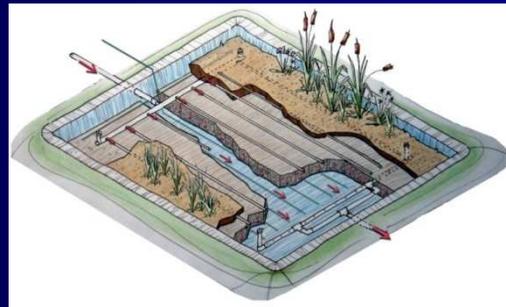




# Wetland Waste Water Treatment Plants as a Best Practice for Rural Settlements on Impervious and Semi Impervious Soils in Saint Lucia



**LaVerne Walker  
&  
Cornelius Isaac**

**June, 2010**

## Location of Saint Lucia



## **GEF-IWCAM SLU Demonstration Project**

### **■ OBJECTIVE:**

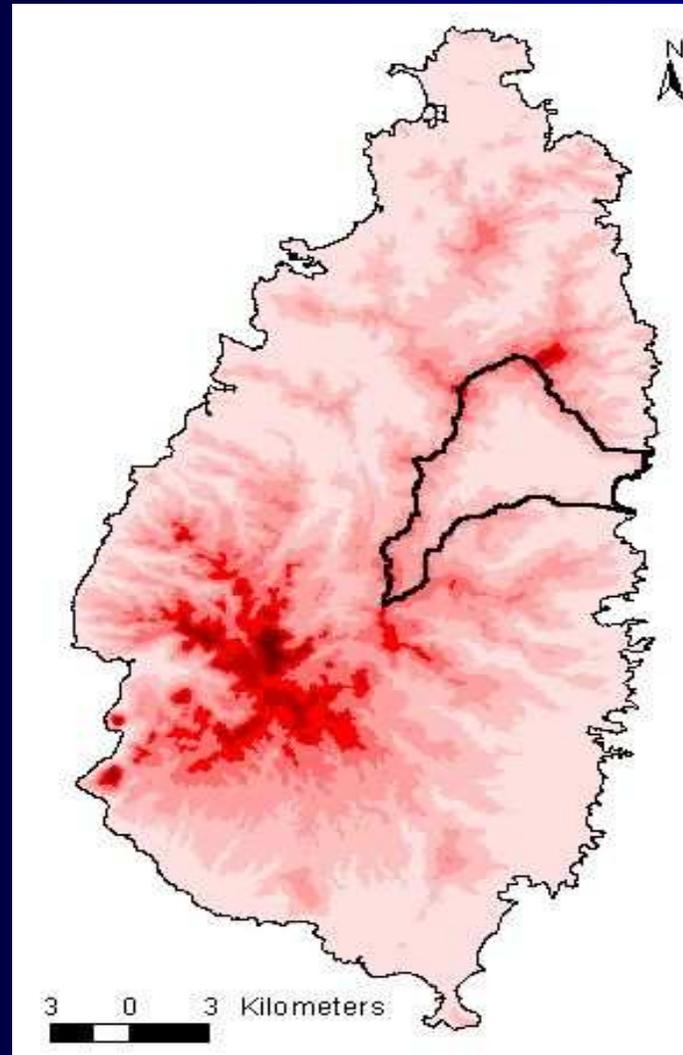
**The development of a model approach to participatory watershed management In the Fond D'Or watershed**

### **■ DELIVERABLES:**

- Establish a participatory watershed management model,**
- Develop mechanisms for sustainable natural resource management,**
- Capture lessons in policies, legislation and management strategies,**
- National and regional Replication**

