



BASEL CONVENTION

Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean Region

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GEF 5558: DEVELOPMENT AND IMPLEMENTATION OF A SUSTAINABLE MANAGEMENT MECHANISM FOR PERSISTENT ORGANIC POLLUTANTS (POPs) IN EIGHT (8) CARIBBEAN COUNTRIES

APPENDIX 1 TERMS OF REFERENCE

Reduction of UPOPs (Unintentional Persistent Organic Pollutants) emissions by improving waste management practices at landfills

(Reference number: BCRC#5558_2019_002)

Parties consenting to be served by the Centre:

Antigua & Barbuda Commonwealth of the Bahamas Barbados Belize The Republic of Cuba The Commonwealth of Dominica The Dominican Republic
The Republic of Guyana Jamaica The Republic of Trinidad and Tobago The Federation of Saint Kitts and Nevis Saint Lucia Saint Vincent and the Grenadines Suriname

BACKGROUND

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean (BCRC-Caribbean) is a member of a global network of twenty-six (26) independent regional and coordinating centres established under the Basel and Stockholm Conventions.

The Stockholm Convention on Persistent Organic Pollutants (POPs) is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment.

The BCRC-Caribbean is currently executing a regional project entitled “*GEF 5558: Development and Implementation of a Sustainable Management Mechanism for POPs in Eight (8) Caribbean Countries*”. The project is funded by the Global Environment Facility (GEF) and is being implemented through the United Nations Industrial Development Organisation (UNIDO).

OVERALL PROJECT OBJECTIVES

The project has the following five (5) objectives:

1. Strengthen the requisite human, institutional and infrastructural capacities for the compliance and implementation of the Stockholm Convention on POPs in the eight (8) Caribbean countries.
- 2. Strengthen the capacity of five (5) of the eight (8) Caribbean countries to improve waste management practices at their landfills to reduce site contamination by POPs and Unintentional POPs (UPOPs) emissions.**
3. Assess and rank potentially contaminated sites in all of the eight (8) Caribbean countries; determine contamination levels at the Guanapo Landfill in Trinidad and develop appropriate remediation strategies for future implementation at this site.
4. Manage the consolidation and off-island disposal of Polychlorinated biphenyl (PCBs) in four (4) of the eight (8) Caribbean countries.
5. Establish demonstration projects for the reduction of POPs and UPOPs in Belize (medical waste) and Ornamibo, Suriname (design and construction of an engineered landfill).

Further details can be accessed in the project document at https://www.thegef.org/sites/default/files/project_documents/GEF_5_CEO_Endorsement_Regional_Caribbean_5558_resubmission_signed_0.pdf

In this regard, the BCRC-Caribbean is seeking to recruit suitably qualified and experienced consultant(s) or firm to provide key services for the project countries as it relates to ‘**Output 2.1: Improved waste management practices and landfill operations**’ under Objective 2 of the project. These services will lead to the overall improvement in human health and the environment due to the associated reduction in the production of UPOPs.

OVERVIEW OF OUPUT 2.1: Improved waste management practices and landfill operations'

Open burning of waste is a significant source of Unintentionally Produced Persistent Organic Pollutants (UPOPs) in the Caribbean¹. Most emissions result from dumpsite/landfill fires and from the backyard burning of municipal solid waste by households and recyclers. Potential sources of UPOPs (including polychlorinated dibenzo-para-dioxins and dibenzofurans (PCDD/PCDF)) include polyvinyl chloride (PVC) plastics/pipes, copper cable coating/housing, waste electronic and electrical equipment (WEEE), foams and synthetic carpets. These may be of concern to householders as well as the informal waste sector. When formed, UPOPs are released along with other pollutants such as heavy metals and polyaromatic hydrocarbons, which eventually contaminate the environment (air, soil and sediments).

Like the other POPs designated under the SC², when these PCDDs/PCDFs are released to the environment, there are permanent implications. They remain in nature for many years to decades or even longer. They accumulate in plants and animals, and ultimately end up in human beings through our food. Therefore, the open burning of waste needs to be effectively reduced or eliminated to protect the environment and human health.

The proposed project targets the reduction of UPOPs emissions through (i) the training of landfill operators, (ii) the development of source segregation strategies (which may prevent potentially hazardous waste from entering the landfills), and (iii) the development of adequate hazardous waste storage facilities, considering the Best Available Techniques (BAT)/ Best Environmental Practices (BEP)³ guidelines.

