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On 30 May 2019SPREP Registry

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Minamata Initial Assessment – MERCURY Inventory Development in the South Pacific

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## **BACKGROUND**

The Minamata Convention on Mercury, opened for signature in October of 2013, and ratified on 16 August 2017, is the first global legally binding agreement specifically designed to address contamination from a heavy metal. Under the Minamata Convention, individual countries are charged with protecting human health and the environment from the risks of mercury exposure by systematically controlling mercury emissions and releases, including phasing out the use of mercury in certain products and processes. The major highlights of the Convention include a ban on new mercury mines, the phase-out of existing ones, control measures on air emissions, and the international regulation of the informal sector for artisanal and small-scale gold mining.

The South Pacific countries of Cook Islands, Kiribati, Palau, Tonga, and Vanuatu, with funding from the Global Environment Facility (GEF), are undertaking a regional Minamata Initial Assessment (MIA) project to enable their respective countries to determine the national requirements and needs for the successful ratification and subsequent implementation of the Minamata Convention. To this end, the relevant ministries in each country, with support from the Secretariat of the Pacific Regional Environment Programme (SPREP), will undertake a series of activities including:

1. Developing a mercury inventory using the UNEP mercury toolkit and strategies to identify and assess mercury contaminated sites;
2. Drafting a National Mercury Profile that summarizes the major sources of mercury emissions and releases in their countries, and;
3. Preparation and validation of a national MIA report including an assessment and analysis of national institutional and legislative gaps in mercury management, implementation of awareness raising activities and dissemination of results.

The work plan included here provides an outline of the major activities that will be conducted by the team of consultants from BRI and a detailed Gantt chart summarizing the major project activities as well as the responsible parties and a timeline for all activities.

# Introduction, Scope of Work

This document represents the work plan for the UNEP/GEF project for ***Inventory Development in the South Pacific Region*** that is part of the larger regional Minamata Initial Assessment. The project includes 5 participating countries: Cook Islands, Kiribati, Palau, Tonga, and Vanuatu. The overall objective of the project is to coordinate and supervise the national mercury inventory process in each of the 5 participating countries and assist with the preparation of a National Mercury Profile summarizing the results of the inventory. In addition, a final project document, the Minamata Initial Assessment report will be developed as will a strategy for identifying sites where contamination from mercury and mercury-containing compounds may be of elevated risk.

Tasks to be carried out, in parallel, in each country will include:

* Supervision of Inventory Data Collection
* Sampling and analyses of cosmetics, fish, and hair (informally if requested) for mercury
* Identification of Contaminated Sites
* Review of Inventory Data Spreadsheet
* Drafting of National Mercury Profile
* Review of Institutional and Legislative Gap Analyses
* Review of National Minamata Initial Assessment report
* Dissemination of Results with country-specific communication pieces

The submission of this work plan is considered the initial primary task for the project. It is submitted to SPREP for approval. Once approved, the document and the tasks and activities outlined herein will serve as the primary organizational document for the execution of the inventory and subsequent enabling activities. Below is a brief summary of the activities that will be conducted to complete the above-mentioned tasks.

**Task 1. Submission of approved work plan**

 The approved draft work plan will be presented at the inception workshops in each country for approval by members of the National Steering Group, the National Project Coordinator (NPC) and SPREP. Upon approval, a final work plan will be submitted to SPREP.

**Task 2. Supervision of Inventory Data Collection**

 Inception workshops and inventory trainings will be held in each participating country. Prior to these meetings the NPC will be familiar with the MercuryLearn Training program developed by UNITAR and UNEP (access via: http://mercurylearn.unitar.org/). This on-line training will provide the NPC with important background information on concepts and methods for data collection needed for the mercury inventory. Efforts will be made to review necessary methods and approaches for data collection related to the mercury inventory. Data collection protocols and questionnaires will be developed as needed to assist with data collection.

 Following the inception workshop and inventory training based on UNEP’s *Toolkit for the Identification and Quantification of Mercury Releases*, off-site supervision will include regular Skype meetings (as needed) to review progress and address any challenges with data collection. In addition, the NPC will be asked to submit progress reports on data collection, with a particular focus on the major sectors that include activity rates, input factors and distribution factors that will be necessary for the accurate estimation of mercury emissions and releases.

