

<b>Demonstration:</b>	Two
<b>Project Title:</b>	Integrated “ridges to reef” management of the SW coast of Antigua (Boggy Peak, Wallings Forest, Fig Tree Drive Forest and Cades Bay Marine Reserve)
<b>Objective:</b>	To implement integrated management to promote the maintenance of the environmental integrity, conserve key assets with active stakeholder participation, and to generate revenues to support management activities.
<b>Key Issues:</b>	Conservation of terrestrial and marine biodiversity, Revenue generation for conservation, Stakeholder participation, Co-management.
<b>Executing Agency</b>	Forestry Division in close collaboration with the Environment Division of the Ministry of Works, Transportation and Environment
<b>Time Frame</b>	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 the following principles of the NEMS.

- Principle 1: Foster Improvement In the Quality Of Life
- Principle 4: Ensure meaningful participation by Civil Society
- Principle 5: Ensure meaningful participation by the Private Sector
- Principle 6: Use of economic instruments for sustainable environmental management.
- Principle 7: Foster broad-base environmental education, training and awareness.
- Principle 13: Protect and conserve Biological Diversity

The forest of Antigua have been recognized locally, regionally, and internationally, through the Conventions on Biological Diversity, Climate Change and Desertification, as globally significant for the protection of biodiversity, mitigation against climate change and the prevention of land degradation. 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
- St Georges Declaration of Principles for Environmental Sustainability in the OECS.

### **Pilot Demonstration Site Objectives and Activities:**

#### ***Background / Justification***

As a small island developing state Antigua and Barbuda is entirely dependent on the integrity and productivity of the ecosystem. Protected areas have proven to be an effective means of

conserving terrestrial and marine biodiversity and resources elsewhere around the world. Antigua and Barbuda has declared several national marine parks and forest reserves. However the majority of national parks and forest reserves that have been declared only exist on paper without zoning and management plans, a dedicated management authority or the infrastructure required for their implementation, monitoring and enforcement. The failure to implement these protected areas is in part due to a lack of the necessary institutional and regulatory frameworks to make them effective but also due to a lack of adequate financial resources to make them self-sustaining. After decades of ineffective management there is an urgent need to re-evaluate the management of natural resources and to ensure their effective conservation and sustainable use of biological diversity.

Some of the key assets that Antigua has to offer are situated in the SW region of the island and include Wallings Forest (WF) and Fig Tree Drive Forest (FTDF), and Cades Reef (CR):

*Cades Reef* is one of several reef complexes found around Antigua and the main reef on the south coast of the island. The Cades Bay Marine Reserve was declared in 1999, by the Fisheries Division declared the area under the Fisheries Act, following observed destruction in the wetland system at Cades Bay. The Cades Bay Marine Reserve includes three wetland systems, a major reef system (Cades Reef), several beaches and relatively healthy seagrass beds.

Following its declaration consultations with various interests groups (including fishers and tour operators) assisted in the formulation of a management plan for the area. The management plan included a zoning plan for the area; however fishers in the area requested that the zoning plan be revisited to incorporate an area of no use. The management plan has not been finalised since a final zoning plan has not been created for the area.

*Wallings Forest and Fig Tree Drive* are areas of outstanding natural scenic beauty and repositories for a significant portion of the nation's biodiversity (flora and fauna). The forests are classified as moist semi-evergreen forest and, although secondary in growth, they support a wide number of tropical plant species (trees, shrubs, lichens, ferns and orchids). The forests also support a wide range of fauna (31 species of resident and migratory birds), including the Bridled Quail Dove, considered to be extremely threatened and in need of special conservation.

Currently, WF operates under a multiple-use management work programme, by the Forestry Unit, Ministry of Agriculture, Lands and Marine Resources, with special emphasis on ecotourism. While the FTDF is a protected forest mainly for its watershed and wildlife, the other important issues for WF are that of soil and water conservation and wildlife conservation. The Wallings Conservation Project started in the mid-1990s, has attracted many nationals and international visitors.

Individually these assets are of national importance from an economical, social, historical and biodiversity perspective. Collectively they form part of a broader landscape on the SW region of the island (Doiggs, Barta, Rendezvous, Boggy Peak and Christian Valley) that is in need of special conservation management. In fact the entire south west coast of Antigua has spectacular scenery with off-shore coral reefs, mangroves, sandy beaches backed by the mountains with tropical moist forests. The natural scenic landscape had made the SW coast a major tourist attraction on the island. Coupled with traditional uses in these resources, the collective value of

these assets to the country's economic sectors can not be underestimated. While tourism developments have already impacted the coastal resources in this area (e.g. removal of mangroves for the Carlisle Bay Hotel) the area is not as heavily developed as the NW tourism zone. The country's needs to expand the tourism potential and promote economic growth may result in more environmental decline if the proper measures are not put in place.

