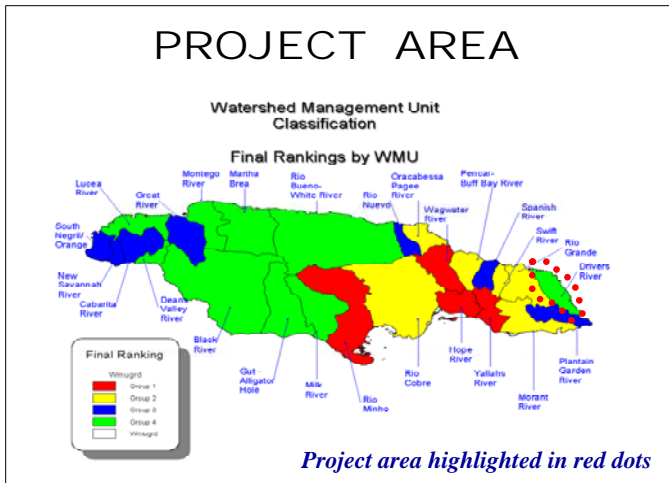


In this issue:

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Sites of interest in the Drivers River Project Management Area, Portland, Jamaica



Feature Article:

A Participatory Approach to Watershed Management: The Drivers River Watershed, Jamaica

Background

Jamaica's Global Environment Facility-funded Integrating Watershed and Coastal Areas Management (GEF-IWCAM) Demonstration Project, the Driver's River Watershed Management Area, is geared towards development and implementation of a model Watershed Area Management Mechanism (WAMM) for Eastern Portland that incorporates the lessons and experiences gained in other Watershed Management Units and Small Island Developing States.

The overall degradation of the environment in the parish of Portland, Jamaica has resulted in growing concerns for its proper management. Environmental challenges are rooted in a number of interrelated causes, which have physical, socio-economic and institutional dimensions. The Drivers River Watershed Management Unit is classified as the least degraded watershed in the parish of Portland. It was chosen for the demonstration project as it was considered ideal for the introduction of interventions towards preventing further degradation and for establishing a model Watershed Area Management Mechanism (WAMM).

The project started off with reconnaissance visits to the watershed by the Project Management Team to give them

(Continued on page 2)



Destruction of wetland areas

Participatory Strategic Planning Process

1. Current Reality Dialogue

An assessment of the current situation



2. Shared practical Vision

A practical Vision of the desired future



3. Underlying Obstacles

Analysis of issues that are blocking process



4. Strategic Actions

Proposed priority action arenas to move ahead



5. Implementation Planning

Detailed plan to carry out the new strategy

BACKGROUND ON THE IWCAM PROJECT:

The Integrating Watershed and Coastal Areas Management in Caribbean Small Island Development States (IWCAM) Project, with a value of USD 112 million, was approved by the Global Environment Facility (GEF) in May 2004. Implementing agencies are the United Nations Environment Programme (UNEP) and the United Nations Development Programme (UNDP). Executing agencies are the Secretariat of the Cartagena Convention (UNEP-CAR/RCU) and the Caribbean Environmental Health Institute (CEHI) and the UN Office of Project Services (UNOPS). The thirteen participating SIDS are: Antigua and Barbuda, The Bahamas, Barbados, Cuba, Grenada, Dominica, Dominican Republic, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago. The length of the Project is 5 years and commenced in the second quarter of 2005. The Project Coordinating Unit is located at the CEHI, as agreed by the Implementing and Executing Agencies and the participating countries.

(Continued from page 1)

greater insight into existing issues. Environmental challenges to be addressed through project interventions include:

- inappropriate garbage disposal,
- unapproved development along the coastline,
- dumping of wetlands and agricultural activities along waterways,
- poor disposal of sewage.

The Demonstration Project utilized a participatory approach from the outset to shape its work plan. The project employed a two-way process of dialogue, negotiation and decision-making between project staff and watershed stakeholders. This process has proven to be inclusive and helpful and will continue to play an integral role in the project.



Illegal construction along coastline

Three consultations were held over a two-month period. They provided invaluable insight into the issues impacting the project location and anticipated outcomes resulting from project interventions.

Consultation I: The Project Management Team presentation to, and meeting with, the Portland Parish Development Committee at the Portland Parish Council, May 31, 2007.

