

# GEF-IWCAM Demonstration Project Data Management – a Snapshot

Regional Network in Marine Science & Technology for the Caribbean:  
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# GEF-IWCAM Background



## Project Objective

To assist Caribbean Small Island Developing States to adopt an integrated approach to watershed and coastal area management.

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# GEF-IWCAM Background



13 participating countries – Antigua & Barbuda, the Bahamas, Barbados, Cuba, Grenada, Dominica, Dominican Republic, Haiti, Jamaica, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines, and Trinidad & Tobago

Length of project – 5 years (2006 – 2011)

Activities include: Demonstration Projects; a Legislative, Policy and Institutional component; development of IWCAM Indicators, and; Communications and Public Awareness Activities.

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# GEF-IWCAM Project Component 1:

## Demonstration, Capture and Transfer of Best Practices

- Implementation and management of 9 demonstration projects in 8 countries
- Capture of lessons, best practices, alternative technologies from Demonstration Projects

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# Data Management in the Demos – March '09

The GEF-IWCAM demonstration projects are at different stages of implementation.

A quick data management survey was circulated to Demo Managers in March 2009.

## Responses

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# Antigua and Barbuda

## Mitigation of Groundwater and Coastal Impacts from Sewage Discharges from St. John's

Data: water quality; soil

Data being collected monthly by consultants who are responsible for archiving.

To be passed to gov't once analysis is complete.

Will form baseline for future monitoring



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# The Bahamas (Exuma and Andros)



## Marina Waste Management at Elizabeth Harbour in Exuma

## Land and Sea Use Planning for Water Recharge Protection and Management (Andros)

Data: Water quality, reef damage, wastewater disposal practices, assessments of natural resources

Data collection has not yet begun

To be collected by consultants and government officers who will be responsible for archiving

To be use to plan and disseminated by BEST



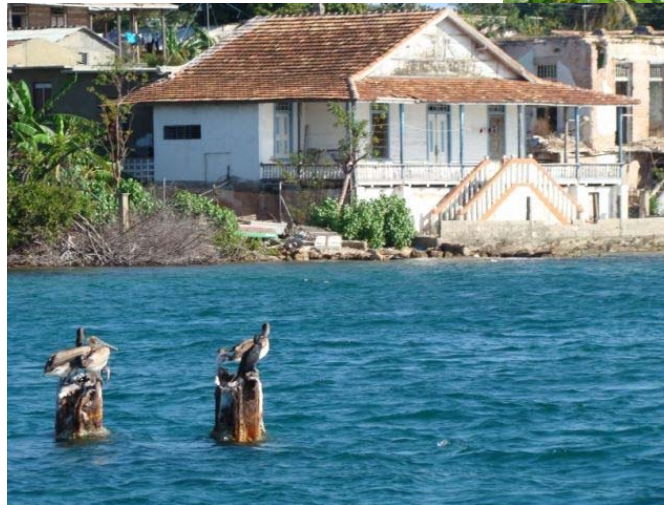
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# Cuba

## Application of IWCAM Concepts at Cienfuegos Bay and Watershed

Data: water quality, soil

Collected by CEAC and other institutions and stored in owner institutions as well as in database located at the GIS Laboratory



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# Dominican Republic

## Mitigation of Impacts of Industrial Wastes on the Lower Haina River Basin and its Coast

Data: water quality

Collected by project staff and SEMARENA personnel; recently began and so far archived in project office (hard copy only)



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# Saint Kitts & Nevis

## Rehabilitation and Management of the Basseterre Valley as a Protection Measure for the Underlying Aquifer

Data: hydro-geological data, water quality, inventory and mapping of ecological resources

Water quality sampling still to begin

Collected by consultants who are responsible for storage



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# Trinidad & Tobago



## Land-Use Planning and Watershed Restoration as part of a Focused IWCAM Demonstration in the Courland Watershed and Buccoo Reef Area

Data: water quality, point & non-point sources of pollution, soil, stream flow

Collected by project staff, consultants, community members, students using data collection forms.

Stored and backed up by Buccoo Reef Trust (project managers)

GIS quite advanced



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# Jamaica

## An Integrated Approach to Managing the Marine, Coastal and Watershed Resources of East-Central Portland

Data: water quality, reef checks, mangrove, stream flow, bio-monitoring

Collected by state agency personnel, community members, students and will be archived and linked to gov't info systems after one year of data is collected



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# Jamaica: lesson 1 – sharing for sustainability

## Data is shared with government agencies

Monitoring data will be given to State agency partners:

- Stream flow and weather & bio-monitoring data, collected following the specifications of the WRA and Met. Services, will go to those agencies and fill significant data gaps.
- Reef and mangrove data is sent to the University of the West Indies (Mona) for analysis and stored in UWI database as well as NEPA and PEPA.



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# Jamaica: lesson 2 – empowering people



## Results used to guide project activities

Water quality data is analyzed at NEPA's lab. Results are discussed at monthly meetings of a **community-based Environmental Monitoring Committee**.