The training of landfill operators in five (5) project countries can contribute to improved waste management strategies which will reduce the potential for UPOPs emissions at these facilities. The project proposes the conduct of a detailed needs assessment in order to determine the gaps and barriers to the environmentally sound management of waste at each facility. The needs assessment should inform the development of sustainable training materials to support the operations of the landfill and delivery of this training in each project country.

The introduction of source separation programmes can prevent the contributing waste streams from entering the landfills in three (3) project countries which can subsequently be managed in an ESM. The proposed project seeks to develop or improve on the existing national strategies. This strategy will be informed by a thorough assessment of the existing national strategies and infrastructure. The project also proposes to support the implementation of the strategies on a pilot scale through the provision of implementation plans and the requisite technical support. Further to this, the project proposes to assist these three (3) countries with the development or upgrade of hazardous waste storage facilities in order to support initiatives to prevent the entry of hazardous waste into the landfills.

¹ Indicated in POPs Inventories conducted as part of Component 1 of the GEF 5558 project.

² <http://chm.pops.int/>

³ <http://chm.pops.int/Implementation/BATandBEP/BATBEPGuidelinesArticle5/tabid/187/Default.aspx>

DESCRIPTION OF REQUIRED SERVICES

Under the guidance of, and reporting directly to the BCRC-Caribbean, Consultant(s)/ Consulting Firm is expected to, and will be responsible for the following activities:

A. Develop and execute training programmes for five (5) countries (Antigua & Barbuda, Barbados, Saint Kitts & Nevis, Saint Lucia, Saint Vincent and the Grenadines⁴)

This activity seeks to improve the efficiency of landfill operations through the training of landfill operators and managers including the development of efficient systems for the collection and disposal of hazardous wastes containing POPs. It is expected the findings of this Activity will contribute to the development of Activity B.

Key tasks to be undertaken will include:

- i. Conduct training needs analysis⁵, at each landfill, with a focus on the hazardous waste (especially POPs) management capabilities and existing waste separation programs at the landfill. The analysis should consider each facility's existing capacity to handle hazardous wastes.
- ii. Develop specific training materials (based on the above assessment & using internationally accepted procedures and guidelines) to support the implementation and in-country capacity building on hazardous waste management, including a waste separation programme at the landfill. This can include, but not be limited to, the development/ update of existing Standard Operating Procedures (SOPs), emergency response plans and awareness raising on the dangers of open burning and landfill fires.
- iii. Execute training (of landfill managers and other users of the landfill such as operators, recyclers and garbage collectors) in each of the five (5) countries.

B. Design and improve source separation programmes for three (3) countries (Antigua & Barbuda, Barbados and Saint Lucia)

This activity seeks to develop a (or improve existing) municipal waste source segregation management system to remove materials that produce UPOPs. It will include the development of and implementation strategy for a public awareness campaign to support the municipal waste source segregation programme.

⁴ Please consider the multiple landfills and operators in each country (e.g. Saint Kitts and Nevis and Saint Vincent and the Grenadines)

⁵ The training needs analysis and training development and execution should complement the previous needs assessment and training conducted on the overall management of POPs (in the eight project countries) under the GEF 5558 project in Q1 of 2018. Information on this project activity can be requested.

Key tasks to be undertaken will include:

- i. Analyse the existing Waste Management Scheme with specific focus on any current recyclables and chemicals waste collection and transport.
- ii. Support the Waste Management Authorities with the improvement/introduction of waste separation at source (households) through the development of a methodology of waste separation and collection including technical specifications for procurement of equipment and materials. This methodology should be based on international best practice and experience and provide a model for the introduction of source separation in other countries.
- iii. Assist in the overall improvement of waste management system. Ad hoc technical assistance, which may include technical assessments, presentations and managing workshops (and public awareness campaigns).
- iv. Work with the Waste Management Authorities on tasks like development of a project pipeline.

C. Assess existing hazardous waste facilities in three (3) countries (Antigua & Barbuda, Barbados and Saint Lucia)

This activity seeks to assess the current situation with management of wastes and chemical wastes containing POPs and wastes that produce UPOPs and the entry of these into the current landfills.

Key tasks to be undertaken will include:

- i. Assess the safety aspects of the existing hazardous waste storage facilities and recommend upgrading measures (if need be) to meet international standards. The assessment should include adequacy, relevance, location and operations.
- ii. Determine the current and future capacity needs of such a facility (e.g. quantities of wastes that need to be stored, different types of wastes, storage restrictions etc.).
- iii. Assist and provide support to Waste Management Authorities with the preparation of tender specifications for the upgrade of the facilities.

