

Demonstration:	Four
Project Title:	Promoting best practices in waste water disposal water conservation and re-use in the North West tourism zone Antigua
Integrated Issues:	Water quality and quantity; Sustainable resource use; Agriculture; Tourism
Objective:	To identify and promote best practice in waste water disposal and water conservation and re-use in the NW tourism zone in Antigua.
Executing Agency	Environment Division of Ministry of Works, Transportation and Environment
Time Frame	2 years +

Linkage to National Priorities and Programmes

Antigua & Barbuda has ratified the Convention on Biodiversity and the Convention to combat Desertification, and has met all other eligibility requirements. This demonstration project is consistent with the priorities identified within the National Environmental Management Strategy developed as commitment to the St Georges Declaration. The development of the NEMs is an OECS initiative that seeks to establish national mechanism for the implementation of the Barbados Plan of Action for SIDS. This project is consistent with Principle X of the NEMS. The proposal is consistent with the following additional International Regional Multilateral Agreements to which Antigua and Barbuda is a signatory:

- Convention of Biological Diversity
- The Ramsar Convention on Wetlands
- The Cartagena Convention and Protocols
- Convention for the Prevention of Marine Pollution (MARPOL)
- St Georges Declaration of Principles for Environmental Sustainability in the OECS.

Project Objectives and Activities:

Background:

Tourism can play an important role in the development of a small island's domestic economy. If the development of tourism is planned carefully (including hotel construction, imported goods and foods, preservation of culture and island heritage protection of the island's environment) and effectively regulated, then the tourism sector can be a positive influence for small islands.

However, the economic potential that accompanies tourism (large chain hotels, international airlines, cruise ship lines, travel agents) often overrides any environmental concerns or the rate of development exceeds the capacity of the island to regulate. The need for economic development is then often accompanied by environmental costs (pollution, land degradation, beach erosion, biodiversity loss, loss of cultural ways of life) that ultimately degrade the key attributes that attracted the sector in the first place.

Tourism has been the main focus of economic development on Antigua and Barbuda since the 1960s and it is now responsible for about 70% of the GDP. The numerous white sand beaches have served as the key attribute that attracted developers to the islands, hence the reason why the much of the tourism is coastal. The current level of tourism and lack of institutional capacity to regulate the existing establishments or control new developments is putting pressure on the islands limited resources and leading to conflicts of interest. In the meantime the heavy economic dependence on tourism leaves the island vulnerable to market fluctuations and recessions. Antigua and Barbuda would like to diversify the economy away from its reliance on beach tourism and the tourism sector generally, as are other Caribbean nations. In the meantime however there is a need to minimise the impacts of this sector on the environment and thereby preserve the quality of the tourism product the island has to offer.

Freshwater is a scarce resource in Antigua and Barbuda. In the context of a growing tourist industry, demand for water is rising. All water resources of Antigua and Barbuda are currently vested in the Antigua Public Utilities Authority (APUA). APUA operates a network of distribution pipes throughout the country to supply treated water to both domestic and commercial sectors. Agriculture is considered to be a commercial activity and irrigation generally does not enjoy any special preference in water allocation. This prevents the expansion of this sector, through limiting the ability to maintain a continuous supply, and hence the potential profitability. Moreover, this situation is unlikely to change as the APUA long-term water development plan places emphasis on desalinization of seawater to eliminate the risk of drought and inadequate surface storage and groundwater facilities.

At present there are two municipal desalination plants located at Crabbs Peninsular on the North East coast of Antigua, one government-owned and the other privately owned. The cost of water is currently being subsidized by the APUA and this is not a sustainable situation. All of revenues generated are targeted for Operation and Maintenance, and there is little left over for the maintaining the watersheds. A number of hotels have recently installed private desalination units, as the water produced from these private units is not subject to the same commercial water rates. This has significantly reduced the revenue to the APUA. So aside from the environmental problems that can be caused by desalination plants (warm brine effluent and use acid as cleaning product) the increasing number of private desalination units is inadvertently constraining the ability of the government agencies to address the environmental concerns and find long term sustainable solutions to water shortage issues affecting other sectors (i.e. agriculture).

The North West Coast of Antigua is the main tourism zone on the island, with the greatest concentration of hotels and the highest levels of water use. This area is however within the Cedar Grove Watershed (W1) which is a drought risk zone with the lowest annual rainfall compared to other watersheds and limited ground water stores. There are no municipal sewage treatment plants and although some exist in private hotels, most domestic properties utilize septic tank systems to provide primary treatment of sewage. In the absence of proper building regulations many of these tanks are not properly constructed or maintained and this can lead to contamination of streams or groundwater (through overflow or runoff) especially during heavy storms. The NW tourism area has been identified as an environmental Hotspot due to the high levels of liquid and waste contamination (nutrients, microbiological and chemical pollution; suspended solids; solid wastes).

The purpose of this demonstration project is to investigate mechanisms and strategies by which to encourage better water conservation and re-use, to minimise both point and non-point sources of pollution (from poorly maintained septic tanks and private waste water disposal systems), and ensure equitable distribution of water resources. Assistance will be given to APUA to review the water tariff scheme and to find alternative mechanisms by which to address: 1. Inadequate waste water disposal, 2. The lost revenues from water provided by private desalination plants, 3. Ensuring the equitable and continuous supply of irrigation water for agriculture, and 4.

Environmental management responsibilities in the watershed. In doing so the project will work closely with the Hotels and Tourism Association and will promote public private partnerships and encourage the adoption of environmental management systems. Strategies to compensate for the use of private desalination plants could be in the form of implementing an offsetting scheme by which the excess grey-water produced by hotel is made available for re-use for municipal and / or agricultural purposes. The project will investigate the possibility of implementing a Blue Flag

eco-certification scheme for the beaches within the NW zone. The project will collaborate with the GEF-IWCAM project activities concerning water quality and monitoring activities in the GEF-IWCAM project.

