardous. He stated that this has created issues in landfills with respect to leachate but the issue has been dealt with through the implementation of the municipal landfill regulations which mandated double liners and the collection of leachate in order to protect groundwater. Mr. Hoffman (Consultant) explained that the leachate is liquid hazardous waste and it is very expensive to treat. He advised that the cheapest method is the implementation of take-back systems to separate wastes before it reaches the landfill.
- Dr. Yarde (CARICOM Secretariat) suggested that one method to prevent at least certain types of wastes from reaching the landfills is to provide a refundable deposit or surcharge on the waste. Dr. Yarde (CARICOM Secretariat) shared the example of Barbados in which a similar principle was used for plastic bottles and was proven to be very successful. Mr. Hoffman (Consultant) stated that this is also done in the United States with respect to car batteries and it has been very successful, eliminating the improper disposal of batteries. He added that there is a price which will result in the change of practice in a country, and this price is dependent on national and cultural issues and may vary from one country to another, stating that the examination of the social and cultural decision making is almost more important than the environmental aspect.
- Dr. Courtar (Suriname) sought advice on the position of Suriname's government with respect to closed mercury contaminated facilities by private sector. Mr. Hoffman (Consultant) stated that the Government would be liable and advised that in such corporate relationships, Suriname should set requirements on private companies to clean up the facility to a point upon which they would be able to transfer ownership and liability of the facility to the Government. He strongly urged the Government of Suriname to do this before ownership of the facility is claimed, as under environmental law, environmental liability will automatically be transferred to the new owner. The Government should therefore have assurances that prior contamination before ownership (surface or sub-surface) will be retained by the previous owner. He then gave an example illustrating that in the United States, the seller is required to do due diligence due to the innocent land owner's clause (see USEPA CERCLA statute) before a transfer of property ownership. He stated that to be an innocent landowner, the seller of an industrial activity has to conduct a Phase 1 or Phase 2 environmental audits affirming no long-term environmental liabilities. Any subsequent environmental damage will relieve the current landowner of any liability and concluded by saying that the absence of such a system can result in trouble in the future.
- Dr. Courtar (Suriname) sought clarification on the level of cleanliness the previous owner is required to adhere to before ownership is transferred, that is, whether it would be based on the requirements of the Basel Convention or the EPA. Mr. Hoffman (Consultant) responded that

each national and international convention have their own standards with varying degrees of strictness. He stated that emphasis should therefore be placed on how the company intends to enforce the laws set on whichever standard are adopted. He added that companies have legal rights, and their obedience to particular standards will be based on legal and not necessarily voluntary guidance. Dr. Courtar (Suriname) stated that international companies can therefore enforce corporate social responsibility without it being legally binding. Mr. Hoffman (Consultant) disagreed, adding that only legally binding standards can be enforced by national governments and non-legal commitments based on corporate responsibility standards are voluntary choices.

- Mr. Hoffman (Consultant) mentioned that the Sourcebook should be used purely for informational purposes and should not be taken as a formal guidance document.

Presentation 5: A Suggested Framework for Decision Making for the Safe Management of Redundant Mercury - Dr. Narvaez (UNEP Chemicals)

Dr. Narvaez (UNEP Chemicals) began with a clarification of the definition of excess mercury. The presentation entailed an overview of the comprehensive strategy for the environmentally sound storage of disposal of mercury wastes and outlined the suggested framework for managing mercury wastes. This included conducting a mercury inventory, assessing management options for storage and disposal and enabling activities for implementation. A sample outline of a work plan was then illustrated.

Questions and comments

- There were no questions and comments

Presentation 6: Specific Sources of Mercury Wastes – Mr. Stephen Hoffman (Consultant)

This presentation discussed the specific sources of mercury and mercury wastes. Artisanal gold-mining and bauxite refining were identified as significant sources of mercury waste in the Caribbean region. Examples and references were given on ASGM, bauxite refining, mercury waste management in health care facilities and the management of mercury from fluorescent lights. Emphasis was placed on the United Nations Development Programme (UNDP)-World Health Organisation (WHO) guidance on the clean-up, storage and transport of mercury wastes from health care facilities and the WHO safe management of waste from health care.

Questions and comments

- Mr. Hoffman (Consultant) emphasised the need to be aware of variations in the definition of terms from one country or state to another. He encouraged Governments and regulators to have discussions with industries to determine process flows which may contain mercury as well as the efficiencies of the operations. He gave examples to the participants of the types of questions which should be asked to determine the process flow. He stated that this approach could be useful to aid Governments in identifying waste mercury decision options.
- Mr. Hoffman (Consultant) mentioned that mercury regulation may take years and have economic and social costs attached. He stated the importance of control measures and the

efficiency of the control measures to be implemented to address mercury waste in the absence of legislation.

