CARIBBEAN DEVELOPMENT BANK

AFRICAN CARIBBEAN PACIFIC – EUROPEAN UNION – CARIBBEAN DEVELOPMENT BANK NATURAL DISASTER RISK MANAGEMENT PROJECT PLANNING FOR THE INTEGRATION OF CLIMATE RESILIENCE IN THE WATER SECTOR IN THE BORROWING MEMBER COUNTRIES OF THE CARIBBEAN DEVELOPMENT BANK - USE OF FUNDS - REGIONAL

Considered at the Two Hundred and Seventieth Meeting
of the Board of Directors held in St. Vincent and the Grenadines, March 9, 2016

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CARIBBEAN DEVELOPMENT BANK

TWO HUNDRED AND SEVENTIETH MEETING OF THE BOARD OF DIRECTORS

TO BE HELD IN ST. VINCENT AND THE GRENADINES

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1. BACKGROUND

1.01 The Caribbean Development Bank (CDB) entered into a contribution agreement (CA) with the European Union, the African Caribbean Pacific – European Union – Caribbean Development Bank Natural Disaster Risk Management (ACP-EU-CDB NDRM) in CARIFORUM Countries Project (July 2014)[1]. The Project is aimed at reducing vulnerability to long-term impacts of natural hazards, including potential impacts of climate change, among Borrowing Member Countries (BMCs). Its overall goal is to achieve regional and national sustainable development and poverty reduction goals in the CARIFORUM[2] Countries.

1.02 CDB, Caribbean Disaster Emergency Management Agency (CDEMA) and the Government of Dominican Republic (DR) are executing the Project. The Project comprises four results areas with Results Area 1 (RA1) being executed by CDEMA, Results Area 2 (RA2) and Results Area 3 (RA3) by CDB and Results Area 4 (RA4) by DR. RA3 speaks specifically to resilience strengthening in key public sectors through disaster risk reduction and climate change adaption mainstreaming. One of the outcomes under RA3 is making critical infrastructure in the transportation and water sectors in the CARIFORUM countries more resilient to natural hazards and better prepared for climate change and climate variability.

1.03 To achieve this outcome, the Project intends to develop and pilot in two BMCs approaches for mainstreaming gender-sensitive climate resilience by assessing the climate vulnerability of the two sectors, transportation and water and identifying resilience measures and an investment program to implement these measures. In order to strengthen regional capacity to respond to climate change, the Project would use this information to develop a package of guidelines and technical notes or tool box that could be utilised across the BMCs of the CDB to help mainstream climate resilience in these two sectors. Staff from CARIFORUM countries would be trained (training of trainers) in the implementation of the approach. The focus of the present study is on developing the package of guidelines for the water sector.

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1 Contribution Agreement with CDB for ACP-EU-CDB NDRM in CARIFORUM Countries (July 2014)

2 The Forum of the Caribbean Group of African, Caribbean and Pacific (ACP) States (CARIFORUM) is the body that comprises Caribbean ACP States for the purpose of promoting and coordinating policy dialogue, cooperation and regional integration. http://caricom.org/jsp/community_organs/cariforum/cariforum_main_page.jsp?menu=cob

1.04 This is in-keeping with CDB's efforts to support BMCs to design transformative sector wide interventions for key climate sensitive sectors such as water, that are responsive to the eligibility requirements of global climate finance mechanisms such as the GCF And the AF. It was designed with the support of technical resources provided by the EIB CALC Technical Assistance Programme, building on the outcome of work financed under the GIZ/ CDB/ CCCCC Climate Finance Readiness programme.

1.05 The study will assist CDB in designing projects that will reduce the risks associated with its water sector investment portfolio which at the end of 2014, totalled approximately USD145 million (mn). The recommendations of the study are consistent with CDB's Climate Resilience Strategy priority of financing investments in key climate-sensitive sectors identified as priorities by BMCs.

1.06 Climate resilience of water infrastructure is not only essential for the economic development of the BMCs, but it is also important for the social well-being of the population and carries important gender effects. Climate resilient infrastructure is particularly beneficial for women who perform most of the water-related household tasks.

2. PROPOSAL

2.01 It is proposed that CDB approve Use of Funds (UOF) resources in an amount not exceeding the equivalent of seven hundred and three thousand three hundred and ninety-five United States dollars (USD703,395), from its Special Funds Resources (SFR) to fund consulting services to: (a) complete sector-wide climate risk and vulnerability assessment (CRVA); (b) assess relevant, policies, plans, strategies legal and regulatory frameworks and proposals to build capacity to implement resilience measures (c) identification of sector investment needs for climate resilience and (d) develop an index to measure the level of resilience in the water sector.

2.02 The Draft Terms of Reference (TOR) for the consultancy services assignment is presented at Appendix 1.

3. OUTCOME

3.01 The outcome of the study is enhanced capacity to manage disaster risk, the impacts of climate change and prioritising climate resilient investment, for a successful transition to a low-carbon climate-resilient and gender sensitive development path of the water sector in the beneficiary BMCs. A Logical Framework Matrix for this activity is presented at Appendix 2.

