Demonstrating the Development and Implementation of a Sustainable Island Resource Management Mechanism in Antigua and Barbuda

Terminal Evaluation

June 2014

Project Funded By:

The Global Environmental Fund (GEF)
The United Nations Development Programme (UNDP)
The Government of Antigua and Barbuda

Implementing Agency:

The United Nations Development Programme (UNDP)

Executing Agency:

The Environmental Division of the Government of Antigua and Barbuda

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Antigua and Barbuda

PIMS 1899/ATLAS Project ID 45493

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Evaluation Time Frame: April - June 2014

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ACRONYMS

ALS	Alternative Livelihood Study
APUA	Antigua Public Utilities Authority
AWP	Annual Work Programme
CBA	Cost-Benefit Analysis
CBD	Convention on Biological Diversity
CBH	Central Board of Health
CBO	Community Based Organisation
DCA	Development Control Authority
EAG	Environmental Awareness Group
EIA	Environmental Impact Assessment
EIMAS	Environmental Information Management and Advisory System
EPMB	Environmental Protection and Management Bill
FAO	Food and Agriculture Organisation
FOBPs	Friends of Body Ponds Committee
GARDC	Gilbert's Agricultural and Rural Development Centre
GEF	Global Environment Facility
GIS	Geographic Information Systems
GoAB	Government of Antigua and Barbuda
GPS	Global Positioning System
IMF	International Monetary Fund
IWCAM	Integrated Watershed and Coastal Management (GEF/UNDP/UNEP Regional Project for the Caribbean)
LAP	Local Area Plan
MACC	Mainstreaming Adaptations to Climate Change (GEF Caribbean Project)
MEA	Multilateral Environment Agreement
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
MPA	Marine Protected Areas
MTE	Mid-Term Evaluation
NAP	National Action Plan
NODS	National Office of Disasters
NEMS	National Environmental Management Strategy
NEX	National Execution Modality
NBSAP	National Biodiversity Strategy and Action Plan
NCM	National Coordination Mechanism
NGO	Non-governmental Organization
NPA	National Parks Authority
OECS	Organization of Eastern Caribbean States
PCC	Project Coordination Committee
PDF	Project Development Fund
PIF	Project Identification Form
PIR	Project Implementation Review
PMC	Project Management Committee
PMU	Project Management Unit
PSC	Project Steering Committee
QOR	Quarterly Operational Report

SCCF	Special Climate Change Fund
SGP	Small Grants Programme
SIDS	Small Island Developing State(s)
SIRF	Sustainable Island Resource Framework Fund
SIRM	Sustainable Island Resources Management
SIRMM	Sustainable Island Resource Management Mechanism
SIRMZP	Sustainable Island Resource Management Zoning Plan
SPPARE	Sustainable Pathways – Protected Areas and Renewable Energy
TAC	Technical Advisory Committee
TE	Terminal Evaluation
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
UWI	University of the West Indies

1 Executive Summary

Table 1: Project Summary				
Project Title: Demonstrating the Development and Implementation of a Sustainable Island Resource Management Mechanism in a Small Island Developing State				
GEF Project ID:	PIMS 1614		*at endorsement US$*	*at completion US$*
UNDP Project ID:	PIMS 1899 00053747	**GEF financing:**	2,995,930	(as per audit report)
Country:	Antigua and Barbuda	**IA/EA own:**		
Region:	Latin America and the Caribbean	**Government:**	3,434,100	
Focal Area:	Integrated Ecosystem Management	**Other:**	1,189,200	
FA Objectives, (OP/SP):	OP12; EM-1	**Total co-financing:**	4,623,300	
Executing Agency:	Environment Division of the Government of Antigua and Barbuda	**Total Project Cost:**	7,619,230	
Other Partners involved:	Fisheries Division, Development Control Authority, Forestry Unit, Lands Department, National Office of Disasters, Antigua Public Utilities Authority, NGOs	**ProDoc Signature (date project began):**	August, 2007	
		(Operational) Closing Date	**Proposed:** December, 2011	**Actual:** June, 2014

Description of Project

The project entitled 'Demonstrating the Development and Implementation of a Sustainable Island Resource Management Mechanism in a Small Island Developing State' (SIRMM) was funded by the Global Environmental Facility (GEF), the United Nations Development Programme (UNDP) and the Government of Antigua and Barbuda, with UNDP being the Implementing Agency and the Environmental Division of the Government of Antigua and Barbuda being the Executing Agency.

The overall Goal of the project was to ensure the sustainability and maintenance of island ecosystem integrity, health, and function through integrated planning and management of island resources. The Objective of the project was to develop and implement a Sustainable Island Resource Management (SIRM) approach in Antigua and Barbuda to stabilize and maintain ecosystem functions, thereby providing a basis for continued sustainable economic development. The Project aimed to overcome the challenges constraining the achievement of its key Objective through four main Outcomes:

- Outcome 1: Easy and reliable access to information for environmental management by all stakeholders (through the development of an Environmental Information Management Advisory System for use in Planning, Decision-making and Improved Targeted Awareness).
- Outcome 2: A Sustainable Island Resource Management (SIRM) Mechanism developed and in place (through the development of a Sustainable Island Resource Management Zoning Plan).
- Outcome 3: Policy and institutional reforms to provide a framework for implementation of the SIRM Plan (through realignment of Policy, Legislation, and Institutional Capacity to support the SIRM Plan).

- Outcome 4: Requirements for implementation of the SIRM Plan in place, as well as mechanisms for the capture of lessons learned and best practices (including four on-the-ground Demonstration Projects to display SIRM in operation).

Important emphases in the Project were capacity development, public awareness, project impacts and project replicability.

Challenges and Execution Modality

The SIRMM Project Document was signed in August 2007, with an expected Project duration of 4 years, but there was a considerable lag between Project Design and the onset of Project implementation. Its emphasis on an integrated management approach to island resources meant that SIRMM was a complex project, requiring, among many other components, both policy and institutional changes. Given this, it was realised from early in the project that a re-scheduling and modification of activities would be required, particularly since some activities were under-budgeted and the full co-financing expected could not be realised. The Project was ultimately extended to June 2014.

Several formal structures were put in place to facilitate and manage Project implementation. A **Project Steering Committee (PSC)**, also referred to as the **Project Board**, was established. However, the Board rarely met, in part because of the difficulty and expense of getting the UNDP representative to be present at face to face meetings. A **Project Management Unit (PMU)** was established, headquartered within the Environment Division of the then Ministry of Works, Transportation and the Environment. The PMU was responsible for project implementation and management on a daily basis, as well as for the preparation of work plans, budgets, project proposals and progress reports. The principal staff of the PMU consisted of the Project Manager, the Project Coordinator, an Administrative Assistant and other technical staff within the Environment Division. A **Project Coordination Committee (PCC)** was established, chaired by the Project Coordinator. The PCC membership consisted of several agencies and units responsible for environmental matters. The PCC was highly effective, as a multi-sectoral Committee, in working with the PMU to drive project implementation and management on a daily basis. A **Technical Advisory Committee (TAC)** was established, with membership that varied depending on the nature of the issue to be addressed. The TAC proved to be an effective mechanism for discussing and using scientific understanding in making management decisions, and was particularly valuable in guiding the implementation of the Demonstration Projects. A **Project Management Committee** was established as the SIRMM Project neared completion and required less dedicated attention and support. This Committee essentially took over the role of the Project Steering Committee and dealt with several environmental projects, not only the SIRMM Project.

Given the time and financial constraints prevailing at the time of Project implementation, Adaptive Management would clearly be required to meet as a high proportion of Project Outcomes as feasible. The PMU and the PCC displayed both flexibility and commitment during Project implementation. There was a strong emphasis throughout implementation on ensuring that Project activities were consistent with national priorities, were relevant and had tangible national impact.

Context and Purpose of the Evaluation

A Terminal Evaluation (TE) of the Project was conducted between March and June, 2014. The country visit for the Evaluation took place from April 6 to 10, 2014. The TE was conducted in accordance with the GEF Monitoring and Evaluation (M&E) policy. The principal purpose of the Evaluation was to assess the relevance, performance and success of the project, given the value placed on it by the Government of Antigua and Barbuda, and the investment of the GEF and the UNDP. The Evaluation therefore examined the project execution, focusing on effectiveness, efficiency and relevance of outputs and Outcomes. The Evaluation also examined the management structure of the project itself, including its adaptive capacity and the overall management of project resources. Finally, it identified and documented lessons learned and made recommendations intended to improve the design and implementation of other UNDP/GEF projects.

Main Conclusions, Recommendations and Lessons Learned

Given the complexity of the SIRMM Project, and the severe time and financial constraints under which it was implemented, it was estimated at the time of the Mid-Term Evaluation that about 60% of the Outcomes would be realised. However, given the commitment of the Project staff and Project Committees, and particularly the Project Manager and Project Coordinator, as well as the adaptive management approach taken throughout implementation, the Terminal Evaluation (TE) estimates that about 75% of Outcomes were realised. Moreover, this has been accomplished in an extremely cost effective manner.

With respect to **Outcome 1**, the Environmental Information Management and Advisory System (EIMAS) has been developed and is operational. Its establishment has facilitated the identification of remaining data gaps that need to be filled to facilitate comprehensive ecosystem management, and data collection to fill the gaps will be in a format that is compatible with the EIMAS. The establishment and operation of EIMAS is appropriately considered to be one of the key achievements of the Project.

