CARIWIN Project Update
January 14, 2010
presented by Catherine Senecal

Canadian International Development Agency

Agence canadienne de développement international

McGill

Order of Presentation

1. CARIWIN overview
2. Activities since January 2009
3. Mid-Term Evaluation
4. Regional Seminar objectives

1. CARIWIN overview

- CIDA Funded - $1 million Canadian
- Project duration: 2006-2012

A Joint McGill – CIMH
Institutional Strengthening
and National and Regional Capacity Building Project
In Integrated Water Resources Management (IWRM)

www.mcgill.ca/cariwin

Goal

To increase the capacity of Caribbean countries to deliver equitable and sustainable IWRM.



Methodology

- Strengthen CIMH to provide training and capacity development in aspects of IWRM at the regional scale;
- Pilot IWRM capacity building initiatives at the national, local government, and community levels.



Country partners

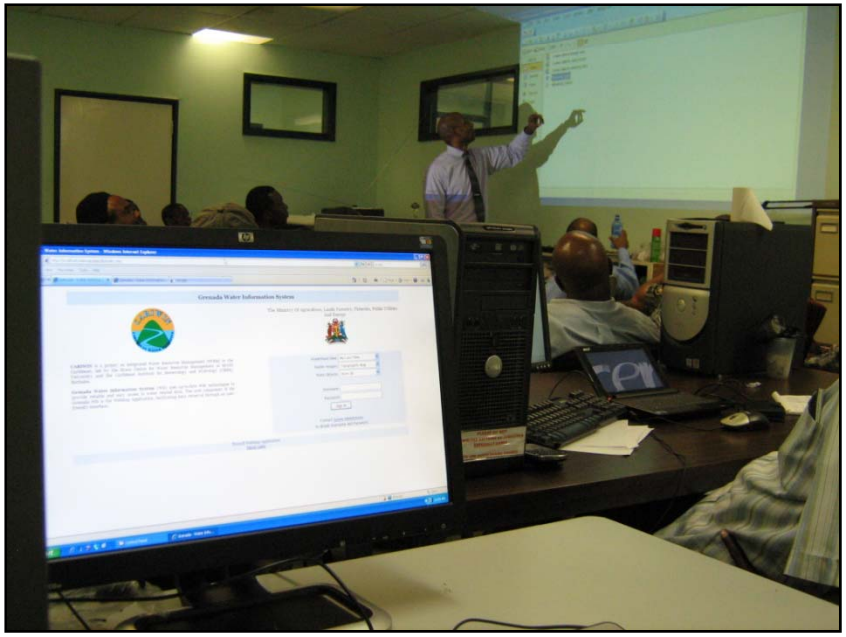
- **Grenada** - Land and Water Division, Ministry of Agriculture; NAWASA.
- **Guyana** – Ministries of Agriculture and Water; National Hydrometeorological Service; GWI.
- **Jamaica** – Water Resources Authority; Rural Water Programme, Ministry of Water.

2. Activities since Jan. 2009

- ✓ NWIS Grenada
- ✓ Training sessions
- ✓ Books for CIMH library
- ✓ Research - Guyana
- ✓ Research - Jamaica
- ✓ CWS Framework
- ✓ Mid-term evaluation

Grenada National Water Information System (NWIS)

- Launched in Jan 2009
- 20 Personnel trained
- Tool for applying IWRM principles



www.cariwin.gd

Training

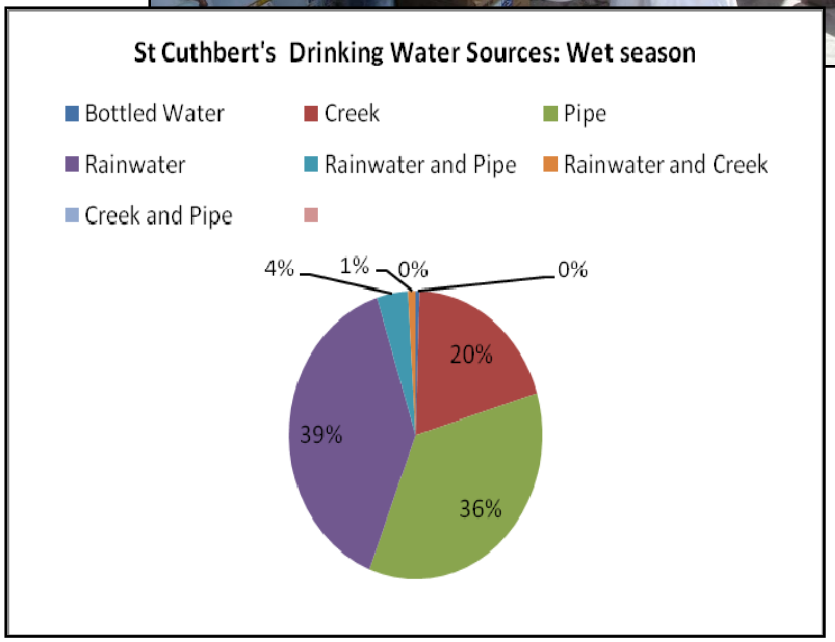
- CIMH personnel at McGill
- Technicians in Grenada
- Technicians in Guyana