4. JUSTIFICATION

4.01 Water infrastructure design, construction and maintenance among BMCs are undertaken with guidelines that do not explicitly account for future changes in climate parameters. Under current climate projections, water resources and infrastructure in the Caribbean Region will be significantly impacted by climate change and most freshwater ecosystems have already begun to feel these effects. This could be detrimental to the continued sustainability of water resources and the anticipated benefits from water infrastructure investments as well as human livelihoods and communities that depend on freshwater ecosystem goods and services. Although there is a high degree of uncertainty about the exact nature of the expected changes, it is recognised that these impacts may vary given country specific characteristics of the hydrological resources, differential climate vulnerability and underlying sensitivity of different ecosystems resulting from differential risks. These are all factors that must be considered to determine potential impacts on the performance and sustainability of current and future water investments, and to prioritise management responses for both the resource as well as the physical water and sanitation assets

within a country. Successful adaptation responses for the water sector will require an understanding of the risks, the devising and implementing strategies to effectively address these risks and the monitoring of future changes.

4.02 In an effort to build resilience to climate change, it will be necessary to strengthen regional, national and community level capacities for mitigation, preparedness, management and coordinated responses to natural hazards and the effects of climate change. Several adaptation approaches and tools[3] are already in use both in the Caribbean and elsewhere. This study would draw on these established approaches and develop a systematic framework[4] to strengthen sector resilience as it relates to assets and infrastructure, policies, plans, strategies and institutions that is appropriate in the Caribbean context.

4.03 Based on CDB's Performance Rating System, the Project has been assessed as highly satisfactory with a score of 4. Appendix 3 shows the rating system. This suggests that it is likely to contribute to development effectiveness.

4.04 The proposed study will assist CDB:

(a) In the preparation of an assessment method/tool for the water sector of its BMCs, hence determining priority areas of intervention and investment, which should assist in the:

(i) reduction of vulnerability to long term impacts of natural hazards, including potential impacts of climate change, thereby achieving regional and national sustainable development and poverty reduction goals in BMCs of CDB; and

(ii) strengthening of regional, national and community level capacities, in taking a gender-responsive approach and at the community level of BMCs for mitigation, preparedness, management and coordinated responses to natural hazards and the effects of climate change.

(b) To better support its BMCs in the implementation of policies, strategies, projects and programmes geared towards addressing their water sector challenges.

4.05 The study is assessed as not mainstreamed, based on CDB's Gender Marker, as the assessment tool for the water sector focuses on increasing the climate resilience of the water infrastructure. However, increasing the climate resilience carries important gender effects due to the importance of infrastructure for time savings of women. The gender marker is summarised in Table 1 below. Gender equality incorporated as a cross-cutting theme is shown at Appendix 4 in the Gender Marker Analysis.

TABLE 1: GENDER MARKER SUMMARY

Gender Marker	Analysis	Design	Implementation	Monitoring and Evaluation	Score	Code
	0.25	0.5	0	0.5	**1.25**	**NO[5]**

[3] Climate and disaster screening tools are available to assess high level impacts at national, sector and project levels, while CVA are used for more detailed assessments. Adaptive Capacity Assessment, as a part of CVAs, identifies gaps in institutions and communities' ability to identify and undertake adaptation measures, while policy-based approaches are used to mainstream climate resilience into planning processes.

[4] Package of guidelines and technical notes or tool box

[5] NO: no contribution to gender equality, it is not reflected in the project, or appears as a formal reference only.

4.06 The proposed project is consistent with:

(a) CDB's Strategic Cross-Cutting Objective of Regional Corporation and Integration.

(b) CDB's Strategic Objective of supporting inclusive growth and sustainable development within its Borrowing Member Countries.

(c) CDB's Corporate Priority of strengthening and modernising social and economic infrastructure.

(d) Special Development Fund 8 (SFR 8) themes of: (i) Environmental Sustainability and Climate Change; and (ii) Inclusive and Sustainable Growth.

(e) CDB's Technical Assistance (TA) Policy and Operational Strategy of commitment to strengthening the synergies between TA operations and the Bank's investment lending.

(f) Sustainable Development Goals (SDG) 2, 3, 6, 9, 13[6]

5. EXECUTION

5.01 CDB will be the executing agency and the consultants will be supervised by the staff of the Economic Infrastructure Division (EID) who will be responsible for the coordination of the work of the Consultant in accordance with the TOR. In addition, CDB will organise and host the consultation workshops with key stakeholders from the two selected BMCs. EID and the appointed consultants will work closely with the Environmental Sustainability Unit to ensure satisfactory deliverables. It is estimated that the study will be completed over a period of nine and a half months.