While each of the assets could be managed individually there would be several additional benefits accrued from embedding these areas within a broader integrated management framework. There would be economical advantages due to the economies of scale to be gained from developing and promoting the entire SW region as a premiere eco-tourism destination, for example. The most compelling evidence for embedding these areas in an integrated management framework however relates to the impacts of land-based sources of pollution on coastal and marine system. Coral reef health around Antigua has declined over the years and recent studies have shown that the decline is most likely due to a series of human induced and natural impacts and rather than one single catastrophic event. The most likely cause of the decline is cumulative impacts of increasing sediment loads as a direct result of drought conditions, coastal erosion and removal of healthy mangrove forests, (coupled with anchor damage from boating activities, storm and hurricane damage as well as natural disease, and predation). This therefore requires zoning for sustainable use and maintenance of ecosystem functionality within the landscape SW region.

The purpose of this project is to establish an integrated management plan for the SW region that incorporates an interlinked chain of marine and forest reserves to protect both the key biodiversity assets and the functional habitats within this environmentally sensitive area. The need to sustain economic growth often overshadows conservation goals and it is therefore important that any activities are financially sustainable and provide real benefits to the local communities. WF currently receives an average 10,000 visitors per annum from cruises and stay over visitors, along with local individuals and groups. This level of interest has already generated local benefits and increased business for local entrepreneurs such as taxi drivers, guides and local shops and stalls. The inclusion of FTDF and CR and possibly Boggy Peak will only add to the ongoing economic buoyancy of this natural area. A willingness to pay study has shown that the WF would be able to generate revenues to support management activities if the systems were in place to retain these revenues.

In order to engender support and active participation in the development of the area the proposed project will adopt a co-management approach to ensure that the key assets are protected in parallel with developing the potential for the site as an eco-tourism destination, to encourage outdoor recreation, learning and research. The development of the eco-tourism potential in the area through co-management will generate revenues to support their management and to the benefit the local community. To ensure the activities are environmentally sustainable the carrying capacity of the area will be determined as a matter of priority, and programme implemented to monitor the effects of ecotourism on the biodiversity and overall ecology of the area(s) remains.

The **objective** of the project is to conserve the natural assets on the south west coast of Antigua through integrated management to ensure the maintenance of the environmental integrity and

sustainable use to generating revenues for conservation management and for the benefit of the local communities.

### **Pilot Site Objectives and Deliverables:**

#### **Objective A. SW regional co-management authority identified and established**

- A.1. Identify and establish a co-management working group, with representatives from the different local communities, and relevant agencies to co-ordinate project activities (National Parks Authority, Ministry of Agriculture, Fisheries Division, Forestry Division, Environment Division etc. local CBOs and NGOs)
- A.2. Review of potential financial instruments for sustainability (e.g. Willingness to pay survey for Cades Marine Reserve for Boggy Peak and for the extended combined network of reserves)
- A.3. Participatory consultations on fee structures and revenue collection
- A.4. Public awareness and policy sensitisation

#### **Objective B: Participatory assessment and mapping of watershed**

- B.1. Development of baseline assessment and mapping approaches
- B.2. Mapping and survey activities
- B.3. Reporting and feeding of results into Management Strategy
- B.4. Establishment monitoring programme for management effectiveness (including bio-physical, social and governance indicators)

#### **Objective C: Training and capacity building for management**

- C.1. Cross-sectoral training and capacity needs assessment
- C.2. Training exercises and workshops (for wardens, tour guides, etc)
- C.3. Capacity building and training for co-management authority

#### **Objective D: Carrying capacity study**

- D.1. Determine carrying capacities for commercial activities in SW region
- D.2. Determine infrastructure requirements in relation to carrying capacities (e.g. mooring buoys, signed walkways, snorkelling trails).
- D.3. prepare regulations and guidelines based on findings for inclusion in policy and legislative review and management strategy
- D.4. Procurement and installation of supportive infrastructure related to tourism and parks management. e.g.
  - Construction of an information centre and rest rooms (e.g. composting toilets)
  - Improvement of existing trails.
  - Construction of new trails in the FTDF and BP
  - Development of parking areas for patrons and staff.
  - Construction of three (3) gazeboes.
  - Development of hides and bird watching trail
  - Establish signs, walkways and trails.
  - Establish marker buoys and
  - Procure and establish moorings buoys
  - Procure small patrol boat to regulate activities

## **Objective E: Realignment of legislation and policy for effective zoning and management of the southwest watershed area**

- E.1. Review of policy and legislation affecting southwest watershed
- E.2. Recommendations for revisions and reforms to support co-management and sustainability
- E.3. Development and finalisation of a zoning plan
- E.4. Final management Plans adopted

### ***End of Project Landscape (Outcomes)***

Management plan for Cades Reef including clear definition of the regulations pertaining to the different zones. Taking into account the factors that threaten the biodiversity of the WF and FTDF, it is evident that the site, along with its biological resources, will be lost to alternative uses unless the measures proposed under the WF and FTDF Conservation Project are carried out. By achieving the above listed outcomes it is expected that the WF and FTDF will be conserved for the benefit of present and future generations

### **Project Management Structure and Accountability**

No marine protected area can be successful unless there is a management plan in place which also allows for a process of evaluation and review. The completion of the management plan for the area is of particular importance, however it is envisioned that this would be supplemented with other “user/management” policies for the area. It is envisioned that many of these systems will be developed through the consultations with various interest groups. The ultimate goal is to establish an effective management body for the area.

