1. BACKGROUND

1.1 Jamaica, a small island developing state, is particularly vulnerable to climate change and climate related disasters. Over the 12-year period 2001-2012, hydro-meteorological hazards alone have caused damage and losses estimated at J$121.5 billion. On average over this period, the damage and loss suffered amounted to approximately 2% of national Gross Domestic Product (GDP). For instance in 2014 the country experienced severe drought conditions which impacted several sectors among them the agricultural sector, recording estimated losses of JA$900 million for that year.

1.2 Jamaica will likely experience significant changes in temperature and precipitation and sea level rise is projected according to downscaled models described in the the 2015 “State of Jamaican Climate, Information for Resilience Building” report. In summary, the models have indicated that an increase in climate variability will likely result in: a) the mean temperature increase by 0.85°-1.80°C by the 2050; b) the 2030s being up to 4% drier, and the 2050s up to 10% drier; c) 2% less rainfall in the annual mean by the mid-2020s d); an 80% increase in the frequency of Saffir-Simpson category 4 and 5 Atlantic hurricanes over the next 80 years; and e) sea level rise by 0.26-0.82 m by 2100 relative to 1986-2005 levels. Consequently, more impact and damage are anticipated: sea level rise leading to accelerated coastal erosion in some areas; increased flood risk and loss of land; saline intrusion into coastal aquifers; increased destructiveness of tropical storms; loss of protective coastal systems, such as coastal vegetation and coral reefs partly due to higher ocean surface temperatures and loss of livelihoods, especially in climate-and weather-sensitive sectors such as tourism, agriculture and fisheries.

1.3 Scientists have also identified significant implications from climate change for human health and see the phenomenon as a driver of disease migration; contributing to vector borne diseases; and generally affecting the physical, social, and psychological health of humans. In this regard, there are concerns relating to increasing threats of: food shortage, deaths and illnesses associated with heat strokes, cardiovascular and respiratory illnesses, and degradation in air and water quality.

1.4 Because of its climate sensitivity and vulnerability to natural hazards, Jamaica has embarked on a programme to adapt to climate change and build disaster risk resilience. The programme is grounded in the thrust towards resilience building reflected in Vision 2030 Jamaica – National Development Plan, the Growth Inducement Strategy, Medium Term Socio-economic Framework, Climate Change Policy Framework for Jamaica, country strategy agreements with International Development Partners and the budget process.

1.5 One of the projects giving effect to the resilience thrust is Investment Project 1 – Improving Climate Data and Information Management Project (ICDIMP) – funded under the Pilot Programme for
Climate Resilience (PPCR) through the World Bank. The project is aimed at modernising and upgrading the hydro-met monitoring networks to address current deficiencies and to place the country in a position of improving the quality and use of climate related data and information for effective planning and action at local and national levels. The ICDIMP is one of four investment projects under Jamaica’s Strategic Programme of Climate Resilience funded under the PPCR. In addition to the upgrading of the hydro-met network, the project will facilitate a detailed vulnerability assessment of the health sector, and preparation of a costed resilience strengthening plan for climate-proofing the nation’s health facilities and operations which have over time been significantly affected by hydro-met events.  

II. OBJECTIVES OF THE CONSULTANCY

The objectives of this consultancy are:

a) To assess the vulnerability of the health sector (physical facilities and systems) to different climate hazards
b) Determine the degree to which the sector is susceptible to adverse effects of climate variability and change (based on the projections outlined in the State of the Jamaican Climate)
c) Identify the extent to which coping mechanisms are in place and the efficacy of such mechanisms against those conditions projected in the scenarios
d) Propose initiatives to build resilience
e) Develop a costed plan in order to build resilience within the sector.

III. SCOPE OF WORK

In carrying out the assignment, the consultant will collaborate with the Ministry of Health and all other relevant local or regional technical bodies. The consultant will undertake a literature review of the subject matter and identify the vulnerable population and regions in Jamaica and how these may change in the future and impact the burden on the health sector considering different climate scenarios. The consultant will utilize the outputs based on the 2015 State of the Jamaican Climate (SOJC) report which seeks to establish future climate scenarios over the near to long term. This study will allow for the assessment of the expected consequences of climate change and variability on the sector by providing projections for relevant climate parameters for different timescales and geographic locations.

