

# The GEF- IWCAM Project



# Laboratory Strengthening in the Participating Countries of the GEF-IWCAM Project



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# GEF-IWCAM Project Laboratory Strengthening Subcomponent



**Objective:**

**To inform Project Managers and GEF-IWCAM Focal Points of**

- laboratory strengthening activities that have taken and will take place;
- Regional laboratory services available
- National laboratories capable of environmental quality testing needed by GEF-IWCAM Project.

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# Caribbean Environmental Health Institute



- **CARICOM Agency established in the 1988 to respond to the environmental health concerns of CARICOM Member States**
- **CEHI is headquartered in St. Lucia**
- **CEHI has 16 Member States across the Caribbean: from Belize in the West to the OECS and Barbados in the East**

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# CEHI's Activities/ Programmes and Services



- Water Resources Management
- Coastal Resources Management
- Environmental Impact Assessments
- Environmental Monitoring and Surveillance
- Training Courses/Internships
- Laboratory, Information, Engineering Services
- Solid/Liquid Waste Management

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# CEHI's Laboratory Services – Metals Analysis



Used to analyse for metals such as:

**Mercury**

**Lead**

**Cadmium**

**Magnesium**

**Calcium**

**Copper**

**Iron**

**Chromium**

**Zinc**

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# CEHI's Laboratory Services – Pesticide Analysis



Used to analyse for pesticides:  
Carbamates  
Glyphosate  
Paraquat and Diquat

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# CEHI's Laboratory Services – Pesticide Analysis



**Organochlorine pesticides such as DDT, lindane, endrin, endosulphan**

**Organophosphorus pesticides such as diazinon, malathion, pirimiphosethyl**

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# CEHI's Laboratory Services - Microbiology

Capacity to analyse for:

Total Coliforms

Faecal Coliforms

*E. coli*

*Pseudomonas aeruginosa*

Heterotrophic plate count

Enterococci

**Membrane filtration technique employed**



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# CEHI's Laboratory Services – Physico-Chemical Analyses



- Phosphates
- Nitrates
- Sulphates
- Chlorides
- Total nitrogen
- Total phosphorus
- Ammonia
- pH
- Total Suspended Solids
- Turbidity
- Residual Chlorine

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# Why Laboratory Capacity Building



- Environmental monitoring and surveillance
  - In the long term:** Need for building capacity, both nationally and regionally, to monitor and evaluate environmental water quality in all participating SIDS.
  - In the short term:** To support the monitoring needs of the National Demonstration Projects.

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# Why Laboratory Capacity Building

- Enhancement of laboratory monitoring capacity and capability needed – provision of equipment, technical training including QA/QC



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# Plans for Increasing Laboratory Capacity



- ☹ Determine equipment and training needs of laboratories
- ☹ Strengthen laboratory capabilities through acquisition of equipment
- ☹ Provide regional and national training in environmental water quality monitoring including QA/QC

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# Plans for Increasing Laboratory Capacity



💧 Upgrade monitoring capabilities of regional laboratories

💧 Create and manage a regional network of laboratories for sharing of technical information and online training

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# Lab Strengthening Activities



- Labs Chosen for Assessment based on Meeting of Criteria for Selection:
  - 💧 Laboratory must have a mandate for environmental management including ambient water quality monitoring
  - 💧 Recommendation of laboratory by Demo Project Manager
  - 💧 The laboratory must indicate a willingness to support IWCAM work and the Demonstration Projects in particular, during and beyond the life of the GEF-IWCAM Project
  - 💧 The organizational structure of the lab or institution should be sustainable in terms of staffing arrangements, budget and facilities.

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# Lab Strengthening Activities



## ➤ Criteria Developed for Selection of Laboratory for IWCAM Support include:

💧 The availability of sufficient personnel that are currently involved in environmental monitoring and analysis

💧 The availability of suitable laboratory infrastructure

💧 The implementation of method quality control

💧 Pre-selection of the laboratory to provide monitoring and analytical services by the Project Manager of the demonstration project

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# Laboratories Assessed



## Jamaica

- The National Water Commission's Eastern Laboratory
- The National Environment and Planning Agency's Laboratory of the Ministry of Land and Environment
- The Mines and Geology Division Analytical Services of the Ministry of Energy, Mining and Telecommunications
- The Environmental Health Laboratory of the National Public Health Division of the Ministry of Health and Environment
- The Negril Coral Reef Preservation Society's Laboratory

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# Laboratories Assessed

## The two laboratories chosen for support by the GEF-IWCAM Project

- The Environmental Health Laboratory of the National Public Health Division of the Ministry of Health and Environment – has received equipment
- The National Environment and Planning Agency's Laboratory of the Ministry of Land and Environment

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# Laboratories Assessed

## Antigua and Barbuda

- Division of Analytical Services of Ministry of Agriculture – has received equipment
  - Water and Sewerage Authority
- Both laboratories chosen for support






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# Laboratories Assessed

## Cuba

-  Needs assessments carried out on 5 laboratories in Cienfuegos
-  Public Health Lab, Sugar Factory Lab, Soil Lab, Hydrology Lab and CEAC
-  CEAC, the Public Health Laboratory and the Hydrology Lab chosen for support

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# Laboratories Assessed

## Saint Lucia

-  Water and Sewerage Company
-  Gros Islet Polyclinic of the Ministry of Health

**The Gros Islet Polyclinic was chosen for support and equipment has been ordered.**



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# Laboratories Assessed



## Trinidad and Tobago

- Institute of Marine Affairs – Trinidad
- Water and Sewerage Authority – Tobago
- Department of Natural Resources and the Environment (carries out field testing for demo project)

**WASA and DNRE chosen for support based on location and work currently being done for the Demo Project**

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# Laboratories Assessed



## Dominica



DOWASCO



EHL



Both chosen for support






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# Laboratories Assessed



## St. Kitts

-  Water Quality Laboratory of EHD
-  Water Quality Laboratory - WASA
-  Water Quality Laboratory of EHD chosen for support

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# Planned Lab Strengthening Activities



Laboratories in the Dominican Republic will be assessed in March by CEAC official



Laboratories in Grenada to be assessed this week  
–NAWASA and Produce Chemist Lab



Bureau of Standards laboratory to be assessed in St. Vincent



Barbados, Bahamas and Haiti to be scheduled



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# Planned Lab Strengthening Activities

## Basic Training Needs so far Identified

- Laboratory QA/QC - planned for week of April 20
- Lab networking discussions to be held
- Training in basic microbiology and use of membrane filtration technique for determination of enterococci and E.coli in marine and freshwaters

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# Update on Lab Strengthening Activities



Thank you for your attention.

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