

CITYADAPT
BUILDING CLIMATE RESILIENCE OF URBAN SYSTEMS THROUGH
ECOSYSTEM-BASED ADAPTATION (EBA) IN LATIN AMERICA AND THE
CARIBBEAN PROJECT

Terms of Reference: Rainwater Harvesting Infrastructure Specialist

Prepared:
August 19, 2022

**TERMS OF REFERENCE
FOR
Rainwater Harvesting Infrastructure Specialist**

1.0 Introduction

The Latin America and Caribbean (LAC) region is the second most urbanised region in the world, with ~80% of the population living in cities. Within the next two decades, this proportion is projected to reach ~85%, thereby ranking the cities of the LAC region among the fastest-growing in the developing world. The rate of urban expansion is faster in small and medium-sized cities relative to mega cities. In the medium-sized city of Kingston in Jamaica, rapid urbanization is coupled with limited urban planning. This rapid urbanisation and the associated expansion of cities is degrading urban and peri-urban ecosystems – including wetlands, green spaces and forests – that provide a wide range of ecosystem services for urban communities.

The degradation of these ecosystems coupled with the impacts of climate change threaten the lives and well-being of urban communities in the LAC region and increase the risk of urban communities vulnerable to natural disasters. It is on this premise that the Global Environment Facility (GEF) through its Special Climate Change Fund is financing a project called the Building Climate Resilience of Urban Systems through Ecosystem-Based Adaptation (Eba) In Latin America and the Caribbean (CityAdapt), implemented by UNEP in 3 medium-sized cities in LAC, one of them being Kingston. The overarching goal of the CityAdapt project is to build the climate resilience of urban and peri-urban communities in cities in the LAC region through the implementation of Ecosystem-based Adaptation (EbA) approaches. The objective of the project is therefore to increase the capacity of government and local communities living in three medium-sized LAC cities to adapt to the effects of climate change through the integration of EbA into urban planning in the medium- to long-term.

The objective of the project will be achieved through the implementation of activities under three main components:

Component 1 - will include activities to strengthen the technical and institutional capacity of stakeholders involved in urban planning and environmental management to

integrate EbA into development planning within cities. This will support improved decision-making on climate change adaptation in urban areas in the LAC region, thereby promoting climate-resilient urban development.

Component 2 - on-the-ground, urban EbA interventions will be demonstrated in Kingston (Jamaica) to increase the capacity of urban communities living in vulnerable areas within the city to adapt to the effects of climate change.

Component 3 - will promote the generation, dissemination and management of knowledge on urban EbA in each city and across the broader LAC region, thereby supporting upscaling of the urban EbA approach.

To support the accomplishment of project objectives the UNEP has signed agreements with three local partners: The Forestry Department, The Nature Conservancy and the Jamaica 4-H Clubs. Each partner is responsible for the implementation of activities under each component with the Jamaica 4-H having responsibility for activities under Components 2 and 3. Through their agreement the Jamaica 4-H Clubs will employ additional personnel and will provide supervision to same in conjunction with the existing National Coordination Team for the project established by UNEP. The National coordinating team includes a National coordinator and a Technical Advisor.

2.0 OBJECTIVE OF CONSULTANCY

The services of a Rainwater Harvesting Infrastructure Specialist is required to (1) design, and manage the construction/installation of (2) rainwater harvesting systems and a (3) water management system and (3) conduct training to key personnel in five locations across Kingston and St. Andrew.

The responsibilities of the specialist are as follows:

- Design the **water harvesting system & water management system**
- Sourcing of labourers
- Provision of all technical works required for implementation
- Procure and supply all inputs required for the full execution of work to include obtaining material quotation and preparation of bill of quantity
- Supervision of the installation/construction
- Testing and commissioning of rainwater harvesting system at the following locations:

- Camperdown High School
- Kingston Technical High School
- Tivoli High School
- Greenwich Town Community
- Abilities Foundation
- Provide a close out report indicating activities completed, variations if any from scope and alternate action. Report must provide before and after photos.
- Provision of capacity building/ training of designated personnel/students in charge of the system at all five (5) locations listed above

3.0 SCOPE OF WORKS

The Rainwater Harvesting Infrastructure Specialist will perform the specific activities under the overall supervision and direction of the Jamaica 4-H clubs and the CityAdapt Project's National Coordinating team:

Rainwater Harvesting

1. Site analysis including all relevant and necessary tests

- Mapping roof/other areas to determining the most appropriate catchment locations
- Assess the height of building from which water will be harvested to determine base requirements.

2. Supply the system components and other relevant materials

- Supply of rainwater harvesting system components

3. Installation of the rainwater harvesting system

- In-situ and factory fitted delivery system and water storage based on the proposed design

4. Testing and commissioning

- Check all component installations to ensure system integrity
- Catchment, conveyance systems and tank maintenance guidelines

- Must be willing to repair system in the event of construction/installation faults identified during the 3-month defect liability period.

