ANNEX II: TERMS OF REFERENCE

Consultancy to support the CARPHA DHIS2 Regional Data Repository for Health

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1. BACKGROUND INFORMATION

1.1. Partner country

Twenty-six (26) CARPHA Member States (CMS): Anguilla, Antigua & Barbuda, Aruba, Bahamas, Barbados, Bermuda, Belize, Bonaire, St. Eustatius, Saba, British Virgin Islands, Cayman Islands, Curacao, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Maarten, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, and Turks and Caicos Islands.

1.2. Contracting authority

Caribbean Public Health Agency (CARPHA)

1.3. Country background

CARPHA was legally established as the regional public health agency in July 2011 by an Inter-Governmental Agreement of the Caribbean Community (CARICOM) Heads of Government. Grounded in the philosophy and principles of regional cooperation as outlined in the Treaty of Chaguaramas (1973), CARPHA was created to oversee the implementation of the regional strategy for cooperation in health as a vital element of regional human, social and economic development and resilience. The Agency merges and rationalises the operations of five previous Regional Health Institutions, with an enhanced scope and depth of support to Member States:

- Caribbean Environmental Health Institute (CEHI);
- Caribbean Epidemiology Centre (CAREC);
- Caribbean Food and Nutrition Institute (CFNI);
- Caribbean Health Research Council (CHRC); and
- Caribbean Regional Drug Testing Laboratory (CRDTL).

The Agency's services to its Member States are guided by the functions established by the Inter-Governmental Agreement (IGA) and the Caribbean Cooperation in Health (CCH) framework, which establishes health priorities for the Region. These are aligned with the essential public health functions to assess needs, develop policy and assure quality. In collaboration with regional and international Agencies and Development Partners, CARPHA provides technical evidence-based guidance and support to Member States in alignment with the six (6) main objectives of its mandate:

1. To promote the physical and mental health and wellness of people within the Caribbean;
2. To provided strategic direction, in analysing, defining and responding to public health priorities of the Caribbean Community;
3. To promote and develop measures for the prevention of disease in the Caribbean;
4. To support the Caribbean Community in preparing for and responding to public health emergencies;
5. To support solidarity in health, as one of the principal pillars of functional cooperation in the Caribbean Community; and
6. To support the relevant objectives of the CCH as approved by the Council for Human and Social Development (COHSOD) of CARICOM.

The Surveillance, Disease Prevention and Control Division of CARPHA is responsible for, *inter alia*, regional surveillance of communicable and vector borne diseases, conducting epidemiological investigations, monitoring and responding to increased disease trends and outbreaks, and strengthening the capacity of its Member States for national surveillance, prevention and control of diseases.

1.4. Current situation in the sector

The disease surveillance function of CARPHA involves routine collection, collation, verification, analysis, and dissemination of data from Member States. Currently, there is a hybrid system using a mix of procedures for collecting and managing data, from weekly email reports requiring manual input into Microsoft Access databases, to periodic country assessments to collect and validate data, to the use of a DHIS2-based repository to manage certain datasets. CARPHA also implements new datasets as needed, to support monitoring of diseases that require increased surveillance and control.

CARPHA seeks to continue the migration of its datasets to its DHIS2 platform (and expansion as needed), called the ***CARPHA Regional Repository for Health***, to address the challenges of the hybrid system, including:

- Limited resources within CARPHA for data entry
- Much-needed support for the data validation process
- Limited access to data by technical officers in CARPHA and its Member States, and
- Limited analysis of data by Member States for its own purposes

These challenges were compounded during the COVID-19 pandemic and increased the need for CARPHA to implement its online surveillance system to continue national and regional monitoring and detection of disease threats.

1.5. Related programmes and other donor activities

This activity and related work to strengthen regional public health surveillance systems are being undertaken by the CARPHA through a project funded by the Agence Française de Développement (AFD), or French Development Agency in English) and the World Bank.

2. OBJECTIVE, PURPOSE & EXPECTED RESULTS

2.1. Overall objective

The overall objective of the project of which this contract will be a part is:

To improve Caribbean public health programs that influence morbidity and mortality and improve the resilience of populations facing climate changes.