5.02 The resources of CDB will be used to finance the following:

(a) consultancy - professional fees, cost of travel and accommodation for country visits and conduct of the workshops; and

(b) cost associated with the consultation workshops:

(i) meals and materials for participants; and

(ii) the publication and dissemination of the assessment tool.

6. RISK ASSESSMENT AND MITIGATON

6.01 Some risks have been identified which could have an effect on the undertaking of the study. The risks have been classified as implementation and operation in nature. The summary of risks and mitigation measures is presented in Table 2 below.

[6] SDG 2 – End Hunger, achieve food security and improved nutrition and promote sustainable agriculture
SDG 3 – Ensure healthy lives and promote well being for all at all ages
SDG 6 – Ensure available and sustainable management of water and sanitation for all
SDG 9 – Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation
SDG 13 – Take urgent action to combat climate change and its impacts

TABLE 2: RISK ASSESSMENT AND MITIGATION

Risk Type	Description of Risk	Mitigation Measures
Implementation	The selected BMCs are unable to provide the resources to perform assessments on the remainder of their systems. Limited resources available for implementation	BMCs presently show a high level of commitment to strengthening the resilience of their water sector infrastructure and resource against the impacts of climate change variability. Likewise, in many of the BMCs there are established procedures for reducing risk in their facilities and operations. This exercise will build on this existing corporate culture.

7. COST AND FINANCING

7.01 The total cost of the study is estimated at USD703,395. The detailed budget is shown at Appendix 5. The financing plan is summarised in Table 3 below:

TABLE 3: SUMMARY FINANCING PLAN

Contributors	USD
CDB (SFR) OSF ACP-EU-CDB	703,395
Total	**703,395**

8. FUNDING SOURCE

8.01 CDB's UOF of the equivalent of seven hundred and three thousand three hundred and ninety-five United States dollars (USD703,395), is eligible for financing from CDB's SFR/OSF ACP-EU-CDB. Funds are available within existing resources.

9. PROCUREMENT

9.01 Procurement of CDB-financed consultancy services shall be in accordance with CDB's procurement procedures with respect to its UOF. Financing shall be provided under ACP-EU-CDB NDRM in CARIFORUM Countries and thus eligibility shall be extended to reflect the applicable eligibility provisions of the EU. The Procurement Plan is provided at Appendix 6. Any revisions to the Procurement Plan would require CDB's prior approval in writing.

10. REPORTING REQUIREMENTS

10.01 The Consultancy will be required to submit to CDB, reports in keeping with the draft TOR, Appendix 1.

11. RECOMMENDATION

11.01 It is recommended that the Board of Directors approve the use of funds of an amount not exceeding the equivalent of seven hundred and three thousand three hundred and ninety-five United States dollars (USD703,395), from CDB's SFR, to engage a consultancy to:

(a) complete sector-wide CRVA;

(b) assess relevant, policies, plans, strategies legal and regulatory frameworks and proposals to build capacity to implement resilience measures;

(c) identification of sector investment needs for climate resilience; and

(d) develop an index to measure the level of resilience in the water sector. In accordance with the TOR at Appendix 1.

SUPPORTING DOCUMENTATION

Appendix 1 - Draft Terms of Reference - Consultancy Services – Planning for the Integration of Climate Resilience in the Water Sector in the Caribbean
Appendix 2 - Design and Monitoring Framework
Appendix 3 - Performance Rating System
Appendix 4 - Gender Marker Analysis
Appendix 5 - Budget
Appendix 6 - Procurement Plan

APPENDIX 1

DRAFT TERMS OF REFERENCE

CONSULTANCY SERVICES - PLANNING FOR THE INTEGRATION OF CLIMATE RESILIENCE IN THE WATER SECTOR IN THE CARIBBEAN

1. INTRODUCTION

1.01 European Union, the African Caribbean Pacific – European Union – Caribbean Development Bank Natural Disaster Risk Management (ACP-EU-CDB NDRM) in CARIFORUM Countries Project (July 2014). The Project is aimed at reducing vulnerability to long-term impacts of natural hazards, including potential impacts of climate change, among Borrowing Member Countries (BMCs). Its overall goal is to achieve regional and national sustainable development and poverty reduction goals in the CARIFORUM Countries. One of these is: "making critical infrastructure in the transportation and water sectors in the CARIFORUM countries more resilient to natural hazards and better prepared for climate change and climate variability." To achieve this outcome, the project intends to develop and pilot in two countries approaches for mainstreaming gender-sensitive climate resilience into these two sectors by assessing the climate vulnerability of the sectors, identifying resilience measures and an investment program to implement these measures. In order to strengthen regional capacity to respond to climate change, the project would use this experience to develop a package of guidelines and technical notes or tool box that could be utilised across the region to help mainstream climate resilience in these sectors. Staff from CARIFORUM countries would be trained (training of trainers) in the implementation of the approach. The focus of the present study is on developing the package of guidelines for the water sector.