- Mr. Hoffman (Consultant) spoke about the significance of education and training for staff dealing with mercury wastes. He stated that medical equipment such as thermometers and blood pressure machines were identified as having significant amounts of mercury in them. He added that the key to a national plan requires questions to be answered such as, if there is a spill, does the Government have sufficient regulatory authority to set minimum requirements and are those minimum requirements economically and environmentally sound that they can be implemented without causing tremendous economic disruptions. He noted that spills response training is straight forward and spill equipment for responders, such as respirators, are cheap and accessible. Bigger spills can however be expensive.

Presentation 7: Environmentally Sound Management of Mercury Wastes – Mr. Stephen Hoffman (Consultant)

Mr. Hoffman (Consultant) introduced the concept of environmentally sound management and spoke about the key aspects of an environmentally sound programme for the management of mercury waste.

Questions and comments

No questions or comments.

Presentation 8: Handling, Packaging, Labelling, Transport of Mercury Wastes – Mr. Stephen Hoffman (Consultant)

This presentation focused on the Basel Technical Guidelines list of disposal operations for the storage of mercury waste and states the importance of handling, labelling and packaging mercury waste. The significance of transport planning was also discussed.

Questions and comments

- Mr. Hoffman (Consultant) talked about the transport criteria for mercury waste, stating that there should be a tracking system in place from beginning to the end as well as the use of a licensed transporter. He urged participants to consider the use of barcodes for the various types of wastes because of their convenience, simplicity and economic costs.
- Ms. Gardiner (Ministry of Environment and Water Resources (MEWR), Trinidad) asked for clarification on the chemicals sodium or potassium methylate and its use in mercury related industries. Mr. Hoffman (Consultant) responded that it can be derived from a sulphur source, or off gas from a petroleum refinery. He stated that it is sometimes used as a gaseous input. However, production is limited due to the use of mercury in manufacture.
- Dr. Courtar (Suriname) questioned the methods by which mercury waste should be handled in a hospital, whether it should be isolated altogether or simply placed in a special container. Mr. Hoffman (Consultant) responded that the human health and environmental risks of blood-bearing wastes and other medical wastes present different issues to mercury-bearing wastes.

He recommended identifying a well-ventilated, secure space for mercury waste because the training and response for a spill is very different to biological waste. He also mentioned that in the event of a fire, whilst biological waste may present concerns of atmospheric emissions, mercury wastes can potentially contaminate the entire hospital. Mr. Hoffman (Consultant) advised that the cheapest course of action would be to replace mercury bearing equipment. Dr. Narvaez (UNEP Chemicals) agreed with Mr. Hoffman's recommendation for mercury waste segregation and directed Dr. Courtar to the Sourcebook provided to obtain further clarification to his question.

- Ms. Elias-Samlalsingh (Atlantic, Trinidad) shared an overview of Atlantic's procedure for dealing with spills which include their internal system for initial incident notification. Dr. Courtar (Suriname) asked about procedures carried out by the other countries to deal with spills. Ms. Beejai (EMA, Trinidad) shared the Ministry of Health's national policy to deal with biomedical wastes and other procedures. Mr. Hoffman (Consultant) emphasized the need for spills to be part of an overall national plan per country and the importance of proper reporting. Ms. Elias-Samlalsingh (Atlantic, Trinidad) stated that reports are tailored for the receiving agency, taking into consideration corporate confidentiality.
- Ms. Lewis (National Environment and Planning Agency, Jamaica) shared that the fire brigade is one of the first respondents to incidences such as spills in Jamaica, but to date there has been limited training for the first respondents. Mr. Hoffman (Consultant) shared that this was previously an issue in the United States whereby firefighters were unable to handle industrial fires, but they have now benefitted from relevant trainings and helpful resources.
- Ms. Elias-Samlalsingh (Atlantic, Trinidad) questioned which agencies or organizations (local or international) have the responsibility to verify the shipment of waste in an environmentally sound manner. Mr. Hoffman (Consultant) stated that both the exporting and the receiving countries need to meet national regulations and the requirements under the Basel Convention. He informed the participants that the World Court could take action if international shipments of hazardous wastes did not meet both national and international requirements.
- Mr. Hoffman (Consultant) advised that companies conduct their own investigations on insurers who serve companies receiving waste. He noted that there is a trend among insurers to provide costly and specific terms of coverages especially for companies which utilise mercury. These companies have resorted to alternate processes, excluding the use of mercury altogether. Mr. Hoffman (Consultant, S. Hoffman) also highly recommended companies to conduct independent, third party audits when large quantities of waste have to be shipped. He suggested organizations such as the European Union and the EPA support the concept of using third party audits to verify that Basel and/or national export requirements are being met.
- Ms. Lewis (National Environment and Planning Agency, Jamaica) shared an overview of the procedures conducted in Jamaica for companies wishing to export mercury. She stated that countries receiving the waste must be a signatory to the Basel Convention and consent must be received from the receiving country as well as countries in close proximity to the shipping route. A copy of the receiving company's insurance documentation must also be provided which will be reviewed by the legal department before the shipment of waste can be permitted. Mr.

