Project name: Climate Resilient Water Sector in Grenada (G-CREWS)

TERMS OF REFERENCE (TOR)

Geographic Information System and database advisory support to the National Water and Sewage Authority (NAWASA)

Project Title:	Climate-Resilient Water Sector in Grenada (G-CREWS)
Project number	18.9029.2-001.00
Assignment:	**up to 5-person months (PM)**
Location:	**Grenada**
Duration of Contract:	**03.01.2022 – 31.05.2022**

1. General information

The project Climate-Resilient Water Sector in Grenada (G-CREWS) presents an opportunity to comprehensively mainstream and implement climate resilience throughout Grenada's entire national water sector. The project's holistic approach addresses two main climate risks and vulnerabilities of Grenada: freshwater availability and disaster preparedness.

To achieve its objective, the project supports the water sector's comprehensive transformation on multiple levels, which represents a nationwide 'paradigm shift' for Grenada's overall resilience. This paradigm shift will include citizens and businesses as water users, the public sector as provider of potable water and infrastructure, and behavioural changes triggered through appropriate governance, regulation, economic incentives and raising awareness.

The project is jointly financed by the Green Climate Fund (GCF) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) under its International Climate Initiative (IKI), and the Government of Grenada. Over 6 years, the Government of Grenada, the Grenada Development Bank (GDB) and the National Water and Sewerage Authority (NAWASA) in partnership with the German Development Corporation (GIZ) implements the project's five components.

financed by GCF:

- Climate-Resilient Water Governance
- Climate-Resilient Water Users
- Climate-Resilient Water Supply System

financed by BMU:

- Additional Contributions of the Water Sector to Grenada's NDC
- Regional learning and replication

The detailed description of the project can be found in in the Funding Proposal[1].

The contractor will contribute to the achievement of output 4, complying with the associated indicators, fulfilling the module objective indicators, and implementing parts of the activities described below.

2. Context

The G-CREWS project aims to improve water efficiency and energy efficiency in the National Water and Sewage Authority (NAWASA's) systems and thus unlocks additional contributions to the project's objective and Grenada's Nationally Determined Contributions (NDC). The project supports NAWASA in implementing measures to enhance their water loss reduction strategy (e.g. water audits, centralized database set-up, GIS-based infrastructure and customer management system and selected replacements of leaking pipes).

So far, the water utility uses spatial data in its planning and engineering projects but has not yet set up a centralized database management system that integrates water usage data as well as operational data necessary to monitor and reduce revenue and non-revenue water losses. The asset and data maintenance responsibilities of the company increases proportionally with development of new transmission and distribution water networks and waste-water network, including water catchment monitoring and management. Observed is the need for a tool to effectively address the responsibilities.

The actual structure of the data model requires a complete review and redesign. The required GIS data model has to allow systematic and automated data analysis and therefore has to follow examples of internationally recommended systems that shall be translated into implementation under economically-affordable operational costs for NAWASA.

In order to connect the customer data base, the billing information, the accounting data base and eventually any other NAWASA data base, like the ware house data base or repair information, interfaces and exchange protocols have to be developed to allow for integration of the Geographic Information System (GIS).

3. Objectives

The overall objective of this assignment is to **develop and implement a strategy of an integrated platform to support spatial data use within NAWASA's operations and thereby provide seamless integration of a Geographic Information System (GIS) with all the utility's existing core business systems and database software.**

Specific Objectives are:

- A combined GIS/Data Management System based on respective GIS software prescribed needs and linked to operation and maintenance, customer and financial database is developed
- Creation of digital forms for ease of work flow including work orders that feed into database including asset management

[1] https://www.greenclimate.fund/project/fp059

- Software implementation strategy with specific IT requirements provided
- NAWASA personnel is trained on implementation and use of new centralized data base usage, incl. GIS
- Develop training program targeting selected personnel/departments on GIS data collection for sustainable replenishment of existing database and capturing new GIS data in unmapped areas.

4. Tasks & responsibilities of service provider

The assignment is expected to be performed by one expert.

The service provider is expected to perform the following tasks during the consultancy:

- Produce a technical assessment report of all database and software systems currently used in NAWASA's operations and recommendations for interface connections of integration into one centralized database management system
- Design of a combined GIS / Data Management System in the fields of leakage detection, leakage management, GPS Mapping with field equipment, asset management and customer service.
- Provide software and hardware recommendations for the integration of the GIS into a centralized data base system, that addresses and interfaces with existing and currently planned systems of NAWASA's operations, including the customer database, the billing information, work order management, the accounting database and eventually any other NAWASA data base, like the warehouse database or repair information (e.g. NorthStar, EPANET, WEAP, Android based mapping devices)
- Work closely with the relevant NAWASA staff, the GIZ team and the international expert on non-revenue water
- Provide server recommendations for additional server capacity needed to operate the new data base structure
- Train respective NAWASA personnel in the operation of the new data base system
- Develop and present a roadmap for smooth transition to the new data base system with specific focus on the integration of GIS.
- Implementation of the new system in three selected/ priority areas.

5. Time schedule & Place

In total, this assignment will have a volume of up to 5-person months (PM) on-side in Grenada. At the beginning of the contract the contractor will develop a timetable with expected deliverable activities and dates.

The assignment will commence on 03.01.2022 and end on 02.06.2022.