The Portland Parish Development Committee of the Portland Parish Council is the local government governance mechanism for community involvement. The objectives of this consultation were to:

- introduce the Parish Development Committee to the GEF-IWCAM Project;
- pave the way for stakeholders' participation;

(Continued on page 3)

(Continued from page 2)

- acquire background information on the watershed and how its management can fit into the local government process.

Ownership of project interventions and the subsequent outputs and outcomes were successfully promoted. Stakeholders pledged their participation and insisted that the process of incorporating their inputs continue throughout the implementation phase.

Consultation II: The Project Management Team met with the Portland officers of the Executing Agency, the National Environment & Planning Agency (NEPA), May 31, 2007.

Meeting objectives were to:

- discuss issues within the Drivers River Watershed;
- discuss strengthening the capacity of NEPA, Portland in an effort to promote sustainable watershed and coastal area management;
- identify key stakeholders for inputs and assistance with the GEF-IWCAM project.

The consultation helped the Project Management Unit to identify areas of critical concern within the study area as well as what can be done by GEF-IWCAM to strengthen sustainable watershed management in the area.

Consultation III: Drivers River Stakeholders Workshop, June 27, 2007

Seventeen persons participated in the Workshop



Participants in a stakeholders' workshop

which was held at the Portland Parish Council, Port Antonio. Participants were from a wide cross section

of organizations inclusive of public sector, private sector, NGOs and community-based organizations. The workshop objectives were to:

- invite participation in the Demonstration Project work planning process;
- position the group to arrive at decisions/proposed actions which are owned by the stakeholders;
- develop a work plan that takes into consideration the realistic expectations of participants, and promotes ownership of process, outputs and responsibility for outcomes.

Diagram 1 on page 2 summarizes the process that was used to engage participants in a strategic planning process at the stakeholders' workshop. Workshop activities followed all five steps of the Participatory Strategic Planning Process: current reality dialogue; shared practical vision; underlying obstacles; strategic actions; and implementation planning. Participation in the entire workshop was excellent.

All three consultations achieved their objectives, enabling the Project Management Unit to prepare the Final Draft of the Work Plan and the Budget. The following issues were also resolved:

1. Agreement on project location, as the project document was inconsistent in defining the study area.
2. Establishment of a stakeholders working group that will guide the project.
3. Identification of groups in need of capacity strengthening.
4. Identification of critical needs (relating to watershed management) to be addressed.
5. Establishment of a relationship with relevant stakeholders within the Drivers River Watershed Management Unit.

Participation of stakeholders will continue throughout project implementation. The completed work plan will be presented at another stakeholders' workshop in September 2007 and the formal Project Management Committee will have its first meeting soon after.

This article was provided by the GEF-IWCAM Jamaica Demonstration Project Management Unit.

See Pg. 4 for key interventions made by this Demonstration Project.

From Awareness to Action!

There are two international events taking place in September and October 2007 which have public education and awareness goals consistent with those of IWCAM and in which you may wish to participate in the future:

World Water Monitoring Day

World Water Monitoring Day (WWMD), October 18, 2007, is a global education and outreach event designed to promote personal stewardship and individual involvement in the protection of world water resources. Participants conduct basic water quality monitoring tests and record their findings. The importance of monitoring water quality is stressed. The data collected through WWMD activities can give an annual snapshot of local water quality, and gives community groups, students, citizens, and others the basic skills needed to participate in more formal citizen monitoring programmes. Information collected from each site over a number of years can provide insights into local water quality trends over time. The website provides several useful resources: media and community outreach templates which can be adapted for local use; fact sheets on ground water; and, the *Kid's Stuff* features three books which teach about ground water and water pollution. Reports and summaries for past years, including 2006 are also available.

Website: <http://www.worldwatermonitoringday.org>

The International Coastal Cleanup

The 22nd Annual International Coastal Cleanup (ICC) will be marked on **Saturday 15 September 2007**. This is the largest one day event to clean oceans and waterways. The focus is on educating and empowering people to become a part of the marine debris solution. In 2006, a total of 358,617 volunteers cleaned 34,560 miles of shoreline around the world.