Pilot Site Objectives and Deliverables:

Objective A: Establishment of management structure for self-regulation of tourism industry

- A.1. Establishment of cross-sectoral management group to coordinate Demonstration Activities through regular steering meetings
- A.2. Undertake a gaps-analysis in policy and regulations relating to environmental standards within the tourism in the northwest region
- A.3. Review guidelines and standards for EIA, SEA, environmental quality, etc
- A.4. Undertake community policy and self-regulation development workshops
- A.5. Conduct awareness seminars for tourism industry
- A.6. Assist in establishment of self-regulatory environmentally-friendly tourism body among tourist establishments (from core of steering group)

Objective B: Adoption of Environmental Management Systems and incentives by tourism industry

- B.1. Conduct an assessment of tourism establishments in NW region to identify suitable targets for EMS implementation
- B.2. Undertake detailed assessments of selected establishments and develop an implementation plan
- B.3. Undertake a training exercise and provide technical support and monitoring for adoption of EMS procedures at selected establishments
- B.4. Case study report for distribution to other establishments (including Cost-Benefit identification)
- B.5. Conduct awareness seminars and capacity training courses to present case study findings to other establishments
- B.6. Establish a National Award Scheme to provide incentive and promote champion establishments

Objective C: Financial and economic instruments for regulation of wastewater disposal, water resource conservation and watershed management

- C.1. Review of current water supply tariffs and identify mechanisms for generation of revenues for watershed and water resource management
- C.2. Review options and case studies of mechanisms, strategies and technologies for water conservation and recycling, and policies for equitable use between different demand sectors
- C.3. Review existing and optional improvement strategies for domestic liquid waste disposal (sewage and grey water) including financial incentives and fee structures as appropriate
- C.4. Provide recommendations to cross-sectoral management group for action
- C.5. Undertake awareness briefings and seminars for tourism establishments to explain incentives and cost-benefits of various improvement and recycling schemes

End of Project Landscape (Outcomes)

Working examples of Environmental Management Systems within selected operators/hotels and lessons/best practices available for transfer and replication. Specialists trained to provide guidance and training to tourism operators and hotels on implementing cost-effective EMS. Active examples of water recycling and re-use and appropriate wastewater treatment technologies

and strategies. Mechanisms established for sustainable generation of funding and revenues to support watershed and water resource management and wastewater treatment. National ward schemes in place for Green Flag hotels and Best Operators.

Project Management Structure and Accountability

To be completed

Stakeholders and Beneficiaries

Primarily the tourism industry which will benefit from effective water resource and wastewater management and improved coastal water quality. Ecosystem functions within the area will be better protected as a result of reduced pollutants and more effective use of resources

Long term Sustainability Strategy

This will be developed through a carefully review of revenue options and economic instruments including a 'beneficiary-pays' and 'polluter-pays' approach. Fee structures and incentive schemes will be identified through deliverables in Objective C.

Replicability

Lessons and Best Practices established by the Demonstration will be reviewed and captured through Activities 4.5.5 and 4.5.6 of the Full Project. These activities will identify suitable areas and appropriate technologies/methodologies for replication. Lessons and Best Practices pertinent to the overall Antigua and Barbuda 5 Year SIRM Plan, legislative and institutional reform, monitoring strategies, etc will also be replicated through the SIRM and associated reforms.

Monitoring and Evaluation Process

Through the M&E Plan adopted by the Full Project and through a cross-sectoral Steering Group which will report to the Full Project Coordinator/Director on a quarterly basis

WORKPLAN FOR DEMONSTRATION FOUR

DEMO OBJECTIVE	DELIVERABLE		YEAR 1				YEAR 2			
A. Establishment of management structure for self-regulation of tourism industry	A.1	Establishment of cross-sectoral management group to coordinate Demonstration Activities through regular steering meetings	X							
	A.2	Undertake a gaps-analysis in policy and regulations relating to environmental standards within the tourism in the northwest region	X	X						
	A.3	Review guidelines and standards for EIA, SEA, environmental quality, etc	X	X						
	A.4	Undertake community policy and self-regulation development workshops	X	X						
	A.5	Conduct awareness seminars for tourism industry	X	X						
	A.6	Assist in establishment of self-regulatory environmentally-friendly tourism body among tourist establishments (from core of steering group)		X	X					
B. Adoption of Environmental Management Systems and incentives by tourism industry	B.1	Conduct an assessment of tourism establishments in NW region to identify suitable targets for EMS implementation	X							
	B.2	Undertake detailed assessments of selected establishments and develop an implementation plan		X						
	B.3	Undertake a training exercise and provide technical support and monitoring for adoption of EMS procedures at selected establishments		X	X	X	X			
	B.4	Case study report for distribution to other establishments (including Cost-Benefit identification)					X			
	B.5	Conduct awareness seminars and capacity training courses to present case study findings to other establishments						X		
	B.6	Establish a National Award Scheme to provide incentive and promote champion establishments					X	X		
C. Financial and economic instruments for regulation of wastewater disposal, water resource conservation and	C.1	Review of current water supply tariffs and identify mechanisms for generation of revenues for watershed and water resource management		X						
	C.2	Review options and case studies of mechanisms, strategies and technologies for water conservation and recycling, and policies for equitable use between different demand sectors		X	X					

watershed management	C.3	Review existing and optional improvement strategies for domestic liquid waste disposal (sewage and grey water) including financial incentives and fee structures as appropriate			X	X					
	C.4	Provide recommendations to cross-sectoral management group for action					X				
	C.5	Undertake awareness briefings and seminars for tourism establishments to explain incentives and cost-benefits of various improvement and recycling schemes						X			