

Caribbean WaterWays

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Squatters settlement, Port-au-Prince hillside, before the earthquake

Feature Article:

Planting Hope in Haiti through Jobs and Trees

– GEF-IWCAM and UNEP CEP-AMEP support the work of FoProBiM in Haiti

The earthquake which occurred in Haiti on January 12, 2010, did a tremendous amount of damage. As the poorest country in the Western hemisphere, Haiti has long faced tremendous challenges to the preservation and sustainable use of its natural resources and in recent years a series of natural disasters have taken their toll. The earthquake, in addition to resulting in extremely high human

casualties and physical damage, led to a chaotic situation.

Due to the lack of facilities and infrastructure an estimated 1 million inhabitants of Port-au-Prince left the capital in search of better and safer lives. This resulted in increased pressure on nearby natural resources as these inhabitants settled into more rural areas surrounding the capital. Among those relocating were many who had either never lived in rural areas or who had left these areas many years ago. The scarcity of jobs further increased the threat of harmful resource exploitation including use of unsustainable tree harvesting methods for charcoal production and inappropriate fishing methods. In particular, the continued decline in agricultural and fisheries production has been devastating for the local population dependent on these activities and there were significant waste disposal issues to contend with.

The GEF-IWCAM Project in conjunction with the UNEP-CAR/RCU Assessment and Management of Environmental Pollution (AMEP) sub-programme, of the Caribbean Environment Programme (CEP) responded by supporting a project which is currently being implemented by the Foundation for the Protection of Marine Biodiversity (FoProBiM). FoProBiM is a Haitian non-governmental organization which was established in 1995 and is headquartered in Port-au-Prince. It works on Haiti's environment in general, and on coastal and marine zones in particular, in the areas of sustainable development, education, research, and monitoring.

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Youth Take Rightful Place at 5th Caribbean Environmental Forum

Youth representing high schools in Jamaica and a community college appeared quite comfortable presenting an environmentally sustainable project, meeting with Prime Ministers, debating, interpreting the environment with the creative arts and sitting among delegates at the Fifth Caribbean Environmental Forum, Montego Bay, Jamaica.

During the five-day forum which ran from June 21 – 25, 2010, several high school and college students were brought together for the first ever Caribbean Youth Environmental Fo-



The Hon. Stephenson King, Prime Minister of St. Lucia with students at the GEF-IWCAM sponsored Youth Environmental Forum

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Seedlings being prepared

The project, which is currently being implemented, seeks to develop and improve watershed management and sedimentation control in rural areas such as Luly (north of Port-au-Prince), and along the southern peninsula in Léogane (south of Port-au-Prince) primarily by replanting of mangroves. It specifically addresses GEF-IWCAM Project Component 2 which deals with Hotspot Diagnostics and the Objectively Verifiable Indicator of "demonstration of applied solutions and technologies within selected hotspots and sensitive areas".

Activities are meant to contribute directly towards capacity building for management of coastal watersheds. It also aims to raise awareness at the community-level of the effects of improved integrated watershed and coastal area management practices, while contributing to sustainable livelihoods, through sustainable environmental practices.

It is also hoped that the Project will move Haiti closer to ratification of the Cartagena Convention and the Land-Based Sources of Marine Pollution (LBS) Protocol.

BACKGROUND ON THE GEF-IWCAM PROJECT:

The Global Environment Facility-funded Integrating Watershed and Coastal Areas Management in Caribbean Small Island Developing States (GEF-IWCAM) Project 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), the Caribbean Environmental Health Institute (CEHI) and the UN Office for 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.

Main objectives of the project are to:

- Provide those in need a sense of purpose by enabling them to earn an income while engaging in the protection and rehabilitation of the environment;
- Engage these individuals in watershed sediment control, and
- Manage watershed and coastal waste through recycling activities.

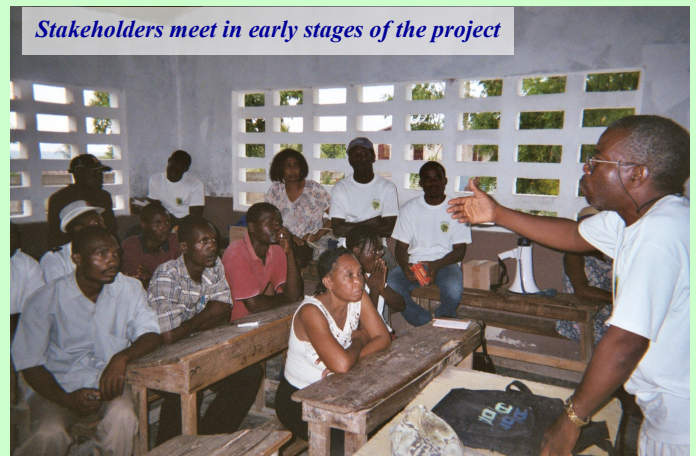
The Project focuses upon Environmental Education and Reforestation for Coastal Protection:

Environmental Education

Environmental Education activities such as classes, workshops, and field activities for those participating in project activities are being conducted. Topics range from basic general environmental processes (e.g. the water cycle; tides) to more specific topics addressing such concerns as the drying up of local springs and the role of mangroves. Training is being provided as nursery activities are undertaken in order to make best use of the time and avoid delays with implementation. While catering mostly to stakeholder groups, individual stakeholders are also being invited to participate. These workshops revolve around basic concepts of ecology and the importance of healthy watersheds.

Prior to the work on the replanting, three workshops are being held in order to discuss: the reasons for replanting; how to evaluate if a site is suitable for replanting; how the work will be carried out with the help of local community groups and individuals; who will be responsible for protecting and caring for the plants, and; where replanting should take place.

Stakeholders meet in early stages of the project



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Moving plants around a nursery

These activities aim to:

- foster constructive and democratic debate and dialogue amongst participants;
- learn about various stakeholders groups' successes in improving their member's livelihoods through internal democratic decision-making processes;
- bring about an increased public awareness of the economic, ecological and social importance of their environment;
- help develop a common understanding of the need for resource management;
- exchange information about management and regulatory methods which have been successful in the past;
- schedule and plan for continued collaborative activities, joint action, and follow-up events between groups and key community members.

Reforestation for Coastal Protection

Plant nurseries are being developed mainly for rapid growing, soil retaining species (e.g. bamboo) which may also be used as renewable crops for charcoal production. Many coastal areas which were not protected by mangroves and reefs were damaged by the post-earthquake tsunami, causing damage to local near-shore structures as well as fishing equipment. Mangroves are to be replanted to protect some of these areas. An estimated 20,000 man/days of employment are being created as locals are hired to work in the nurseries (preparing plants, watering, etc.) as well as in replanting activities in area watersheds. In addition, used containers (such as oil, water, paint, etc.) which usually end up in the marine environment are being recovered from areas of the watershed and coastline and recycled for use as pots in the nurseries, thereby reducing watershed pollution.

With the assistance of local community groups and leaders, sites for replanting are being identified. During community awareness raising activities plants are also being distributed to six individuals or groups for replanting efforts within their own communities. Planting must be timed to take place in the next suitable rainy season after plants have matured.

Project Benefits:

- Participation of 500 local area stakeholders and public sector representatives in environmental education classes;
- Recovery of 50,000 containers/pots from area watersheds and the marine environment for reuse in plant nurseries;
- 20,000 man/days of employment;
- 50,000 plants prepared in nurseries for sediment control;
- 600 man/months of employment created by engaging local stakeholders in pot preparation, nursery, and replanting efforts;
- 50,000 plants/trees replanted within the local community, area watershed, and coastal zone;
- A better understanding of the impacts of the mismanagement of area ecosystems upon stakeholder revenues, and of the shared benefits of more sustainable management of resources;
- a greater understanding of pollution issues affecting watersheds and coastal areas.



Collecting containers

Between May and August 2010, Stakeholder Environmental Education and Stewardship Classes/Workshops were held for 500 local area stakeholders and public sector representatives participated in six day-long environmental education classes. Ten day-long classes saw the participation of 619 local area stakeholders including 414 youths and 205 adults (over 18). Three schools in the Luly area and two schools in the Léogane area have participated. Adult participants have included members of various local stakeholder groups including fishers, women, earthquake victims and farmers.



Preparing mangrove propagules on nursery fieldtrip

The GEF-IWCAM Bahamas, Exuma Demonstration Project:

Wastewater Management at Elizabeth Harbour Marina, Exuma

Introduction

The GEF-IWCAM Demonstration Project in Exuma, Bahamas focuses upon waste disposal in one of the Caribbean's busiest harbours: Elizabeth Harbour in the Exuma Keys.

At many anchorages, harbours and marinas throughout the Caribbean SIDS, provision for proper waste disposal is inadequate. Sewage discharges in particular are of concern. This harbour was identified as an area of concern as up to 500 marine vessels per day make use of it during peak yachting seasons. Although adequate solid waste collection is available to yachters, the harbour did not have a facility for the collection and treatment of wastewater. In addition, although designated anchorage areas are available, along with private mooring and docking facilities, these were insufficient during peak months. As a result, improper anchoring practices have caused damage to sensitive biological habitats. Historically, wastewater contamination from the yachting and harbour-side communities has posed a challenge to environmental sustainability.