With respect to **Outcome 2**, the Sustainable Island Resource Management Zoning Plan (SIRMZP) has been developed and approved by Parliament, and is a second key achievement of the Project. The legislative Regulations required to implement the Plan are currently being developed. It is evident that all activities originally envisaged as components of Outcome 2 could not be fully realised given the funds and time available, but the Project has been strategic in ensuring that the available Project funds were used to create mechanisms that will facilitate the implementation of the remaining components over time.

With respect to **Outcome 3**, it is evident that moving from a sector approach to the planning and management of island resources to a comprehensive integrated approach would necessarily require changes in institutional responsibilities and arrangements, as well as the policy and legislative changes required to support institutional changes. From the onset of the Project it was clear that achieving the necessary institutional, policy and legislative changes within the time frame of the Project would be an enormous challenge, particularly since the authority to make the changes does not reside in the Project

staff. The SIRMM Project made considerable progress in advancing the policy and legislative frameworks that will be required for effective integrated island resource management, and in developing the institutional capacity that will ultimately be required. Many of the necessary policy and legislative tools now lie with various arms of Government for ultimate Parliamentary approval.

With respect to **Outcome 4**, the principal approach taken by the Project to illustrate lessons learned and best practices in SIRM in a practical sense was to develop and operationalize four Demonstration Projects. These were particularly important components of the Project Outcomes, since Project Staff were committed to ensuring that the Project had tangible impacts on the ground which could be appreciated by the general public, rather than being merely satisfied that the Project met its reporting requirements. The Demonstration Projects were Body Ponds, Reefs to Ridges, Northwest Coast (Tourism and Waste Water) and the Barbuda National Park. Important actions to demonstrate the benefits of SIRM in action were undertaken by each of the Demonstration Projects. The projects were effective in convincing the general public, as well as the political directorate, of the benefits of a SIRM approach, whilst simultaneously achieving positive impacts on the ground. However, there was significant variation between Demonstration Projects in what was achieved, and in all cases funds are being sought to continue and expand the activities at the Demonstration Sites.

Key Recommendations emerging from this Terminal Evaluation are:

- Project budgets should be re-visited to ensure adequacy for financing project activities if there a significant time lag between project design and project implementation.

- Projects should seek to ensure, not only that indicators are monitored and reporting requirements are met, but that there is adequate focus on achieving tangible national impacts through the activities implemented.

- Continue to advocate for Parliamentary approval of the necessary policy frameworks for supporting and implementing SIRM, and for the necessary supporting Regulations to be developed, approved and operationalised.

- Continue to advocate for the necessary changes in institutional arrangements required to effectively operationalize SIRM to be identified and implemented.

- To facilitate the required integrated approach to island resource management, institutionalise the PCC/PMC, with additional membership as required, as an effective multi-sectoral committee and support its merger with the National Coordination Mechanism.

- Aggressively support the establishment and operationalization of the Antigua and Barbuda Sustainable Island Resource Framework (SIRF) Fund, and support the activities identified to be supported under the Fund.

- Support the further data collection required for the EIMAS, as well as its continuous updating and capacity expansion.

The key Lessons Learned from this Project include:

- Project design and scheduling must allow a realistic project duration when deliverables include new policies and institutional changes that require Parliamentary approval.

- Adaptive Management that seeks consistency with national priorities and emphasises the achievement of tangible national impacts is required for successful project implementation. Project Managers need the flexibility for Adaptive Management to achieve project outcomes.

- Stakeholders, including the general public, the private sector and the political directorate, are more likely to appreciate tangible national impacts emerging from the project than to learn that the project is meeting its reporting requirements.

- Project Managers and Project Coordinators who understand the local environment and culture in which the project is being implemented are essential for project success, as is the personal dedication and commitment of staff.

- When international and regional consultants are hired to execute project activities, they should be paired with local/national consultants, since this ensures that consultant reports adequately capture national/cultural priorities and that there is capacity building of nationals as consultants.

- Appropriate framing of environmental and natural resource management as underpinning sustainable economic development is important, since the case for environmental management is often more difficult to make than the case for economic development.

- An informed, engaged and active public is important in garnering political support for project activities.

Table 1- Main Project Ratings

Project Formulation		**Rating**
	Conceptualization	**Satisfactory**
	Stakeholder Participation	**Satisfactory**
Project implementation		
	Implementation Approach	**Highly Satisfactory**
	Monitoring and Evaluation	**Satisfactory**
	Stakeholder participation in implementation	**Satisfactory**
Results	**Attainment of outcomes/ Achievement of objectives**	**Satisfactory**
Sustainability		**Moderately Likely (ML). There are moderate risks that affect this dimension of sustainability.**
	Financial Resources	**Moderately Likely (ML). There are moderate risks that affect this dimension of sustainability.**
	Country Ownership: Socio-political	**Likely (L). There are no risks that affect this dimension of sustainability.**
	Mainstreaming: Institutional Framework and Governance	**Moderately Likely (ML). There are moderate risks that affect this dimension of sustainability.**
	Environmental:	**Likely (L). There are no risks that affect this dimension of sustainability.**

2 Introduction

The project entitled 'Demonstrating the Development and Implementation of a Sustainable Island Resource Management Mechanism in a Small Island Developing State' (SIRMM) was funded by the Global Environmental Facility (GEF), the United Nations Development Programme (UNDP) and the Government of Antigua and Barbuda, with UNDP being the Implementing Agency and the Environmental Division of the Government of Antigua and Barbuda being the Executing Agency. The overall goal of the project is to ensure the sustainability and maintenance of island ecosystem integrity, health and function in Antigua and Barbuda through integrated planning and management of island resources.

UNDP and GEF Monitoring and Evaluation (M&E) policies and procedures require that all full and medium-sized projects supported by GEF undergo a Terminal Evaluation (TE). The principal purpose of Terminal Evaluations is to assess the relevance, performance and success of the project. They assess early signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. They also identify and document lessons learned and make recommendations with the intention of improving the design and implementation of other UNDP/GEF projects. In accordance with the policies and procedures of UNDP/GEF, the present Terminal Evaluation has four objectives:

i) to monitor and evaluate results and impacts;
ii) to provide a basis for decision making on necessary amendments and improvements;
iii) to promote accountability for resource use;
iv) to document, provide feedback on, and disseminate lessons learned.

In meeting these objectives the TE examined the project execution, focusing on effectiveness, efficiency and relevance of outputs and outcomes. The key outcomes addressed in the evaluation were: Easy and reliable access to information for environmental management by all stakeholders; A Sustainable Island Resource Management (SIRM) Mechanism developed and in place; Policy and institutional reforms to provide a framework for implementation of the SIRM Plan; and, requirements for implementation of the SIRM Plan in place, including mechanisms for the capture of lessons learned and best practices. The TE was sensitive to issues of Capacity Strengthening, Public Awareness, Project Impacts through the Demonstration Projects and Project Replicability. Finally, the Evaluation examined the management structure of the project itself, including its adaptive capacity and the overall management of project resources.

The Terminal Evaluation (TE) was conducted between March and June, 2014. The country visit to Antigua took place from April 6 to 10, 2014. The TE closely followed the GEF Monitoring and Evaluation (M&E) policy. It was conducted by a single independent evaluator who was familiar with the requirements and mode of operation of GEF and UNDP. Many sources of information were used and many methodological approaches taken, including both qualitative and quantitative methods, in the

execution of the evaluation. These included a desk review of: the project document, the project implementation report (PIR), the project inception report, the Project Management Unit's minutes of project meetings, the project workshop reports, and the UNDP/GEF guidance policies on the evaluation process.

The evaluator then developed a questionnaire to guide the interviews and group discussion sessions which took place during the TE exercise in Antigua. Interviews and discussions were held with the following organizations and persons: The two UNDP Programme Managers who oversaw the project, the Project Manager, the Project Coordinator, the Minister of Agriculture, Lands, Housing and the Environment, available members of the Project Management Committee, the Permanent Secretary in the Prime Minister's Office - the UNDP Focal Point, and the Demonstration Project Coordinators. Some additional interviews were conducted on an *ad hoc* and less structured basis with project beneficiaries and other stakeholders.

Having completed the qualitative analyses indicated above, the indicators in the project document were quantitatively analysed to assess the relevance and efficiency of UNDP-GEF support and the overall project performance.

The Results of the Evaluation are presented in this Report in the following organisational structure: Introduction; The Project and its Development Context; Findings, including Project Formulation and Project Implementation; Results; Conclusions and Recommendations; and Lessons Learned.

3 The Project and its Development Context

Despite its small land mass (441 square miles), Antigua and Barbuda supports a range of globally, regionally and nationally significant terrestrial and marine species, habitats and ecosystems. These include coral reefs, seagrass beds, mangroves, sandy beaches, lowland tropical forests, and other terrestrial vegetation communities. These habitats and their associated species are important in their own right for supporting globally significant biodiversity, but from a national development perspective, they are also critical components of an ecologically interlinked system that provides the country with the island life support functions that are themselves directly linked to and necessary for a successful and sustainable economy. Forested watersheds retain soils and maintain water resources. Mangroves, seagrasses and coral reefs provide shoreline defences and are feeding and breeding grounds that support important coastal fisheries. Maintenance of these coastal habitats, upon which both fisheries and recreational beaches depend, are in turn critical for the sustainability of the tourism sector in Antigua and Barbuda. Despite the critical importance of these habitats, inadequate conservation, planning and management over the years has already resulted in significant degradation of the functionality of this island ecosystem, and this has been aggravated by unsustainable agro-pastoral practices. The degradation has in turn reduced the country's capacity to sustain and provide basic needs and increased its vulnerability to climatic change. Ensuring the integrity and health of these ecosystem functions, and through this their sustainable contribution to national economic development, particularly in the face of predicted climate change, demands a comprehensive cross-sectoral ecosystem approach to managing island resources.