5. Capacity building/ training for personnel and students in charge

PROFILE AND SCOPE OF WORKS FOR EACH LOCATION WATER HARVESTING

Site 1: Camperdown High School

1. To construct support tank stands for 3-point collection
 - Point A: 10 x 5 x 3 (l x w x h)
 - Point B and C 5 x 5 x 3 (l x w x h)
2. To procure and install catchments and down pipes to harvest rainwater
3. Procure and install 4 1000-gallon tanks

Site 2: Kingston Technical High School

1. Erect stand 10 x 5 x 4
2. Procure 1- 1000-gallon tank
3. Procure and install 40 feet guttering and downpipe to feed collection points.

Site 3: Tivoli Gardens High School

1. Erect a 10 x 8 harvesting shed to support production
2. Install countertop and wash bin inside shed
3. Gutter 10 feet of shed

Site 4: Greenwich Town

1. Construct 20 x 5 x 2 base
2. Procure and install 4–1000-gallon tanks
3. Procure and install 100 feet of guttering to include down pipes to harvest rainwater
4. Design and construct a secure water distribution point for water collection
5. Procure a load of water for securing of tanks

PROFILE AND SCOPE OF WORKS FOR EACH LOCATION

WATER MANAGEMENT SYSTEM

Site 1: Abilities Foundation

To develop a water management system to divert water overflow from the Constant Spring Road on to the property of the Abilities Foundation into collection system for agriculture purposes.

1. To provide drawing of water diversion system
2. To undertake excavation work of 270 feet of water carriage (connected by 6-inch pipes)
3. The construction of 5 manholes to support system maintenance
4. To undertake excavation of 675 square feet underground capacity for storage of 3 1000-gallon tanks
5. Remove escalated material and clean up
6. Provide a close out report indicating activities completed, variations if any from scope and alternate action. Report must provide before and after photos.
7. Contractor is required to procure and supply all inputs required for the full execution of work
8. Hydrology

3.0 OUTPUTS/DELIVERABLES

Inception Report: Report outlining the technical approach including the implementation schedule inclusive of a detailed workplan, bill of quantities. This must be submitted to the Project Lead, City Adapt within 10 working days of contract signing.

Implementation Report 1 – A report is to be provided on the status of the project implementation, inclusive of site visit report, labourers (hiring of labourers must utilize a gender inclusive approach), before and after photos, challenges and recommendations, evidence of contracting labourers and payment from labourers/construction workers

Final Report - A final report is to be provided on the status of the project implementation, inclusive of site visit report, labourers (hiring of labourers must utilize a gender inclusive approach), before and after photos, challenges and recommendations evidence of contracting labourers and payment from labourers/construction workers. This report should also include the training report for each location inclusive of attendance register, clearly stating the gender of the beneficiaries, and modules covered.

Deliverable and Timeframe: This service is for an estimated contract period of maximum 3.5 months.

4.0 LENGTH OF CONTRACT

5 months: September 2022- February 2023

3.0 PAYMENT TERMS

The value of the contract is : \$ 6,200,000.00

Deliverable	Description	Due Date	Payment
Deliverable 1	Submission of inception report with site assessment details, BQ, design and implementation timelines within 10 working days after the contract is signed.	10 Working days after contract signing-	40%
Deliverable 2	Implementation Report 1 – A report is to be provided on the status of the project implementation, inclusive of site visit report, labourers (hiring of labourers must utilize a gender inclusive approach), before and after photos, challenges and recommendations, evidence of contracting labourers and payment from labourers/construction workers.	4 weeks after deliverable 1	40%
Deliverable 4	A final report is to be provided on the status of the project implementation, inclusive of site visit report, labourers (hiring of labourers must utilize a gender inclusive approach), before and after photos, challenges evidence of contracting labourers and payment from labourers/construction workers. This report should also include the training report for each location inclusive of attendance register, clearly stating the gender of the beneficiaries, and modules covered.	1 week after the completion of the works	20%

6.0. REPORTING ARRANGEMENTS

Prior to the start of this assignment, there will be an initial briefing with the Jamaica 4-H Club Project Office Team, and the UNEP National Coordination Team. The specialist shall report all technical & contractual matters to the CityAdapt, 4-H Project Lead

The specialist is reminded that he/she should request problem-solving meetings with the Jamaica 4-H Club Project Office Team as soon as there is any indication of a variation in the scope of work, changes to the timeline or additional costs being necessary. No variations are to be made to the agreed time or cost without the prior approval of Jamaica 4-H Clubs.

7.0 MINIMUM QUALIFICATIONS AND EXPERIENCE

- Bachelor's Degree in Construction Management, Engineering, or any other relevant discipline with at least 3 years' experience in implementing similar projects
- OR Diploma/ Certificate or HEART NCTVET Diploma in Draughting and Building Technology, Architecture and Construction Technology, or Building Construction with at least 5 years' experience in implementing similar projects
- Prior experience working with international organizations implementing rainwater harvesting systems.
- Knowledge of climate change and its potential impact on Jamaica and a good understanding of issues in climate change policy, mitigation and adaptation both regionally and internationally would be an asset;
- Access to a team is an asset

Language of Delivery: English (*British Standard*)

Type of Contract: Independent Specialist – Individual

(Consultant will be responsible for the provision of office and accommodation facilities)