The Elizabeth Harbour Management Steering Committee (EHMSC) was formed on Exuma in 2009.



Stakeholder involvement (both the yachting community and land-based communities on Exuma) was facilitated through town meetings and interviews. Here, residents attend a town meeting to learn more about the Project.

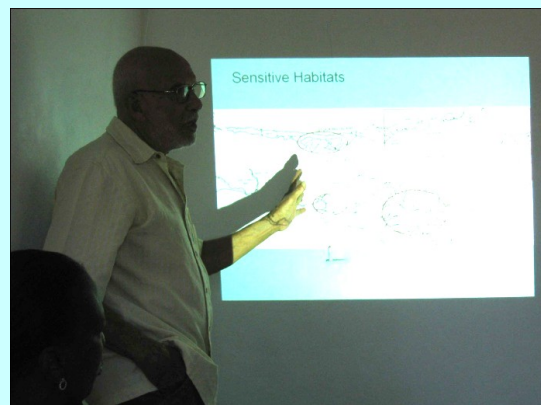


The objective of this demonstration project is to show how such facilities can be retroactively installed and sustainably managed, and how incentives for use (or disincentives for violation of legal requirements) can be effectively established.

Project Partners include:

- The Bahamas Environment, Science and Technology (BEST) Commission
- Bahamas Water and Sewerage Corporation
- Department of Environmental Health Services
- Bahamas Reef Environment Educational Foundation (BREEF)
- Engineering Technical Services
- Harbour Solutions Pump-out Services
- Elizabeth Harbour yachting community
- Sandals Resort Foundation

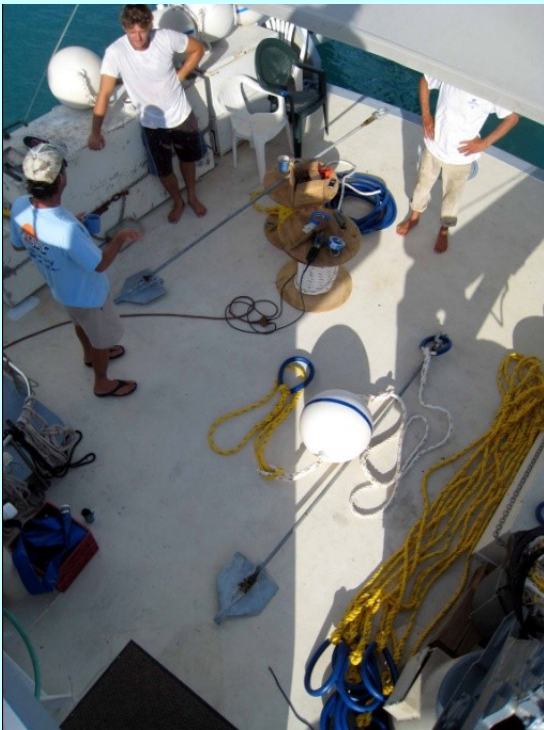
After longer than anticipated administrative planning, execution of this demonstration began in early 2009 and is currently underway. Project infrastructure is expected to be completed during the last quarter of 2010, before the start of the peak yachting season. Some of the Exuma Demonstration Project's activities and achievements are featured here.



The EHMSC heard from **local conservationists and scientists** to identify sensitive habitats in Elizabeth Harbour. Mr. Basil Minns shares his knowledge with the committee.



Teachers from Exuma learn new **hands-on lessons** to teach their students about taking care of the marine environment. BREEF created the educational materials and ran the workshop.



The destruction of sea grass beds by boat anchors is an ongoing problem. Fifteen **moorings were installed** in a heavily used area where sea grass recovery can occur. Here, moorings are prepared for installation in Gaviota Bay, Elizabeth Harbour.

Entrepreneur Patterson Smith with his **pumpout boat**, which now operates in Elizabeth Harbour to service hundreds of yachts which visit annually.

As an **interim solution** until the wastewater treatment plant could be completed, Sandals Resorts, one of the stakeholders, agreed to accept wastewater into their facility.



A **harbour inspection and coastal water quality monitoring program** was established by the Department of Environmental Health Services.



Construction of a wastewater treatment plant, though faced with many challenges, began early in 2010 and should shortly be commissioned. This will receive all boat sewage from the marina. Here, Reginald McKenzie, construction foreman, and Ambrose Johnson, engineer, inspect the facility.



