

TERMS OF REFERENCE

GEOGRAPHICAL INFORMATION SYSTEMS (GIS) EXPERT

1. BACKGROUND

The Caribbean Public Health Agency (CARPHA), as the lead regional public health agency and an expression of Caribbean Cooperation in Health, is mandated by its Inter-governmental Agreement (IGA) to support its 26 Member States in bolstering national systems and coordinating regional response to public health threats. CARPHA has established programs for pandemic prevention, preparedness and response (PPR) and coordination (Communicable Diseases, Emergency Response, Tourism and Health, Foodborne, Vector-borne, and Field Epidemiology) and serves as the Regional Reference Laboratory for Public Health. The Agency works closely with regional and international agencies and uses regional mechanisms, surveillance systems, and networks for coordinating its public health response work. CARPHA is competent in all three areas of PPR and has a successful track record of the same, as demonstrated by its regional COVID-19 response. The Agency is uniquely positioned for successfully implementing PPR capacities in the region, and to leverage its coordinating ability to encourage complementarity.

The Pandemic Fund (PF), established in September 2022, is the first multilateral financing mechanism dedicated to providing multiyear grants to help low- and middle-income countries become better prepared for future pandemics. The PF's first Call for Proposals provides additional financing to strengthen PPR capabilities and address critical gaps in low- and middle-income countries through investments and technical support at the national, regional, and global levels. It is expected to support and reinforce capacity building and implementation of pandemic prevention, preparedness and response (PPR) under the International Health Regulations (2005) (IHR) and other legal frameworks, consistent with the One Health approach. The three high-priority areas are:

- Comprehensive disease surveillance and early warning systems (EWS)
- Laboratory systems
- Human resources and public health and community workforce capacity.

In August 2023, the PF Governing Board announced that CARPHA's regional entity proposal, entitled '*Reducing the Public Health Impact of Pandemics in the Caribbean through Strengthened Integrated Early Warning Surveillance, Laboratory Systems and Workforce Development*' was successfully selected for the first round of financing. CARPHA is the Executing Agency and the IDB is the Implementing Entity.

The goal of this project is to reduce the Public Health Impact of Pandemics in the Caribbean through Prevention, Preparedness, and Response. The objective is to support CARPHA in reducing the public health impact of pandemics in the Caribbean region and to build PPR surveillance & EWS, laboratory systems and workforce capacity regionally at CARPHA and at country levels.

The Project comprises the following five components:

- Component 1: Strengthening and Expanding Integrated EWS
- Component 2: Expansion of Laboratory Systems
- Component 3: Workforce Development
- Component 4: Regional Strategic Coordination, Collaboration & Commitment to Pandemic Response
- Component 5: Monitoring, Evaluation, and Project Management

2. OBJECTIVE

This position will provide technical support to build regional capacity to map disease cases in geographic space, so that surveillance staff can easily identify the distribution and spread of diseases across geographic regions to optimise planning of interventions and monitor their effectiveness.

3. SCOPE OF SERVICES, TASKS AND EXPECTED DELIVERABLES

- 3.1. Survey availability of GIS infrastructure and mapping capabilities in CARPHA member states (CMS), including hardware, software, data availability, and human resources.
- 3.2. Support the geospatial analysis and mapping of the indicator markers identified to be mapped.
- 3.3. Develop the standard geospatial data requirements for integrating existing surveillance data with geographical information. Include a georeferenced database able to contain essential information for effective use of mapping, including the list of essential geospatial attributes and the corresponding metadata following the ISO 19115 standards.
- 3.4. Co-facilitate workshops with the Ministries of Health in CMS involving other ministerial sectors (e.g. agriculture, disaster and preparedness, national security) to sensitize and determine the next steps towards mapping essential/key indicators.
- 3.5. Implement a fully functional GIS in at least four (4) CMS which should include:
 - Gathering, analysing, and integrating spatial data from in-country sources and determining how best the information can be displayed using GIS.
 - Amending and updating communicable disease databases to apply additional knowledge of spatial feature representations.
 - Produce set of GIS displays and interactive maps that will enable different users access to layers of information and produce tailored reports
 - Identify the base maps to be linked to the georeferenced database (e.g. topographic maps, roads maps, critical infrastructure such as clinics, police, bridges etc.)
 - Entering new spatial data through use of a digitizer or by direct input of coordinate information using the principles of cartography including coordinate systems of longitude, latitude, elevation, topography and map scales.
 - Developing overlays for indicator markers such as river courses, city details, hospitals, health facilities, urban and rural developments.
 - Introducing spatial techniques to determine associations such as those found between disease prevalence, environmental and socio-economic parameters.
- 3.6. Report on the overall project and countries' progress.
- 3.7. Build CMS' and CARPHA's capacities for managing, updating and making adjustments to the georeferenced database developed:
 - Prepare a User Manual including the instruction to manage and manipulate the georeferenced database.
 - Train focal points in all the aspects of database management and data collection.
 - Prepare a final report with potential needs for CARPHA and CMS.

