



GOVERNMENT OF DOMINICA

Terms of Reference

For

**Consulting Firm to Provide Audit & Feasibility Study of
Irrigation Systems**

**For the Government of the Commonwealth of Dominica,
Ministry of the Blue and Green Economy, Agriculture and
National Food Security, Emergency Agricultural Livelihoods
and Climate Resilience Project**

A. BACKGROUND

The Government of the Commonwealth of Dominica has emphasized agricultural livelihoods as a priority on the national agenda and as such has received financing from the **World Bank (WB)** towards the implementation of the **Emergency Agricultural Livelihoods and Climate Resilience (EALCRP)** Project.

The Emergency Agricultural Livelihoods and Climate Resilience Project complements the role of partners in addressing the first phase of agricultural sector's recovery and leverages the World Bank's global experiences in post-disaster recovery and reconstruction in the Caribbean, as well as post-hurricane emergency recovery loans in small island states.

The project consists of three (3) primary components:

- **Component A** – Restoration of Productive Base for Recovery of Agricultural Livelihoods (USD \$16.5 million)
- **Component B** – Restoration of Key Productive Infrastructure and Institutional Strengthening (USD \$10.6 million)
- **Component C** – Project Management and Coordination (USD 2.4 million) (one (1) of which specific this consultancy will seek to provide services to support.

Component B, Subcomponent B1: Restoration of Key Infrastructure in Agriculture, Livestock, and Forestry (USD \$8.3 million) is aimed at restoring key public sector infrastructure and assets damaged by the hurricane and to reestablish the essential public services for up to 4,800 crop and livestock farmers.

The key areas where reconstruction or rehabilitation of public infrastructure is required include crop propagation centers (to include Forestry Wildlife and Parks Division), The Central Livestock Farm (CLF), Ministry of the Blue and Green Economy, Agriculture, and National Food Security (MBGEANFS) regional offices and training centers, Forestry Wildlife and Parks Division's sylvicultural centers and facilities, building reconstruction and rehabilitation of eco-trails, and rehabilitation of irrigation systems; preparing irrigation designs that address climate risks beyond hurricanes, including better water delivery and reduced waste during the dry season.

B. OBJECTIVES OF THE CONSULTANCY

The objectives of the Consultancy are to undertake audits and feasibility studies for each of the selected Agricultural Irrigation Systems.

The consultants are expected to provide or develop appropriate, site-specific audits for the proposed, rehabilitation, and/or upgrade of systems. Significant emphasis will be placed upon resilience, sustainability, and economics. The consultants are also to take into account the climate of the country, and shall be in compliance with any national, regional or international guidelines on Irrigation Systems.

The appointed consultants will report to Project Manager of the Project Implementation Unit (PIU) within the Ministry of the Blue and Green Economy, Agriculture and National Food Security of the Commonwealth of Dominica, Emergency Agricultural Livelihoods and Climate Resilience Project.

C. QUALIFICATION REQUIREMENTS FOR CONSULTING FIRMS

Consulting firms shall ensure adequate resources are available to complete the work within the specified time frame and shall not engage in any assignment that may place them in a position of not being able to carry out the specific services described in these Terms of Reference.

The consulting firms should be of international documented standard and have the necessary permanent key personnel required to carry out the services. The consultants should have experience in the design and construction of water and irrigation systems in developing countries and specific experience of the design of the aforementioned, the supervision of construction programmes and the provision of project/construction management services. They should also have the financial and technical resources to undertake the assignment.

D. SCOPE OF SERVICES

General

The Consultants will undertake audits and feasibility studies for the proposed (new), rehabilitation, and upgrade of the selected Agricultural Irrigation Systems. This work will include: audits and feasibility studies of existing sites and systems for:

- Four Irrigation Systems – Portsmouth (1 mile), Geneva, Calibishie, and Castle Bruce.

The consultancy will be carried out as follows:

- visits to all sites and the carrying out of site, facility, systems and services audits/surveys
- Preparation and submission of report on audit and project feasibility.

NB: Activities will be carried out under a lump-sum contract.

The MBGEANFS will provide the following to assist the Consultants in the preparation of their deliverables:

- List of Agriculture Irrigation Systems for Works
- Support with access to relevant key stakeholders
- FAO Guidelines
- Site Visits

Audit & Studies

In Phases 1 & 2, the activities of the consultants with respect to: carrying out audits and feasibility studies; will include but not be restricted to the following:

System Audits

The Consultants will visit the sites of all of the systems selected for proposed (new), rehabilitation, and/or upgrade; and carry out comprehensive surveys. These audits will determine the condition of existing systems and its adequacy to provide the services for the purpose intended and determine the proposed/rehabilitation/upgrade requirements. The Consultants will also review the availability and adequacy of the water supply.

Feasibility Study

The Consultants will develop in co-operation with the MBGEANFS an analysis that considers all of the project's relevant factors—including economic, climatic, technical, legal, and scheduling considerations—to ascertain the likelihood of completing the project successfully. It should also include points of vulnerability, recommendations and conclusions and a go/no-go decision.

