ANNEX II: TERMS OF REFERENCE

Consultancy to Provide Laboratory Support for Disease Diagnosis, Mosquito Identification, Insecticide Resistance Testing, as well as other Entomological Activities

1. BACKGROUND INFORMATION

1.1. Partner country

Twenty-six (26) CARPHA member states all of whom are CariVecNet members namely, Anguilla, Antigua & Barbuda, Aruba, Bahamas, Barbados, Bermuda, Belize, BES Islands (Bonaire, St. Eustatius, Saba), British Virgin Islands, Cayman Islands, Curacao, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts & Nevis, St. Lucia, St. Maarten, St. Vincent & the Grenadines, Suriname, Trinidad & Tobago, Turks & Caicos Islands.

1.2. Contracting authority

Caribbean Public Health Agency (CARPHA)

1.3. Country background

CARPHA's mission is to provide strategic direction, in analysing, defining, and responding to public health priorities of Member States to prevent disease, promote health and respond to public health emergencies. Vector-Borne Diseases (VBDs) pose a significant threat globally. In the Caribbean sub-region, vector-borne diseases, specifically mosquito-borne diseases, such as Dengue, Chikungunya and Zika can cause significant morbidity and mortality. VBDs are currently of major health concern regionally, particularly against the backdrop of the COVID-19 pandemic. With most health system resources dedicated towards COVID-19 response, additional threats due to VBDs will place a further strain on countries' ability to deliver adequate national health response.

Considering this, CARPHA is currently serving as the Executing Agency for the Centers for Disease Control and Prevention (CDC) grant titled, "Protecting and Improving Health Globally: Building and Strengthening Public Health Impact, Systems, Capacity and Security - Advancing Regional Health Security for Prevention and Control of Communicable and Non-Communicable Diseases". A component under this grant supports the work of the Caribbean Vector-Borne Diseases Network (CariVecNet) which was established in May 2016, through a consortium of regional institutions, with original funding from a World Health Organization Tropical Diseases Research (TDR) grant.

This network fosters information exchange for best practices related to the prevention and control of VBDs of public health importance and has the goal of supporting the Caribbean in responding to vector-borne diseases and their growing challenge to health, social and economic systems. Members of the network include representatives from CARPHA Members States, including the English, Dutch, and French, speaking territories, as well as, associated countries and international agencies.

The objectives of CariVecNet are to promote information sharing on VBD prevention and control; support capacity building for VBD diagnosis and surveillance; facilitate collaboration on VBD research-related topics; harmonize the regional use of technologies and protocols for VBD management; and, foster the integration of community engagement into vector control activities.

The CariVecNet consists of five working groups, namely: Surveillance, Vector Control, Clinical Management, Laboratory Diagnosis and Community Engagement. Each working group has a chair and a co-chair. The different working groups are overseen by the Steering Committee. CARPHA is responsible for the appointment of a Network Coordinator who manages the activities of the Technical Working Groups and reports to the Steering Committee.

The Caribbean Public Health Agency (CARPHA) is the Executing Agency for the CDC-RFA-GH21-2177 Project, entitled "Protecting and Improving Health Globally: Building and Strengthening Public Health Impact, Systems, Capacity and Security - Advancing Regional Health Security for Prevention and Control of Communicable and Non-Communicable Diseases in the Caribbean" from 2021-2026. Notwithstanding the application of innovative practices of integrated vector management across the Caribbean region, there have been continued Mosquito-borne Disease (MBD) threats compounded by

the risk of emergence and spread of resistance to insecticides used to control their vectors. The abundant use of insecticides coupled with the limited availability of information on resistance to same justify the need for regular monitoring of insecticide resistance. The support provided through this consultancy will help in providing much required technical support in the roll-out of field activities linked to insecticide resistance study efforts.

1.4. Current situation in the sector

The health security of the Caribbean region is threatened by the burden of VBDs. The tropical environments, migration of both humans and animals, and climate change have influenced the spread and distribution of disease-carrying vectors. Due to the interaction of various ecological, biological, and social factors, prevention and control measures are complicated and involve multisectoral approaches to produce desired outcomes. Socio-economic cost is also high as the CARPHA Member States (CMS) depend heavily on tourism as a main contributor to Gross Domestic Product. While the threat associated with Zika has reduced, a significant Dengue outbreak was of critical concern in the Caribbean region during 2019. It is important to note that dengue outbreaks in the Caribbean region recur in a cyclical nature every 3-5 years, which presents the need to have robust regional health security systems in place.

The threat associated with mosquito vectors warrants an effort to build the capacity of public health officials as drivers of necessary public health outcomes. As such, to prevent disease, promote health and respond to public health emergencies, CARPHA seeks to provide field technical support to CMS in the roll-out of insecticide resistance studies.