The Sustainable Island Resource Management Mechanism Project was designed in the above development context. The Goal of the project is to ensure the sustainability and maintenance of island ecosystem integrity, health, and function through integrated planning and management of island resources. The Objective of the project is to develop and implement a Sustainable Island Resource Management (SIRM) approach in Antigua and Barbuda to stabilize and maintain ecosystem functions, thereby providing a basis for continued sustainable economic development. The Project will aim to overcome the management challenges constraining the achievement of its key Objective through four main Outcomes:

- Outcome 1: Easy and reliable access to information for environmental management by all stakeholders (through the development of an Environmental Information Management Advisory System for use in Planning, Decision-making and Improved Targeted Awareness).
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- Outcome 4: Requirements for implementation of the SIRM Plan in place, as well as mechanisms for the capture of lessons learned and best practices (including four on-the-ground Demonstration Projects to display SIRM in operation).

Important emphases in the Project were capacity development, public awareness, project impacts and project replicability.

The GEF funding contribution to the SIRMM project was US$$2,995,930, with expected co-financing of $4,683,200, and was to assist Antigua and Barbuda in achieving the project Outcomes described above. The Project was originally designed to cover the four-year period from November, 2007 to December, 2011, but was ultimately extended with an expected completion date of June, 2014.

4 Findings

4.1. Project Formulation

Conceptualisation and Design

Past projects in Antigua and Barbuda have been sectoral in approach, addressing specific activities as if they were independent in function, and in the case of environmental projects, addressing specific threats in an isolated manner. The basic concept behind the design of the Sustainable Island Resource Management Mechanism (SIRMM) Project is that an island such as Antigua is functionally one ecosystem, with many interdependent and interrelated components, and should therefore be managed through an integrated inter-sectoral approach. An important premise which supports this approach is that an effectively managed island ecosystem is the necessary foundation on which sustainable economic development can be built. The design of the project reflected an appropriate appreciation of the interrelated components of the island ecosystem, as well as the appropriate balance between policies and tools, capacity development and practical application through well selected demonstration projects. Moreover, the project targets identified were clear, as was the logical framework of the project, and this was largely followed in project implementation, although adaptive project management approaches to achieve the required Outcomes were required.

In terms of the mechanics of project design, the broad goals and objectives of the project were preset by the funding agency (GEF), and there was a perception among some national stakeholders that the goals and objectives were too general and not adequately fine-tuned to national needs. However, the specific activities to be implemented were initially developed nationally, with the Project Identification Form being first developed by the current Project Manager. UNDP/GEF (Panama) then hired a consultant to further develop the project design, and refine and customise the project proposal to make it more competitive for funding. The fact that there was national input into the design of the project proposal, and that it encompassed nationally identified priorities, are important positive aspects of the project design process.

The concept behind the project design was appropriate and innovative, and the mechanics of project design involved national input and was consistent with national priorities. However, the complexity and scale of the project did create challenges in implementation in the time available, particularly since, in some cases, the activities required could not be supported by the funds available in the budget. However, with all factors considered, the design of the SIRMM Project can be considered to be Satisfactory (S).

Although the conceptual design was what was ultimately required, it was necessarily a complex approach, and execution of the project was always going to be challenging and highly dependent on a strong support system in terms of governance, administration, and commitment to change; as well as on the conditions prevailing at the time of project design still being in place at the time of project implementation. For example, the design was based on the assumption of available baseline data, which was true at the time but much of which was destroyed during the passage of hurricane Omar in 2008. Recreating and recollecting the necessary data, in part through the demonstration projects, made unexpected demands on resources and time. It was also assumed that the Government authorities would remain committed to the project management approach throughout the project, and that the

Government and the partner institutions would be capable of providing the co-financing resources committed to and required. The former held true but the latter was not ultimately possible, given the IMF Programme which came into effect in Antigua and Barbuda during the project.

Stakeholder Participation

Stakeholder participation from the earliest project stages, including during project formulation, is an important strategy for ensuring stakeholder commitment to the project and ultimately project success. Project stakeholders were consulted during the initial design stage of this project, including potential beneficiaries at the national level, policy-makers, the Environment and Forestry Divisions, and NGOs. **Given this, stakeholder participation in project formulation can be considered Satisfactory (S).** However, a considerable time elapsed between project formulation and project implementation, and many of the individual stakeholders whose posts had enabled their involvement in project formulation had changed posts by the time of project implementation.

Country Ownership

As indicated above, national project stakeholders were consulted during the design stage of the Project, including potential beneficiaries, relevant government departments and NGOs. This is an important initial step in moving towards country ownership of any project. Moreover, the specific activities to be implemented in this Project were initially developed nationally through the efforts of the current Project Manager, and the activities were consistent with previously identified national priorities and therefore linked to the national development agenda. These characteristics ensured that a sense of country ownership of the project emerged at the onset. The use of National Execution (NEX) as the modality of implementation has the inevitable consequence of further enhancing country ownership of project activities. NEX has become the modality of choice for implementation of UNDP projects precisely because it increases national and local ownership, promotes self-reliance, and emphasises integration of project activities with national programmes. All of the above activities and project characteristics ensured that the Project Management Committee and other public sector stakeholders had a strong sense of commitment to, and ownership of, the Project from the onset.

Replication Approach

The design of the SIRMM Project was innovative in an Antigua and Barbuda context in that prior projects in the country had taken a sectoral approach, whereas the SIRMM Project conceptualised the country as one ecosystem with interdependent components, and emphasised a fully integrated approach to management. In that sense the SIRMM Project was not a replication of prior projects and was not strongly influenced by their design. However, the design of the SIRMM Project is the appropriate one for the management and sustainable economic development of small island states, and its design should be replicated and encouraged in other Caribbean island states. With sensitivity to the lessons learned in the SIRMM Project, implementation of similar projects in other Caribbean countries should be highly effective in managing their environments and natural resources, and in facilitating sustainable economic development. Persons responsible for implementing the SIRMM Project in Antigua and Barbuda felt strongly that the integrated management approach should be the management structure for all national projects, and National Agencies are already harnessing best practices from the SIRMM Project into their work programmes.

Partnerships and Linkages

UNDP provided technical and financial support to the project development process, including the identification of consultants to help with project formulation. The principal specific linkages for the SIRMM Project were with the Biodiversity Enabling Activity and with the Integrated Watershed and Coastal Areas Management (IWCAM) Project. IWCAM collected and provided some data sets that were used as baseline data in the SIRMM Project and sewage treatment plant infrastructure from IWCAM was used in the Northwest Coast Demonstration Project. In a more general sense, the emphasis in the SIRMM Project on public awareness and education, particularly in relation to ecosystem management and economic development, on individual and institutional capacity development, and on evidence-based policy development, complements and supports most current and planned projects in Antigua and Barbuda.

4.2. Project Implementation

Implementation Approach

The SIRMM Project Document was signed in August 2007, with an expected Project duration of 4 years. A GEF-UNDP Project Inception Workshop, which focused on the Workplan, took place in January 2008, with activities formally beginning later that year. However, from quite early in the project, it was realised that a re-scheduling of deliverables and an extension of project duration would likely be required. As indicated earlier, SIRMMS was a complex and expensive project which required, *inter alia*, both policy and institutional changes to achieve island wide ecosystem management. This was always going to be challenging to achieve in the time available, particularly if some project activities were under-budgeted from the onset and if the full co-financing originally expected could not be realised. The long lag between project design and project implementation did mean that some activities were under budgeted at the time of implementation. Moreover, the global financial crisis that began in 2008, and the consequent IMF Programme for Antigua and Barbuda, meant that much of the co-financing originally envisaged did not materialise.

Adaptive management would clearly be required to maximise the deliverables that could be achieved with the time and financial resources available, and, as a component of this, new and more realistic targets were discussed and agreed to in 2010. It was going to be challenging to realise even these revised expectations, and several creative and flexible approaches were developed and used to ensure that the project met as high a proportion of its deliverables as possible. This flexibility extended even to modifications of the formal structures originally established for project implementation. Examples of this adaptive management in terms of modifications of implementation arrangements, as well as modifications of targets and activities, are provided below.

Adaptive Approaches to Management Arrangements

Several formal structures were put in place to facilitate and manage project implementation. A **Project Steering Committee (PSC)**, also referred to as the **Project Board**, was to be established with oversight responsibilities for Project implementation and to play an important role in Monitoring and Evaluation of the Project. This Committee was to consist of the Director of Planning, or another Officer of similar status as Chair, the Project Manager, the Project Coordinator, the UNDP representative, a private sector representative from one of the co-financers was the idea, and a member of the NGO community. The Project Board was to meet twice yearly and the Chair of the Board was to provide regular reports to the National Coordinating Mechanism (NCM) which would serve as an inter-sectoral coordination body for the Project. However, the Board rarely met, in part because of the difficulty and expense of getting the UNDP representative to be present at face to face meetings.

A **Project Management Unit (PMU)** was established, headquartered within the Environment Division of the then Ministry of Works, Transportation and the Environment. The PMU was responsible for project implementation and management on a daily basis, as well as for the preparation of work plans, budgets, project proposals and progress reports. The principal staff of the PMU consisted of the Project Manager, the Project Coordinator, an Administrative Assistant and other technical staff within the Environment Division, but the Demonstration Project Coordinators also played an important role in project implementation. The Project Manager had general oversight of the Project and was the main liaison with government agencies and with the National Coordination Mechanism (NCM), a role that became

increasingly important given the limited functionality of the Project Board. The Project Coordinator was responsible for the daily implementation of project activities and completion of agreed work plans, and therefore had the principal responsibility for execution of the project.