Book purchase

- Thirteen text books were purchased, with titles related to hydrology, climate, and drought

Research - HWTS (Guyana)

- RWH report – Scaling Up Domestic Rainwater Harvesting, St. Cuthbert's Mission, Guyana
- Comparing 3 HWTS Options in St. Cuthbert's Mission, Guyana



Comparing 3 HWTS Options in St. Cuthbert's Mission, Guyana

by **Candice Young – Rojanschi,** Dr. Chandra Madramootoo, Lauren Intven, Catherine Senecal

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Abstract

Three different household water treatment and safe storage systems (HWTS) were installed in 50 households each within the Arawak village of St. Cuthbert's Mission, Guyana, with 50 households acting as a control, to:

1. compare household water quality between treatment groups and a control to test their effectiveness at removing thermotolerant coliforms; and
2. compare the rates of adoption between the different HWTS methods within this village.

Of the three treatments tested, it was found that ceramic candle filters performed best in terms of rate of adoption.

Introduction

In the later half of 2008, Guyana Water Inc initiated a pilot test of the Biosand filter in the community of Ithuni. At the same time, the Ministry of Health and PAHO also initiated a drinking water program with the development of a chlorine product marketed as "Chlorosol". Meanwhile, in neighbouring Brazil, the use of ceramic candle filters is widespread. As more and more money is put towards HWTS in Guyana, the question thus arises as to which system has the highest potential for positive impact, both in terms of technical performance and in terms of user acceptance.

Materials and Methods

- Water, sanitation, and hygiene survey (late 2008)
- Sampling of primary drinking water sources
  - 6 creek locations, 10 standpipes)
  - over dry and rainy seasons (mid 2008 – mid 2009, 12 samples each)
- Drinking water samples taken from cups in 200 volunteer households (early 2009)
- Randomized control trial, equal distribution of standpipe vs. creek dry weather source
  - Control (50 households)
  - Biosand filter (50 households)
  - Ceramic candle filter (50 households)
  - Chlorosol (50 households)
- Drinking water samples taken from cups in households 1 month after intervention
  - adoption rate determined by user response to a survey, as well as by observing where the drinking water sample was collected from

Water Quality Tests

•Turbidity: Lamotte 2020e turbidity meter

•Thermotolerant coliforms: membrane filtration using membrane lauryl sulphate broth, DelAgua incubator

- Electroconductivity: WTW 340i multimeter probe
- pH: WTW 340i multimeter probe
- Temperature: WTW 340i multimeter probe
- D.O.: YSI multimeter probe

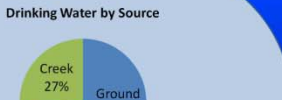
Biosand Filter
- Concrete filter using the biosandfilter.org mould provided by GWI, with safe water storage container

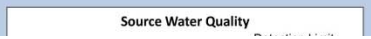
Ceramic candle filter
- 2 local 20L plastic buckets and 3 Steffani ceramic candles

Chlorine
- Chlorosol product from Globe Manufacturing (0.68% sodium hypochlorite) with safe water storage container

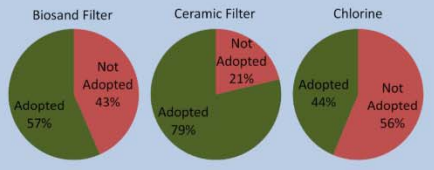
Setting

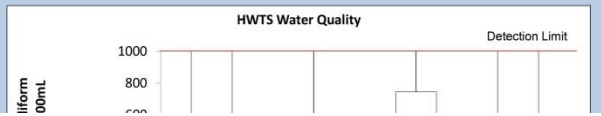
- **St. Cuthbert's Mission:** an Arawak community of approximately 1500 residents located approximately 80km from Georgetown.
- **Health**: The community health worker identifies diarrhoeal disease as a significant issue within the community.
- **Sanitation**: The majority of residents have their own pit toilet, though a large minority have a pour-flush system to a septic tank.
- **Hygiene**: The local health clinic regularly hosts hand-washing campaigns