Hoffman (Consultant) reiterated that an insurance policy does not guarantee protection of the sender of the waste. He stated that insurance companies may try to either deny coverage or pay in incremental stages. He re-emphasized the need for third party audits and the involvement of the Government throughout the process.

- Ms. Lewis (National Environment and Planning Agency, Jamaica) stated that there have been recent efforts in which local companies wishing to export waste are mandated to have insurance to cover the waste exported. She stated that the insurance process is very difficult as insurance companies are not willing to insure waste. Mr. Hoffman (Consultant) said that the United States EPA also faces the challenge with environmental liability insurance and provided an overview of the steps taken.
- Ms. Elias-Samlalsingh (Atlantic, Trinidad) mentioned that there are some companies which are mandated to set aside money to cover the costs in the event of an incident. Mr. Hoffman (Consultant) gave examples of countries which practice this.

Presentation 9: Storage Options of Mercury Wastes – Mr. Stephen Hoffman (Consultant)

This brief presentation discussed the Basel Technical Guidelines for storage of mercury waste, types of storage facilities, and the criteria for siting and designing storage facilities.

Questions and comments

- Mr. Hoffman (Consultant) discussed the storage criteria for mercury and mercury waste. He emphasised the need to exclude drains within the vicinity of storage sites as this can lead to mercury contaminated water reaching the environment, making clean up difficult and costly. Mr. Hoffman (Consultant) recommended that drains within storage areas should be sealed and there should be with proper signage in multiple languages at storage facilities in the event of a spill.

Presentation 10: Conducting Mercury Waste Inventories and Facility Inventory: Mercury storage and disposal – Mr. Stephen Hoffman (Consultant)

The presentation described the Basel Methodological Guide for developing inventories for hazardous and other waste and explained the use of the UNEP toolkit for the identification and quantification of mercury release using the UNEP toolkit guidelines for inventories. The methodology to conduct a facility inventory for mercury storage and disposal was also explained.

Questions and comments

- Ms. Elias-Samlalsingh (Atlantic LNG, Trinidad) asked about the major pitfalls and possible solutions when conducting an inventory. Mr. Hoffman (Consultant) recommended some approaches which may be applicable.
- Dr. Courtar (Suriname) inquired about calculations to estimate the emissions as a result of open cremations. Mr. Hoffman (Consultant) confirmed that this is possible but stated that regulations

of such practices have both social and economic impacts that should be considered before any further actions are taken.

DAY 2 PROCEEDINGS

Dr. Khan (BCRC Caribbean) welcomed the participants to Day 2 of the inception workshop and presented a review of the proceedings from Day 1.

Presentations continued

Presentation 11: Regulatory Framework – Mr. Stephen Hoffman (Consultant)

This presentation captured existing regulatory framework affecting mercury storage and disposal at a local, national, regional and international level. This included legislation on hazardous substances, waste, trade, products phase-out among others. Examples of mercury related legislation in the Latin American countries were illustrated. The European Union waste legislation was discussed in terms of waste storage and disposal as well as the United States EPA mercury specific laws and regulations.

Questions and comments

- Mr. Brebnor (Tobago House of Assembly) expressed his concern with respect to the definition of mercury waste under the Minamata Convention and stated that the definition excludes mercury containing waste such as waste rock and tailings from mining (Practical Sourcebook on Mercury Waste Storage and Disposal, 2015). This concern arose because of activities such as the dumping of off-shore drilling muds (which may contain mercury) into the ocean that can potentially negatively affect Tobago, even though it may be of no threat to Trinidad. Mr. Hoffman (Consultant) assured him that the presence of mercury as a contaminant in these muds is highly unlikely. Nonetheless, he stated that these muds should still be tested for any metal contaminants. Dr. Narvaez (UNEP Chemicals) added that the mercury concentration limits for these muds are yet to be determined by the Conference of the Parties for the Minamata Convention and the Basel Convention.
- Ms. Elias-Samlalsingh (Atlantic, Trinidad) stated that any legislation or regulation written for industrial purposes should provide specific quantitative data such as the allowable concentrations for which a particular chemical may be present. She explained that the exclusion of numerical limits from a piece of legislation makes it very difficult for industries to adhere to guidelines. Mr. Hoffman (Consultant) added that for organizations such as the United States EPA, a timeframe for compliance of any guideline set by a piece of legislation is also specified. He stated that legislation regarding chemicals should include an exhaustive list of all chemicals to which it refers and the list must allow for amendments. He emphasised the need for any legislation to be concise and clear in order to avoid confusion.
- Mr. Brebnor (Tobago House of Assembly) inquired about whether the Basel Convention technical guidelines were linked to any other trade agreements. Mr. Hoffman (Consultant) confirmed that it was and stated that it had been integrated into other agreements such as the

Rotterdam Convention which may be considered the umbrella convention. He stated that countries should be aware of the conventions or agreements to which they are signatories and determine the aspects which may be used as guidance.