1.02 This is in-keeping with CDB's efforts to support its BMCs to design transformative sector wide interventions for key climate sensitive sectors such as water, that are responsive to the eligibility requirements of global climate finance mechanisms such as the Green Climate Fund (GCF) and the AF. It was designed with the support of technical resources provided by the European Investment Bank Climate Action Line of Credit Technical Assistance Programme, building on the outcome of work financed under the GIZ/ CDB/ Caribbean Community Climate Change Center. Climate Finance Readiness programme.

1.03 Several adaptation approaches and tools are already in use both in the Caribbean and elsewhere. Climate and disaster screening tools are available to assess high level impacts at national, sector and project levels, while Climate Vulnerability Assessments (CVA) are used for more detailed assessments. Adaptive Capacity Assessment, as a part of CVAs, identifies gaps in institutions and communities' ability to identify and undertake adaptation measures, while policy-based approaches are used to mainstream climate resilience into planning processes. This study would draw on these established approaches and develop a systematic framework to strengthen sector resilience including assets and infrastructure, policies, plans, strategies and institutions that is appropriate in the Caribbean context.

2. OBJECTIVES

2.01 The study will establish suite of tools and guidance resources for institutions responsible for water policies, plans and the implementation of investment programmes to assess and design effective climate resilient action, to help practitioners establish robust and implementable climate resilience sector policies and investment plans and to identify potential financing for effective implementation.

2.02 The objective of this work is to therefore demonstrate how gender-sensitive climate and disaster resilience measures could be integrated into the water sector, and in so doing, develop a package of materials that would provide guidance, lessons learnt and technical notes to help practitioners in the

region implement the approach. Building on existing methods and tools, work will be carried out in two BMCs that will inter alia include:

(a) an assessment of the vulnerability of key infrastructure and assets in the water sector;
(b) gender-sensitive climate screening of relevant policies, plans and strategies in the sector and recommendations for integrating resilience;
(c) assessment of the adaptive capacity of the water utility and other key institutions and recommendations for strengthening;
(d) preparation of a climate resilient investment plan that would include priority infrastructure investments and proposals and strategies to deliver the identified adaptation options; and
(e) development of a water sector resilience index to measure progress on adaptation.

The methodology will be to develop the guidance based on two country case studies where appropriate technical approaches and good practices from international experience would be tested in building resilience in the water sector.

3. SCOPE OF WORK

3.01 The scope of work includes preparation of the following deliverables

(a) Sector-wide CRVA. The proposed study would consider the impact on the sustainability of the country's water resources, on the water supply system and on the provision of services that would result from the projected changes in future climate, including temperatures, precipitation and other climatic variables. The study would examine how these changes could affect water availability including resource values, projected demand, distribution and storage, and would include the following:
  (i) characterisation of water resources infrastructure and assets;
  (ii) assessment of the vulnerability of the infrastructure and assets; and
  (iii) assessment of the adaptive capacity of the water utility

(b) Assessment of relevant, policies, plans, strategies legal and regulatory framework and proposals to build capacity to implement resilience measures.

(c) Identification of sector investment needs for climate resilience.

(d) Based on the above, development of an index to measure the level of resilience in the sector that takes account of the level of vulnerability and existence of actions to prepare for and implement adaptation options.

(e) Preparation of a package of materials that would provide guidance for increasing the resilience of the water sector.

(f) Delivery of training of trainers workshops on Water Sector Resilience Assessment and Integration.

Task 1: Climate Risk and Vulnerability Assessment

3.02 Impact, Vulnerability and Adaptation Assessments are aimed at answering the following questions: what are the current and historical trends in climate? How is climate projected to change in the future and in what ways? How will this affect natural and human systems of interest? What reasonable

assumptions (quantitative and qualitative) can be made about climate change and its impacts on the proposed infrastructure, people and area? How have people historically coped with heavy rainfall, floods, landslides, drought, storm surges, and other weather events? Where are the most vulnerable areas? Who are the most vulnerable populations? What adaptation solutions[7] are technically feasible to address projected climate vulnerabilities? What are the costs and benefits of these options? What are the preferred options in the context of the project? The Climate Risk and Vulnerability Assessment (CRVA) would be guided by the following:

Characterisation of the Water System

3.03 This activity seeks to identify and characterise the water resources availability in the country, as well as the existing infrastructure used for the provision of water. It also includes the analysis of water demand and the institutional arrangements developed to manage water resources and the provision of potable water to the population. The following tasks will be carried out by the consultants:

(a) *Water Resources availability:* Preparation of a comprehensive water budget of the country (a model detailing inputs, outputs and changes in storage for the entire island as well as for the main watersheds, as allowed by the existing information), at a monthly basis for average conditions as well as for the observational period of key climate variables (rainfall in particular, see below):

(i) Surface waters:
- (aa) Watershed analysis (geographic information system GIS-based characterisation).
- (bb) Hydrometric network (critical analysis, gaps, requirements, recommendations).
- (cc) Water budget analysis.
- (dd) Analyses of droughts.
- (ee) Water quality.