The specific objective of the relevant project component is:

To strengthen disease surveillance toward more effective evidence-informed public health decision-making and action, by ensuring that relevant, timely and accurate surveillance data are available to monitor the health status of CMS and to produce strategic information that is readily available for national and regional decision- and policy-making.

2.2. Purpose

The purpose of this contract is:

To optimize and expand the current CARPHA DHIS2-based data repository to facilitate the direct access to additional datasets by CARPHA and its Member States and Associates to input, manage and generate reports on country-specific and regional communicable and vector-borne disease surveillance data.

2.3. Results to be achieved by the contractor

The results to be achieved by the Contractor are as follows:

i. **Result 1:** Inception Report, including a detailed Workplan, developed and submitted for approval of the Project Manager.

ii. **Result 2**: CARPHA Regional Data Repository for Health optimised, updated and expanded, focusing on seven (7) specified datasets, populated with historic data where required, with indicators for analysis, standard reports and visualisations for dashboard view.

iii. **Result 3:** System documentation developed, including technical manual for CARPHA and CMS user manual and training materials.

iv. **Result 4:** Pilot of each specified dataset implemented in 3 CMS and CARPHA.

v. **Result 5:** Training sessions conducted and recorded as follows: one (1) train-the-trainers session with CARPHA staff and two (2) sessions with CMS on how to use CARPHA DHIS datasets (one specific to communicable diseases and one specific to vector borne diseases).

vi. **Result 6**: Implementation support provided to CARPHA and CMS for a one-month period.

vii. **Result 7:** Draft and Final Reports submitted and accepted in accordance with the reporting requirements in Section 7 of these Terms of Reference.

3. ASSUMPTIONS & RISKS

3.1. Assumptions underlying the project

- CMS continued commitment to national and regional surveillance of the datasets;
- CMS identify and facilitate the participation of relevant staff in the pilot and training;

3.2 Risks

- Project implementation may be delayed by the occurrence of public health emergencies and natural disasters (such as hurricanes) in the region during the implementation period, which may require the attention of relevant CARPHA and CMS staff;
- Lack of commitment by CMS could impede the adoption and implementation of the recommendations.
- Hardware/software failure

4. SCOPE OF THE WORK

4.1. General

The **CARPHA Regional Data Repository for Health** supports the public health surveillance at national and regional levels, and facilitates data entry, validation, analysis and reporting functions. The Project involves the optimisation, updating and expansion of the DHIS2-based **CARPHA Regional Data Repository for Health** with a focus on seven (7) datasets related to communicable disease and vector borne disease surveillance in CARPHA Member States. The Contractor will also assess the existing setups, conduct a pilot and provide support for implementation of the optimised, updated and expanded datasets in CMS and CARPHA.

4.1.2 Geographical area to be covered

CARPHA Member States.

4.1.3 Target groups

Target groups for this project will primarily include technical staff of CARPHA and the various CMS Ministries of Health, including surveillance officers, environmental health officers and vector control workers.

4.2. Specific work

The specific tasks to be carried out by the Contractor are as follows:

Result 1: Inception Report, including a detailed Workplan, developed and submitted for approval of the Senior Technical Officer.

1.1 Engage in an initial briefing and follow-up engagement as required with the Project Manager and relevant CARPHA personnel to discuss the scope of work to be undertaken, the approach and any other issues pertaining to the Project upon the commencement of the contract.

1.2 Conduct a desk review of the existing datasets, additional data forms, formulae for aggregations, indicators and indices, criteria for standard reports and visualisations and other relevant information provided by CARPHA. Desk research on methodologies and other considerations may also be required.

1.3 Discuss and agree with the Project Manager and CARPHA technical team on the approach and methodology to be used, including information systems flow and user experience design.

1.4 Prepare and submit for the approval of the Project Manager, an Inception Report which includes a detailed workplan with timelines and methodology for the specific project activities to be undertaken, findings of desk research and an Information System / Data Flow Diagram for the datasets. A draft template for interim reports should be proposed, as well as a schedule for submission. Demos of the work on the DHIS2 platform will also be required to be made to the Project Manager and relevant CARPHA staff for review of progress and feedback – these should be scheduled where possible, but should also be available upon request.