- Dr. Narvaez (UNEP Chemicals) directed participants to the Global Mercury Partnership website to receive further information about previous projects on mercury.
- Dr. Khan (BCRC-Caribbean) mentioned that at the last Conference of the Parties (COP) meeting, a memorandum of understanding was signed among the BRS Secretariat, World Trade Organisation and the World Customs Organization formalizing linkages among the groups. He stated that in Trinidad and Tobago regulations are not specifically written with rigid limits, which may be as a result of the Caribbean laxed approach to regulations.
- Ms. Beejai (EMA, Trinidad) stated that the draft Waste Management Rules uses the schedule of waste as described in the Basel Convention and rigid numeric limits are not set as it is found in the United States EPA Resource Conservation and recovery Act (RCRA).
- Ms. Elias-Samlalsingh (Atlantic, Trinidad) emphasized the need for limits to be specified for industrial purposes in order to avoid pressures from industries. Ms. Beejai (EMA, Trinidad) agreed with Ms. Elias-Samlalsingh and agreed to take the comments back to the EMA. Mr. Hoffman (Consultant) also agreed with the need to set specific numeric standards for industries. Ms. Elias-Samlalsingh (Atlantic, Trinidad) added that test methods should also be included within the guidelines. Mr. Hoffman (Consultant) directed the participants to review test standards utilized by the EPA which may save time and money. He also said trade agreements provide environmental support to Parties.
- Ms. Lewis (National Environment and Planning Agency, Jamaica) mentioned that there exist some limits for emissions as it pertains to air quality regulations in Jamaica. The limits have helped significantly with the enforcement of regulations and licensing of facilities within the country.

Presentation 12: Recovery Operations and Disposal Operations – Mr. Stephen Hoffman (Consultant)

These presentations provided a detail description of the 'R and D' codes used in the Basel technical Guidelines to address recovery and discovery operations. The difference between recovery and treatment was explained and the steps for recovery were identified. The types of treatment for mercury waste were also addressed.

Questions and comments

- Ms. Elias-Samlalsingh (Atlantic, Trinidad) asked about the methods of treatment for recoverable catalysts when they are returned to the manufacturer to recover mercury and metals such as copper. Mr. Hoffman (Consultant) explained that the procedure to be used should follow the Basel Technical Guidelines: Classification of recovery operations for catalysts. Ms. Elias-Samlalsingh (Atlantic, Trinidad) stated that catalysts are used extensively in the country and most are exported for regeneration or disposal. She indicated that there have been requests to have a regional facility to regenerate catalysts. Mr. Hoffman (Consultant) stated that the

regeneration of catalysts is a complicated process and he would not be able to determine the cost effectiveness of such a venture. He provided some factors to be considered in handling catalysts contaminated by mercury as well as waste water containing trace amounts of mercury.

Presentation 13: Export of Mercury Wastes– Mr. Stephen Hoffman (Consultant)

This presentation discussed the criteria for exporting mercury waste and the legal considerations associated with the export. Export management issues were mentioned and the elements of environmentally sound management for the export of mercury waste were explained.