(ii) Subsurface Waters:
- (aa) Based on secondary information provide a description of the geo-hydrology of the island.
- (bb) Building a comprehensive water budget for BMCs.
- (cc) Water quality.

(c) *Infrastructure and Operation*

(i) Inventory and basic characterisation of the main water infrastructure:
- (aa) Within the Utility.
- (bb) Other users' infrastructure.
- (cc) Energy: Sources and Use.

[7] Adaptation options in this sector can include increased water use efficiency; integrated flood management; enhancing ecosystem services; expand water storage and conjunctive management of surface and ground water resources; upgrade and increase monitoring and management of data, early warning systems; infrastructure strengthening. In addition, it is important to recognise that in a number of circumstances, a "do nothing" response to climate change, for example, allowing an infrastructure to deteriorate and be decommissioned instead of making the infrastructure climate resilient, may be a preferred course of action.

(ii) Overview of future proposals, e.g., expansion plans, master plans, new projects, etc.
- (aa) Within the Utility.
- (bb) Other users.
- (cc) Options for use of renewable energy.

(d) Cost Analysis

(i) Identification and quantification of inputs required for the provision of water supply services including energy.

(ii) Maintenance and replacement costs:
- (aa) Requirements.
- (bb) Budgets / Assignments

(iii) Capital investments:
- (aa) Requirements.
- (bb) Sources.
- (cc) Budget / Assignments.

(iv) Surcharges and subsidies.

(v) Liabilities.

(vi) Financial costs estimation.

(vii) Economic costs assessment

(e) Demand Estimation:

(i) Population analysis:
- (aa) Demographic analysis and projections by major geographic division if possible/relevant.

(ii) Economic activities:
- (aa) Identification of main water consuming economic activities, past growth and projections, differentiated by gender where relevant.

(iii) Water demand:
- (aa) Per-capita water demand analysis, including spatial distribution (by main geographical centre if relevant), and projected growth.
- (bb) Water demand per main economic sector.
- (cc) Price elasticity of water demand (residential, commercial, industrial, agriculture).

(iv) Environmental water needs and contributions:

- (aa) Identification of environmental constraints to water operations (ecological discharges.)

(f) *Revenues (to be defined in close consultation with technical and managerial personnel from the Utility:*

(i) Estimation of non-revenue water (by subsystem).

(ii) Tariffs and tariffs adjustment procedures.

(iii) Billing and collection.

(iv) Surcharges and subsidies.

(v) Revenues:
(aa) Historic analysis, at least for the past 10 years.
(bb) Preliminary projections, corporate projections

Climate Variables and Climate Change Scenarios

3.04 This section of the CVA should include:

(a) identification of climate variables of interest, and defining baseline conditions;

(b) selection of climate change scenarios, based on best available information; and

(c) defining design parameters for climate variables of interest.

3.05 Identification of climate variables of interest. The following climate variables are to be analysed, but the consultant is at liberty to add other variables as relevant:

(a) Seasonal (monthly) precipitation.

(b) Precipitation variables defining drought conditions.

(c) Precipitation extremes (flood analysis and to assess the potential increase of water "lost" to the sea due to intensification of the precipitation with climate change).

(d) Temperature (and its potential effect evapotranspiration, greater water consumption and heat waves).

(e) Winds and their impact on buildings and infrastructure.

3.06 **Selection of Climate Change Scenarios**: Based on the National Communications to the United Nations Framework Convention on Climate Change, and best available information, for example from the Caribbean Community Climate Change Center. The selection of relevant climate change scenarios will be guided by the specific country characteristics and information available, such as from downscaled climate models. Based on the selected scenarios the consultant will define the trends (compatible with historic information) that characterize the climate variables of interest, as defined in the previous task.

3.07 **Design Parameters for Climate Variables of Interest by Mid-century**: The consultant is required to define the conditions under which the performance of the System will be assessed. In particular the information generated shall provide inputs to allow the estimation of future monthly water budgets, develop parameters to assess the vulnerability of the main infrastructure vulnerable to climate impacts (in particular floods, winds) and assess future drought conditions and heat waves.

(a) Assessing the impacts of climate change on the following:
  (i) Water availability and the analysis of droughts.
  (ii) Extreme events impacting infrastructure: winds, floods, heat waves.
  (iii) Extreme events impacting operations: droughts, heat waves.
  (iv) Water demand and increasing temperatures and dealing with heat waves.
  (v) Capability/flexibility of the system to adjust to climate change.

(b) Adaptive Capacity Assessment: The consultant will make an assessment of the adaptive capacity of the Utility, in terms of their ability to undertake risk and impact assessments, to plan and implement adaptation actions and to undertake adaptive management and identify the requirements for additional support

(c) Presentation of the Results of the CVA:

  (i) Diagnostic results:
    (aa) Presentation of the CVA for comments and recommendations to the government.
    (bb) Presentation of the CVA to the Utility and other relevant government organisations' technical personnel.
    (cc) Presentation to private sector representatives.