Safeguards Requirements

1. Ensure all guidance of the Environmental and Social Management Framework of the Emergency Agricultural Livelihoods And Climate

Resilience Project (EALCRP) (<http://www.agriculture.gov.dm/notices/56-environmental-and-social-managementframework-esmf-dominica>) are adhered to and incorporated in the final designs of the irrigation systems and addressed during operational phase, including but not limited to:

- a. specific components/contents of an ESMP commensurate to the level of risks of the irrigation works.
- b. Materials and equipment used should not cause harm to the environment;
- c. Irrigation works including excavation works does not cause soil erosion or destroying microhabitats;
- d. Health and safety concerns of workers are adequately addressed, with special attention when working on dams and large volume of water.

E. DURATION OF CONSULTANCY AND STAFF REQUIREMENTS

The total duration of the assignment is expected to be 4-man months.

F. OUTPUTS: PHASES 1 & 2

System Audit

The Consultants will:

- Check and report on the condition of the existing irrigation systems, identify defects and recommend corrective action, and the availability of water at each site.
- Perform the audit at the time-of-day irrigation would normally take place or system would be at maximum use.
- Collect data, verify whether or not systems are working and identify opportunities to improve water-use efficiency. Data shall include but not be limited to; head locations, head spacing, model and sizes of nozzles, valves and alike, catchment or catch device locations, catchment readings, test run time, meter readings (where possible), pressure readings with locations, date of tests/audit.

Feasibility Study

The Consultants will report on:

- The feasibility of improving, rehabilitating, upgrading the systems and system vulnerabilities.

- The adequacy of the supply based on the increasing demand and utilization of water by surrounding farmlands. Factors to consider but not be limited to include; volume of water required based on crop type at surrounding farm lands, population growth of agricultural lands over a period of time, climatic conditions (the average prevailing atmospheric conditions in a given area over a given period of time), and global-warming and climate change.
- How irrigation can help in securing and increasing food production and improve livelihoods in rural areas/populations.
- The relative water supply, and relative irrigation supply. Operation and maintenance cost per unit, and per unit volume of water supplied.

G. DELIVERABLES

The following are the document delivery requirements:

Site Audit

An audit report for each site

- 3 hard copies and 1 electronic copy

Feasibility Studies

- 3 hard copies and 1 electronic copy

Reporting Requirements and Time Schedule for Deliverables

Specific Deliverable	Timeline
Inception Report	Two (2) weeks after signing of contract
Submission of Draft assessment/Audit report	Six weeks (6) after commencement
Final Assessment/Audit Report	Two (2) week after receipt of Clients comments on draft report.
Draft Feasibility Studies	Three (3) week after acceptance of final Audit report by Client
Final Feasibility Studies	Three (3) weeks after receipt of clients

H. KEY STAFF: PHASES 1 & 2

Team Leader/Manager

The Team Leader/Manager who will lead the team and provide overall management of the programme will be an engineer with the following qualifications, skills and experience:

Qualifications

Degree in Civil Engineering or related fields from a recognized University and a recognized professional qualification from the country of origin or residence, or post graduate qualifications of the same together with:

- Proven project management skills;
- Fluency in English;
- Computer skills – AutoCAD, MS Office, MS Projects etc.
- Knowledge of project related estimation

Professional experience

At least 5 years professional experience, 3 years of which should have been in developing countries and which should have included:

- The design of potable and/or agricultural irrigation systems;
- The design, upgrade, and/or management of irrigation and/or water resource systems
- The management and supervision of medium to large-scale water projects;
- Experience of managing a supervision team.

Quantity Surveyor

Qualifications and skills

Degree in Quantity Surveying from a recognized University and a recognized professional qualification from the country of origin or residence.

Professional experience

At least 5 years professional experience.

Civil Engineer

Qualifications

Degree in Civil Engineering from a recognized University and a recognized professional qualification from the country of origin or residence.

Professional experience

At least 5 years professional experience and 5 years site experience with a good knowledge of Civil Engineering regulations.

Water Resource Engineer

Qualifications

Degree in Water Resources Engineering from a recognized University and a recognized professional qualification from the country of origin or residence.

Professional experience

At least 5 years professional experience and 5 years site experience with a good knowledge of Water Resources regulations.

Surveyors

Qualifications

A professional qualification in building / land surveying / geomatic engineering or an associated discipline from their country of origin or residence.

Professional experience

At least 10 years post qualification professional experience.

Systems to be rehabilitated, upgraded, completed and/or furnished

Item	Region	Description
<i>Propagation Stations</i>		
Portsmouth (1 mile)	North	Feasibility study/audit
Geneva	South	<ul style="list-style-type: none">• Feasibility study/audit• Design
Calibishie	North East	<ul style="list-style-type: none">• Feasibility study/audit
Castle Bruce	East	<ul style="list-style-type: none">• Feasibility study/audit