Questions and comments

- Dr. Yarde (CARICOM Secretariat) commented that the export of hazardous waste for recovery is permitted under the Basel Convention. She stated that mercury is allowed to be shipped to another country to be recovered as a raw material in another process. She then queried about the procedure for the global export of mercury and the importance to the importing country. Mr. Hoffman (Consultant) shared his experience in Ghana where there is a categorical ban on the import of elemental mercury, but the import of dental mercury is allowed. Tonnes of mercury are imported as amalgam but upon successful entry, it is often used in ASGM. He suggested that the import of amalgam to the country should be examined and recommended that national plans assess the imports of mercury which remain in the country. Dr. Narvaez (UNEP Chemicals) stated, that the excess mercury supplies were coming from the bigger regions such as the United States and the European Union.
- Dr. Yarde (CARICOM Secretariat) stated that at present in the Caribbean, some hazardous wastes are transported under the Basel Convention not for disposal but for recovery. She asked if it would be valid for mercury waste to be exported for recovery, in a case where the receiving country is likely has excess mercury. Mr. Hoffman (Consultant) advised that in such cases where the receiving country has no demand for mercury, there may be no guarantee that the mercury is being recovered can be used for the stipulated purposes.
- Ms. Elias-Samlalsingh (Atlantic, Trinidad) inquired about the manufacturer's take back system for catalysts if the manufacturer states that the catalysts can be reused. Mr. Hoffman (Consultant) confirmed that this system will work once the catalyst has material value and can be reused once the metals in it have been reconstituted.
- Ms. Elias-Samlalsingh (Atlantic, Trinidad) questioned whether there exist any legal requirements for a shipping company to ship hazardous waste. Dr. Courtar (Suriname) stated that he is aware that some private companies ship mercury to the United States and asked about the responsibilities of the United States EPA in this regard. Mr. Hoffman (Consultant) clarified that the assurance of the EPA begins when the waste is landed in the United States and not in transit. Dr. Dhaniram (BCRC-Caribbean) stated that Trinidad and Tobago has a Shipping Act under the Ministry of Transport, which covers the movement of hazardous material at sea. The Act requires that all ships for transporting hazardous cargo must be registered. She also stated that they are signatory to the Marpol Convention. Mr. Hoffman (Consultant) suggested a review of the Marpol Convention to determine if mercury is included in the list of wastes. Dr. Yarde

(CARICOM Secretariat) reiterated the need for due diligence when registering ships within your country.

- Dr. Courtar (Suriname) stated that Suriname has an upcoming oil industry, hence the potential for mercury waste and sought advice on managing this waste before the country can be a party to the Minamata Convention. Mr. Hoffman (Consultant) recommended discussions with the industries to determine the process flows, mercury sources and waste streams.

Presentation 14: Possible Elements of a National Action Plan for Mercury Waste Storage and Disposal – Mr. Stephen Hoffman (Consultant)

This presentation concluded the technical presentations for the inception workshop. Mr. Hoffman (Consultant) spoke about the activities expected to be carried out for the project and the expected outputs and outcomes of the project.

Questions and comments

No questions or comments.

Work plan

Dr. Narvaez (UNEP Chemicals) spoke to the participants about drafting a work plan for their country over the next twelve months for the implementation of the mercury storage and disposal project for the Caribbean region. Dr. Narvaez (UNEP Chemicals) provided an overview of the objectives of the work plan and explained the steps for the execution of the project. Participants from each of the three countries were asked to complete the work plan for their country and comment on the effectiveness of the sourcebook.

Presentation of work plans

Each country presented their work plan for the implementation of the mercury and mercury storage project. The plan summarized some of the main tasks to be executed from inception to implementation, the persons responsible, stakeholders involved, resources required and the timeframe for each task. The work plans for Jamaica, Suriname and Trinidad and Tobago can be found in Annex III.

Questions and Comments - Jamaica

Ms. Lewis (National Environment and Planning Agency, Jamaica) expressed her appreciation for the opportunity to participate in the workshop and explained that the workshop was very useful in helping her learn about the Minamata Convention. She described the Sourcebook as very informative as it provided her with a wealth of knowledge she did not know previously.

Questions and Comments - Suriname

Dr. Courtar (Labour Inspectorate, Suriname) expressed his appreciation for the opportunity to participate in the workshop since he was able to learn a lot and can now share this information with his

colleagues in Suriname. He also requested that the Sourcebook be translated to Dutch for his colleagues, to which the BCRC-Caribbean took the responsibility.

Dr. Narvaez (UNEP Chemicals) recommended the inclusion of an inventory for mercury and mercury wastes in the work plan.

Questions and Comments – Trinidad and Tobago

Dr. Narvaez (UNEP Chemicals) commended the quality of the presentation by Trinidad and Tobago.

Ms. Smith (Ministry of Environment and Water Resources, Trinidad) stated there was a general appreciation for the sourcebook and commended its practicability and real-life examples. She also stated that more time is required to analyse the Sourcebook comprehensively in order to provide adequate feedback.

Closing Remarks

Dr. Khan (BCRC-Caribbean) recapped the achievements of the workshop which included bringing together countries involved in the extractive industries, a review of the knowledge-based material within the sourcebook and the creation of a work plan for handling the storage and disposal of mercury waste. He expressed the willingness of the BCRC-Caribbean to host these workshops as part of its mandate. He added that though mercury may not be considered to be a significant issue within the Caribbean, it is still essential that the Caribbean region include its voice globally in the implementation of the Minamata Convention.