A **Project Coordination Committee (PCC)** was established, chaired by the Project Coordinator. The original principal mandate of the PCC was to coordinate execution between the main project outputs and the activities to be implemented in the four Demonstration Projects. However, given the limited functionality of the Project Board, the PCC began to fill the void by taking over the Board's responsibilities and roles. The PCC membership consisted of agencies and units responsible for environmental matters including Fisheries, Forestry, Health, the National Disaster Authority, the National Development Control Authority, the Economic Policy and Planning Unit, the Survey/GIS and Spatial Environment Division, the Ministries of Tourism and Agriculture, the Barbuda Council and the Barbuda National Parks Authority, and the SIRMM Demonstration Project Coordinators. The PCC was highly active throughout the Project, meeting typically on a monthly basis, but more frequently if technical or management issues required resolution. The PCC has been highly effective, as a multi-sectoral Committee, in working with the PMU to drive project implementation and management on a daily basis. Active participation of PCC members has been facilitated by members receiving a stipend as an incentive to participate. The role of the PCC expanded even further as the Project progressed. The PCC has merged informally with the NCM, and consideration is being given to merge the two entities formally. Moreover, the work of the PCC has expanded beyond the SIRMM Project to encompass national sustainable development planning in general, and the PCC has proven itself as an effective coordination mechanism for government well beyond SIRMM project objectives.

A **Technical Action Committee (TAC)** was established, with membership that varied depending on the nature of the issue to be addressed. The TAC proved to be an effective mechanism for discussing and using scientific understanding in making management decisions, and was particularly valuable in guiding the implementation of the Demonstration Projects. The Project Coordinator could call a meeting of the TAC at any time and could select the appropriate technical persons to be involved in any particular meeting. The TAC has been an important tool in determining changes in strategies and activities, and hence in guiding adaptive management decisions, particularly in the context of seeking to ensure that the project had national impact on the ground. In its quest to do so while constrained by both time and finances, the TAC sometimes walked a thin line with respect to national procedural best practice, as was the case when the Body Ponds Demonstration Project changed strategy without execution of an EIA.

A **Project Management Committee** was established as the SIRMM Project neared completion and required less dedicated attention and support. This Committee essentially took over the role of the Project Steering Committee and dealt with several environmental projects, not only the SIRMM Project.

Adaptive Management of Project Activities

Given the complexity and magnitude of the project, and the time and financial constraints, adaptive management became the mode of operation in terms of attempting to meet project targets and objectives. The focus became attempting to meet the project Outcomes by the means considered most effective at the time, rather than by strict adherence to the activity approaches originally identified in the Project's Logical Framework. The project's activities were based on the annually developed operational workplans, and those that were considered unrealistic at the time were abandoned or modified. Examples of these adaptive approaches are identified below.

- The most fundamental adaptation arose from the PMU identifying the need to revise the log frame targets soon after project inception and setting a date of February 2009 for a technical visit from the UNDP's Regional Coordinating Unit in Panama to discuss and agree on this. The consequence of this was that new project targets were proposed and operationalized in 2009, with UNDP agreeing to the revision providing that all changes be documented and reported in subsequent Project Implementation Reports (PIRs). The changes were accompanied by a request for a project extension from August 2011 to December 2012, and later to April 2013. This Terminal Evaluation agrees that the original targets could not have been met, particularly given the financial constraints and the time required for Parliament approval of legislative and institutional changes. The new targets were more realistic and feasible, and incorporated important policy recommendations from nationally approved policy documents, including the National Biodiversity Strategy and Action Plan (NBSAP), the National Action Plans (NAPs) and the National Environment Management Strategy (NEMS). The new targets did not change the overall objective of the project, which was the SIRM systems development for stabilisation of ecosystem functions and sustainable economic development, but they did allow the PMU the flexibility to focus the limited resources on the most important enabling activities in support of the overall project objective. These included capacity strengthening, workshops on legislation, the Demonstration Projects, the development of the EIMAS system and cross-sector collaboration and coordination. The revised approach also emphasised more explicitly Capacity Strengthening, Public Awareness, Project Impacts and Project Replicability, which were embedded in the original Outcomes 1-4, but which the PMU felt required more explicit focus.

- Terms of Reference were developed for some of the key activities within Outcomes 2 and 3, specifically the Cost Benefits Analysis, the Alternative Livelihood Study and the Institutional Assessment. However, the costs quoted for execution of these activities from consultants far exceeded the funds available, and the activities could not be completed in this format. In response, the PMU used the money available in these budget lines to support the development of the Sustainable Island Resource Management Zoning Plan (SIRMZP) which contained elements of these activities.

- Of the four Demonstration Projects, the Barbuda National Park was implemented following the guidelines in the Project Document. However, the approaches used to implement the three other Demonstration Projects (Body Ponds, Reefs to Ridges and the North West Coast-Tourism and Waste Water) all had to be significantly modified to address implementation challenges as they emerged and therefore ensure effective delivery.

- There were initial challenges with project staff in that persons simply seconded from Ministries to the project were not adequately committed to project implementation through their standard Ministry contracts, but also felt that they could retain these contracts whilst seeking consultancy contracts within the project. A decision was therefore taken that key persons responsible for project implementation, such as the Project Manager, Project Coordinator, and Demonstration Project Coordinators, were not simply seconded from their Ministry posts to the project but were given specific project contracts while retaining their original contracts with their respective Ministries. Although in some senses disadvantageous to the individuals through loss of leave entitlements and a quicker route to dismissal for non-performance, this approach was advantageous to the project for several reasons. These included a sharper focus on project requirements and continuous commitment to the project, capacity development of Ministry

staff through their execution of project responsibilities, and overall better management of the human resources involved in project execution. Members of the Programme Coordinating Committee (PCC) were also provided with fiscal incentives for their services, which ensured more active and committed participation and greater continuity of individual involvement.

- Financial management and documentation, through the standard government management of projects, was an initial challenge given the reporting requirements of the project. The Environment Division therefore created its own internal financial management system. The Division hired an accountant to be responsible for all project finances. They also hired an Internal Auditor, competitively selected from the private sector, to oversee responsible use of project funds and to ensure that the project would be ready for the UNDP audits.

- There were significant initial challenges with data storage and management, partly of a technical nature, partly through issues of data ownership by different government agencies, and partly through the sensitivity of certain datasets. The response of the PMU was to hire a data manager who addressed these issues, managed the EIMAS database and responds to requests for information that the database can provide.

- When international and regional consultants were hired to execute project activities, the PMU deliberately paired them with local/national consultants. This had the advantages of ensuring that the consultant reports would adequately capture national/cultural priorities, that the language used in the report was appropriately tailored for national audiences, and that there was significant capacity building of local persons as consultants.

- The original approach to be used for public consultation and stakeholder engagement was to hold group meetings that community members could attend. This worked for some groups and at some locations but not for all. For example, in the case of farmers, one-on-one engagement with individuals was far more effective in gaining their interest and commitment to project issues, such as watershed management.

- There was an initial challenge of engaging political leadership in support of project implementation. The PMU ultimately addressed this issue by organising weekly briefings with the political leadership, and specifically with the relevant Permanent Secretaries. This enhanced engagement with the political leadership, coupled with the persistence of the PMU in emphasising the national value of the project, ultimately facilitated the passage of the SIRMZP.

The project was complex and ambitious, and difficult to fully implement in the time available, even without the significant financial constraints that it experienced. The PMU demonstrated extreme flexibility and commitment in ensuring that the project could achieve as high a proportion of its outcomes as feasible under the circumstances, and in a highly cost effective manner. Given this, the evaluator considers that the project implementation process should be given a grade of Highly Satisfactory (**HS**).

Monitoring and Evaluation

Effective monitoring and evaluation requires that good baseline data be available to characterise the situation prevailing at the start of a project. At the time of project design, it was considered that adequate baseline data existed to allow for monitoring of project achievements. However, much of the baseline data was destroyed during the passage of hurricane Omar in 2008, and therefore had to be recollected during project implementation. This proved to be a challenging task, requiring considerable time, effort and financial support. Ultimately, sufficient data were obtained on many indicators, although not all. The data collected were used to populate the EIMAS and were therefore available to facilitate monitoring of project activities.

There were insufficient funds allocated in the project budget for monitoring and evaluation to cover the unexpected cost of gathering baseline data, and other project funds therefore had to be used to meet this requirement. This financial challenge was aggravated by the fact that the funds allocated in the budget for auditing (financial monitoring) were insufficient, given that audit frequency had to be increased during project implementation due to changing donor requirements.

No specific monitoring and evaluation strategy or tool was developed to track project progress against baseline data and targets. The Government of Antigua and Barbuda has an established protocol for monitoring and evaluation of its budgeted programmes, but this differs from the approach required for monitoring and evaluation of projects implemented by external agencies. The principal role in monitoring and evaluation of the SIRMM Project was therefore carried out by the Project Management Unit/Programme Coordinating Committee, and the UNDP, following the reporting regime required by the UNDP. This monitoring by the Project for the UNDP took the form of Quarterly Operational Reports (QORs), annual Project Implementation Reviews (PIRs), Annual Work Plans (AWPs), Annual Project Reports (APRs), and financial Audits. The PCC/PMU met monthly to discuss project progress, and information on project progress, which is in essence project monitoring, is documented in the Minutes of the Meetings. Beyond this, in the latter stages of the project, the Project Coordinator gave weekly briefings on project progress to the Permanent Secretary in the relevant Ministries, primarily in an effort to garner high level political support for required project activities. Project staff also made regular visits to Demonstration Project sites to document progress. A constraint expressed by project staff is that formal reporting formats did not allow the opportunity to provide adequate information on the progress of activities in the Demonstration Projects.