4. QUALIFICATIONS AND EXPERIENCE

Academic Qualifications:

- A university degree in geoinformatics, geospatial science, or a related discipline
- Desirable: Degree or studies in public health, communicable diseases, public health planning
 - Any combination of working and educational experience in Public Health will be considered.

Experience:

- At least 5 years of well-rounded experience in GIS in multiple sectors.
- At least 5 years of working experience in information management.
- At least 5 years of experience in designing and building linked databases.
- At Least 5 years of experience in designing capacity development and training.
- Experience in working across Government Departments.

Expert Knowledge and Skills:

- Expert knowledge of written and spoken English

- Proficiency in GIS software and tools, such as ArcGIS, QGIS, and other spatial analysis software, including knowledge of Python or R for spatial data analysis.
- Experience with database management systems such as SQL Server, PostgreSQL/PostGIS, or Oracle, and familiarity with data visualization tools like Tableau or Power BI.
- Capacity to promote and implement collaboration and exchange with CMS, partners, and CARPHA Staff toward the implementation of best practices for preparing and responding to public health emergencies.
- Proven organizational and analytical skills, together with excellent interpersonal skills.
- Proven ability to communicate and to write technical documents in a clear and concise manner.
- Ability to work harmoniously as a member of a team, adapt to diverse cultural and educational backgrounds and maintain a high standard of personal conduct.

Mandatory Compliance:

- **Eligibility:** as per *Policies for the Selection and Contracting of Consultants Financed by IDB-GN-2350-15 May 2019*: Section I. Clause 1.13 Eligibility. Information on Eligible Countries is at Annex 3.
- **No Conflict of Interest:** as per *Policies for the Selection and Contracting of Consultants Financed by IDB-GN-2350-15 May 2019*: Section I Clause 1.11 Conflict of Interest
- **Not Sanctioned by the Bank:** IDB's Group List of sanctioned firms and individuals – <https://www.iadb.org/en/topics/transparency/integrity-at-the-idb-group/sanctioned-firms-and-individuals%2C1293.html>

5. CHARACTERISTICS OF THE CONSULTANCY

- Type of Consultancy: Individual
- Duration: 26 months
- Place of Work: Caribbean Public Health Agency (CARPHA) HQ, Port of Spain, Trinidad and Tobago
- Working Language: English

6. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

All payments will be made upon submission and acceptance of monthly invoices and timesheets by the Project Director (CARPHA Technical Lead) or designate.

7. CLIENT INPUT AND COUNTERPART PERSONNEL

CARPHA will provide the **GIS Expert** with the applicable laws and policies, Operations Manual, relevant project documentation, office space and relevant computer equipment.

8. COORDINATION

The **GIS Expert** will report to the Technical Coordinator and the Project Director (CARPHA Technical Lead) or designate. The Project Director will be responsible for the coordination of activities under the contract, for accepting and approving reports on behalf of CARPHA, receiving and approving invoices for payment, and preparing performance evaluation reports.

The **GIS Expert** is expected to collaborate, liaise or meet as required with specialist team members in the PEU, CARPHA's personnel, assigned subject matter experts, executives and stakeholders, and representatives of the IDB.

Annex 1: Evaluation Criteria

| Selection Component | Evaluation Criteria | Max Points |
|---------------------------------------|--|------------|
| 1. Academic Qualifications | A university degree in geoinformatics, geospatial science, or a related discipline | 10 |
| | Desirable: Degree or studies in public health, communicable diseases, public health planning. Any combination of working and educational experience in Public Health will be considered. | 5 |
| 2. Required Experience | <ul style="list-style-type: none"> At least 5 years of well-rounded experience in GIS in multiple sectors. | 10 |
| | <ul style="list-style-type: none"> At least 5 years of working experience in information management. | 10 |
| | <ul style="list-style-type: none"> At Least 5 years of experience in designing capacity development and training. | 10 |
| | <ul style="list-style-type: none"> Experience in working across Government Departments. | 10 |
| 3. Expert Knowledge and Skills | Expert knowledge of written and spoken English | 10 |
| | Proficiency in GIS software and tools, such as ArcGIS, QGIS, and other spatial analysis software, including knowledge of Python or R for spatial data analysis. | 10 |
| | Experience with database management systems such as SQL Server, PostgreSQL/PostGIS, or Oracle, and familiarity with data visualization tools like Tableau or Power BI. | 10 |
| | Capacity to promote and implement collaboration and exchange with CMS, partners, and CARPHA Staff toward the implementation of best practices for preparing and responding to public health emergencies. | 10 |
| | Proven ability to communicate and to write technical documents in a clear and concise manner. | 5 |
| Total Points | | 100 |