Dr. Courtar (Suriname) thanked the BCRC-Caribbean on behalf of the participants for the opportunity to partake in the workshop and presented a token of appreciation to Dr. Khan (BCRC-Caribbean). Dr. Yarde (CARICOM Secretariat) thanked the BCRC-Caribbean for the opportunity to participate in the workshop and as such the opportunity to be privy to some of the issues being faced by the individual countries within the Caribbean region with regards to mercury, as well as for the opportunity to strengthen the bond between the BCRC-Caribbean and the CARICOM-Secretariat. Ms. Lewis (National Environment and Planning Agency, Jamaica) expressed gratitude for the ability to participate in the workshop and the wealth of knowledge it has provided. Mr. Hoffman (Consultant) thanked the BCRC-Caribbean for the opportunity to present at the workshop and expressed confidence that the project will be a success. He congratulated the countries on the progress made thus far.

Next Step forward

In accordance with the Funding Agreement between the UNEP and BCRC-Caribbean, the next steps forward to execute the project include:

- Establishment of an inter-agency/inter-ministerial committee in each country;
- Establishment of a national working group in each country;
- National interagency meetings and workshops in each country;
- List of generators of mercury wastes for each country;

- Inventories of mercury waste streams in each country;
- Preliminary list of potential temporary storage locations in each country;
- List of companies authorized for the treatment, storage or disposal of hazardous waste in each country;
- Assessment of the domestic management infrastructure in each country;
- Summary report on the regulatory framework relevant for hazardous waste management and mercury in each country;
- Report on the basic management options, including evaluation and recommendations in each country;
- Results workshop; and
- Report of the results workshop.

ANNEX I

OFFICIAL LIST OF PARTICIPANTS



Inception Workshop
Norway ODA Mercury Storage and Disposal Project in the Caribbean
(Jamaica, Suriname, Trinidad and Tobago)
12th – 13th August 2015
Hilton Trinidad & Conference Centre
Port-of-Spain
OFFICIAL PARTICIPANT LIST

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ANNEX II
FINAL AGENDA



Inception Workshop
Norway ODA Mercury Storage and Disposal Project in the Caribbean
(Jamaica, Suriname, Trinidad and Tobago)
12th – 13th August 2015
Hilton Trinidad & Conference Centre
Port-of-Spain
OFFICIAL PARTICIPANT LIST

FINAL AGENDA		
DAY 1 12 TH AUGUST		
9.00	Opening Safety Briefing	Dr. Ahmad A. Khan, Director, BCRC-Caribbean Hilton Trinidad Hotel and Conference Centre
9.15	Opening Remarks	Dr. Desiree Montecillo Narvaez UNEP Chemicals Branch Representative
9.30	Introduction of Participants	Participants
	Overview of the mercury process (Partnership and Convention)	Dr. Desiree Montecillo Narvaez UNEP Chemicals Branch Representative
	Mercury projects and initiatives <ul style="list-style-type: none"> • Jamaica • Suriname • Trinidad and Tobago 	<ul style="list-style-type: none"> • Jamaica Representative • Suriname representative • Trinidad and Tobago representative
10.30	<i>Coffee Break</i>	
10.45	Project mandate, background, objectives, activities relevance to ratification process; expected output	Dr. Desiree Montecillo Narvaez UNEP Chemicals Branch Representative
11.15	Overview of the “Sourcebook on Mercury Waste Storage and Disposal”	Mr. Steven Hoffman International Consultant

FINAL AGENDA		
12.00	Lunch	
13.00	A suggested framework for decision making for the safe management of redundant mercury	Dr. Desiree Montecillo Narvaez UNEP Chemicals Branch Representative
14.00	Types, identification and sources of mercury wastes; inventory of major mercury waste streams; sources of mercury waste	Mr. Steven Hoffman International Consultant
14.30	Break	
15.30	ESM of mercury waste for the main waste streams; Storage; Recovery and Recycling	Mr. Steven Hoffman International Consultant
16.00	Survey and analysis of possible temporary storage locations in the country	Mr. Steven Hoffman International Consultant
18.30	Closure of Day 1	Mr. Ahmad A. Khan, Director, BCRC-Caribbean
DAY 2 13TH AUGUST		
9.00	Recap of day 1 discussions	Dr. Ahmad A. Khan, Director, BCRC-Caribbean
09.15	Review of regulatory framework	Mr. Steven Hoffman International Consultant
10.30	Break	
11.00	Assessing basic management options: Disposal operations	Mr. Steven Hoffman International Consultant
12.00	Export of mercury waste; clean-up of sites contaminated with mercury waste	Mr. Steven Hoffman International Consultant
13.00	Developing national mercury storage and disposal action plan	Mr. Steven Hoffman International Consultant
13.30	Lunch	
15.00	Establishing decision-making process	Dr. Desiree Montecillo Narvaez UNEP Chemicals Branch Representative
15.30	Drafting of project work plan by country	Dr. Desiree Montecillo Narvaez UNEP Chemicals Branch Representative
16.00	Break	
17.00	Presentation of project work plan by country ⁱ	<ul style="list-style-type: none"> • Jamaica Representative • Suriname representative