All of the GEF-IWCAM Participating Countries, with the exception of Cuba (which, as reflected in the 2006 Report, manages to provide some data), are listed as international participants in this activity which is coordinated worldwide by the Ocean Conservancy (OC) operating out of Washington D.C.

Website: <http://www.oceanconservancy.org/>

For more information on how to participate in ICC 2007, contact your Country Coordinator. A complete list may be found on the ICC website at:

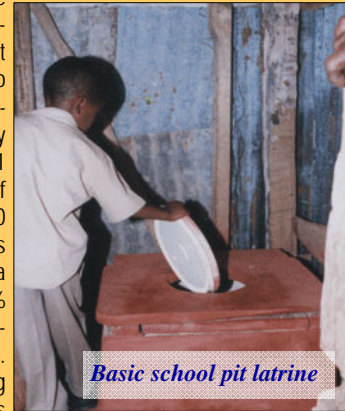
http://www.oceanconservancy.org/site/DocServer/Int_Coordinators.pdf?docID=1781

Key Interventions of the GEF-IWCAM Demonstration Project - Jamaica

In consultation with stakeholders, several key interventions were agreed upon. These include:

Community Sanitation Improvement

Approximately half of the total households within Drivers River Watershed use pit latrines and there are no wastewater treatment systems in place. Secondary information from the 2001 census revealed that of 7,670 households, 3550 used pit latrines; statistics from the NGO Build Jamaica Foundation indicate that 90% of basic schools have inadequate sanitary conveniences. The project will be replacing six pit latrines within schools and communities with upgraded flush toilets and treatment systems such as septic tanks and constructed wetlands. This intervention will promote the social well being of beneficiaries as well as reduce water pollution.



Basic school pit latrine

Community Workshops and Training

Community training workshops will promote environmental awareness in an effort to increase people's knowledge and awareness of the environment as well as associated challenges. Training activities will seek to develop the necessary skills and expertise to address the challenges, encourage different attitudes, increase motivation and commitment so that members of the community are able to make informed decisions and take responsible action.

Mapping of community resources will also be used to identify community assets such as natural and manmade resources. For simplicity, the community layout will be displayed on the ground using sticks, mud and stones. The main purpose of this exercise is for community members to appreciate assets that their community owns and to better understand the benefits to be derived from conservation.

Transfer of Best Practices and Lessons Learned

Portland has had several projects, programmes and activities, which have attempted to address many of the same issues. Such projects include:

1. The Ridge to Reef Watershed Project (R2RW)
2. The Coastal Water Improvement Project (CWIP 1 and 2)
3. Environmental Audits for Sustainable Tourism (EAST)

Building upon lessons learned in previous interventions as well as documenting best practice is a fundamental aspect of the GEF-IWCAM Project. As a result this Project will also seek to identify best practices from previous watershed management projects and community activities and implement them within the Drivers River Watershed.

GIS in Support of Planning for Watershed and Coastal Areas Management

GIS technology is an important tool for integrated data analysis and management. Recognizing this, the GEF-IWCAM Project decided to incorporate the use of GIS in various components. Mindful of the complexity and cost associated with effective and efficient use of GIS, the Project commissioned the conduct of a detailed capacity needs assessment study that would guide the process through development of a Road Map.

What are the benefits of GIS?

- integrated data storage and data retrieval capabilities.
- a more systematic approach for the collection of data.
- reduces the overall costs of data collection and management by facilitating data sharing among users.
- increases comparability and compatibility of diverse data sets.
- makes data accessible to a wider range of decision-makers.
- encourages the spatial analysis of environmental impacts that would otherwise be more easily ignored because of analytical difficulty or high cost.
- improves access to information and service to the general public
- supports the decision making process
- provides for effective communication on spatial issues

There are many examples of GIS applications relevant to watershed and coastal areas management:

Noise Pollution tracking and modeling

Water Pollution tracking and modeling

Air Pollution tracking and modeling

Soil Pollution tracking and modeling

Solid Waste management

Flood hazard mapping and management

Coastal erosion modeling

Coastal Water-Quality Modeling

Environmental Impact assessment

Monitoring landslide occurrence

Hazard Risk analysis

Non-point pollution analysis

Hydrological modeling

Sediment flow analysis

Monitoring of affected marine ecosystems (coral reefs)

Monitoring species abundance as it relates to the protection of important species in watershed areas.