The following table proposes the allocation of time aligned to the presumed weight of tasks however, adjustments can be proposed during the pre-assessment period.

ACTIVITY	SUPPORT	EXPERT DAYS
Assessment		
(a) Review existing assessment reports, e.g. recommendations on the GIS system	NAWASA, NRW expert,	

	GIZ	
(b) Launch Meeting: (i) Meet with GIZ and NAWASA to present the assessment approach, logistical arrangements, schedule for executing the assessment and present pre-assessment findings; and (ii) Discuss goals and process of the expert with key personnel of the facilities. (iii) The expert to present examples for potential systems	NAWASA, NRW expert, GIZ	2 months
(c) Summary of preliminary findings: (iv) Produce a technical assessment report of all database, software systems and capacity of staff currently used in NAWASA's operations and recommendations for interface connections of integration into one centralized database management system noting human resource requirement (e.g., It support, data entry, etc).	NAWASA, NRW expert, GIZ	
Design stage		
(d) Design of a combined GIS / Data Management System in the fields of leakage detection, leakage management, asset management, asset mapping and customer service. (e) Provide software and hardware recommendations for the integration of the GIS into a centralized data base system, that addresses and interfaces with existing and currently planned systems of NAWASA's operations, including the customer database, the billing information, work order management, the accounting database and eventually any other NAWASA data base, like the warehouse database or repair information (e.g., NorthStar, EPANET, WEAP, Android based mapping devices) (f) Work closely with the relevant NAWASA staff, the GIZ team and the international expert on non-revenue water (g) Provide server recommendations for additional server capacity needed to operate the new data base structure and human capacity needed for sufficient upkeep of system.	NAWASA, NRW expert, GIZ	1 months
Implementation Stage		
(h) Train respective NAWASA personnel in the operation of the new data base system (i) Develop and present a roadmap for smooth transition to the new data base system with specific focus on the integration of GIS. (j) Implementation of the new system in three selected/ priority areas	NAWASA, NRW expert, GIZ	2 months

The offer shall be calculate based on the 5 months mentioned above. In the contract there is no claim to exhaust the full budget. The budgets are agreed in the contract "up to".

6. Deliverables incl. Report

No.	Deliverables	Due date after start of assignment
1	Inception presentation on schedule for executing the assessment	start
2	Assessment report and presentation to the team on current IT architecture/ system usage, interface requirement across all of NAWASA's departments and human capacity requirements.	+1 months
3	Database software recommendations, incl. server capacity needs and software solution and draft implementation plan	+ 3 months
4	Drafting of procurement specifications	
5	Training plan for NAWASA	+ 5 months

The payment plan for the contract is linked to the above-mentioned deliverables and proposed as follows:

- Advance payment: 20%, with contract signature (only in case of independent experts, not companies)
- First payment: 40% after 1 months, with delivery of assessment report
- Second payment: 20% after 3 months, with delivery of draft implementation plan
- Final Payment: 20%, after completion of task and submission of training report

7. Requirements of qualification and competencies

To achieve the specified objectives, the minimum requirements for the expert profile are the following:

- University degree in Geo-informatics, IT-database management or a related discipline to the relevant subject area;
- Minimum of 10 years of experiences on GIS data;
- Minimum of 2 years work experience in the water sector;
- Proven analytical expertise and vast GIS software experience;
- Proven skills in conducting trainings on GIS and/ or database integration;
- Demonstrable working experiences in a Caribbean utility would be an advantage;
- Project management skills;
- Excellent communication and presentation skills in English;
- Ability to work in a multi-lingual, multi-cultural, and multi-disciplinary team.

8. Requirements of the Offer

- A signed financial offer covering all costs related to the assignment, including the number of expert months required for the assignment with the respective monthly rates;
- The financial offer should be in US Dollars only;
- A signed technical proposal with references to the ToR;
- The technical proposal should be no longer than 10 pages;

- **The financial and technical offer must be in two separate PDFs files**
- An up to date version of expert's CV in English language with a maximum of 3 pages;
- A scanned copy of a valid ID e.g. Passport or Driver's licence (both sides);
- Written confirmation that consultant can issue invoices with tax receipt number;

9. Responsibilities of GIZ

GIZ and/or other actors are expected to make the following available:

- Existing reports from previous consultancies and assessments
- Planning documents on planned non-revenue water interventions under the project and if available, beyond
- Operational experience of equipment and facility and discussion of challenges.

10. Other Provisions

- The offered personnel must be available at the beginning of the contract;
- All intended short-term consultancy services must be agreed and authorized in writing;
- The consultant commits to not disclose confidential information, neither before, nor during, nor after the delivering of the service;
- Publications and media contact will be agreed in advance with the project leader;
- All studies and documents elaborated within the contract will be made available to the project in digital form for discussion and approval;
- All results must be provided to the project leader in digital version (Microsoft office) and needs to follow the corporate design standards;
- Reasonable changes during the assignment will be agreed in writing in advance between the consultant and the responsible person within GIZ
- GIZ reserves the right to pay within 3-5 business days once the deliverables and receipt of original final invoice (signed and stamped) have been reviewed and approved. GIZ does not cover third-party's bank fees charges.

All submissions must be made electronically in PDF format to the e-mail address:
DO_Quotation@giz.de

Please submit the proposal by 21st of December 2021.
For further questions, please contact DO_inquiry@giz.de