Apart from evaluating reports submitted by project staff, UNDP made visits to Antigua and Barbuda to monitor project progress. Initially the UNDP Programme Manager made two site visits per year. However, the change in UNDP Programme Manager created some discontinuity in site visit monitoring and no site visits have taken place in the latter stages of the project.

Finally, an independent Mid-Term Evaluation of the Project was conducted in April, 2011. The Mid-Term Evaluation Report made recommendations to project staff, many of which were acted upon. The current report is the Terminal Evaluation Report required for the Project.

Given the above, Monitoring and Evaluation of the Project is assessed as Satisfactory (S).

Stakeholder Participation

Stakeholder participation in project implementation, at the level of technical government staff, was extremely high. The PCC was a key driver of project implementation and management, and its membership comprised Fisheries, Forestry, Health, the National Disaster Authority, the National Development Control Authority, the Economic Policy and Planning Unit, the Survey/GIS and Spatial Environment Division, the Ministries of Tourism and Agriculture, the Barbuda Council and the Barbuda National Parks Authority, and the SIRMM Demonstration Project Coordinators. Through the persistence of the PMU in making presentations to Permanent Secretaries and Ministers where feasible, there was also government buy-in at the highest political levels. For example, the Minister of Finance came to clearly recognise the potentially valuable economic impacts of the project, and was therefore highly supportive. Beyond this, the appreciation of the Project by the Ministers ensured the passage of the SIRMZP through Parliament. This government buy-in at the technical and political level augers well for the sustainability of project activities and use of project outcomes over time.

Two NGOs, the Gilbert's Agricultural and Rural Development Centre (GARDC) and the Environmental Awareness Group (EAG), participated heavily in the SIRMM Project. GARDC was a member of the PCC for the first two years of project implementation, and stayed engaged with the Project when no longer a member of the PCC. GARDC implemented components of the Demonstration Project at Body Ponds and supported Demonstration Project Coordinators in preparing project proposals for GEF Small Grants funding to continue activities at Body Ponds and Wallings (Ridge to Reef). EAG was a member of the PCC and participated in GIS training supported by the Project. EAG was an important source of data for the EIMAS system development and collaborated in mapping exercises related to the Demonstration Projects.

The Demonstration Projects were specifically geared to raise public awareness and facilitate community participation. Initially, community groups did turn out and work with the Demonstration Projects, although enthusiasm did decline somewhat in the absence of incentives and immediate benefits from the Demonstration Project activities. There was considerable variation between Demonstration Projects in terms of the participation of community groups. **At Body Ponds**, a community group called Friends of Body Pond was formed to support the Demonstration Project. The group has now been legally established and is keen to take on smaller initiatives to expand the work done at the site. **The North West Coast Demonstration Project** also benefitted from community participation. The student nurses were particular interested in the waste water management issues and integrated them into their higher learning activities. The Yorks community group also became very engaged. The student nurses and the Yorks group, along with the Environment Division, worked with the Solid Waste Management Authority in cleaning up the area, in a tree planting exercise with interpretive signs, and in installing recreational benches for the area. A component of t**he Ridge to Reef Demonstration Project**, which was originally a USAID-funded project that emphasised co-management, was to be a demonstration of co-management in the SIRMM Project. However, there was limited interest from the community in taking on this responsibility as the project progressed, and it is now clear that the government will have to take full responsibility for this activity if it is to be fully effective.

Stakeholder participation by community groups and the general public was more challenging in the context of general Project activities, and required a comprehensive public awareness programme (a Communication Plan) in an effort to get their buy-in. Efforts at public awareness, outside of on-site work at the Demonstration Projects, included the following. A DVD was produced which attempted to

demonstrate how all components of the project were integrated in the context of sustainable island resource management. This was aired widely by the government TV station when first produced and is still aired occasionally. Public service announcements about the Project were run on all radio stations at least once per month. The DVD is also accessible on the Project website. A live TV show about the Project was aired and posters were produced and disseminated. An EcoZone Summer Camp was organised to teach youngsters about the need to protect and conserve the environment, and an EcoZone Programme was developed and aired on TV to raise public awareness. The Project also developed teaching materials for schools island-wide which emphasised the requirements and benefits of a SIRMM approach. Central to the Communication Plan on an on-going basis is the use of the Botanical Gardens as an inspirational space for learning and recreation. The Office of the Environment Division has been relocated to the Botanical Gardens to facilitate this. The displays at the Botanical Gardens will focus on environmental issues in general, national environmental projects, and green technologies. Many activities will be 'afterschool', to facilitate members of the privates sector and school children, but tourists will also be encouraged to participate in the activities.

The above activities, as well as the dissemination of the SIRMZP in the media, had the effect of ensuring that SIRMP activities were frequently raised by the public in call in programmes. Attempts were also made to hold group meetings for community members to attend. Some of these were successful, but for example in the case of farmers, this approach had to be replaced with one on one engagement with individuals. There is a general sense that these cumulative efforts have had an impact, and that the public is more interested in and knowledgeable about the individual components required for ecosystem management and sustainable development.

Given all of the above, a rating of Satisfactory (S) is considered appropriate for stakeholder participation in implementation.

Financial Planning and Management

The expected costs of the various project activities and the source of the funds to implement them (i.e. GEF Budget *vs* Co-financing), as anticipated in the original project document is summarised below.

Project Outcome	Outcome Budget as in Prodoc. US$	Co-financing as in Prodoc. US$	Total In US$
Outcome 1	400,000	994,750	1,394,750
Outcome 2	203,920	746,200	950,120
Outcome 3	141,420	787,750	929,170
Outcome 4	2,250,570	274,600	2,525,170
UNDP Year 4	20,000		20,000
	3,015,910	2,803,300	5,819,210

It is important to note that there is a perception that the long lag between project design and project implementation meant that some activities were under-budgeted at the time of implementation. Moreover, the global financial crisis that began in 2008, and the consequent IMF Programme for Antigua and Barbuda, meant that much of the co-financing originally envisaged did not materialise. This situation created significant challenges for project implementation.

All GEF funds due under the budget were disbursed and the disbursement was typically well recorded by UNDP. However, in one instance a recording error, belatedly discovered, meant that a small sum became available to the project near project completion, but still in time to be used for project activities. Project staff complained that the long time required for annual budget approval by UNDP, as well as in delays in disbursements of funds, created challenges for project implementation. Specifically, the project had to be suspended at times for several months while awaiting disbursements and this led to loss of consultants, loss of stakeholder interest, and general scheduling challenges. The Environment Division was not able to secure bridging loans to maintain project momentum during these periods. Project staff also felt that there was inadequate flexibility in terms of approval to move funds between budget line items, and that this at times constrained the adaptive management they required to achieve maximum outputs in a challenging implementation environment.

As indicated previously, the financial climate prevailing in Antigua and Barbuda at the time of project implementation constrained the delivery of the co-financing originally agreed to. However, the Government of Antigua and Barbuda did attempt to provide both in-kind and cash support through its standard operational budgets whenever feasible. Moreover, co-financing was realised from the budgets of other complementary projects whenever appropriate and feasible.

Finally, it is important to note that, as reported by the Auditors, there is no evidence to suggest any inappropriate conduct as regards the management of the funds under the project. All funds provided by the GEF were accounted for, and were found to be spent in accordance with the specifications of the project document.

It is clear from this Terminal Evaluation that the Project was implemented in a highly cost effective manner; much was achieved with the funds available. Project staff, and particularly the Project Coordinator, is to be complimented on the efficiency with which the project was executed.

Execution and Implementation Modalities

In a conceptual context, National Execution (NEX) was the appropriate modality for implementing the Project. It results in increased national and local ownership of a project, promotes self-reliance, and emphasises integration of project activities with national programmes. As a consequence of this, it can effectively mainstream SIRM approaches and perspectives into national policies and work programmes.

Following project approval by the GEF, UNDP assumed the role of Implementing Agency. In this role, UNDP holds fiduciary responsibility for the project and is the lead agency for monitoring and evaluation. UNDP also provides expertise and technical support in the implementation of the project on request. Project staff were appreciative of the approach of the UNDP Programme Manger throughout much of the Project. The Programme Manager was supportive and provided sound management advice on request, without attempting to micro-manage the project. However, the change in UNDP Programme Manager, which occurred during the Project, did result in some discontinuity in the provision of advice and support. As indicated previously, project staff did identify delays in approval in Annual Budgets by UNDP, and delays in the disbursement of funds, as challenges for project implementation.

The Government of Antigua and Barbuda was the Executing Agency for the Project, and therefore responsible for project management. A Project Management Unit (PMU) was established, headquartered within the Environment Division of the then Ministry of Works, Transportation and the

Environment. The PMU was responsible for project implementation and management on a daily basis, as well as for the preparation of work plans, budgets, project proposals and progress reports, but was ably assisted by the establishment and operationalization of several supportive Committees. These included the Project Coordination Committee (PCC), Technical Advisory Committees (TACs), and, towards the end of the Project the Project Management Committee (PMC). Given the complexity and magnitude of the Project, and the time and financial constraints prevailing, adaptive management became the mode of operation in terms of attempting to meet project targets and objectives. The PMU and its associated Committees did an impressive job in executing the project under the constraints prevailing. In particular, the Project Coordinator, fully supported by the Project Manager, are to be commended for their dedication and commitment to the Project, which was a principal contributor to its successful and cost effective execution.