Hill-shaded map of Dominica

The Road Map is based upon recommendations from the assessment which consisted of a desktop study which reviewed the GIS capacity building activities in the Caribbean and a regional assessment of GIS capacity in the Caribbean as well as stakeholder input via the Regional GIS Workshop (see page 7) which was held in Dominica in early-July. It consists of steps to be taken to bring capacity up to a level where GIS data can be generated, manipulated and shared among Participating Countries within a common framework. The actions to be implemented as a result of the assessment's recommendations would build data and information management capacity in participating countries and specifically at the level of the IWCAM Demonstration Projects.

The two background studies identified a number of common issues with respect to the implementation of GIS at a national level in the region including:

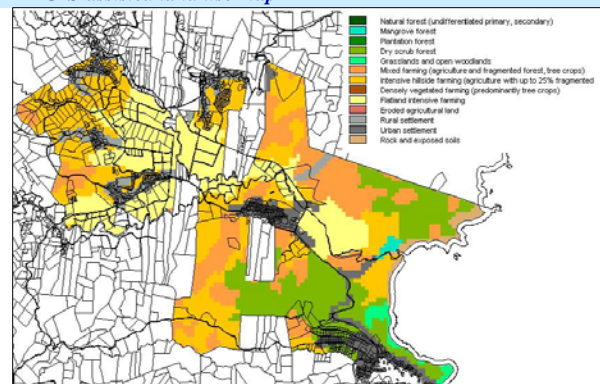
- the lack of an overall national GIS strategy;

(Continued on page 8)

Examples of GIS products which may be offered to the public

Drainage networks	Soil erosion potentials
Watershed boundaries	Transportation networks
Slopes and aspects	Digital elevation models
Water discharge points	Water quality sampling or monitoring points
Trends in land use and land cover	Waste disposal sites
Flood hazard maps	Isoheytal maps
Depth of ground waters	Soil permeability
Special interest atlases	Land use maps

GIS-assisted land use map





Hills of Grenada



Leatherback turtle, Grande Anse Bay, St. Lucia



Mangroves, Union Island, St. Vincent and the Grenadines



Cul de Sac River at Deglos Bridge, St. Lucia



River bath, Northern Range, Trinidad

Partnership at the National Level: National Intersectoral Committees (NICs)

The overall objective of the GEF-IWCAM Project is to strengthen the commitment and capacity of the Participating Countries (PCs) to implement an integrated approach to the management of watersheds and coastal areas. This is a big challenge given the sectoral approach which is the norm throughout the region.

National Intersectoral Committees (NICs) have been, or are to be, set up in each PC. The role of the NIC is to integrate IWCAM principles into national policy. The NICs will act as the main national policy bodies for Integrating Watershed and Coastal area Management into the national policy framework. As such, they are responsible for discussing, endorsing and promoting policy issues on IWCAM.

The composition of each NIC ideally should include key representatives of government, NGOs and the private sector. For example:

- Relevant Ministries and Departments (e.g. Agriculture, Health, Environment, Fisheries, Tourism, Forestry, Planning, Finance)
- Related projects (e.g. national projects on land, water or coastal zone management)
- Environmental, Community Development, or Private Sector Non-Governmental Organisations
- Civic Organisations (e.g. Chamber of Commerce, Rotary Club)
- Local Academic Institutions (e.g. UWI in Jamaica, Barbados, or Trinidad)

The NIC in each Participating Country is a key element of the project and its early engagement and involvement is important.

To date, three PCs have appointed NICs. The Trinidad and Tobago NIC was formally launched in November 2006 following a Cabinet decision for its establishment. It held its inaugural meeting in January 2007 and has convened three meetings to date. In both Saint Lucia and Antigua & Barbuda existing intersectoral committees, the Coastal Zone Management Advisory Committee and the National Coordinating Mechanism respectively, will effectively be NICs for the IWCAM Project.