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rum. Two of these young people, Tashana Clemings and Tanashay Cheddesingh were supported by their teacher Devon Callam of the Mannings High School, Jamaica when they presented the environmentally-friendly project termed "Conserving Energy with Green Roof Technology." The project has already received the Jamaica Public Service Company Ltd. (SPSCo) Environmental Award.

Using five models Clemings and Cheddesingh were able to demonstrate that it is possible to grow vegetation on roofs by water-proofing the area, choosing the appropriate soil and ensuring adequate drainage. The students noted that benefits would include a cooler house, income from the sale of plants and reduction of theft of plants due to their high placement.

The young people were also given an opportunity to have their voices heard by policy makers when they met and held discussions with Prime Minister of St. Lucia Honourable Stephenson King as well as Jamaica's Minister of Water and Housing Honourable Dr. Horace Chang.

The young people were also participants in a Tree Planting Ceremony at the Old Hospice Site Montego Bay to mark the First Youth Environmental Forum. The first tree was planted by Montego Bay Community College Students along with Montego Bay's mayor, Charles Sinclair, and Patricia Aquino, Executive Director of the Caribbean Environmental Health Institute (CEHI). The students of the Mannings High School planted the next tree with Vincent Sweeney, Regional Project Coordinator of the Global Environmental Facility-Integrating Watershed and Coastal Area Management (GEF-IWCAM) project. The final tree was planted by the accompanying teachers of the schools attending the Forum and Nadia Deen Ferguson of the United Nations Environment Programme- Caribbean Regional Coordinating Unit (UNEP CAR-RCU) and Ava Tomlinson of the National Environment and Planning Agency (NEPA). Ms. Tomlinson was instrumental in the coordination of the Youth Forum itself.

The students also visited the Montego Bay Marine Park where they identified environmental issues and solutions and Project Wet, an environmental group, led the youth in a Blue Planet Activity which enabled them to identify water sources on the globe.

The young participants were given the opportunity to immortalize their thoughts on their Forum experience by keeping a daily journal and creating what was termed Youth Commitments. They acknowledged their personal responsibility to the environment.



Tree planting ceremony to mark the First Youth Environmental Forum

"I am committing myself to impart the knowledge I have garnered about the environment and use it in a way that will most definitely prove beneficial to the ecosystem," said Christopher Munro of Mannings

SIDS Representatives meet in St. Lucia to discuss IWRM



Workshop Participants

A Workshop organized by UNEP and GEF-IWCAM to review draft Global Guidelines for Integrated Water Resources Management (IWRM) Planning for SIDS was held in Rodney Bay, St. Lucia from 24 to 26 August, 2010.

The workshop considered a draft Resource Book developed by UNEP to promote the implementation of IWRM in SIDS, taking into account their unique geographical, hydrological, socioeconomic and cultural attributes and vulnerabilities. This Resource Book attempts to review IWRM guidelines from various regions and provide a globally applicable methodology.

The workshop provided a forum for participants from the Caribbean, the Atlantic, the Indian Ocean and the Pacific to exchange information and experiences in IWRM, and to identify what needs to be done to accelerate the implementation of IWRM in SIDS. Countries represented at the workshop included Cape Verde, Fiji, the Maldives, Samoa, Sao Tome & Principe, the Seychelles, and the Solomon Islands. Senior experts were also present from Barbados, Grenada, Jamaica, St. Lucia, and Trinidad & Tobago, along with representatives from UNEP Headquarters in Nairobi, Kenya.

High School, Jamaica.

"There are many solutions to all the environmental problems that we are facing today and it is my dream to make the world a better place for God's wonderful creatures."

"The forum was very enlightening," said Ramone Gibbs of the Mannings High School, Jamaica. "It reminded that we are indeed a part of our environment and we ought to be stewards of the environment."

"I pledge to educate the public and whomever I come in contact with about how their actions can be detrimental to the environment," said Tanashay Cheddesingh of the Mannings High School, Jamaica. "I also pledge to help take the initial steps in protecting and preserving every aspect of the natural environment, hence promoting sustainable development and a sustainable future."

Article prepared by Alecia Blake, GEF-IWCAM St. Kitts & Nevis Demo Project.

GEF-IWCAM Demonstration Project in Trinidad & Tobago closes



Orville London, Chief Secretary, THA, addresses gathering

Senior dignitaries from the Tobago House of Assembly (THA) and the Government of Trinidad and Tobago, as well as Directors and staff of the Buccoo Reef Trust (BRT), the GEF-IWCAM Regional Project Coordinator, the Executive Director of CEHI, a representative of UNDP, and a cross-section of stakeholders, attended the Closing Ceremony of the Trinidad & Tobago Demonstration Project in Crown Point, Tobago on 21st September.