4.3 Results

Attainment of Outcomes

The Goal of the SIRMM Project was to ensure the sustainability and maintenance of island ecosystem integrity, health, and function through integrated planning and management of island resources. The Objective was to develop and implement a Sustainable Island Resource Management (SIRM) approach in Antigua and Barbuda to stabilize and maintain ecosystem functions, thereby providing a basis for continued sustainable economic development. The Project aimed to achieve its key Objective through four main Outcomes:

- Outcome 1: Easy and reliable access to information for environmental management by all stakeholders (through the development of an Environmental Information Management Advisory System for use in Planning, Decision-making and Improved Targeted Awareness).

- Outcome 2: A Sustainable Island Resource Management (SIRM) Mechanism developed and in place (through the development of a Sustainable Island Resource Management Zoning Plan).

- Outcome 3: Policy and institutional reforms to provide a framework for implementation of the SIRM Plan (through realignment of Policy, Legislation, and Institutional Capacity to support the SIRM Plan).

- Outcome 4: Requirements for implementation of the SIRM Plan in place, as well as mechanisms for the capture of lessons learned and best practices (including four on-the-ground Demonstration Projects to display SIRM in operation).

Outcome 1

There were many challenges that had to be overcome in the development and operationalization of the EIMAS. An early challenge was the scarcity of baseline data to populate the EIMAS, and much of this had to be gathered during project implementation. Problems of data ownership by different government agencies, and the sensitivity of certain data sets and whether some should be excluded from the EIMAS, also had to be resolved. Some of the data in the EIMAS is considered sensitive and access to it and how it can be used is controlled by signed Confidentiality Agreements by the Agency requesting the data. An important component of the data currently in the EIMAS was produced from the digitisation of the 2010 aerial photographs of Antigua and Barbuda.

A second major challenge in creating and operating EIMAS was the need to develop national capacity in GIS spatial analysis and data mining. The response of the Project was to hire a data manager who was sent to the University of the West Indies (UWI) on scholarship to be trained in GIS. The data manager is now responsible for managing and further developing the EIMAS database and responding to requests for information. A Memorandum of Understanding (MOU) was also signed with the University of the West Indies which allowed UWI students to participate in the digitisation of the aerial photographs that populated the EIMAS. Beyond this, there were several training workshops offered to the technical staff in other government agencies in areas relevant to the use of the EIMAS. These included data collection

and entry and GIS spatial analysis, and emphasised demonstrations on how to use equipment, such as the GPS Hand Units.

It was also important to familiarise agency personnel with the types of information that they could both provide to, and access from, EIMAS. Training was therefore provided in several areas relevant to island ecosystem management. These included Biodiversity (e.g. Development and Monitoring of Biodiversity Indicators), Water Resources Management, Climate Change and Adaptation, Waste Water Management, EIA, Pest Management, Land Management, and Environmental Legislation for the stakeholders involved in the Project, from both Government and the private sector. Among those trained were three Heads of Agencies (Environment Division, Development Control Authority, the Central Board of Health), as well as the Barbuda National Parks, NODS, the Department of Analytical Services, the Attorney General's Office and the Forestry Department. The Project also helped to sponsor the attendance of a member of the Barbuda National Park Council to the Sub-regional Workshop for the Caribbean on Capacity Building for Implementation of the Convention on Biodiversity Programme of Work on Protected Areas; and staff form the Ministry of Agriculture to attend Workshops on Financial Mechanisms of Sustainable Marine Protected Areas Management and Waste Water Management and Sewage Treatment.

An important aspect of Outcome 1 was not only the establishment and operationalization of EIMAS itself, but also the need to ensure that business and social communities, and the general public, were made more aware of the desirability and need for SIRM. A comprehensive public awareness campaign was mounted to achieve this. The most significant components of this programme are described under **Stakeholder Participation** in Section 4.2 Project Implementation.

In conclusion, the Environmental Information Management and Advisory System (EIMAS) has been developed and is operational. Its establishment has facilitated the identification of remaining data gaps that need to be filled to facilitate comprehensive ecosystem management, and data collection to fill the gaps will be in a format that is compatible with the EIMAS. As with all data systems, EIMAS will require continuous updating and capacity expansion as new data emerges and new demands are made on its services. EIMAS is currently housed in the Environment Division, and is utilised by other government agencies in implementing their work programmes, and by students in search of information for research projects. EIMAS was heavily used in the development of the Sustainable Island Resource Management Zoning Plan (SIRMZP), and has been particularly valuable to the Environment Division in executing their responsibility to advise on applications for changes in land use (e.g. industrial, domestic, agricultural) in Antigua and Barbuda. EIMAS is not yet networked in the sense that all government agencies can access the information from their locations; they must come to the Environment Division and obtain the information they require from the EIMAS data manager there.

Outcome 2

The approach used by the Project for the development of a Sustainable Island Resource Management (SIRM) Mechanism was to develop a Land Use Zoning Plan (SIRMZP) as the foundation on which the SIRM Mechanism would be based. This key project deliverable has been realised. The SIRMZP was developed by the project and approved by Parliament. Approval by Parliament required buy-in by high level political leadership. To secure this, the PMU organised weekly briefings with the political leadership, and specifically with the relevant Permanent Secretaries. The PMU also made four presentations to Parliament on the national value of the Project and the need to support its activities.

This enhanced engagement with the political leadership was a key reason why the SIRMZP was ultimately passed by Parliament. The legislative Regulations required to implement the Plan are currently being developed.

Four Local Area Plans (LAPs) were to be developed to complement and elaborate on the SIRMZP in specific areas. These have been developed for much of the area at two of the Demonstration Sites, Body Ponds and the North West Coast (Christian Valley), with the remaining areas at the two sites to be completed through future activities. A decision was taken not to pursue the other two LAPs at the time since updated information (e.g. Census and Energy Consumption data) was required for an effective LAP at the two sites. Instead, the remaining funds in this budget line item were used to develop a methodology for producing other LAPs locally, and for expanding the two LAPs already done. This will ensure that many LAPs can be completed over time to complement the SIRMZP.

A Cost Benefit Analysis (CBA) and an Alternative Livelihoods Study (ALS) were to be conducted in support of a Sustainable Island Resource Management Mechanism for Antigua and Barbuda. Terms of Reference were developed for these studies. However, the costs quoted for execution of these activities from consultants far exceeded the funds available in the Project budget, and the activities could not be conducted in the detail originally envisaged. A decision was therefore taken to use the money available in these budget lines to support the development of the Sustainable Island Resource Management Zoning Plan (SIRMZP), ensuring that the concepts of CBA and ALS were incorporated into the SIRMZP.

It is evident from the above, that important components of Outcome 2 have been realised. However, all activities originally envisaged as components of this Outcome could not be fully realised given the funds and time available. The Project has been strategic in ensuring that the available Project funds were used to create mechanisms that will facilitate the implementation of the remaining components over time.

Outcome 3

Moving from a sector approach to the planning and management of island resources to a comprehensive integrated approach necessarily requires changes in institutional responsibilities, as well as the policy and legislative changes required to support and give teeth to the institutional changes. For such changes to be realised requires a clear understanding of the national benefits that could accrue from making the changes, the political will necessary to make the changes, and a cooperative attitude and approach by those persons working in the institutions whose responsibilities must change. From the onset of the Project it was clear that achieving the necessary institutional, policy and legislative changes within the time frame of the Project would be an enormous challenge, particularly since the authority to make the changes does not reside in the Project staff.

The Project design considered that the Physical Planning Act and the Draft Environmental Protection and Management Bill were important intervention areas for establishing the legal requirements for an integrated approach to island resource management, but it became evident that there were several other policy and legislative areas that would require upgrade and advancement. The Physical Planning Act had been passed by Parliament in 2003 but the institutional and information requirements for its full implementation have not materialised. Responsibility for activities under the Act lies with the Development Control Authority (DCA), but this agency is not yet fully operational. The critical challenge is to leverage the necessary political support to move these activities forward. The SIRMM Project did

attempt to advance the process by supporting a sub-committee under its PCC to assist with updating the National Physical Development Plan which was presented to Parliament in May 2011.

The SIRMM Project also worked extensively on the Draft Environmental Protection and Management Bill (EPMB). The revisions are designed to more fully incorporate the SIRM approach as the basis of the Bill, and the Draft Bill now adequately captures the missing policy elements required for sustainable environmental management in Antigua and Barbuda. Specifically, the EIA sections have been strengthened and water quality management has been added which will be the basis of the development of a national Water Quality Management Policy. The sections on Watersheds and Wetlands Management, and on Biodiversity and Wildlife Management, have been extensively redrafted. The Bill now makes specific reference to the establishment of an EIMAS Unit and incorporates recommendations for institutional reform emerging from the Body Ponds Demonstration Project. At the heart of the Draft EPMB is the establishment of the Antigua and Barbuda Sustainable Island Resource Framework (SIRF) Fund, which will be legislatively established. The Draft EPMB is now with the Attorney General's Office for review and ultimately for approval by Parliament.

The SIRMM Project has supported the drafting of Regulations for Marine Protected Areas, and Regulations for Waste Water Management. The former now lies with the Fisheries Division and the latter with the Central Board of Health for further advancement. The SIRMZP included measures to reserve all Class 2 Agricultural Crown Lands for agricultural production and the Extension Division of the Ministry of Agriculture continues to implement and champion this change in Land Tenure policy.