### **■ Duration – 3 years**

## Project Site



## **Some Uses of the River**

# The way we use the river

## Bathing



# The way we use the river

## Laundry



# The way we use the river

## Farming



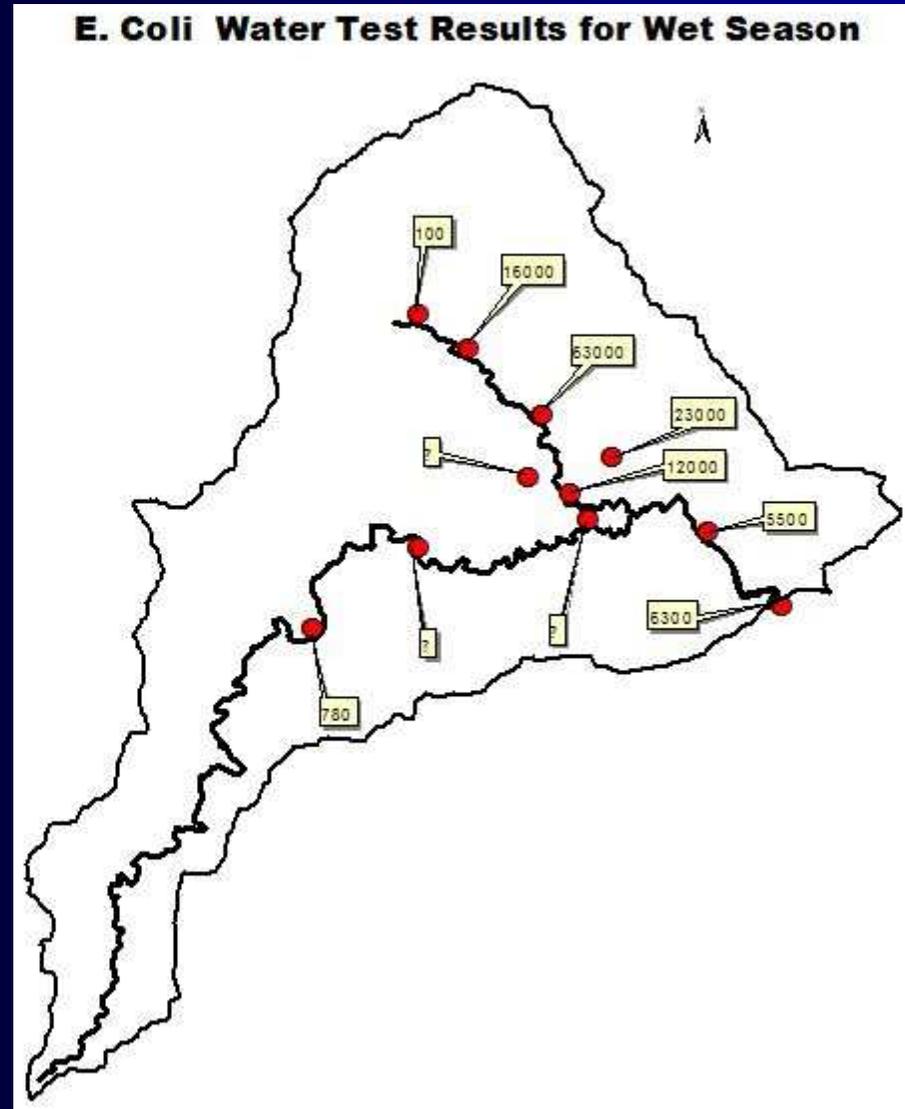
# THE WAY WE USE THE RIVER

## Potable Water Supply



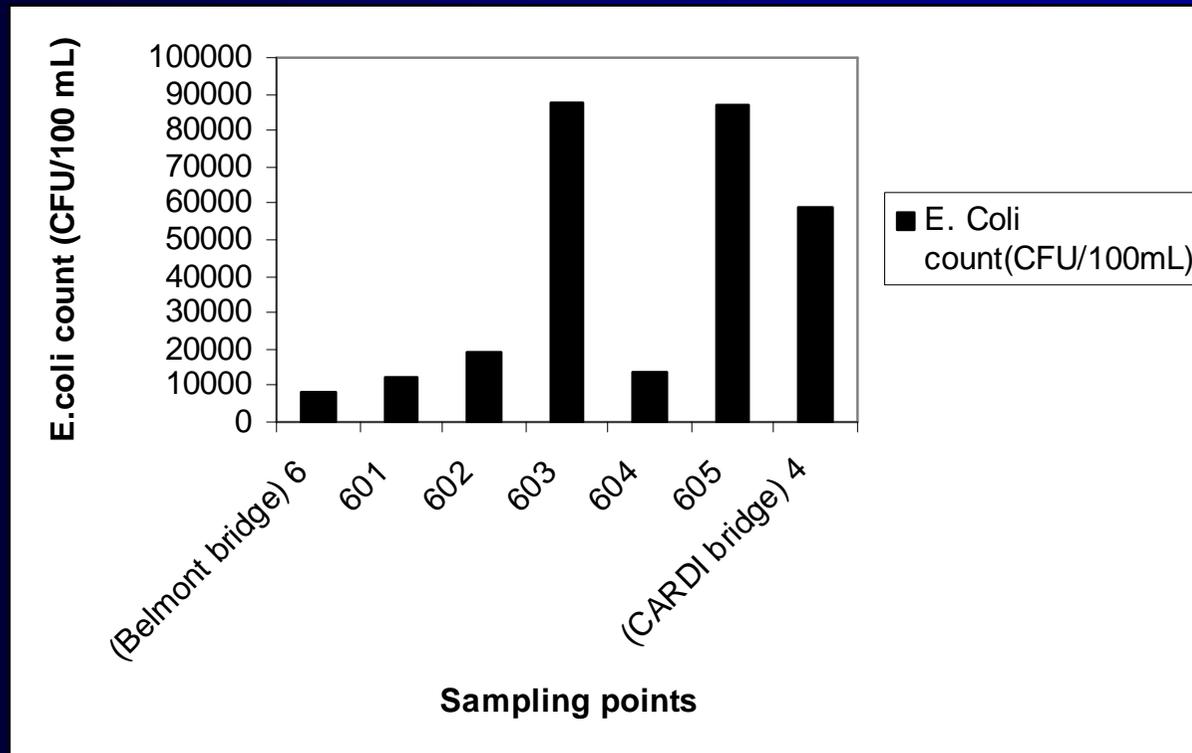
## Project Activities & Results