CARPHA continues to provide support and follow up for vector-borne diseases to Member States during the pandemic. Capacity building in entomological surveillance for Integrated Vector Management (IVM) and advanced entomological techniques to support Insecticide Resistance Testing (IRT), thereby improving entomological surveillance capacity through Monitoring and Evaluation assessments, were implemented recently. The Caribbean Vector Borne Diseases (VBD) Network (CariVecNet) was also relaunched with renewed efforts aimed at the sustainable implementation of entomological surveillance in IVM, IRT and Applied Geographic Information Systems (GIS) for vector control.

After a 4-year hiatus Zika has been identified in the region in January 2023. Member States must continue being vigilant as to the effectiveness of insecticides which are being used in resource-limited settings to control the mosquito vector. It is critical for CariVecNet and by extension CARPHA, to seize all opportunities for a more evidence-based approach.

1.5. Related programmes and other donor activities

The CariVecNet will be supported in part over the next year through complementary funding from the European Union, namely, Support for Health Systems Strengthening for Prevention and Control of Outbreaks of Zika and other Mosquito-borne diseases in the Caribbean.

2. OBJECTIVE, PURPOSE & EXPECTED RESULTS

2.1. Overall objective

The overall objective of this project is as follows:

To achieve Regional Health Security, through the building of capacity to prevent, detect, respond to and control infectious disease outbreaks, strengthen border security and mitigate Public Health Emergencies of International Concern (PHEICs)"

2.2. Purpose

The purpose of this contract is as follows:

- To provide technical cooperation to CMS on vector-borne threats in the Caribbean region.

More specifically, a Consultant will be contracted to support the implementation of entomology, laboratory activities especially those linked to insecticide resistance studies.

2.3. Results to be achieved by the contractor.

The contractor is expected to achieve the following results:

- **Result 1**: Inception Report developed and submitted for approval of the Project Manager.
- **Result 2**: Effective support provided for entomology, laboratory operations and insecticide resistance studies
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- **Result 3**: Final Report developed **and submitted in accordance with the reporting requirements in Section 7.1 of these Terms of Reference**

3. ASSUMPTIONS & RISKS

3.1. Assumptions underlying the project.

- Necessary data and persons will be readily available for development of the report.

- Stakeholders (external and internal) will meet deadlines for submission of requested data.

3.2. Risks

- If there are changes in economic, social and political conditions as well as other exogenous shocks, this may create difficulties, which may impact the achievement of the objectives of the project.

- If there is the occurrence of major manmade or natural disasters, this can change public health priorities, which can inhibit the implementation of this project.

- As a result of their busy schedules and competing priorities all contributors may not be readily available, which can impact implementation of this project.

4. SCOPE OF THE WORK

4.1. General

4.1.1. Description of the assignment

4.1.2. The main aim of this consultancy is to provide entomology, laboratory technical support for rolling out insecticide resistance studies (IRT) and general strengthening of entomological surveillance capacity in CARPHA Member States. Geographical area to be covered.

The Geographic areas to be covered include twenty-six (26) CARPHA Member States all of whom are members of the CariVecNet.

4.1.3. Target groups

The main target groups are Health professionals of CARPHA Member States working in Vector control and Vector Borne Diseases, particularly Environmental Health/ Vector Control Officers, public health practitioners, and health promotion/health education officer.

4.2. Specific work

The Project will include the specific work tasks:

Result 1: Inception Report developed and submitted for approval of the Project Manager.

1.1. Engage in an initial briefing with the Project Manager and other 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 Consultancy.

1.2. Conduct a desk review of existing literature and data related entomology and insecticide resistance testing in the Caribbean region.

1.3. Prepare and submit for the approval of the Project Manager, an Inception Report which includes as a minimum:

- Desk review of existing literature and data related to the topic of the publication.
- Initial findings and progress with desk review
- The process/methodology for project completion
- Detailed project timeline/workplan.
- Potential risks and strategies to mitigate risks.

Result 2: Effective support provided for entomology, laboratory operations and insecticide resistance studies

2.1. Receive, sort and appropriately store all specimens for delivery to different sections of the laboratory.
2.2. Accurately use and operate equipment in accordance with Standard Operating Procedures (SOPs).
2.3. Undertake preliminary processing and culture of specimens following SOPs.
2.4. Demonstrate competent use of the laboratory computer system, correctly inputting data and retrieving patient results when applicable.
2.5. Carry out simple daily and weekly maintenance routines.
2.6. Helpfully, competently and confidentially assist staff and laboratory visitors while addressing enquiries and orally transmitting results as laid down in the appropriate SOP.
2.7. Comply with departmental Health and Safety regulations taking note of Hazards and Risk Assessments before starting all procedures.
2.8. Perform general housekeeping duties, including maintenance of clean and tidy work areas, and proper use of disinfectants for bench surfaces.
2.9. Participate, where applicable, in external and internal quality control schemes, and ensures that all laboratory standards are met, to ensure the provision of a high-quality laboratory service.
2.10. Participate in programmatic activities in support of surveillance, training and research as specified.
2.11. Effectively communicate with all members of staff, within the multidisciplinary environment and actively participate in laboratory meetings.
2.12. Undertake supplementary training to develop both knowledge and skills, in accordance with the CARPHA training and Continuing Professional Development (CPD) requirements.