The SIRMM Project developed Terms of Reference for an Institutional Assessment, which was completed but the recommendations were not be implemented due to financial constraints. ~~Instead, Project staff initiated activities in an attempt to assess the institutional changes that would be required for integrated island resource management, and particularly watershed management. A Watershed Management Committee was established but was ineffective.~~ The Project then established a Watershed Council, through consultation with the appropriate Ministers, but this too made little progress. The Food and Agriculture Organisation (FAO) ultimately undertook a study and produced a report in 2012 entitled 'Proposed Merging of the Forestry Unit into the Environmental Division of the Ministry of Agriculture, Lands, Housing and the Environment'. The recommendations in the report have not yet been implemented, in part because of sensitivity to the perception that a 'super agency' would ultimately be created.

RC: Institutional changes are difficult in government.

The SIRMM Project undertook a cross-sectoral capacity assessment, which targeted government agencies, NGOs, CBOs and specific resource communities, to identify capacity building needs, particularly in the context of land use planning and watershed management. Between July 2012 and June 2013, the Project organised and supported workshops which trained 50 persons from 10 agencies in water resources and waste water management, GIS, climate adaptation, and biodiversity indicator development and monitoring.

It is evident from the above that the SIRMM Project made considerable progress in advancing the policy and legislative frameworks that will be required for effective integrated island resource management, and in developing the institutional capacity that will ultimately be required. Many of the necessary

policy and legislative tools now lie with various arms of Government for ultimate Parliamentary approval.

RC: SIRF not mentioned, need to also mention SPARE project document

Outcome 4

The emphasis in Outcome 4 focuses on ensuring that the requirements for the implementation of the SIRM Plan would be in place and that lessons from and best practices in SIRM would be captured and demonstrated. There are three broad categories of requirements for effective implementation of the SIRM Plan. The first is that the appropriate policy and legislative frameworks have been established, and these have been discussed in the evaluation of Outcome 3 above. The second is that adequate technical capacity exists within the agencies responsible for implementation of the Plan, and the capacity development activities implemented by the SIRMM Project to ensure this have been documented in the evaluation of Outcome 3 above. The third is that the appropriate management structures to oversee the implementation of the SIRM Plan have been established.

The PCC established to work with the PMU in executing the SIRMM Project had a membership which consisted of agencies and units responsible for environmental matters including Fisheries, Forestry, Health, the National Disaster Authority, the National Development Control Authority, the Economic Policy and Planning Unit, the Survey/GIS and Spatial Environment Division, the Ministries of Tourism and Agriculture, the Barbuda Council and the Barbuda National Parks Authority, and the SIRMM Demonstration Project Coordinators. The PCC has been highly effective as a multi-sectoral Committee facilitating project implementation and management. The role of the PCC expanded even further as the Project progressed. The PCC has merged informally with the National Coordinating Mechanism (NCM), and consideration is being given to merge the two entities formally. Moreover, the work of the PCC has expanded beyond the SIRMM Project to encompass national sustainable development planning in general, and the PCC has proven itself as an effective coordination mechanism for government well beyond SIRMM project objectives. Towards the end of the Project, a Project Management Committee (PMC) was established which essentially took over the role of the PCC, dealing with several national environmental projects. This PMC is therefore well poised to be the body which would deal with implementation of the SIRM Plan in Antigua and Barbuda.

The approach taken by the Project to illustrate lessons learned and best practices in SIRM in a practical sense was to develop and operationalize four Demonstration Projects. These were particularly important components of the Project Outcomes, since Project Staff were committed to ensuring that the Project had tangible impacts on the ground which could be appreciated by the general public, rather than being merely satisfied that the Project met its reporting requirements. The Demonstration Projects were Body Ponds, Reefs to Ridges, Northwest Coast (Tourism and Waste Water) and the Barbuda National Park.

Body Ponds

At Project inception, the goal of the Body Ponds Demonstration Project was to demonstrate effective and practical methodologies for the rehabilitation and subsequent management of the watershed in the area, for these to be documented and ultimately replicated in other watershed areas. When Project targets were revised in 2009 it was decided to focus on rehabilitation of the watershed and sustainable

agricultural practices and land use, thereby improving the management of what is the largest watershed in Antigua. This required that the activities be concentrated in a smaller area since it was felt that the limited Project resources, both financial and human, could be best employed in a small area where the effects would be more visible and easier for the wider community to appreciate. The management of the Demonstration Project was originally meant to be co-shared between the Forestry Department and the Water Authority (APAU). However, due to financial and other constraints, the Forestry Department ultimately implemented the project with in-kind support from APAU.

The key activities implemented in the Body Ponds Demonstration Project are summarised below.

- An important initial activity was that an ecosystem assessment was conducted in the general Body Ponds area to determine the best local site for the Demonstration Project on the hillsides at Body Ponds.

- GARDC conducted a community-based management analysis to determine if there was an appropriate community group that could work with the Project in this initiative. Out of this emerged a community group called Friends of Body Pond which was trained in aspects of project management and conflict resolution. The group participated in early project activities once these were organised by the Environment Division, but the financial circumstances of members ensured little time for volunteer work. Nevertheless, the group was legally established and remains interested in assisting with smaller initiatives to expand the work started at the Site.

- GARDC also worked with the farmers and focused on organic farming practices that would assist in preserving the watershed area. These included avoiding the use of pesticides and fertilizers to minimise contamination of the watershed, irrigation options for the dry season, soil management options, and guidance on how they could become certified 'Organic Farmers', which could open a niche market for the area.

- A critical aspect of improving watershed management in the area is the eradication of Lemon Grass (C*ymbogogon*) which out-competes other vegetation in low nutrient conditions and which became prolific in the area once the hillsides had lost their natural vegetation to wildfires and soil erosion. The Lemon Grass was originally introduced in the Fisher Pond area to promote soil conservation along the streams and waterways. However, this proved to be a mistake as Lemon Grass grows in clumps, and deep gullies of erosion are created between the clumps in the rainy season, resulting in heavy soil erosion on the hillsides. Moreover, since Lemon Grass grows prolifically in this environment, it becomes fodder for hillside fires, making any such fires difficult to control, but following the fire, the Lemon Grass immediately regenerates. There had been previous attempts in the 1990s to combat the spread of the Lemon Grass by planting Albizia, and the lessons learned helped to design the approach used in the current project.

- Three interactive approaches were used to demonstrate that Lemon Grass, and its negative environmental consequences, could be controlled at the Demonstration Site. The first was terracing to separate the general hillside from the Demonstration Site, which proved effective in buffering the impact of hillside fires on the Demonstration Site. The second was keeping the Lemon Grass cut low in the Demonstration Site, which again was effective in controlling fires at the Site. The third was tree planting at the Demonstration Site which provided a canopy that prevented rapid re-growth of the Lemon Grass. Without a canopy, the grass had to be cut every three weeks; with a canopy, it

only had to be cut every three months. The hillside fires are primarily caused by farmers to clear the land for planting, although the farmers blame spontaneous combustion. Awareness of their role and acceptance of their responsibility by farmers was an important goal of the project. It was therefore good to learn that one farmer has volunteered to have a terrace installed on his farm. The effects of this have not yet been recorded but will be monitored when the farmer begins cultivation, and the lessons learned will be documented for improvement and replication.

- The project experimented with many tree species before selecting Leucaena, Albizia and Flamboyant trees as the principal species to be used in replanting the hillsides. These species survive well under dry conditions, require little nutrients since they can fix nitrogen, and grow quickly which allows them to produce quick canopy cover and to regenerate after a fire. There was also an attempt to introduce some fruit trees, specifically mangoes, cashew, West Indian almond and breadfruit, with the first three being more successful than the last. The most effective way to plant the young saplings was to keep them in the plastic bags when putting them in the ground, as this helps with water retention at a critical time of plant growth. It was important to demonstrate that successful replanting could occur without fertilizers use, since fertilizers are expensive and the Demonstration Site is directly above the water catchment.

- In 2012, the Grass at the Demonstration Site could not be cut for an extended period due to lack of fuel, which was provided by the Ministry of Agriculture as part of the co-financing arrangement. As a consequence, there were significant fires at the Site, with loss of both soil and trees. This was used as a practical example to demonstrate to the political leadership in the Ministry the importance of following the management measures at the Site, and assisted in garnering political support for the project as it progressed.

- Expanding the activities at the Demonstration Site to the wider Body Ponds area would be very expensive and outside of the Government budget. In response, the Environment Division and UNEP have created the Sustainable Pathways, Protected Areas and Renewable Energy Project (SPPARE). This new project will be able to replicate some of the successes of the Demonstration Project at Body Ponds, and the Forestry Department is committed to maintaining the Demonstration Site beyond the life of the SIRMM Project. The SIRMM Project has facilitated the purchase of equipment that will be used by the Forestry Department in maintaining the Demonstration Site.

- The SIRMM Project collaborated with Extension Department of the Ministry of Agriculture and with the community at Body Ponds to launch and run a Buy Local campaign. The campaign made T-Shirts, distributed brochures, had media exposure, publicised interviews with Extension Officers of the Ministry of Agriculture and supported farmers to get their products to the local market and to target larger markets (e.g. hotels). This, together with much publicity about the successes of the Demonstration Project, has garnered political support that will facilitate continued work in the area.