Result 2: CARPHA Regional Data Repository for Health optimised, updated and expanded

2.1 Optimise and update four (4) existing datasets and indicators as itemised below. Optimizing includes reviewing and restructuring existing datasets by standardizing the common variables, making any changes that will enable easier data entry, querying and reporting. Updating existing

datasets includes aligning existing DHIS2 datasets/data entry screens with revised forms and indicators.

2.1.1 Four-weekly
2.1.2 Syndromic
2.1.3 SARI/ARI
2.1.4 Population

2.2 Populate two (2) datasets with existing historic data from Microsoft Access database:

2.2.1 Syndromic
2.2.2 SARI/ARI

2.3 Develop three (3) new datasets and indicators as itemised below, ensuring data import facilities:

2.3.1 Outbreak investigation form
2.3.2 Notes on dataset
2.3.3 Entomological surveillance

2.4 Update, optimise and develop standard reports and visualisations for generation by country, region and CARPHA, and integrated dashboard as itemised below:

2.4.1 In-country reports with generalised and facility-specific reports using historic and current data
2.4.2 Summary reports by country
2.4.3 Regional aggregate reports not broken down by country
2.4.4 Integrated dashboards for country, regional and CARPHA users showing reports, tables, visualisations and indicator results for (i) data trends over a time period, and (ii) real-time, weekly, monthly, quarterly and yearly summaries and report logs

2.5 Prepare and submit for the approval of the Project Manager, interim reports on the progress made as per agreed workplan and template. This should include demos at key points to demonstrate progress and seek feedback and approval.

Result 3: System documentation developed, including technical manual for CARPHA and CMS user manual and training materials.

3.1 Using an outline agreed with the Project Manager, develop a technical manual for CARPHA for its role as administrator of the datasets and system, including but not limited to the documentation of dataset structures, code requirements, data dictionaries to facilitate data imports, and step-by-step instructions to upload external data into forms/datasets via the DHIS2 data import facility.

3.2 Using outlines agreed with the Project Manager, develop a user manual and training materials for CMS users, including step-by-step instructions for data entry, validation, analysis, reporting, visualisation and dashboard use. It should also include relevant information on dataset structures, code requirements, data dictionaries, and step-by-step instructions to facilitate data submission via the DHIS2 data import facility.

3.3 Prepare and submit for the approval of the Project Manager interim reports on the progress made as per agreed workplan and template. This may include drafts at key points to demonstrate progress and seek feedback and approval.

Result 4: Pilot of each specified dataset implemented in 3 CMS and CARPHA.

4.1 Prepare and submit for the approval of the Project Manager a draft approach to the pilot exercise in CMS and CARPHA.

4.2 In accordance with the agreed pilot methodology, and with CARPHA coordination and identified CMS stakeholders, conduct a pilot test of the dataset functions, including training and technical implementation support as required.

4.3 Prepare and submit for the approval of the Project Manager interim reports on the progress made as per agreed workplan and template. This should include findings of the pilot test and recommendations for updates to the system and/or system documentation for the review and approval of the Project Manager.

Result 5: Training sessions conducted and recorded as follows: one (1) train-the-trainers session with CARPHA staff and two (2) sessions with CMS on how to use CARPHA DHIS datasets (one specific to communicable diseases and one specific to vector borne diseases).

5.1 Update the system and/or system documentation in accordance with the agreed changes based on recommendations coming out of the pilot.

5.2 Prepare and submit for the approval of the Project Manager a draft approach to the three training sessions, including a detailed training agenda for each session and supporting documentation / materials, such as slide decks.

5.3 In accordance with the agreed training methodologies, and with CARPHA coordination and identified CMS stakeholders, conduct the three training sessions live (which will be recorded by CARPHA for distribution to users of the system).

5.4 Prepare and submit for the approval of the Project Manager interim reports on the progress made as per agreed workplan and template. This should include results of the training sessions and copies of the final detailed training agenda and supporting documentation and materials.