The programme included a series of remarks, greetings and addresses from these officials, as well as the airing of music videos produced by the BRT and a very impressive calypso performance by a secondary school student. The event concluded with presentations of tokens of appreciation to local persons who had actively contributed to the success of the Demo, including representatives from the Jacob's Fish Processing Plant; the Department of Infrastructure and Public Utilities of the THA; and the Anse Fromager Ecological Environmental Protection Organisation (AFEEPO).

It was apparent throughout the Closing Ceremony that the efforts of the BRT and the THA were greatly appreciated. Notably, THA Chief Secretary, Orville London, commended and expressed appreciation for the partnership efforts of the BRT, acknowledging the benefits that had been derived from government-NGO collaboration. The Chief Secretary was clearly impressed with the Demonstration Projects use of GIS to manipulate data and present it



Sandra Timothy, Demo Project Manager, reviews project achievements



D'andra Grant sings her prize winning calypso!

graphically, its generation of meaningful data and its public education and outreach programme. He also stated, for the record, that it was the first time that he had used the term "replicability" in a speech, confirming that the activities conducted in the Demo project would be replicated elsewhere in Tobago. Finally, he expressed his determination to see that the long-awaited sewerage system for south-west Tobago will be finally constructed.

Other speakers shared their perspectives on the Demo and how it fit with the broader initiatives of their respective organizations and agencies, while congratulating the Demo Project Management Unit for its excellent work. A summary of Demo project achievements was presented by the Demo's Project Manager, Sandra Timothy.



Sign at entrance to the demo wastewater wetland system

Following the Ceremony, there was a field trip to the Demonstration wetlands waste treatment plant, located at Jacob's Fish Processing Plant in the Buccoo Bay/Bon Accord area of Tobago. This allowed for first hand observations of the stress reduction measures put in place to address pollution from fish-processing blood waste which was impacting on Buccoo Bay. During the field trip, the participants were able to observe the pollution source and the difficulties of traditional treatment options, due to the high water table. Mr. Jacobs, who was very appreciative of the assistance, reiterated his commitment to maintain the facility after its completion.

World Water Week 2010 - GEF-IWCAM Project well-represented!



Halla Sahely following her presentation

World Water Week in Stockholm, September 5 - 10, this year brought 2,500 participants from all over the world together to discuss pressing water issues. The theme was: **The Water Quality Challenge – Prevention, Wise Use and Abatement.**

Halla Sahely of the St. Kitts Water Services Department represented the GEF-IWCAM Project at the workshop on **Management of Groundwater Abstraction and Pollution.** The afternoon session focused upon groundwater protection. In response to her presentation, a case study of the St. Kitts Demonstration Project which seeks to protect the Basseterre Valley Aquifer, many participants commented on the novelty of the Project's approach to groundwater protection via the designation of a national park in the sensitive well-field area. In addition,

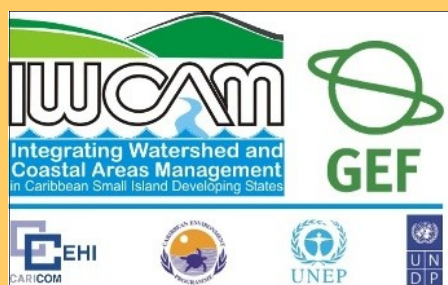
the SIDS perspective on these issues was welcomed and compared and contrasted to the challenges faced by various others in the audience.

Lisa Kirkland, Manager of the GEF-IWCAM Demonstration Project, presented in the workshop on **Minimising Land Use-Based Water Pollution.** Her presentation titled: *A Model for Sustainable Watershed Management: The Case of Drivers River Watershed Management Unit, Portland Jamaica*, outlined the ten components of the GEF-IWCAM/NEPA Watershed Model. She also participated in the panel discussion on **Shortcutting Historical Pollution Trends.** Historically, water pollution has been seen as an unavoidable cost of socio-economic development. This means that water quality often becomes so degraded that people's quality of life suffers. Presenters and panelists explored the link between water quantity and quality, the concept of peak ecological water quality and the need for equal partnership collaboration. It stressed that full stakeholder involvement, a critical mass of community involvement with engagement at all levels, and, more accountability within the private sector are all necessary.

Both participants were grateful for the opportunity to share the SIDS experience and perspective with colleagues facing similar challenges worldwide.



Lisa Kirkland makes a point during the panel discussion



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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