Trinidad and Tobago NIC meets, 2007

The NICs are responsible for:

- Reviewing and promoting the implementation of project concepts and objectives, as defined by the Project Steering Committee (PSC), at the national level.
- Providing feedback to the PSC on project implementation at the national level.
- Reflecting the technical advice and guidelines from the Regional Technical Advisory Group in the development and adoption of national policy and legislation.
- Undertaking or supporting the conduct of National Hotspot Diagnostic Assessments.
- Ensuring full stakeholder participation at the national level in national project implementation.
- Ensuring full multisectoral cooperation and coordination within government departments.



The pristine Shark River, Matelot, Trinidad



Desalination Plant, Carriacou, Grenada



Sediment-laden run-off, East Coast, St. Lucia



Marigot Bay, St. Lucia



Englishman's Bay, Tobago

Partnerships at Work

GEF-IWCAM Exhibit, Innovation Marketplace, GEF 4th Biennial International Waters Conference, 31 July—3 August 2007

In a series of 6 posters GEF-IWCAM's exhibit described the types of partnerships which are fundamental to project implementation:

- Introduction
- Internal Partnership: PCU to PC Demonstration Projects.
- External: including community level.
- National: the National Intersectoral Committees (on this page).
- Regional: the IWRM and GIS Informal Working Groups.
- International level: including other IW projects such as the Pacific IWRM Project.

The series of posters is available on the IWCAM website:

www.iwcam.org

Under Information and Publications, in a special folder titled:

IWCAM Partnerships at Work Posters

GEF 4th Biennial International Waters Conference

The 4th Biennial International Waters Conference of the GEF took place from 31 July – 3 August 2007 in Cape Town, South Africa. Caribbean representatives included two representatives from GEF-IWCAM Participating Countries as well as



Indicators Jeopardy

the IWCAM PCU and the Executing and Implementing Agencies (CEHI, UNEP CAR/RCU, UNDP and UNEP). Specifically, Linford Beckles from Tobago, Joseph Toussaint from Haiti, Vincent Sweeney from the IWCAM PCU, Patricia Aquing from CEHI, Chris Corbin from CAR/RCU, Isabelle Vanderbeck from UNEP and Paula Caballero from UNDP were present.

The GEF-IWCAM Project used the opportunity to present posters on various partnerships, through the Innovation Marketplace (which was the exhibition component of the Conference; see pg. 6). GEF-IWCAM representatives used this avenue to share information on the work being planned within the region and the experiences gained during development and early implementation of the project. Country representatives and the project management team actively participated in a number of parallel sessions as well as the plenary sessions. These served to inform and educate participants on the GEF experiences world-wide and the new requirements of the GEF. One of the more innovative approaches used to sensitize participants to GEF International Waters Indicators was the session on "Indicators JEOPARDY", which was modelled after the television game show. Vincent Sweeney of GEF-IWCAM was one of 4 contestants and "won" the competition!



IWCAM's Partnerships Exhibit, Innovative Marketplace

Over 300 participants from all over the world attended the Conference, representing most, if not all, GEF International Waters Projects.

IWCAM E-Bulletins are regularly published on the Project web site. These cover topics such as:

- IWRM Roadmapping—Two Different Approaches
 - From Awareness to Action
 - Monitoring and Evaluation
- Check them out!**

GEF-IWCAM Regional Geographic Information Systems (GIS) Workshop, 5—6 July 2007, Roseau, Dominica

Representatives from GEF-IWCAM Participating Countries took part in a Regional GIS Workshop which had the objective of seeking regional consensus among GIS implementers and users in the Caribbean on developing the Road Map (see article pg. 5) and effectively mainstreaming the use of GIS for integrated watershed and coastal areas management in the region.

By the end of the Workshop the following had been achieved:

- Revision of the draft Road Map based upon the inputs of participants;
- A regional consensus for mainstreaming GIS amongst stakeholders; and
- Strengthening of the network of key stakeholders.

Many recommendations were made, notably:

- The need to develop a formal protocol for data collection throughout the GEF-IWCAM Project so as to facilitate regional analysis and enable GIS; and
- The need for regional coordination of GIS activities across the Caribbean.



GIS Workshop Working Group

GEF-IWCAM Demonstration Project Status Update (September 12, 2007)

Memorandum of Agreement with UNOPS Signed

Antigua and Barbuda	Saint Kitts and Nevis
The Bahamas*	Saint Lucia
Dominican Republic	Trinidad and Tobago
Jamaica	

Project Management Unit Established

Antigua and Barbuda	Jamaica
The Bahamas*	Saint Lucia
Dominican Republic	Trinidad and Tobago

Completed GEF-IWCAM Workplan and Budget

Antigua and Barbuda	Saint Lucia
Jamaica	Trinidad and Tobago

* The Bahamas has two Demonstration Projects.