D. Recommend and Design the upgraded hazardous waste facilities in three (3) countries (Antigua & Barbuda, Barbados and Saint Lucia)

This activity seeks to design hazardous waste storage facilities at the landfills to temporarily store and segregate wastes and chemicals wastes containing POPs, and wastes that produce UPOPs on combustion, from entering the landfill cells. Design packages should include but not be limited to:

- i. **Specify the design requirements so that the following needs are addressed:**
 - Surface water drainage and storage, as needed.
 - Accommodations for workers to change clothing, wash, eat and rest.

- Buffer zones and operational controls to handle noise, odour and dust, as well as to meet aesthetic needs compatible with the surrounding environs.
- Access roads, internal roads and traffic management systems for safe and efficient flow of traffic for trucks into and out of, as well as within, the facility.
- Safe and efficient loading/unloading of collection and transfer vehicles.
- Sorting and storage facilities for the different waste types.
- Signs identifying the facilities and providing public relations.
- Office and record-keeping facilities for site supervisors and support staff, as well as for training and meetings.
- Fencing and gate control facilities, including weighbridges, to secure the site and adequately manage all waste accounting and enable performance monitoring of all incoming vehicles.
- Parking and workshop facilities, as appropriate, for landfill equipment that will serve the facility.
- Washing facilities for any equipment, and collection and transfer vehicles
- Civil and electro-mechanical works able to withstand foreseeable seismic and climatic events.
- Program of routine preventative maintenance, scheduled overhaul, and refurbishment for all mobile and stationary equipment and facilities.
- Specify requirements so that:
 - a. All construction tasks are clearly explained.
 - b. To-be-built facilities are drawn with adequate details, and quality control measures are fully identified.
 - c. All environmental, health and safety requirements based on local regulations and international best practices must be taken into consideration.

ii. Specify operating and maintenance manuals for each facility to:

- Enable safe and effective site preparation, construction, spills treatment, gas management, waste sorting, waste treatment, record-keeping activities, and closure activities.
- Ensure that environmental monitoring to be conducted in a safe, efficient, and environmentally sound manner.

INSTITUTIONAL ARRANGEMENTS

The contract based on the present Terms of Reference will be made between the BCRC-Caribbean and a selected Consultant/ Consulting Firm. The Consultant(s)/ Consulting Firm will be supervised by the BCRC-Caribbean. However, the final approval on all project deliverables is required from the national stakeholders (i.e. the Project Working Committee⁶).

⁶ Coordination mechanism built into the GEF 5558 project. The PWC comprises of representatives from all national stakeholders relevant to the management of POPS (including government agencies, waste management entities, non-government organisations and informal waste recyclers).

PROJECT DELIVERABLES AND TIMEFRAME

This Consultancy is expected to have a duration of no more than nine (9) months, with an expected start date in the second Quarter of 2019. It is anticipated that some activities will be executed concurrently. The Consultant is required to submit a project implementation schedule as part of the Technical Proposal.

QUALIFICATIONS

The Consultant(s)/ Consulting Firm is expected to have:

- (i) The Consultant or key member of the Consultant firm shall have an advanced degree (Masters/PhD or equivalent qualifications and experience) in hazardous waste management and/or any other related areas including Chemical, Bio-chemical, Chemical Application, Chemical & hazardous waste or relevant fields.
- (ii) The Consultant or key member of the Consultant firm shall have an advanced degree (Masters/PhD or equivalent qualifications and experience) in the areas of Civil Engineering or Structural/Mechanical Engineering and be a Registered Engineer.
- (iii) It is desirable that the Consultant or Consulting firm also have the following capabilities to support the assignment:
 - Financial Planning and Management and Procurement Management
 - Draughting and GIS Capability
 - Institutional Capacity Building and
 - Training and Awareness
- (iv) Proven knowledge of waste management strategies including source separation and waste segregation.
- (v) Proven knowledge of POPs & Stockholm Convention, reduction of POPs and POPs emission, BAT/BEP for control UPOPs and PBDEs, related global policies and trend, application of new technology, solutions of substitutes for POP substances, hazardous waste collection system, life-cycle management and public-private partnership principle.
- (vi) A minimum of ten (10) years professional experience in any of the aforementioned areas as well as tangible project management experience.
- (vii) Previous experience working on international environmental projects.
- (viii) Previous experience in the Caribbean with the capacity and eligibility to work in the five participating countries will be considered an asset.

Bidders are also encouraged to use local content wherever possible. Wherein the Bidder uses the services of one or more sub-contractor(s), the Bidder shall explicitly identify the parts of the ToR where sub-contractors are to be used.

The working language of the BCRC-Caribbean is English.