**Task 3. Identification of Contaminated Sites**

Article 12 of the Minamata Convention calls on Parties to develop strategies for identifying sites contaminated by mercury and mercury-containing compounds. As part of this project, a strategy will be developed to begin this process that will incorporate readily available national-scale data on potential point sources of mercury and ecosystems that might be sensitive to mercury inputs. Spatially explicit data layers that include the locations of major habitats, land use, soils, geology, water bodies (including lakes, rivers, streams) as well as the locations of potential point sources of mercury will be incorporated into a model to help identify areas of the country that are sensitive to mercury inputs from a standpoint of methylmercury generation and availability.

In addition to the desk-top work on identifying potential contaminated sites, an assessment of mercury concentrations in fish and cosmetics from each island will be conducted. The fish assessments will target commonly consumed fish as well as upper trophic level, predatory fish. The primary goal of this component of the project is to provide useful information to the general public that focuses on healthy versus risky choices of fish that can be consumed and the frequency with which various types of fish can be consumed without risking mercury exposure. Under Article 16.1(a) of the Minamata Convention, parties to the convention are encouraged to develop “…science-based health guidelines relating to the exposure of mercury and mercury compounds…”.

The cosmetic assessment will target skin-lightening creams that were produced within the South Pacific region and sold on each of the island (n = 10-20). The cosmetics will be analyzed in a two-step approach. The first step will use a Lumex or XRF to determine generic level of mercury (i.e., none, some or very elevated). The second step will use a Direct Mercury Analyzer for the creams that have some Hg to establish the actual concentration so there can be an evaluation of the number of creams above or below 1ppm (the level identified in Annex A of the Minamata Convention).

All data produced under these projects are bound by confidentiality. No data will be released prior to consent of representatives from each of the 5 countries and SPREP. Country-specific reports will be generated for each country on fish and cosmetic assessments.

Hair sampling from a small group of people will also be informally conducted if requested by the country (i.e., funding is from IPEN and is outside of the MIA formal process).

**Tasks 4 & 5. Review of Inventory Data Spreadsheets & Development of a National Mercury Profile**

Under this activity, the National Project Coordinator for each island will conduct a rapid assessment of mercury emission and release sources. Data sources will utilize sources specific to the sector of interest and where feasible, will incorporate data on specific point sources. Other potential data sources should include periodic reports from industrial facilities/companies as well as on-site mass-balance assessment methods and data from environment permits and inspections of industrial facilities/companies. Ambient environment quality monitoring that measure mercury in air, water and soil are important data sources. Customs offices are responsible for the control and registration of imported and exported products that among others include control of substances/products of dual use the standard list and classification codes of which are defined by the special regulation. Other potential sources for mercury data might be the Ministry of Health and related ministries, research labs of natural and applied science faculties of major universities and colleges, industrial facilities, cement plants, coal-fired power plants, medicinal waste incineration facilities, chemical industries (e.g., chlor-alkali acetaldehyde, polyurethane production industries). In some instances, it may also be important to confirm the presence/absence of mercury use in jewelry jobs as it is often used to amalgamate gold dust created during jewelry production.

National Project Coordinators will be provided with questionnaires that target data needs for major sectors. These questionnaires should be used to facilitate data collection for the appropriate sectors. The general work flow for the development of the inventory will include the following steps:

1. Collection and compilation of data and preparation of an inventory of the sources, types, quantities and physical states of mercury- containing wastes generated, stored and recycled, treated or disposed of;
2. Assessment of the current levels of handling, storage and management practices for mercury- containing wastes;
3. Identification of key sectors, local authorities, communities and other stakeholders affected by or involved with important mercury sources and/or emissions;
4. Identification of opportunities and measures for the minimization, recycling, pre-treatment and disposal of mercury containing wastes;
5. Preparation of a National Mercury Profile including significant sources of emissions and releases, as well as inventories of mercury and mercury-containing compounds.

Development of the National Mercury Profile will follow the template for reporting inventory results prepared by UNEP’s Chemicals and Waste division (available at: http://web.unep.org/chemicalsandwaste/what-we-do/technology-and-metals/mercury/toolkit-identification-and-quantification-mercury-releases).

BRI will work with the NPCs of each country to (1) provide sample questionnaires and feedback on questions regarding the Hg inventory data collection, (2) review the draft and final Hg inventories and (3) review the draft and final National Mercury Profiles.