Result 6: Implementation support provided to CMS and CARPHA for a one-month period.

6.1 In coordination with CARPHA, provide implementation support to CARPHA and identified CMS stakeholders to utilise the system for data entry, validation, analysis, reporting, visualisation and dashboard use, as well as use of the data import facility to submit data.

Result 7: Draft and Final Reports submitted and accepted in accordance with the reporting requirements in Section 7 (Reports) of these Terms of Reference.

7.1 Develop and submit a draft final report to the Project Manager, in accordance with the reporting requirements in Section 7 of these Terms of Reference.

7.2 Submit a final report to the Project Manager, in accordance with the reporting requirements in section 7 of these Terms of Reference.

4.3. Project management

4.3.1. Responsible body

The Surveillance, Disease Prevention and Control (SDPC) Unit of CARPHA will be responsible for the management and coordination of the Project.

4.3.2. Management structure

Project management organisation will consist of the following structures:

i. The Manager, Information Technology, CARPHA, will be the Project Manager. They will have operational oversight for the consultancy and will also be responsible for the day-to-day supervision of project activities. They will coordinate with the technical leads, the Senior Technical Officer, Health Information Communicable Diseases and Emergency Response (HCE) department, and the Head, Vector Borne Diseases, and will provide comments as well as approval of the deliverables of the Consultant.

ii. Key CARPHA personnel, including but not limited to the Information Systems Unit and the Programme Coordination Unit, will be consulted from time to time and may review reports and deliverables of the Contractor and provide recommendations to the Project Manager.

iii. The CARPHA Executive Management Team, led by the Executive Director, will retain strategic oversight and direction of the consultancy. They shall be responsible for the final decisions on the deliverables of the Contractor. They may consult with the CARPHA Executive Board and the funding partner, AFD, prior to decision-making.

4.3.3. Facilities to be provided by the contracting authority and/or other parties

CARPHA will facilitate coordination, logistics and project administrative and contract administrative support. More specifically, CARPHA shall:

i. Provide the Contractor with the relevant background information, data and specifications required to complete the project in a timely manner;

ii. Provide access to the CARPHA DHIS2 system to the Contractor;

iii. Identify and obtain the commitment of CMS stakeholders to participate in the pilot and implementation phases.

iv. Provide timely feedback to demos, reports and deliverables submitted by the Contractor.

5. LOGISTICS AND TIMING

5.1. Location

The operational base for the project is the Port of Spain, Trinidad and Tobago campus of CARPHA. However, the Contractor will not be required to travel to the operational base to execute the contract.

5.2. Start date & period of implementation of tasks

The intended start date is July 2021 and the period of implementation of the contract is estimated as seven (7) months from this date. The proposed timeline for completion of deliverables below may be open to discussion based on identified risks and challenges, with the agreement of all relevant parties.

Activities	**Month 0**	**Month 1**	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**	**Month 7**
Signing of service contract	❖							
Result 1: Inception Report		❖ Week 2						
Result 2: CARPHA Regional Data Repository for Health optimised, updated and expanded				❖ Week 1				
Result 3: System documentation developed				❖ Week 4				
Result 4: Pilot of each specified dataset						❖ Week 1		
Result 5: Training sessions conducted and recorded						❖ Week 4		
Result 6: Implementation support provided to CARPHA and CMS							❖ Week 4	
Result 7: Draft and Final Reports submitted and accepted								❖ Week 1 & Week3

6. REQUIREMENTS

6.1. Staff

Note that civil servants and other staff of the public administration of the partner country, or of international/regional organisations based in the country, shall only be approved to work as experts if well justified. The justification should be submitted with the tender and shall include information on the added value the expert will bring as well as proof that the expert is seconded or on personal leave.

6.1.1. Key experts

All experts who have a crucial role in implementing the contract are referred to as key experts. Key experts must submit CVs, a signed *Statement of Integrity, Eligibility and Social and Environmental Responsibility* (as required by CARPHA's funding partner, AFD). The tenderer shall submit a CV and a Statement of Exclusivity and Availability for the following position:

The profile of the key expert for this contract is as follows:

Key expert: DHIS2 Consultant

Qualifications and Skills:

At least a Master's Degree in Information Technology or a related field.