FINAL AGENDA

		<ul style="list-style-type: none">• Trinidad and Tobago representative
17.30	Closure of the meeting	Dr. Ahmad A. Khan, Director, BCRC-Caribbean

ANNEX III
WORK PLANS

WORKPLAN FOR THE IMPLEMENTATION OF THE MERCURY STORAGE AND DISPOSAL PROJECT IN JAMAICA

GENERAL OBJECTIVE : Sustainable Management of Mercury in Jamaica

Specific Objective 1: To assess the national situation on Mercury					
Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
Complete assessment of the National Situation	<ol style="list-style-type: none"> 1. Create Project Steering Committee 2. Identification of key sources of mercury in Jamaica. 3. Meet with relevant stakeholders identified. 4. Quantify the key sources of mercury in Jamaica 	MWLECC/ OPM	NEPA MOH NGO Private Sector MSTEM NSWMA	6 months	Existing Inventories Staffing Gov. budget Private Funding
National Inventory of mercury	<ol style="list-style-type: none"> 1. Obtain detailed information from industry with mercury sources for the inventory 2. Updating of existing 	NEPA	MOH Private Industries NSWMA	1 year	Existing Inventories UNEP Toolkit Staffing Private Funding

	inventories 3. Identification of possible storage facilities for Mercury				
Specific Objective 2: To review existing regulations addressing Mercury and Mercury Waste and update or develop new regulations as needed and implement the National Action Plan					
Implementation of the National Action Plan	<ol style="list-style-type: none"> Develop National waste management and storage action plan on Mercury Pilot testing of Action Plan Implementation of the National Action Plan 	MWLECC/ OPM	NEPA MOH MTW Ministry of Justice	1 year	Existing Regulations Draft OSHA Act Staffing Gov. Budget Private Funding
Regulations governing Mercury and Mercury Waste	<ol style="list-style-type: none"> Review existing Regulations to determine gaps Implementation of Legislation (transportation, handling and 	MWLECC/ Ministry of Justice	NEPA MTW MOH MOL Ministry of		Staffing Gov. Budget

	storage)		Investment and Commerce Standards and Regulatory Affairs Division		
Specific Objective 3: To increase Public Education and Awareness on Mercury					
Public Education and Awareness	<ol style="list-style-type: none"> 1. Develop a National guideline for the handling of mercury 2. Increase awareness of the availability of information of mercury through the PRTR and ATI Act 	MOH/NEPA	NSWMA MOL	6 months	Private Funding Staffing

WORKPLAN FOR THE IMPLEMENTATION OF THE MERCURY STORAGE AND DISPOSAL PROJECT IN SURINAME

GENERAL OBJECTIVE : SUSTAINABLE MANAGEMENT IN PLACE FOR MERCURY WASTE AND HEAVY CONTAMINATED AREAS

Specific Objective 1: strategies and programs available for identification and assessment of polluted areas					
Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
1.1 development guidelines for identification and assessment of polluted areas	POLICY LEVEL STEERING COM LEVEL EXECUTING LEVEL	NIMOS/MOL	NIMOS MOL PRIVATE SECTOR WWF	SHORT TERM (1 – 2 yr.)	GOV. BUDGET GEF PRIVATE FUNDING
1.2 adoption of ILO OSH in mining for occupational and environmental health risks and related issues	SENSIBILIZATION AND DISSEMINATION ILO-OSH, NEMS, DWCP	MOL	NIMOS MIN NATURAL RESOURCES	SHORT TERM	GOV BUDGET ILO FUNDING
Specific Objective 2: standards for treatment and waste management is in place					
2.1 Development guidelines for waste management	REGULAR MEETINGS CONSULTING	NIMOS	MOL MIN PUBLIC AFFAIRS MIN HEALTH MIN REGIONAL AFFAIRS	SHORT TERM	GOV BUDGET

2.3 Development of guidelines for temporarily storage facility	IDENTIFICATION OF POTENTIAL SITES	NIMOS	MOL MIN PUBLIC AFFAIRS MIN REGIONAL AFFAIR PRIVATE SECTOR	SHORT TERM	GOV BUDGET PRIVATE FUNDING
2.3 standards in Mineral decree is reviewed and updated in accordance with Basel	INVITATION EXPERTS REGULAR MEETINGS	MIN NAT RESOURCES	BASEL FOCAL POINT MOL MULTINATIONALS	SHORT TERM	GOV BUDGET
Specific Objective 3: management of contaminated sites					
3.1 Preliminary assessment in the workplace and in ASGM sites	EXECUTING STAFF COORDINATING MECHANISM	MOL	NIMOS MIN HEALTH MIN NATURAL RESOURCES MIN REGIONAL AFFAIRS PRIVATE SECTOR	SHORT TERM	GOV BUDGET PRIVATE FUNDING
3.2 Site investigation in the oil, bauxite and refineries	EXECUTING UNITS WEEKLY MEETINGS	MOL	NIMOS MIN REGIONAL AFFAIRS OIL AND BAUXITE SECTOR	SHORT TERM	GOV BUDGET PRIVATE FUNDING