  (ii) Finalised CVA

Task 2: Assessment of relevant, policies, plans, strategies legal and regulatory framework governing water rights, the provision of water supply and water for environmental purposes and resilience needs.

(a) Diagnosis:
  (i) Laws and regulations on water rights.

  (ii) Laws and regulations on the provision of water supply services.

  (iii) Laws and regulations on wastewater disposal.

  (iv) Government agencies participating in water resources management:
    (aa) Institutional mandate and capacity self-assessment of key agencies mandated with water resources management (maximum four agencies; through interviews and group discussion of preliminary survey results).
    (bb) The role of the Regulator.

  (v) Analysis of users' participation in water resources management.

  (vi) Identification of main challenges and risk from climate change: Potential barriers to adaptation; what can constrain the ability of the Utility and other relevant organizations to adapt including: Legislation and regulation; management

policies and procedures; human and financial capital; and information and science. The consultant is requested to use secondary information and interviews with key stakeholders and knowledgeable individuals in the characterisation of the organizational context in which the adaption planning must take place.

(b) Building Sector Institutional Capacity to Cope with Climate Change:

(i) Sustainability analysis:
(aa) Identification of financial options.
(bb) Identification of policy and regulatory options.

(ii) Defining policy and regulation criteria and priorities:
(aa) Subsidies.
(bb) Surcharges.
(cc) Liabilities.
(dd) Pricing options.
(ee) Performance monitoring.
(ff) Other.

(iii) Strengthening the role of the regulator.

(iv) Strengthening the capacity of the utility to identify and implement resilience measures.

(v) Water resources information system.

(vi) Water quality control options.

(vii) Exploring alternative sources of energy.

Task 3: Identification of investment needs

3.08 The consultant will develop a prioritised program of climate-resilient investments in the water sector. This prioritisation exercise will be done using a multi-criteria evaluation (MCE) methodology that will take into consideration a combination of factors, including physical, social, economic and institutional criteria, amongst others. This process will allow the Water Utility and/or Water Resources Management agency in each country to prioritise the threats posed by climate change by assessing asset vulnerabilities against a number of criteria thereby enabling it to make decisions on the treatment of risk based on scientific projections of future climate scenarios. The result of this process will be a prioritised list of adaptation options for possible investment.

(a) Identification of activities and investment options to provide a reliable and resilient water supply service to the country.

(b) Prioritisation of needs as indicated by diagnostic:
(i) the Utility; and
(ii) other users.

(c) Development of technical profiles and preliminary cost estimates.

(d) Prioritisation.

(e) Sources of funding.

(f) Investment Plan to be submitted to the Government and CDB.

Task 4: Development of a Water Sector Resilience Index

3.09 Based on Tasks 2 and 3, the consultant will develop an index to measure the level of resilience in the water sector that could be applied in different countries and contexts. The index should take account of a measure of the level of vulnerability of the sector (infrastructure and water resources) and the existence of capacity (policies, plans, strategies, awareness, trained staff) to prepare for and implement adaptation options.

Task 5: Manual or a package of materials that would provide guidance for increasing the resilience of the water sector

3.10 Drawing on the experience of the case studies undertaken in carrying out the above tasks the consultant would prepare a package of guidance material detailing the steps to be followed, technical notes, lessons learned and best practices in implementing the framework developed for integrating climate resilience into the water sector. The draft final document will be presented at a workshop to be organised by CDB and the final package would incorporate the feedback received from this workshop.

Task 6: Training of trainers' workshop on Water Sector Resilience Assessment.

3.11 Once the package of guidance material has been finalised the consultant would organise and deliver a training of trainers' workshop on the use of this material for staff from CARIFORUM countries.

4. REPORTING REQUIREMENTS AND DELIVERABLES

4.01 The consultant will also make regular presentations to the governments and CDB on methodological proposals, data gathering, coordination issues, and relations with key stakeholders, resource use and progress in accomplishing the tasks. The presentations will serve to enhance coordination, facilitate the consultant work, inform the countries, and receive technical feedback on methods and approaches. These presentations will start with the inception report and should be scheduled every 6 weeks, coinciding with the completion of key subtasks, or the draft presentation of deliverables.

4.02 In addition, the consultant shall provide progress reports on a monthly basis.

Summary of outputs/deliverables

(a) Task 1: Within 3 months of the award of contract a report on the CRVA.

(b) Task 2: Within 2 months of acceptance of the deliverable Task 1, a report on the assessment of policies, plans, etc., and recommendations for integrating resilience measures.

(c) Task 3: Within 2 months of acceptance of the deliverable Task 2, a Climate Resilient Investment Plan for the sector. The Investment Plan should identify short-term investment needs required for a period of 5 years or less, medium- and long-term needs, and those that might be postponed for 10 years or more.

(d) Task 4: Within 1 month of acceptance of the deliverable Task 3, a description and methodology for calculating a resilience index for the water sector.