General Professional Experience:

- Minimum of 5 years' work experience in setting up registries or repositories and electronic health surveillance systems
- Minimum of five (5) years' work experience in developing data visualisation tools
- Excellent written and oral communication skills in English.

Specific Professional Experience:

- Must have at least 3 years' experience working and developing in the front- and back-end of DHIS2

All experts must be independent and free from conflicts of interest in the responsibilities they take on.

6.1.2. Other experts, support staff & backstopping

CVs for experts other than the key experts should not be submitted in the tender but the tenderer will have to demonstrate in their offer that they have access to experts with the required profiles. The Contractor shall select and hire other experts as required according to the needs. The selection procedures used by the Contractor to select these other experts shall be transparent, and shall be based on pre-defined criteria, including professional qualifications, language skills and work experience.

The costs for backstopping and support staff, as needed, are considered to be included in the tenderer's financial offer.

6.2. Office accommodation

Office accommodation and equipment for each expert working on the contract is to be provided by the Contractor.

6.3. Facilities to be provided by the contractor

The Contractor shall ensure that experts are adequately supported and equipped. In particular it must ensure that there is sufficient administrative, secretarial and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support their work under the contract and to ensure that its employees are paid regularly and in a timely fashion.

The Contractor shall comply with, and ensure that any subcontractor complies with, international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the contract, including fundamental conventions of the International Labour Organisation (ILO) and international environmental treaties. (Requirement of funding partner, AFD)

6.4. Equipment

No equipment is to be purchased on behalf of the contracting authority / partner country as part of this service contract or transferred to the contracting authority / partner country at the end of this contract. Any equipment related to this contract which is to be acquired by the Contractor must be purchased by means of a separate supply tender procedure.

7. REPORTS

7.1. Reporting requirements

The Contractor will submit the following reports in English in one Microsoft Word version and one pdf version:

i. **Inception Report** of maximum 12 pages to be produced after two weeks from the start of implementation. In the report the Contractor shall describe initial findings, any difficulties encountered or expected, in addition to a detailed workplan with timelines and methodology for the specific project activities to be undertaken. A schedule of demos and interim reports should be proposed, as well as a draft template for the report. Demos will be scheduled where possible, but should also be available upon request and based on mutual availability. The Contractor should proceed with his/her work unless CARPHA sends comments on the inception report.

ii. **Interim Report** of maximum 6 pages to be produced after every two weeks from the submission of the Inception Report and/or in line with completion of each key deliverable (schedule for submission to be agreed as per the Inception Report). In the report, the Contractor shall describe progress made against the agreed workplan, challenges encountered, and action taken to address challenges. A summary of any demonstration / pilot / training / implementation support of the system should be included, as well as a list of modifications to be made based on the feedback from the demonstration / pilot / training / implementation support, and the progress made on the implementation of the agreed modifications. Supporting documents and other work produced in the preceding period must be appended to the report.

iii. **Draft final report** of maximum 12 pages (main text, excluding annexes). This report shall be submitted no later than one month before the end of the period of implementation of tasks. The report shall provide an overview of the work conducted as per the agreed workplan, the challenges encountered and actions taken to address the challenges. It should also provide a summary of the pilot period, including the CARPHA / CMS requests for support, any major issues, the support provided and recommendations for future support / solutions.

iv. **Final report** with the same specifications as the draft final report, incorporating any comments received from the parties on the draft report. The deadline for sending the final report is 7 days after receipt of comments on the draft final report. The final report must be provided along with the corresponding invoice.

7.2. Submission and approval of reports

The reports and deliverables referred to above must be submitted to the Project Manager identified in the contract. The Project Manager is responsible for communicating approval status and any other feedback to the Contractor.

8. MONITORING AND EVALUATION

8.1. Definition of indicators

Implementation performance will be measured by the following indicators

i. Deliverables are submitted in compliance with the agreed workplan; and,

ii. Contractor is in compliance with the schedule for the submission of reports and deliverables as outlined in Section 7.

8.2. Special requirements

There are no special requirements