The Consultant will also build upon work done under the WHO/PAHO/DFID “Smart Health Care facilities Initiative” targeted at the improving the structural condition, function and greening of health facilities. To date, fifteen (15) facilities have been assessed under this project.

Specifically the consultant will:

A. Determine the specific aspects and locations to be assessed, and identify the hazards to which these are exposed in collaboration with the Ministry of Health
B. Undertake vulnerability assessment of the facilities identified. The analysis will include but not be limited to the following:

1 WHO/PAHO, 2012 Annual Report: Emergency Preparedness and Disaster Relief, health facilities in the Caribbean including Jamaica are overwhelmingly affected by storm (75%) and flooding (21%) than any other disaster events
• Hospitals
• Selected health centers and the services provided. The health centers will be selected based on the type of facility and geographical location. The outputs of the 2015 State of SOJC will also be utilized especially in relation to the climate vulnerability profiles of some major towns/communities
• Administrative facilities at the national and regional levels.

C. For the facilities identified in b above, carry out:
• A structural vulnerability assessment (using SOJC 2015) by identifying areas of weakness and recommending mitigation measures.
• An assessment of
  ▪ The emergency water supply and power supply systems
  ▪ Waste management capacity
  ▪ System for grounds management – removal of debris to facilitate access of emergency vehicles and staff
  ▪ Storage for food and pharmaceuticals/medicines and sundries.
  ▪ Assessment of medical equipment, IT infrastructure and storage capacity.

D. Undertake vulnerability assessment of the systems/operational practices/protocols including but not limited to:
• Inventory management and stores
• System to access and preposition emergency supplies
• Surveillance
• Emergency Response Capacity
• Information management system- policy and strategies, records management (safety and backup).

E. Assess the adaptive capacity of the sector (to include surge capacity considerations). In so doing, document the evidence of coping mechanisms in place, robustness and efficacy in current conditions, as well as scalability and replicability to meet new conditions.

F. Identify adaptation strategies.

G. Based on the findings above the consultant will prepare a phased, costed investment plan for the sector considering all the relevant components, such as the infrastructure and systems, which will make the sector more climates resilient taking into consideration the National Building Code of Jamaica, Ministry of Health Building Specifications.

H. Conduct validation workshops with the key technical stakeholders.

I. Organize and present findings and recommendations at a stakeholder workshop.

IV. EXPECTED DELIVERABLES

The deliverables of this assignment will include the following:
1. A detailed work plan and methodology
2. First draft of the vulnerability assessment report
3. Final draft of vulnerability assessment report
4. A phased and costed investment plan to make the health sector more climate resilient
5. Validation workshops with key technical stakeholders
6. Stakeholder workshops to present findings and recommendations.

V. SPECIFICATIONS OF THE CONSULTANCY

• Type of consultancy: Firm

• Duration: The entire consultancy will be for a maximum of 70 effective working days elapsed over a period of 9 months.

• Assignment Location: The assignment requires extensive field work across Jamaica and therefore the consultant is required to be in Jamaica especially at critical periods, including the identification of the aspects/locations to be assessed, undertaking the vulnerability assessment, and conducting the stakeholder workshops.

• Qualification and Experience: The consultant also must be able to design and conduct vulnerability assessments and experience in health risk analysis under climate change projections. The team leader should possess an advanced degree or equivalent with at least eight years’ experience in Environmental Management and/or climate change related fields. Key team members should have:
   ▪ Working experience in conducting climate change vulnerability assessments in developing countries particularly in the health sector
   ▪ Experience in developing investment plans and cost estimates
   ▪ Qualifications and experience in civil/structural engineering
   ▪ Knowledge and working experience with GIS applications.

Importantly the consultant should have done similar assignments in the past 10 years.

• Execution of this Terms of Reference requires the following:
   ▪ Excellent communication skills and excellent knowledge of the English language (both spoken and written); It is important to note that Stakeholder engagement is critical to this consultancy. The consultant is expected to engage the Health Sector Stakeholders throughout the entire process from inception
   ▪ Ability to interface with government officials, and other stakeholders
   ▪ Ability to travel and conduct site visits to the various health facilities across Jamaica.