### **Stakeholders and Beneficiaries**

Stakeholder participation is key to achieving success in any management system that is being developed as these groups both benefit from and impact on the resources. These groups must be engaged meaningfully throughout the process otherwise we are likely to develop a system which will again fail to meet conservation objectives.

It is envisioned that the project would be administered by the government agency with direct responsibility for the management and conservation of marine resources. The Fisheries Division could take on the role as lead agency for the project in partnership with the Environment Division. Other partner organisations may include: the Forestry Unit, Environmental Awareness Group, Fisherman’s cooperatives in the area, tour operator groups and any other interest group for whom the project may hold particular relevance.

The stakeholders and beneficiaries of the biological resources of the WF and FTDF include the inhabitants of the surrounding communities of John Hughes, Saw Colts, Old Road and Swetes. These communities all have historical and cultural links to the WF, FTDF and the Wallings Reservoir, which have supplied water, fuel-wood, building material, food in the form of wild fruits, and other minor forest produce such as “wattle” for the construction of fish traps, as well as recreational facilities.

Consultations will be held with these stakeholders to measure the impact of this project on their economic and social livelihoods and to arrive at methods to minimize negative impacts and

maximize positive benefits resulting from the project and to incorporate as far as possible continuity of these livelihoods in a sustainable manner.

### **Long term Sustainability Strategy**

Tourism has been the leading economic sector in Antigua and will remain so for the foreseeable future. WF has demonstrated its potential for eco-tourism, which is the fastest growing segment of the tourism industry. Current visitation rates, even with the limited level of development, are approximately 10,000 visitors per annum, including tourists and locals.

In Wallings Forest, the intention is to begin charging a fee for the entrance and use of resources and to use the funds generated, together with Government's contribution, to maintain the resources. A Contingent Valuation Method (CVM) survey and analysis was carried out in order to determine the potential economic value of the WF and FTDF, within the context of a protected area, and to determine whether it can be self-sufficient and sustainable in its operation and management. The results of the study, with respect to the mean Willingness to Pay (WTP) values for the four (4) groups in the survey, as well as a summary of aggregate WTP values for alternative visitation levels were determined. For example, local residents who completed the questionnaire were willing to pay on average, US\$6.00 to enter the upgraded WF and FTDF. If ten thousands (10,000) persons visited the site, then the park could expect to make US\$60,000. However, recognizing the fact that several factors must be taken into account when establishing user fees, even if the entrance fee was initially set at EC\$5.00 (or US\$1.85), then the WF and FTDF could expect to generate revenue of EC\$50,000 (or US\$18,519).

The project will build upon these experiences and undertake a review to identify the most appropriate mechanisms to financially support the co-management of Cades and Boggy Peak to ensure sustainability. This will be achieved through the implementation of a range of studies, including the level of use in the area; willingness to pay by visitors, comparison of effective economic instruments in countries of the region / globally.

### **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 TWO

DEMO OBJECTIVE	DELIVERABLE		YEAR 1		YEAR 2		
<b>A. Management and sustainability of the southwest watershed and coast target area</b>	A.1	Establishment of demo steering committee as a cross-sectoral, participatory co-management group	X				
	A.2	Review of potential financial instruments for sustainability	X	X			
	A.3	Participatory consultations on fee structures and revenue collection		X	X		
	A.4	Final recommendations and adoption by co-management group and communities			X		
	A.5	Public Awareness and policy sensitisation review, strategy and implementation			X	X	
<b>B. Assessment and mapping of watershed using field and participatory methods and existing information</b>	B.1	Development of Baseline Assessment and Mapping Approaches and designation of field-teams	X				
	B.2	Mapping and Survey Activities		X	X	X	
	B.3	Reporting on results and feeding into Management Strategy (and into main project Outcome 1 as lessons and best practices for national baseline assessment and mapping)			X		
	B.4	Establish long-term monitoring approach within Demo area			X	X	X
<b>C. Training and capacity building for management</b>	C.1	Cross-sectoral training and capacity needs assessment		X	X		
	C.2	Training exercises and workshops for wardens, tour guides and other stakeholders			X	X	X
	C.3	Capacity building and training for Co-management Authority			X	X	
<b>D. Carrying capacity study</b>	D.1	Determine carrying capacities for commercial activities within SW region	X	X			
	D.2	Determine infrastructure requirements in relation to carrying capacities	X	X			
	D.3	Prepare regulations and guidelines based on findings for inclusion in policy and legislative review and management strategy (E)			X		
	D.4	Procurement and installation of supportive infrastructure related to tourism and parks management	X	X	X		
<b>E. Realignment of legislation and policy for effective zoning and</b>	E.1	Review of policy and legislations affecting southwest watershed area	X				
	E.2	Recommendations for revisions to allow effective co-management and sustainability		X	X		
	E.3	Development and finalisation of a zoning plan related to policy and legislation			X	X	