(e) Task 5: Within 1 month of acceptance of the deliverable Task 4, a package of guidance material for the integration of climate resilience into the water sector.

(f) Task 6: Within 1 week on the acceptance of the deliverable Task 5, the consultancy will conduct a training of trainers' workshop on Water Sector Resilience Assessment.

Qualifications and Experience

4.03 The consulting team should consist of a team of professionals with the following key personnel:

(a) Key professional 1: Climate Change and Climate Vulnerability Expert

Experience: no less than 10 years' of professional experience and a graduate degree of MSc or equivalent. Experience should include working with data provided by Global Circulation Models and Regional Circulation Models, and familiarity with the Fifth Assessment Report by the Intergovernmental Panel on Climate Change. Experience with at least one specific climate vulnerability assessment in the water resources sector is strongly recommended.

(b) Key professional 2: Economist

Experience: no less than 10 years' of experience and a graduate degree of MA or equivalent. Experience should include economic analysis of development projects and sector strategies based on economic analyses. Experience with economic regulation and institutional analysis are required.

(c) Key professional 3: Experienced Water Supply Manager

Experience: no less than 10 years' of professional experience, with at least 5 years' of experience working as a manager or 2 years' experience as Chief Executive Officer of a water utility.

(d) Key professional 4: Water Resources Specialist

Experience: watershed hydrologic modelling (rainfall runoff studies), water budget analysis and drought estimation.

4.04 The consulting team shall also include other experienced personnel in the following fields: geographic information system; Social; Environmental; and Community and Institutions Specialists.

5. DURATION

5.01 The Consultancy is to be implemented over a period of 9.5 months.

DESIGN MONITORING FRAMEWORK

Design Summary	Performance Targets / Indicators	Data Sources / Reporting Mechanisms	Assumptions / Accountabilities
1. IMPACT: 1. BMCs Water Sector operational risks associated with climate change reduced. 2. Optimal investments made towards improving the efficiency and resilience of water sector.	60% of BMC's systems are able to resume operations following an extreme weather event in less than 7 days. (Baseline: to be determined – TBD) Number of Climate Change Designs enhanced investment actions by BMCs supported by IFIs	BMC's Annual Reports.	Resources are available to implement recommend actions.
2. OUTCOME: 1. Improve capacity of BMCs to identify plan and implement climate resilient low carbon gender sensitive development path of water sector to manager disaster risk and the impacts of climate change 2. Climate resilient sector plans and investment programmes using suite of technical resources developed.	1. 100% submissions from 2 pilot BMCs reflect adopted practices influenced by the tool index. 2. At least 80% participants of who attend workshop have indicated that they are confident in their ability to use the tool index.	1. Review of BMCs' financing request and supporting documentation. 2. Workshop feedback.	
3. OUTPUTS: 1. Identification of activities and investment options (5 – 10 year projected period) to provide a reliable and resilient water supply service to two selected BMCs. 2. Investment Plan for the Water Sector of two BMCs with identified sources of funding. 3. The preparation of a package of materials (tool index) that would provide guidance in building resilience in the water sector of the BMCs of the CDB.	1. Investment Plan completed with sources of funding identified by March 31, 2017.	1. Consultant's reports. 2. CDB Supervision Reports	BMCs provide the necessary source of funding to meet investment requirements;
1. Activities/Inputs **Consultancy Services:** Professional Fees Accommodation and Air Travel Workshops – BMCs Contingencies **Total**	**USD** **CDB (SFR)** 555,450 72,000 12,000 63,945 **703,395**	**TOTAL** 555,450 72,000 12000 63,945 **703,395**	1. Consultants selected and engaged. 2. CDB supervision reports. 3. CDB disbursement records.	Two selected BMCs counterpart contribution available in a timely manner.

APPENDIX 2

APPENDIX 3

PERFORMANCE RATING SYSTEM

Criteria	Score	Justification
Relevance	3	BMCs have demonstrated a high level of commitment to increasing the resiliency of their water sectors to natural hazards and climate vulnerability. The proposed project is consistent with: CDB's Strategic Cross-Cutting Objective of Regional Corporation and Integration; CDB's Strategic Objective of supporting inclusive growth and sustainable development within its Borrowing Member Countries; CDB's Corporate Priority of strengthening and modernising social and economic infrastructure; SFR (8) themes of: (a) Environmental Sustainability and Climate Change; and (b) Inclusive and Sustainable Growth; CDB's TA Policy and Operational Strategy of commitment to strengthening the synergies between TA operations and the Bank's investment lending; CDB's Gender Policy and Operational Strategy.
Efficacy	2.5	The proposed consultancy will address engineering, economic, social, environmental and disaster risk reduction, and climate resilience considerations.
Efficiency	3	The expected cost of the consultancy has been based on current professional rates, and given the potential level of capital investment, is considered reasonable. The country has the support of the other stakeholders. The planned activities are expected to be achieved within time and budget.
Sustainability	N/A	The proposed consultancy will assist BMCs in operating and managing the Water Sector more effectively. The project output will however be used to formulate investment projects.
Overall Score	**2.125**	**Satisfactory**