VI. REPORTING/COORDINATION

Reporting to a technical working group (comprising of members of the steering committee), the consultant will work under the supervision of the PIU and in close collaboration (“day to day”) with the MOH Focal Point. The Project Manager will manage the contractual arrangement and will liaise with the consultant as required to monitor the progress of the assignment. Formal meetings and presentations will be scheduled for the consultant to discuss the progress of the assignment.
VII. EVALUATION CRITERIA

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Max. Points Assigned</th>
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<tbody>
<tr>
<td>1. Technical and Managerial qualification and experience (Max 30 points)</td>
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<tr>
<td>a) Team Lead – An advanced degree or equivalent (eg. professional designation)</td>
<td>10</td>
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<tr>
<td>b) Team Lead Experience in Environmental Management or Climate Change (5)</td>
<td></td>
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<tr>
<td>• 8 Years and over</td>
<td>5</td>
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<tr>
<td>• 4-7 years</td>
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<td>• 1-3 years</td>
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<tr>
<td>• No experience in Environmental Management or Climate Change</td>
<td>0</td>
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<tr>
<td>c) Team lead has Project Management Experience</td>
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<tr>
<td>d) Consultant has done similar or related assignments in last 10 years in the health sector</td>
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<tr>
<td>2. Knowledge and Experience with GIS (Max 10 points)</td>
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<tr>
<td>• 10 years and over</td>
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<td>• 5-9 years</td>
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<td>• 1-4 years</td>
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<td>• No experience in GIS applications</td>
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<td>3. Demonstration of developing investment plans/cost estimates (Max 10 points)</td>
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<tr>
<td>• 10 or more similar assignments undertaken</td>
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<td>• 5-9 similar assignments undertaken</td>
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<td>• 1-4 similar assignments undertaken</td>
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<tr>
<td>• 0 similar assignments undertaken</td>
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<tr>
<td>4. Experience of Consultant in conducting VA (Max 20 points)</td>
<td></td>
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<tr>
<td>• 15 years and over conducting Vulnerability Assessments</td>
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- 10-14 years conducting Vulnerability Assessments
- 5-9 years in conducting Vulnerability Assessments
- 4-1 years in conducting Vulnerability Assessments
- No experience in conducting Vulnerability Assessments

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<thead>
<tr>
<th>Qualification in civil/structural engineering (Max 10 points)</th>
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<tbody>
<tr>
<td>Key Staff qualification in PhD in field</td>
<td>10</td>
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<tr>
<td>Key Staff qualification in MSc in field</td>
<td>7</td>
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<tr>
<td>Key Staff qualification in Bachelor’s Degree in field</td>
<td>4</td>
</tr>
<tr>
<td>No qualification</td>
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</table>

6. **Knowledge and experience in the Health Sector**

(Plant/procedures/systems) (Max 10 points)

- 10-14 years in managing plant/procedures/systems in the health sector
- 5-9 years in managing plant/procedures/systems in the health sector
- 4-1 years and under in managing plant/procedures/systems in the health sector
- No experience in managing plant/procedures/systems in the health sector

| Demonstration of good communication skills and excellent knowledge of the English language (Max 5 points) | 5 |

8. **Demonstration of ability to interface with various stakeholders (Max 5 points)**

| TOTAL | 100 |
CONFIRMATION FORM

Name of Project | Improving Climate Data and Information Management Project

Company Name

Mailing Address

Name of Contact(s)

E-Mail Address(es)

We will be submitting an Expression of Interest

Signature: ____________________________________________

Title: ________________________________________________

In order to receive further information about this REOI, this form should be completed and returned via email to johnson@pioj.gov.jm or cmccarthy@pioj.gov.jm.

All prospective firms that have obtained the TOR from the PIOJ and who have completed the confirmation form will be notified of any modifications or amendments by email communication, which shall be binding on them. Emails shall be considered given at the time of its actual transmission, provided that the sender receives a receipt for the email message from the recipient.