Result 3: **Final Report developed and submitted in accordance with the reporting requirements in Section 7.1 of these Terms of Reference**

4.3. 3.1. Prepare a Final Report for submission to the Project Manager Project management

4.3.1. Responsible body

The Office of the Director of Surveillance, Disease Prevention and Control (SDPC) Division of CARPHA is responsible for the management and coordination of the project.

4.3.2. Management structure

Project management organisation will consist of the following structures:

The Head Vector Borne, Diseases, CARPHA, will be the Project Manager and will have overall responsibility for the Project. The Project Manager will retain oversight for the consultancy and will be supported by the Senior Technical Officer, VBD with the day-to-day supervision of project activity. The Project Manager shall be responsible for approving all reports. Additional technical support will be provided by the CariVecNet Officer, VBD.

The Project Manager shall be responsible For approving all reports.

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

CARPHA shall:

- Introduce the Consultant to the relevant stakeholders.
- Provide the Consultant with any documentation and guidance related to the overall work of CARPHA including CARPHA's VBD response.
- Provide administrative and logistical support for field and other work-related activities.
- Provide the Contractor with the branding guidelines for CARPHA, CariVecNet and any other parties involved.

5. LOGISTICS AND TIMING

5.1. Location

The operational base for this consultancy is Port of Spain, Trinidad (CARPHA-POS Campus).

5.2. Start date & period of implementation of tasks.

The intended start date is October 2024 and the period of implementation of the contract will be twelve (12) months from this date.

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 application 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.

Qualifications and skills

- **Essential**: University degree in Medical Microbiology or other Biomedical Science, or a related field with training in medical laboratory technology.

- **Desirable**: Relevant specialist knowledge or expertise acquired through experiential learning.

General professional experience

- One year of experience in a clinical or public health laboratory including experience with diseases-vectors and vector-borne pathogens.
- Excellent knowledge of English.
- Excellent knowledge of English.

Specific professional experience

- In-depth technical knowledge of laboratory systems, procedures and practices.
- Broad knowledge of entomology, vector-borne pathogens and public health Broad knowledge of safety principles and practices, including biosafety.
- Ability to organize and prioritize work.
- Good interpersonal, oral and written communication skills Analytical and systems-thinking skills.
- Computer literacy.
- Sensitivity to quality related to laboratory diagnosis.
- Ability to develop easy-to-follow practical guides to laboratory testing and safety.
- Ability to evaluate and demonstrate practical on-the-bench laboratory diagnostic tests.

6.2. Office accommodation

Office accommodation 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 there must be sufficient administrative, secretarial and interpreting provision to enable the consultant to concentrate on primary responsibilities. Funds should be transferred as necessary to support the consultant's work under the contract. The contractor is responsible for obtaining all supplies needed to complete the project. All costs associated with any travel, within the region, that may be required for the implementation of this contract must be borne by the Contractor.

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 partner country 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, one original as well as the **MS Word E-files**:

- **Inception Report** of maximum 12 pages to be produced **one (1) week** after the start of implementation. In the report the Contractor shall describe initial findings, progress in collecting data, any difficulties encountered or expected in addition to the work programme. More specifically, the Report will include a detailed workplan with the timelines for the specific project activities and the methodology for the activities.

- **Interim Reports** of maximum 12 pages (main text excluding annexes) to be produced at **the end of each month of the Project** (excluding the final month). This report will consist of a detailed summary of progress with implementation of the specific work, set out in Section 4.2, including challenges encountered and action taken/proposed to address challenges.
- **Final report** of maximum 20 pages (main text, excluding annexes) This report shall be submitted at the end of the final month of the Project. The submission must be a comprehensive report comprising the work conducted in respect of section 4.2. The final report must be provided along with the corresponding invoice.

7.2. Submission and approval of reports

The reports referred to above must be submitted to the project manager identified in the contract. The project manager is responsible for approving the reports.

8. MONITORING AND EVALUATION

8.1. Definition of indicators

Implementation performance will be measured by:

- Quality of output documents: These will be judged by content, clarity, and readability.
- Compliance with the schedule for the submission of reports on the outputs of the Project as outlined in Section 7.1.

8.2. Special requirements

There are no special requirements.