APPENDIX 4

GENDER MARKER ANALYSIS

Project Cycle Stage	Criteria	Score
Analysis: Introduction/ Background/ Preparation	Consultations with women/girls/men/boys and relevant gender-related or sector-related public or private organisations have taken place.	0
	Social analysis identifies gender issues and priorities.	0.25
	Macroeconomic analysis identifies gender issues and priorities.	0
Design: Project Proposal/ Definition/ Objective/ Description	To address the needs of women/girls and men/boys concrete interventions to reduce existing gender disparities have been designed. Effect on project outcome is direct.	0
	Project objective / outcome includes gender equality.	0.5
Implementation: Execution	Implementation arrangements (gender mainstreaming capacity building or gender expertise in implementing agency) to enhance the gender capacity of the implementing agency. Effect on project outcome is indirect.	0
	Terms of reference of project coordinating unit / project management unit include responsibilities of gender mainstreaming, especially at the levels of the project coordinator/director and the Monitoring and Evaluation (M&E) officer.	0
Monitoring and Evaluation: Results-Monitoring-Framework (RMF)	Collection of sex-disaggregated data required for M&E (stated and budgeted in Project)	0
	At least one gender-specific indicator at the outcome and/or output level in the RMF.	0.5
Scoring Code		**1 .25**

Scoring Code
Gender specific (GS): if 3.75 points to 4 points **Gender mainstreamed (GM):** if 3 points to 3.5 points **Marginally mainstreamed (MM):** if 1.5 to 2.75 points. **NO:** if projects score zero or 1; if NO please give a justification why

Not Mainstreamed (NO): no contribution to gender equality, it is not reflected in the project, or appears as a formal reference only.

APPENDIX 5

BUDGET
(USD)

Items	**CDB (SFR)**	**Total**
Professional Fees	555,450	555,450
Accommodation and Travel	72,000	72,000
Workshops	12,000	12,000
Contingencies	63,945	63,945
Total	**703,395**	**703,395**

APPENDIX 6

PROCUREMENT PLAN

I. General

1. **Project Information:**

Country: Regional

Grant Recipient: N/A

Project Name: African Caribbean Pacific – European Union – Caribbean Development Bank Natural Disaster Risk Management (ACP-EU-CDB NDRM) Project Planning for the Integration of Climate Resilience in the Water Sector in the BMCs of CDB

Project Executing Agency:

2. **Bank's Approval Date of the Procurement Plan**: March 9, 2016

3. **Period Covered By This Procurement Plan:** June 2016 – March 2017

II. Consulting Services

1. Reference to (if any) Project Operational/Procurement Manual: CDB's procedures applicable to its Use of Funds

2. Any Other Special Procurement Arrangements: To comply with the requirements of the ACP-EU Finance Agreement the following is required:

(a) Procurement of CDB-financed consultancy services shall be in accordance with CDB's procurement procedures with respect to its UOF. Financing shall be provided under ACP-EU-CDB Natural Disaster Risk Management in CARIFORUM Countries and thus eligibility shall include CDB member countries and be extended to reflect the applicable regulatory provisions of the EU.

3. Procurement Packages with Methods and Time Schedule:

1	2	3	4	5	6	7
Ref No.	**Assignment (Description)**	**Estimated Cost (USD '000)**	**Selection Method**	**Review by Bank (Prior/Post)**	**Expected Proposal Submission Date**	**Comments**
1.	Consultant		QCBS	Prior	June 2016	Expected start: August 2016

V. Summary of Proposed Procurement Arrangements

Project Component	CDB ACP-EU (USD'000)									NBF (USD'000)	Total Cost (USD'000)
	Primary	Secondary			Other						
	ICB	NCB	RCB	LIB	Shopping	DC	FA	QCBS	CQS	Country	
1. Professional Fees	-	-	-	-	-	-		[redacted]		-	[redacted]
2. Accommodation and Air Travel	-	-	-	-	-	-		[redacted]		-	[redacted]
3. Stakeholders Workshop Facilitation	-	-	-	-	-	-		[redacted]		-	[redacted]
4. Contingencies	-	-	-	-	-	-		[redacted]		-	[redacted]
Total	-	-	-	-	-	-		[redacted]		-	[redacted]

CQS	-	Consultant Quality Selection	LIB	-	Limited International Bidding
DC	-	Direct Contracting	NCB	-	National Competitive Bidding
FA	-	Force Account	NBF	-	Non-Bank Financed
FBS	-	Fixed Budget Selection	QCBS	-	Quality and Cost-Based Selection
ICB	-	International Competitive Bidding	RCB	-	Regional Competitive Bidding

This information is withheld in accordance with one or more of the exceptions to disclosure under the Bank's Information Disclosure Policy.