**Tasks 6 and 7. Review of National Institutional and Legislative Gap Analyses and National Minamata Initial Assessment report**

As assessment of key institutions (governmental and non-governmental) will be conducted in each country to determine gaps, capacity needs and barriers (legal and functional) to meet the requirements of the Convention, including preparation of recommendations related to the establishment of the Minamata Initial Assessment (to initiate policy discussions and define country strategy and specific steps for the ratification of the Convention). The major focus will be on ministries, as being the foremost agencies with mercury management. The institutional analysis will be carried out through the desktop review of existing reports and charters of relevant agencies as well as through the structured/semi-structured interviews with and questionnaire surveys of relevant staff of these institutions. BRI will assist the NPCs in each country in the development and review of the Institutional Gap Analysis.

In parallel, a review of existing legal-regulatory and policy frameworks regulating production and use of mercury will be conducted. Relevant laws, regulations and policies that address production, storage, trade, industrial and/or household application, environmental release, inventory, registration and reporting of hazardous substances and wastes, management of contaminated sites, management of industrial accidents, and other elements as needed will be assessed. Based on the review, gaps related to the mercury management in general, and to the implementation of the Mercury Convention in particular, will be identified and will be followed by the elaboration of legal-regulatory and policy recommendations to strengthen the mercury governance and ultimately, to set an enabling environment for implementation of the Minamata Convention.

The legislative gap analysis together with institutional assessment will be complied in one capacity needs assessment as part of the National MIA Report. BRI will work with the NPCs of each country to (1) provide an effective template for comprehensive collection of national information and (2) review the Legislative Gap Analysis in addition to the Institutional Gap Analysis.

The National MIA report will incorporate a summary of the major emissions and releases in the country as well as a review of the major institutional and legislative gaps identified during the MIA process. BRI will help to coordinate input from the National Project Coordinator and relevant stakeholders to develop a comprehensive MIA report. The report will seek to identify populations at risk of mercury exposure including gender dimensions.

The MIA report will also include an important section that identifies priorities for future action related to potential interventions and the incorporation of Best Available Technologies and Best Environmental Practices (BAT/BEP). The Secretariat of the Minamata Convention, in collaboration with partnership area groups have developed a series of proposals for BAT/BEP standards. These standards will be finalized prior to the INC8/COP1 meeting for the Minamata Convention, currently scheduled for late September.

The National MIA report will follow established guidelines for MIA reporting. These guidelines are available here (http://www.undp.org/content/undp/en/home/librarypage/environment-energy/chemicals\_management/undp-minamata-initial-assessment-guidance-.html) and are briefly summarized below.

1. Executive summary:
2. Introduction;
3. National background information;
4. Mercury inventory and emission sources;
5. Assessment of legal-regulatory, policy and institutional frameworks and capacity needs;
6. Identification of populations at risks and gender dimensions
7. Awareness/Understanding of Key Stakeholders and the Public; and Existing Training and Education Opportunities of Target Groups and Professionals
8. Implementation Plan & Priorities for Action
9. Annexes: (a) Stakeholder engagement; (b) Filled in UNEP toolkit calculation spreadsheet.
10. References

The National Working Groups (NWG) established for each country will review the draft MIA report and provide to BRI for review – there may be 1-2 iterations between the NWGs and BRI.

**Tasks 8. Dissemination of Results**

The development of the overall communications strategy for the MIA will be the responsibility of SPREP. However, national workshops will be held to present the overall results of the National Mercury Profiles and National MIA reports. These workshops will be organized and coordinated by the National Project Coordinators in each country and will include representation from all of the major sectors responsible for mercury emissions and releases in each country.

The findings of sampling efforts of the fish and cosmetics, as well as the mapping of contaminated sites and mapping of biological mercury hotpots will be presented by BRI at the validation workshop.

As part of these national workshops, BRI will prepare a communication piece that summarizes the results of the strategy for identifying contaminated sites as well as the results from the fish mercury analysis. The format of these communication pieces has yet to be defined and drafts will be circulated to SPREP and members of the Project Steering Committee for approval prior to completion.

# III. Project Gantt Chart: Red signifies Deliverable due and BLUE IDENTIFIES TIMELINE BY TASK

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