Hotspot areas are noted and town meetings are held to inform communities and engender solutions (e.g. clean-ups)



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# St. Lucia

## Protecting and Valuing Watershed Services and Developing Management Incentives in the Fond D'or Watershed Area

Data: stream water quality, rain water harvesting water quality, distribution of pig pens

Collected by project staff, consultants and community members



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# St. Lucia: lesson 1 – doubling up to save

## Parallel testing with a purpose

River water samples are collected monthly for testing by CEHI

A parallel set of testing is done at the same time using field test kits. The two sets of data will be correlated to derive correction factors to allow community members to conduct their own testing in the future, without the more costly CEHI option.

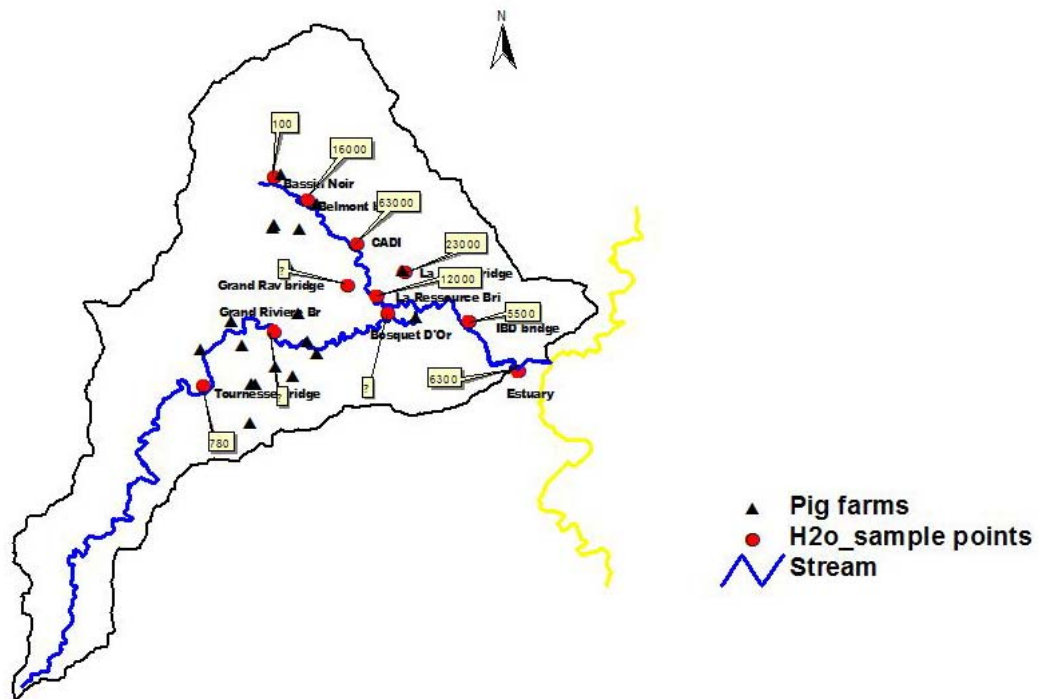


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# St. Lucia: lesson 2 - GIS applied

GIS used to demonstrate link between piggeries and contaminated water

Fond D'Or Watershed



This has helped in the leveraging of funds from GEF-Small Grants for a project with the St.Lucia Pig Farmers Cooperative Society which will demonstrate incentive mechanisms for sustainable pig waste management.

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# IWCAM Challenges in Data Management



- 💧 Collection – equipment, transport, trained personnel ...
- 💧 Archiving – adequate metadata, lack of attention to database management ...
- 💧 Late project start-up
- 💧 Testing of samples is costly
- 💧 Limited time for creation of information products
- 💧 Development of systems / mechanisms for dissemination of data and info into decision-making

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# IWCAM Applications / Information products



💧 Written summaries of findings

💧 Baseline for future studies

💧 Comparison tables

💧 GIS

💧 Manuals for water quality testing (including water quality, stream flow and bio-monitoring)

💧 Contributions to large, already existing datasets / databases

💧 Creation of models

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# Observations I



💧 Demo projects are being resourceful in data collection by encouraging participation of voluntary community members and students in monitoring but training and supervision is important to ensure quality data

💧 While all demo projects are geo-referencing data and keeping some metadata, an agreed set of metadata is needed (next RTAG meeting)

💧 High cost of sample analysis is a limiting factor in the context of the project but also has implications for the sustainability of monitoring – lab-strengthening component of the project seeks to address this

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# Observations II



💧 In Jamaica, St. Lucia, Tobago and Cuba, data and results of analysis are already being used to inform project activities and build public awareness

💧 Many barriers exist to the sharing of: data, existing knowledge, and, existing capacity. Project website helps and IWCAM Clearing House Mechanism planned

💧 Demos which are well integrated into existing government agencies have data management systems which ensure that data is, or will be, archived and linked with existing, wider databases

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# THANK YOU!



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