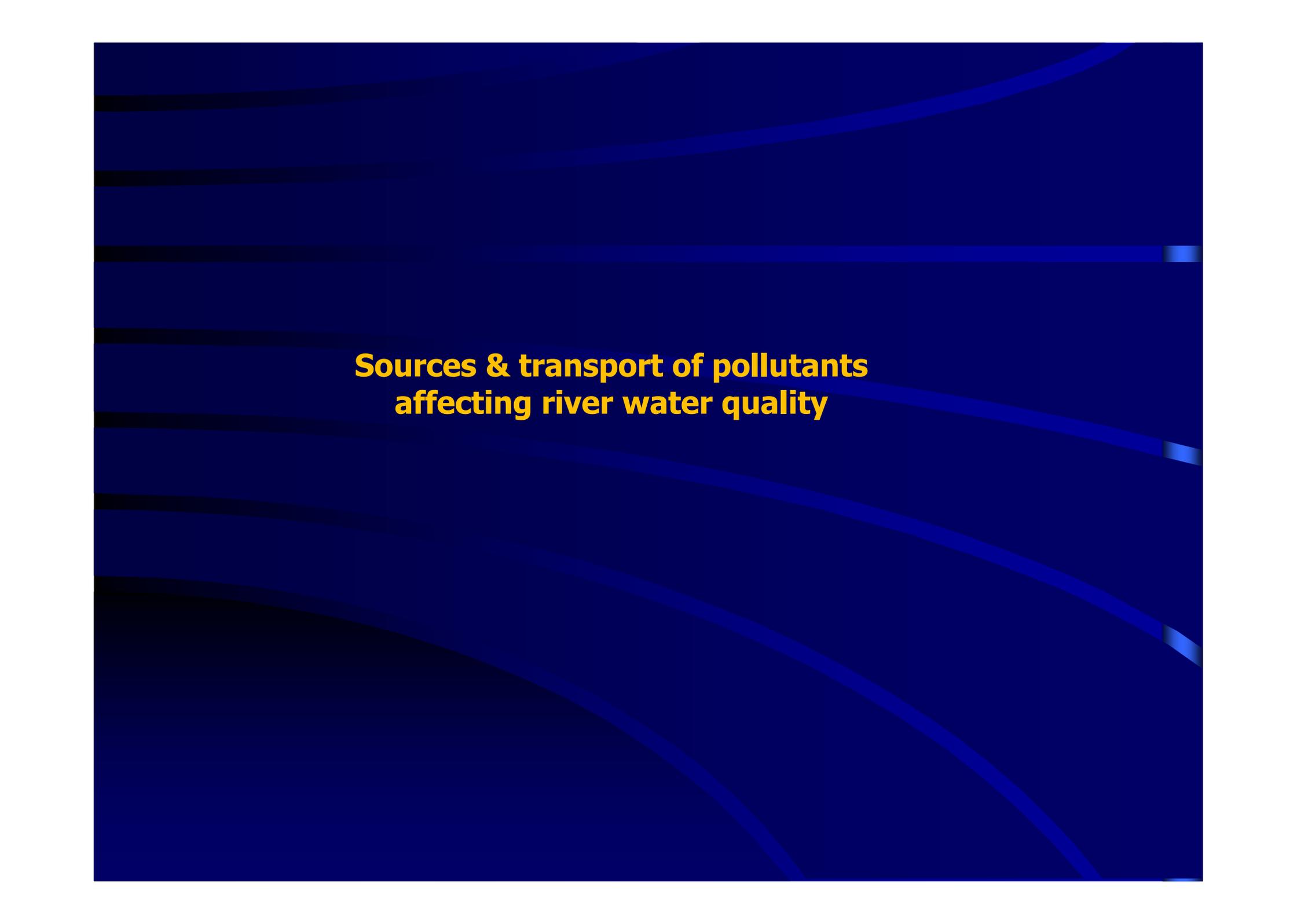
### ■ River Water quality Monitoring



# Project Activities & Results

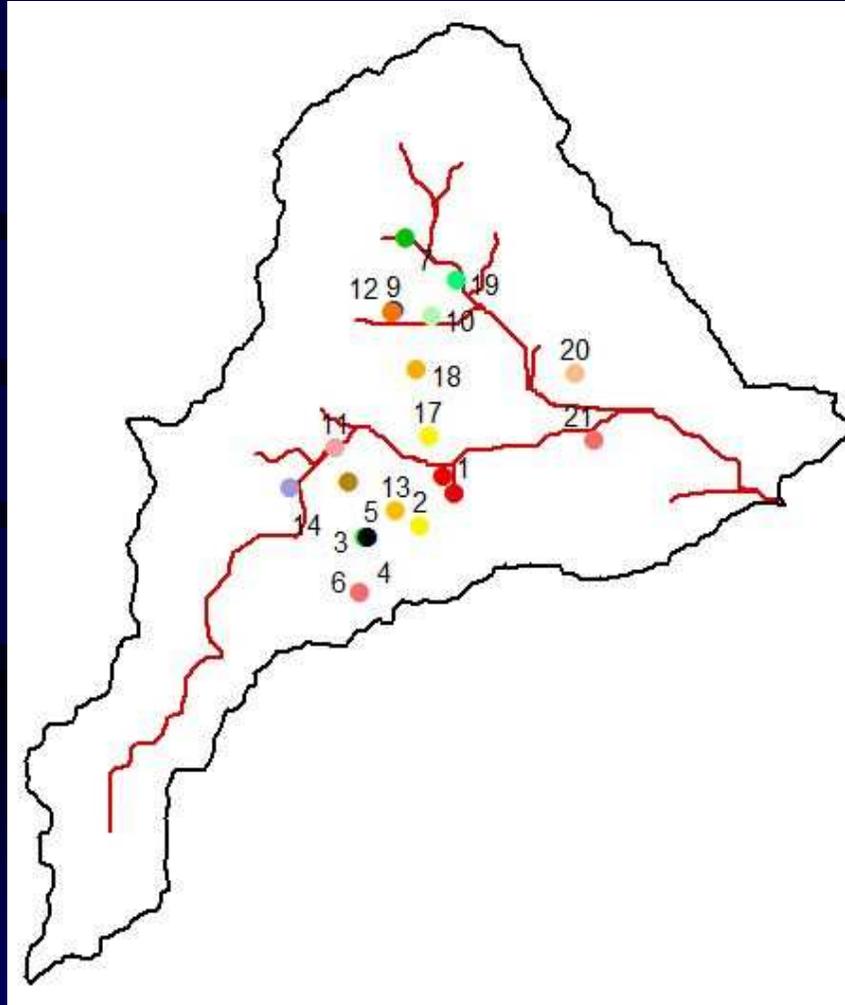
## ■ River Water quality Monitoring



The background is a dark blue gradient with several wavy, lighter blue lines that create a sense of movement. A horizontal bar, also in a lighter blue shade, spans across the middle of the slide.

