# CITYADAPT

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

**Terms of Reference: Environmental Economist**

**Prepared:**
**April 11, 2022**

# TERMS OF REFERENCE
# FOR
# ENVIRONMENTAL ECONOMIST

## 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 periurban 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 objective of this consultancy is to study the economic benefits of the activities being implemented under the CityAdapt Jamaica Project and provide analyses and recommendations. The consultant will contribute to the completion of cost benefit analyses for all interventions under the project and will collaborate closely with the project implementing partners and the national coordinating team to carry out all duties.

## 3.0 SCOPE OF WORK FOR CONSULTANCY

The Environmental Economist will perform the following specific activities under the overall supervision and direction of the Jamaica 4H clubs and the CityAdapt Project's National Coordinating team:

a) Undertake an assessment of the costs to deliver key interventions in table 1. The consultant will work with the implementing partners to collect information on costs of implementation of each activity, to include capital, labour and operational costs.
b) Undertake a benefit estimation exercise based on the expected or projected improvements in ecosystem service flow. This benefit estimation may include qualitative as well as quantitative estimates of economic and social benefits for each intervention as appropriate benefit transfer approach for relevant ecosystem services (4H and Forestry EbA activities), water benefits, flood avoidance benefits, honeybee benefits (market values), carbon benefits and other qualitative and descriptive benefits expected
c) Contribute to the development of indicators for project activities' monitoring
d) Work closely with essential stakeholders and project partners to ensure that they are involved in the of cost benefit analysis process.
e) Provide reports on all cost benefit analyses done for project interventions

f) Collect, check, verify and compile data for the analysis.
g) Provide training in basic cost benefit analysis to project partners and beneficiaries
h) Identify opportunities to leverage additional co-financing
i) Adapt the cost-benefit analysis to target private sector actors who might be interested in supporting project activities
j) Identify private sector actors who might be interested in supporting project activities
k) Assist TNC in the development of the upscaling strategy for the project

**Table 1: Pilot intervention to be completed under CityAdapt**

| No. | Interventions |
|---|---|
| 1. | Installation of 2,500 sq. metres of permeable pavements to increase the infiltration of rainwater during intense rainfall |
| 2. | Reforestation of Hope Watershed |
| 3. | Installation of rainwater harvesting systems at community spaces/buildings and schools: |
| 4. | Installation of greenhouse and nursery at one urban high school |
| 5. | Container garden established at an urban high school and training of students/ teachers in agronomy practices for establishing and maintaining garden. |
| 6. | Bee keeping training and distribution of 250 Beehives, equipment and training to targeted communities. |
| 7. | Rehabilitation of wetlands in the Palisadoes Port Royal Protected Area (PPRPA) Kingston to increase water storage |
| 8. | Rehabilitation of 2.3 hectares (planting of mixed tree seedlings) in lower-income community project site/s within the geographic areas (or adjacent) of Kingston and St. Andrew. |
| 9. | Planting of seedlings (Ornamental, Fruit and Timber) within schools in Kingston & St. Andrew). |
| 10. | Planting of mixed seedlings (Ornamental, Fruit and Timber) within agreed sites in Kingston & St. Andrew. |

## 4.0 ENVIRONMENTAL ECONOMIST OUTPUTS/DELIVERABLES

Specifically, the consultant/contractor must perform the following activities:

I. Develop and submit an inception report with a detailed methodology and work plan outlining the activities to be performed and proposed timeline. This work plan will be used to coordinate activities in the field, as well as activities and consultations with other experts and the implementing partners – The 4H Clubs and Forestry Department.
II. Conduct expert interviews and focus group discussions to gather and update (if applicable) the necessary information on the interventions including project costs.
III. Estimate where feasible and/or describe qualitatively the various expected benefit streams from the EbA activities to include benefit for private sector.

IV. Develop recommendations for replication of the policy interventions, indicating where relevant where the outcomes are not likely to be optimal and should not be repeated.

V. Produce a draft, final and summary technical report of the assessments incorporating listed items above.

| No. | Deliverables |
|---|---|
| 1. | Inception Report including a detailed workplan and methodological approach to be used for the analysis |
| 2. | Preliminary cost benefit report |
| 3. | Draft cost benefit analysis for protocols of all EbA interventions implemented by all project partners |
| 4. | Training conducted in cost benefit analysis |
| 5. | Cost Benefit Analysis adjusted to target private Sector |
| 6. | Final cost benefit analysis for protocols of all EbA interventions implemented by all project partners |
| 7. | Final cost benefit analysis for project including all data collected under project cleaned and presented |
| 8. | Report on input to upscaling strategy |
| 9. | Presentation of results |

## QUALIFICATIONS AND EXPERIENCE

The Environmental Economist will be expected to have the following minimum qualifications and experience:

**Education and Training**

a) First degree in Environmental Economics/Finance, Environmental Sciences, Environmental Engineering, Natural Resource Management, Sustainability or related fields from a recognised university, with at least 5 years demonstrated experience in environmental economics, cost benefit/financial and statistical analyses especially in relation to climate change and natural resources, valuation of ecosystem services

**OR**

Masters degree in Environmental Economics/Finance, Environmental Sciences, Environmental Engineering, Natural Resource Management, Sustainability or related fields from a recognised university, with at least 3 years demonstrated experience in environmental economics, cost benefit/financial and statistical analyses especially in relation to climate change and natural resources, valuation of ecosystem services

**Additional Experience**

b) No less than 3 years of experience in one or more of the following areas: Climate change and its economic impacts, Ecosystem services, Natural resources management
c) Knowledge of Jamaican biodiversity conservation challenges and opportunities
d) Proven Experience in undertaking similar assignments and context

**Key Competencies**

e) Strong analytical writing and communication skills in English;
f) Ability to meet deadlines, prioritize multiple tasks and have a drive for delivering results by applying technical expertise;
g) The candidate should be highly motivated and capable of relating and networking with a wide variety of persons from government agencies, NGOs, and community-based organizations;
h) Ability to work with a multidisciplinary and multicultural team.
i) Ability to respond positively to critical feedback.
j) Good economic analysis and modelling techniques.
k) Very good command of MS Office/excel and spreadsheets.
l) Fluency in written and spoken English.
m) Experience working in a project environment is an asset

## 5.0 CHARACTERISTICS OF ENGAGEMENT

| | |
|---|---|
| **Language of Delivery**: | English *(British Standard)* |
| **Type of Contract:** | Independent Consultant<br><br>*(Consultant will be responsible for the provision of office and accommodation facilities)* |
| **Duration of Engagement:** | Deliverables based |
| **Date of Engagement**: | June 2022 |