Preliminary Results





Research – Indices (Jamaica)

- Precipitation indices for Jamaica + agricultural drought indices for three parishes
- Effects of urbanization the simulated

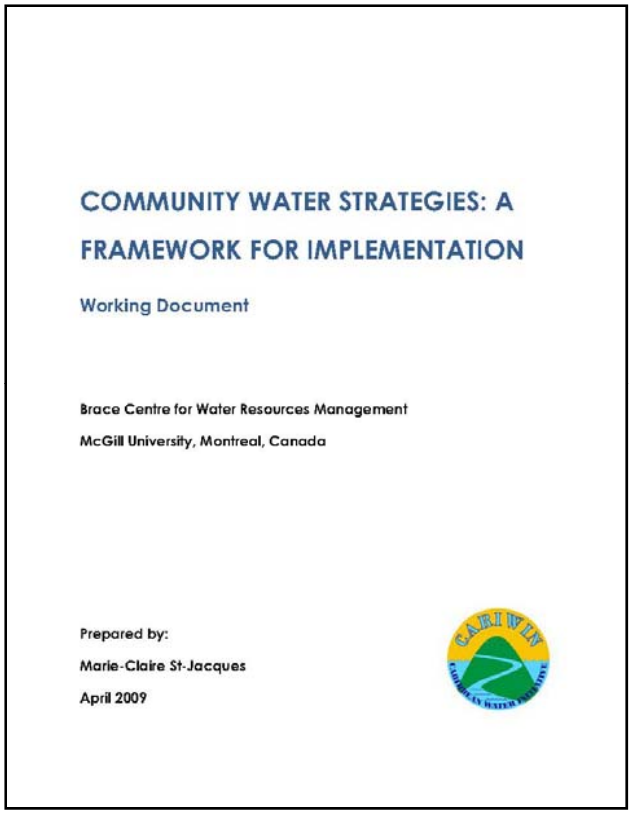


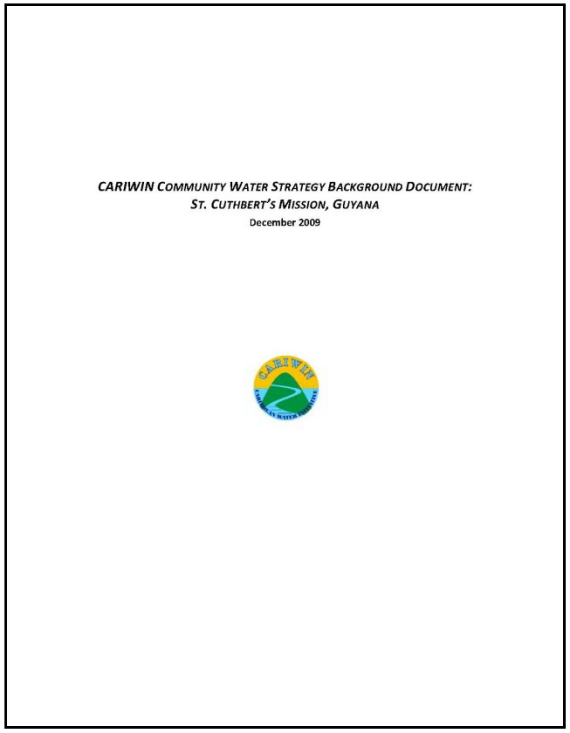




CWS Framework

Reference document with guidelines for developing a community water strategy





Country-specific documents for CWS

3. Mid-Term Evaluation

- Conducted by an external evaluator
- Measured progress towards planned results
- Formulated recommendations

General Conclusion

"CARIWIN could become a major factor of change in the region."

Focus: water management information systems

Converge: all factors to contribute to sustainability

Project Results

Training CIMH personnel in IWRM

Academic training for national specialists

Synergy with partners

Project Results

NWIS

Training for National specialists

Dissemination

Main Recommendations

1. New Outcome – support degree program at CERMES (UWI Barbados)

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2. *Prioritize WIS and allocate necessary resources for this purpose*
3. *Optimize use of financial resources to support human resources capacity building at CIMH and national partners.*

4. Regional Seminar Objectives

- ✓ Generate rich discussion
- ✓ Identify needs and priorities in water management
- ✓ Identify needs and priorities for WIS & CDPMN
- ✓ Direct CARIWIN's potential contribution
- ✓ Consolidate ideas on the way forward



Thank You