**Sources & transport of pollutants  
affecting river water quality**

# The Pig Pens



## Soil profile

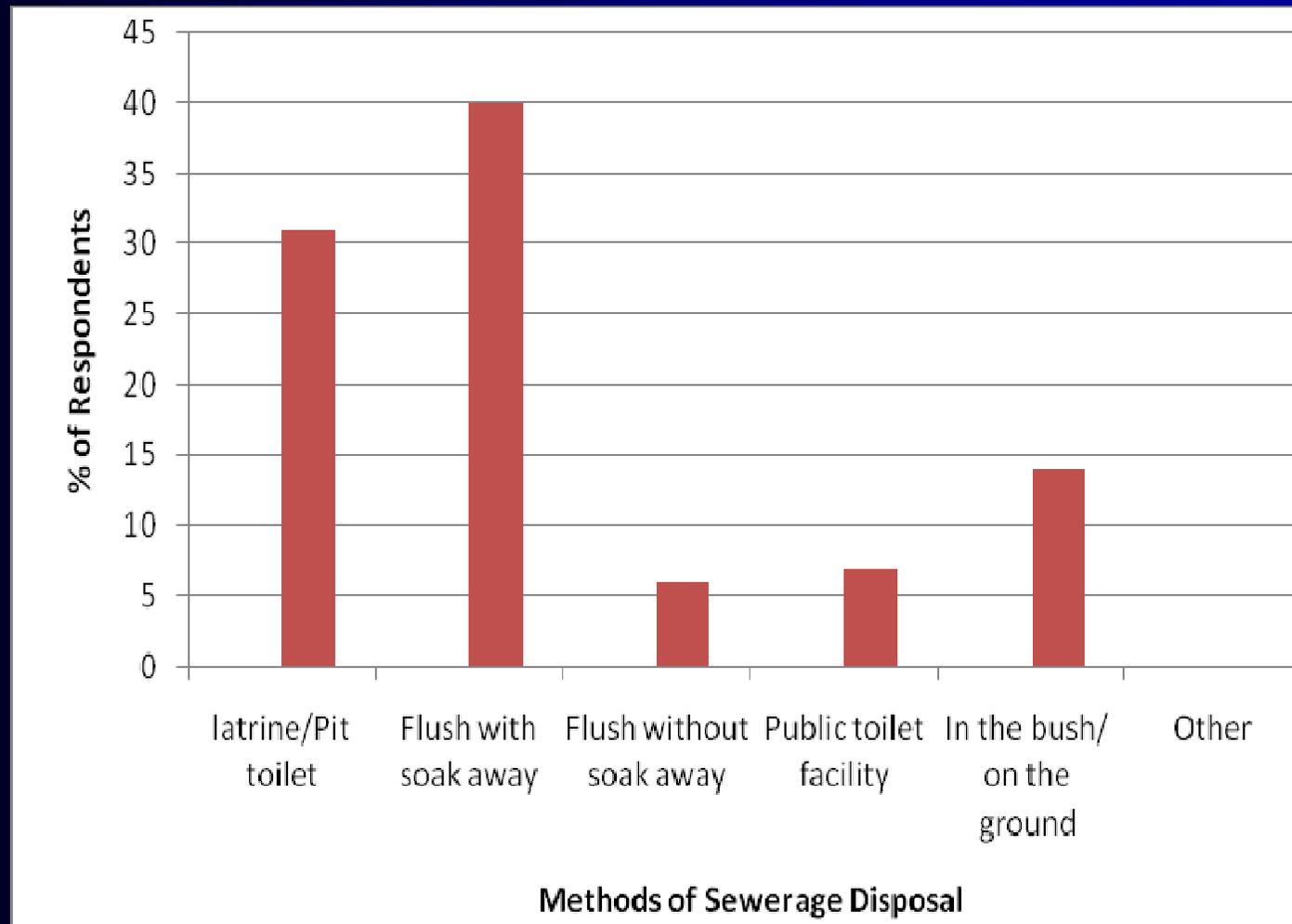


## The settlements



# The settlements

## State of sewerage management

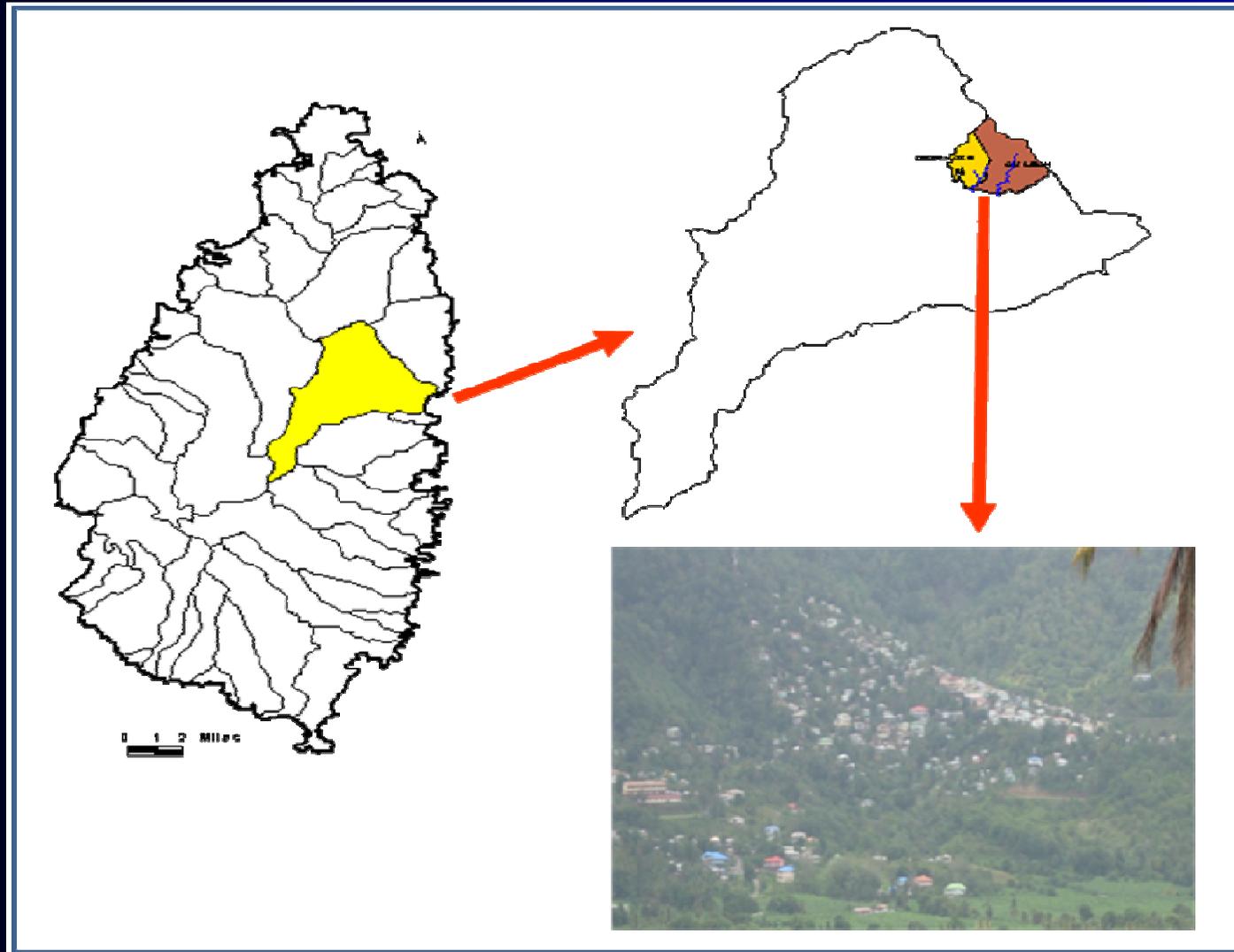


**Constructed Wetland –  
Waste Water Treatment Project**

## **WWT Demonstration Subproject**

- **OBJECTIVE:**
- **To demonstrate a practical method to improve water quality, sanitation and health in a densely populated community.**
- **To allow for better use of water for irrigation and recreational activities.**
- **DELIVERABLES:**
  - **Assessment of pollutants**
  - **Survey on Sewerage Management within Au Leon**
  - **Promotion of Septic Tank Technologies**
  - **Construction of Demo Waste Water Management Systems**
- **Partners: 8**
- **Total Cost – USD \$12,000 (Funded by UNEP-CAR/RCU)**