WORKPLAN FOR THE IMPLEMENTATION OF THE MERCURY STORAGE AND DISPOSAL PROJECT IN TRINIDAD AND TOBAGO

GENERAL OBJECTIVE : To create a Framework for ESM of Hg Storage and disposal for T&T

Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
Specific Objective 1:					
Determine whether the Project is still a National Priority following General Elections					
Obtain written confirmation on whether the Project is still a National Priority	Conduct internal meetings in the MEWR to determine the priority of the Project following General Elections.	EPPD	-	5 months	GORTT
Specific Objective 2:					
To establish a National Steering Committee for the Project.					
Establishment of a National Steering Committee	Identify the stakeholders (private and public sector including NGOs and CBOs) and contact persons for each	Ministry of Environment and Water Resources (MEWR)	<ul style="list-style-type: none"> • Environmental Management Authority (EMA) • BCRC-Caribbean 	2 weeks	- GORTT

Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
	stakeholder.				
	Formally contact stakeholders (via official correspondence, telephone, e-mail) to discuss the requirements of the Project.	MEWR	-	1 month	- GORTT
Define the Work Plan for the Committee	Identify the objectives of the Committee, form sub-committees for specific objectives and establish milestones for the Committee	MEWR	BCRC	1 month	GORTT INTERNATIONAL FUNDING
<p>Specific Objective 3:</p> <p>Assess National Legislation and Propose Regulation as necessary</p>					

Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
Generate a Report on the review of all existing legislation, conventions and operational plans/policies with the Minamata Convention	Review and compare the existing legislation and conventions to which T&T is signatory (local and regional) to the Minamata Convention.	MEWR	<ul style="list-style-type: none"> • EMA • BCRC-Caribbean • Min. of Energy and Energy Affairs • Min. of Health • Min. of Transport • Min. of Trade (MTIIC) • Customs and Excise Division • Tobago House of Assembly/TEMA • Min. of National Security (ODPM, Coast Guard, Fire Services) • DNRE 	2 months	GORTT

Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
			<ul style="list-style-type: none"> • SWMCOL 		
	Review and compare the operational plans and procedures of the various governmental agencies and private sector with the Minamata Convention.	MEWR	<ul style="list-style-type: none"> • Private Sector Organizations (AUOTT, TTMA, AMCHAM, Chamber of Commerce) • BCRC 	2 months	GORTT
Generate a Report Develop a Gap Analysis of the existing regulatory framework with the Minamata Convention	Compile the information generated from the review of existing regulatory framework (above) and make recommendations	MEWR	National Committee BCRC Ministry of Legal Affairs	2 months	GORTT

Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
Specific Objective 4: Conduct or Update a Mercury Waste Inventory					
Develop a Mercury Waste Inventory	Review the existing Hazardous Waste Inventory and use the Mercury Toolkit to develop a Mercury Waste Inventory	EMA	BCRC-Caribbean MEWR SWMCOL	6 months	GORTT, GREEN FUND
Specific Objective 5: Determine the Organizational Structure					
Confirm the Organizational Structure	Identify the staffing demands to manage the requirements the mercury waste storage and disposal plan.	EMA	MEWR BCRC-Caribbean	3 months	GORTT, GREEN FUND
Specific Objective 6: Identify the ESM options for Storage and Disposal					
Identify ESM	Assess the current storage and disposal options in T&T (disposal companies and technologies used to process	EMA	National Committee	4 months	GORTT, GREEN FUND

Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
	mercury waste)				
	Conduct a feasibility study on the use of local options versus export	MEWR	EMA	2 months	GORTT
Specific Objective 7: Assess costs of implementation (funding options)					
Generate a Report on the cost of Implementation	Determine the funding options for developing or improving on local options for storage and disposal versus export	National Committee	BCRC-Caribbean	3 months	GORTT,INTERNATIONAL
Specific Objective 8: Determine Schedule for Implementation					
Specific Objective 9: Implementation					
Implementation of the Action Plan	Identify the responsible persons/entities for	National Committee	BCRC-Caribbean	3 months	GORTT,INTERNATIONAL

Output/Activities	Tasks	Responsible	Partners	Timeframe	Resources
	various aspects of the Plan				

The Basel Convention Regional Centre for Training and Technology

Transfer for the Caribbean Region

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