(Continued from page 5)

- the lack of resources to train GIS personnel;
- the overall lack of understanding of the uses of GIS for the management of critical natural resources; and,
- the use of project-approach mechanisms to develop GIS which often results in the redundancy of GIS applications.

Current status of GIS infrastructure in the region as well as the current level of global development in information and communication technologies were both considered in designing the Road Map. The scope of the Road Map covers the mainstreaming of GIS at a national level. With some minor adjustment, the road-map may however, be adapted for programme-wide or region-wide use as well.

The main aims of the Road Map are:

- to provide guidance to effective and efficient GIS implementation;
- to identify key resources required for GIS implementation;
- to identify key tasks that need to be performed;

- to help minimize the risk of failure in GIS implementation;
- to identify issues that could impede the mainstreaming of GIS.

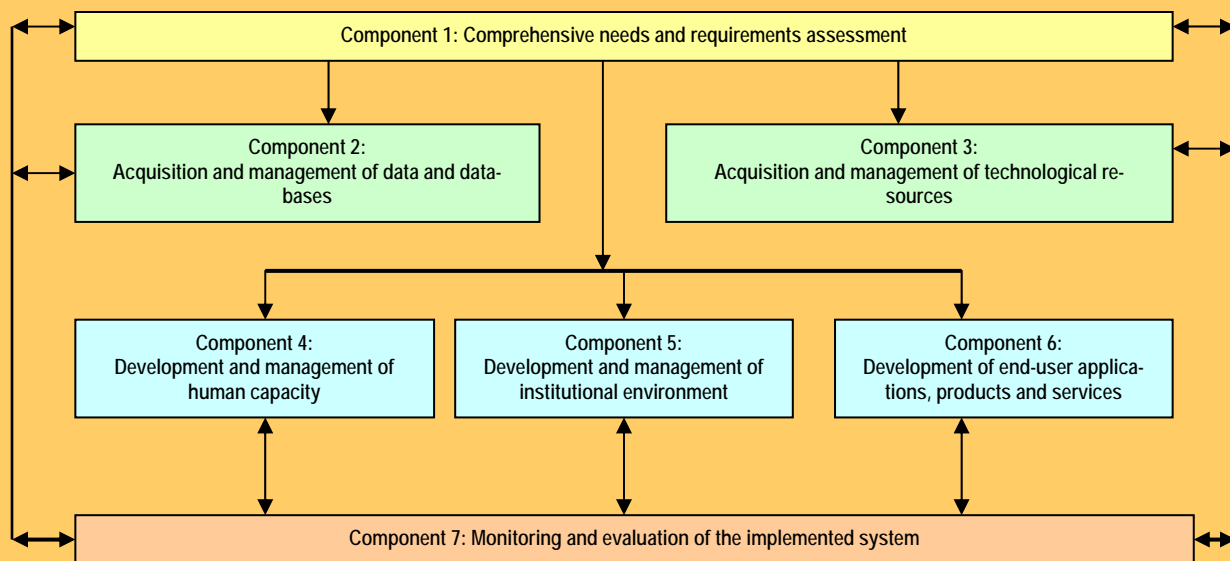
Towards the fulfillment of these aims, seven components were identified as being needed for the development and maintenance of effective mainstreaming of GIS at national levels in the Caribbean. These are:

1. Comprehensive needs and requirements assessment;
2. Acquisition and management of data and databases;
3. Acquisition and management of technological resources;
4. Development and management of human capacity;
5. Development and management of institutional environment;
6. Development of end-user applications, products and services; and
7. Monitoring and evaluation of the system.

An IWCAM Informal GIS Working Group will be expanded to include more key stakeholders with knowledge of GIS (as generators and users).

Figure 2., below, shows the relationship between Road Map components.

Figure 2.



Participating Country Focal Points, Demonstration Projects and others are invited to submit articles. Please contact Donna Spencer at dspencer@cehi.org.lc

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