Annex 2: Curriculum Vitae format

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|--------------------------------|---------------------------|
| Name of Consulting Service: | |
| Name of Individual Consultant: | <i>[Insert full name]</i> |
| Date of Birth: | <i>[day/month/year]</i> |
| ¹ Nationality | |

Education: *[List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained]*

Experience Relevant to the Assignment: *[Experience related to the services and tasks to be performed; professional skills according to the assignment requirements, and knowledge of administrative systems and government organization within the country of the Employer, Region or similar. List previous positions relevant to the Assignment in reverse order, provide dates, name of contracting organization, titles of positions held, types of activities performed that best illustrate capability to handle the services/tasks and location of the assignment. Provide contact information of previous Employers who can be contacted for references. past position that is not relevant to the assignment does not need to be included.]*

| Period | Contracting Organization/type of services provided/ Title/Position; Contact Information for References | Country | Summary of Key Activities Performed relevant to the Assignment |
|---------------------------------|--|---------|--|
| <i>[e.g., May 2015-present]</i> | <i>[e.g., Ministry of, advisor/consultant to... For references: Tel...../e-mail.....; Mr. Bbbbbb, Deputy Minister]</i> | | |
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¹ See Annex 3 of the Terms of Reference Outline for list of member countries of the Bank

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Membership in Professional Associations and Publications:

Language Skills (indicate only languages in which you can work):

Consultant contact information: *[e-mail....., Telephone No.....]*

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, experience, skills and knowledge and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Employer, and/or sanctions by the Bank.

| | | |
|--------------------|-----------|------------------------------|
| Name of Consultant | Signature | Date <i>[day/month/year]</i> |
|--------------------|-----------|------------------------------|

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|---|-----|----|--|
| | Yes | No | I confirm that I will be available to carry out the assignment for which my CV is submitted in accordance with the scope of services and Consultant’s reporting obligations set out in the Terms of Reference. |
| (i) This CV correctly describes my qualifications, experience, skills and knowledge | | | |
| (ii) I am employed by the Executing or the Implementing Agency | | | |
| (iii) I was part of the team who wrote the Terms of Reference for this consulting services assignment | | | |
| (iv) I am currently debarred by a multilateral development bank (If yes, identify who) | | | |

Annex 3: Eligible Countries

This section lists the Bank's member countries, as well as the criteria to determine the nationality of consultants.

"Eligible countries are: Argentina, Austria, Bahamas, Barbados, Belgium, Belize, Bolivia, Brazil, Canada, Colombia, Costa Rica, Chile, Croatia, Denmark, Dominican Republic, Ecuador, El Salvador, Finland, France, Germany, Guatemala, Guyana, Haiti, Honduras, Israel, Italy, Jamaica, Japan, Mexico, Netherlands, Nicaragua, Norway, Panama, Paraguay, People's Republic of China, Peru, Portugal, Republic of Korea, Slovenia, Spain, Suriname, Sweden, Switzerland, Trinidad & Tobago, United Kingdom, and United States, Uruguay and Venezuela.

Eligible Territories are:

- a) Guadeloupe, French Guiana, Martinique, Reunion – as Departments of France
- b) U.S. Virgin Islands, Puerto Rico, Guam – as Territories of the USA
- c) Aruba – as a constituent country of the Kingdom of the Netherlands; and Bonaire, Curacao, Saint Marten, Saba, St Eustatius – as Departments of the Kingdom of the Netherlands
- d) Hong Kong – as a Special Administrative Region of the People's Republic of China".

Nationality and origin of Goods and Services Criteria

The policy provisions make it necessary to establish criteria to determine a) the nationality of the firms and individuals eligible to bid or participate in a bank-financed contract and b) the country of origin of goods and services. For these determinations, the following criteria shall be used:

Nationality:

An individual is considered to be a national of a member country of the Bank if he or she meets either of the following requirements:

- i. is a citizen of a member country; or
- ii has established his/her domicile in a member country as a "bona fide" resident and is legally entitled.