## WWTS Project area



## WWT Demonstration Subproject

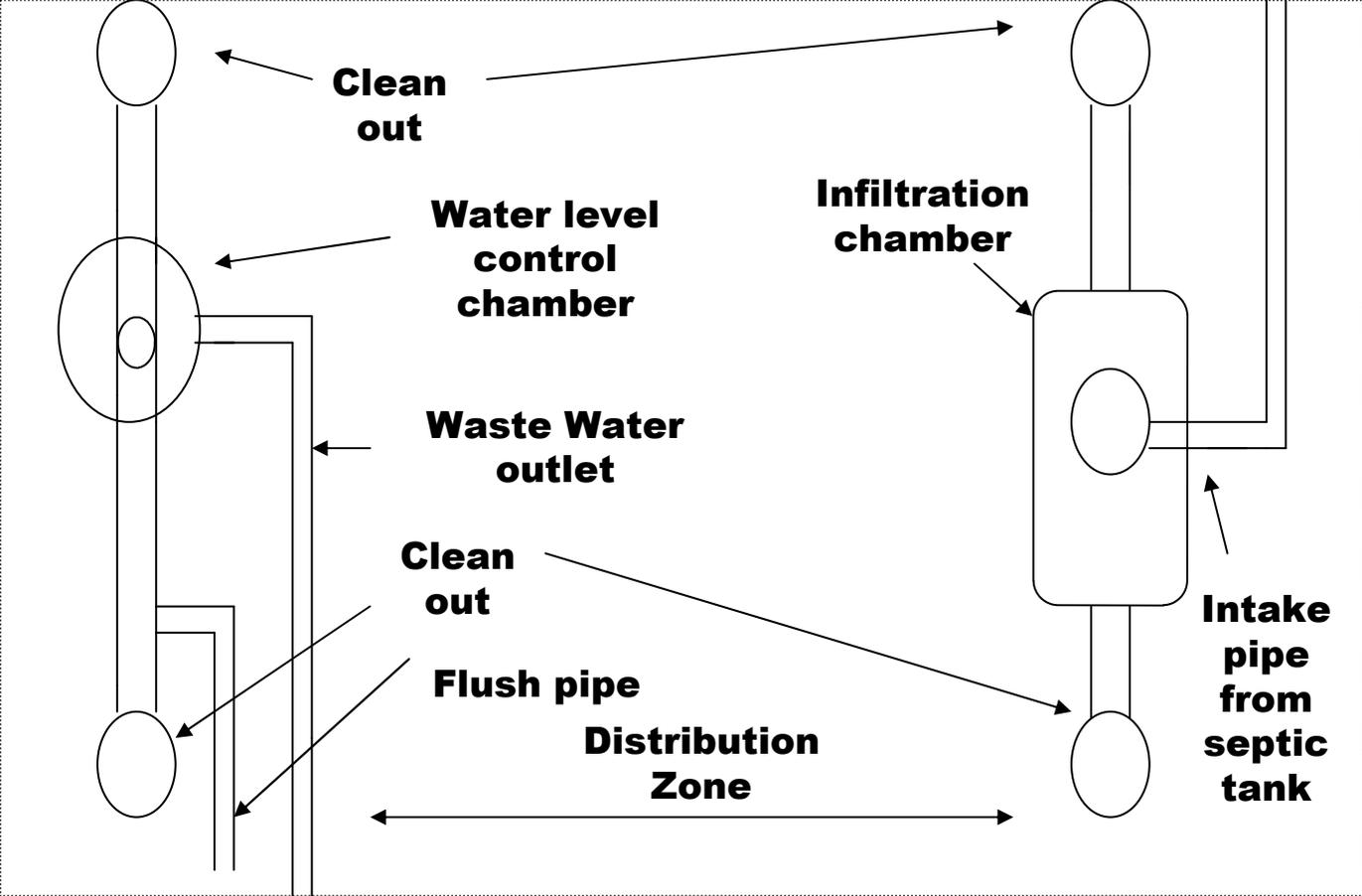
### Partners:

- GEF-IWCAM Demonstration Project, Saint Lucia
- Ministry of Health
- University of Vermont
- Eco Solutions LLC
- Engineering Unit, Ministry of Agriculture
- Au Leon Constructed Wetland Project Committee
- Forestry Department
- Sustainable Development and Environment Section



# WWT Demonstration Subproject

## Basic Design



# WWT Demonstration Project

## Technology Adaptation



# WWT Demonstration Subproject

## Construction Phases



# WWT Demonstration Subproject

## Performance

Parameters	Acceptable Limits	Results		
		17-06-09	15-09-09	09-12-09
Faecal Coliform ( CFU/100ml)	200	1,800	1,300	<10
BOD5 (CFU/100ml)	30	88	8	12

### BOD - Biochemical oxygen demand

- The amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter.
- A measure of the organic content of wastewater.

## Status of Constructed Wetlands

- Four wetlands constructed
- Three operational
  - Two private household
  - One public establishment
- Presentation to the Development Control Authority

## Conclusions

- **The source & type of waste needed to be clearly identified**
- **The solution to the problem needs to be appropriate.**
- **The system's effectiveness has to be assessed before replication.**
- **Involvement of the community was critical to successful implementation of the project;**
  - **The needs assessment**
  - **Sensitization and technology transfer**
  - **Ownership of the initiative**
  - **Sustainability.**

**Thank You**



*Hedychium coronarium* Koenig  
(Lavand)