Ridge to Reef

In the original Project Document, the goal of this Demonstration Project was to develop an integrated 'ridges to reefs' co-management approach for the conservation of resources for the South West region of Antigua. However, the boundaries of the area to be considered were not clearly delineated. The importance of doing so was highlighted by the fact that, whereas the Project Document only referred, and indirectly, to key spatial zones, it was evident that these zones were impacted by a wider system,

traversing several watersheds. The task of delineating the Demonstration Project area was therefore given to the consultant team hired to implement many components of the Reefs to Ridges Project. The ultimate decision taken was that integrated management plans would be developed for three large watersheds, but detailed ecological mapping would focus on a smaller area that included the Cades Bay Marine Reserve, the Wallings Forest and Mount Obama.

The key activities implemented in the Ridge to Reef Demonstration Project are summarised below.

- Baseline data on marine and terrestrial ecosystems in the Demonstration Project area, as well as some information on developed areas were collected, since very little data existed for the area. These data would be required to facilitate an assessment of the ecological features of the region and to allow the preparation of detailed maps of key terrestrial and marine ecosystems.

- Detailed maps of the areas were developed and produced which included key terrestrial and marine ecological features, some historical features, and environmental 'hotspots'. These maps would be a critical tool required for the development of an integrated management plan for the area.

- An important emphasis in the Ridge to Reef project was to generate and sustain effective collaboration among agencies responsible for environmental management, since this would be required for effective implementation of the integrated management plan for the area. The PCC, with its associated TAC for the Ridge to Reef project proved to be highly effective as multi-sectoral Committees driving the implementation of this Demonstration Project.

- **The Cades Bay Marine Reserve** is an old Marine Park in Antigua and Barbuda that had not been further developed or adequately maintained in recent years. The Ridge to Reef Demonstration Project developed new Draft Management Plans for the Park. Legislation had to be upgraded for management of the Park, and the opportunity was therefore taken to evaluate the Legislation in place for Marine Protected Areas in Antigua and Barbuda. The Installation and deployment of new buoys marking out zones in the Marine Protected area in Cades Bay has begun and will continue following project termination. Consistent with the goal of livelihoods diversification, workshops were conducted to train artisans in the art of creating beads and jewellery from recycled glass bottles.

- The Fisheries Officer, who is the Demonstration Project Coordinator for Ridge to Reef, sat on the Community Committee which had the task of developing a Management Plan for the area, which will be known as the **Mount Obama Park**. Land Use issues pertinent to the Park and its surrounding area have been identified and discussed, a Business Plan has been developed for the Park, and an Interpretation Centre has been designed.

- **The Walllings Forest** component of the Ridge to Reef Demonstration Project, evolved from a USAID-funded project that emphasised co-management, and was to be a demonstration of co-management in the SIRMM Project. Infrastructure was already in place from the USAID Project which included an Interpretation Centre and a space for vendors. The SIRMM Project repaired the existing buildings at the Site and upgraded the existing facilities since the area is heavily used by both visitors and locals. The upgrades included the installation of steps, handrails, benches, and interpretive signage, and repairs to existing trails. There was limited interest from the community in taking on co-management responsibilities as the project progressed, and it is now clear that the

government will have to take full responsibility for this if it is to be fully effective. The consensus is that the Wallings site could already have been financially successful as a public/private partnership through effective use of fees and management of the Interpretation Centre and shops if time had not been lost on getting the community involved in co-management.

- Public awareness activities were implemented for all three of the specific sites in the Ridge to Reef Demonstration Project. These included the development and dissemination of brochures and the development of teacher training material which was provided to science teachers across the island.

- As recommended in the Mid-Term Evaluation, the remaining funds in the Ridge to Reef budget line item were used to develop the SPPARE Project (Sustainable Pathways – Protected Areas and Renewable Energy). This project will be submitted to GEF through UNEP, and submission of the Project Identification Form (PIF) has already been successful. The SPPARE Project will continue and further develop the goals and activities of the Ridge to Reef component of the SIRMM Project.

Northwest Coast – Tourism and Waste Water

The goal of this Demonstration Project, as documented in the Project Document, was to promote best practices in water conservation and waste water disposal and grey water re-use in the Northwest tourism zone in Antigua. This is the main tourism zone on the island, with the greatest concentration of hotels, high residential density, the highest levels of water use, and the lowest annual rainfall supplying its principal watershed, the McKinnon Watershed. Many of the hotels have private waste water treatment systems, but these are not always effective, both in terms of the functioning of the plants themselves and the persons employed to operate them. The watershed terminates in a lagoon which is the only buffer to the coast. There is heavy nutrient loading of the lagoon from commercial and domestic effluent which will ultimately overwhelm its capacity to protect the coastal habitats from the effects of nutrient loading. An important strategic approach in the Northwest Coast Demonstration Project was to link with the IWCAM Project and to continue and further develop outputs from that Project.

Key activities implemented in the Northwest Coast Demonstration Project are summarised below.

- IWCAM developed a Liquid Waste Management Strategy which is awaiting Parliament approval before it can be operationalized. The Northwest Coast Demonstration Project has attempted to facilitate this approval and emphasised the need to integrate Waste Management Strategies developed under this Project with the Management Strategy developed by IWCAM.
- IWCAM had begun to construct a Sewage Treatment Plant in the area. SIRMM has been completing the Plant. All equipment is now in place, the necessary electrical work is being completed, and the Plant will soon be commissioned. IWCAM had facilitated the connection of some residences to the Plant and SIRMM has expanded the number of connections. Important early connections include the Supermarket in the area, all homes in the immediate area, and those hotels whose topography will allow connection to the system. Connecting to the Treatment Plant is particularly important in the McKinnon area due to the proximity to the water table below, septic treatment is not always effective. The intention is for the plant to be ultimately self-sufficient, in part by providing irrigation water to farmers and in part from receiving fees from the hotels which connect to the system.

- In collaboration with four pilot hotels, the Demonstration Project facilitated the development of an Environmental Management System. The four pilot hotels are voluntarily inputting their data on water use, waste produced, chemicals used in waste treatment, electricity used and occupancy levels into the pilot system. This system will ultimately allow the Central Health Board and the hotels themselves to monitor their sewage treatment remotely. The software for the Environmental Management System was developed by students from the Antigua State College, and SIRMM provided the College with two computers to facilitate this.

- During the Demonstration Project, advise was given to many hotels on ways to improve the efficiency of their individual Treatment Plants, and the need for them to use trained personnel to operate the Plants was emphasised.

- There was significant on-going communication with community groups in the area during project implementation. The community groups participated keenly in these consultations and in project activities, partly because they experience first-hand the impacts of poor waste management in the area. There were several specific activities that emerged from these consultations. A community group has legally registered and has applied for GEF Small Grants funding to continue activities that began under the IWCAM and SIRMM Projects. Consultations with the stakeholders which included their perceptions on waste management and what they see their role as were used in developing a Strategy for Waste Management with a focus on communities. There were other consultations that considered natural treatment options for the water course which included mini-dams in areas and building set-backs from the waterways; a new project, the Special Climate Change Fund (SCCF) will attempt to implement these recommended options. The 'floating islands' concept for natural waste water treatment was also costed and partially implemented, in collaboration with selected schools and hotels. Student nurses in the Demonstration Project area were particularly interested in the waste water management issues and integrated them into their higher learning activities. The Yorks community group also became very engaged. The student nurses and the Yorks group, along with the Environment Division, worked with the Solid Waste Management Authority in cleaning up the area surrounding the lagoon, in a tree planting exercise with interpretive signs, and in installing recreational benches for the area.

- The SIRMM Project evaluated current legislation in dealing with Waste Water Management and Waste Water Reuse. Revised regulations have been developed and are now with the Central Board of Health (CBH) to take to Parliament for approval and implementation.

- When operational, effluent from the Sewage Treatment Plant will be monitored using laboratories in the Fisheries Division. These laboratories are also used by CBH to monitor water quality in the lagoon.

Codrington Lagoon – Barbuda National Park

The goal of this Demonstration Project was Integrated Planning and Management for the sustainable use of Codrington Lagoon in Barbuda. The Demonstration Area includes a Ramsar Site and a newly designated National Park. This Demonstration Project was completed by the time of the Mid-Term Evaluation.

Key activities implemented in the Codrington Lagoon Demonstration Project are summarised below.

Ecosystem assessments were conducted and a Financial Management Plan developed. Training was conducted to facilitate the implementation of the Management Plan. Public awareness activities were implemented to ensure that stakeholders, particularly fishermen, tourists and farmers, were familiar with the Demonstration Project's activities. The Project upgraded and maintained the docking facilities, purchased a boat and engine for the Site, installed green toilets at the Site, purchased computers for the operation, and facilitated internet services. The project supported the salaries of a Parks Manager, a Public Relations Officer, a Ranger and a Tourism Development Officer. The Codrington Lagoon Project Site has been legally constituted as the Barbuda National Park under the Antigua and Barbuda National Parks Act.

The principal challenge with the operation of the Barbuda National Park when the SIRMM Project terminates is its financial sustainability. Current use of the Park is not heavy enough to ensure that collection fees can finance its operation. Moreover, the Barbuda Council wishes to collect the fees themselves rather than have the Parks Manager collect them. When the Demonstration Project was completed, SIRMM continued to support the Park Ranger, but the remaining staff were released as the Barbuda Council was unable to meet the costs. It is therefore imperative that all efforts be made to develop and operationalize the proposed Trust Fund since effective and sustainable operation of the Barbuda National Park will depend heavily on this. A strong enough case for the importance of the Barbuda National Park, which comprises one third of the island, in the economic development of Barbuda has not yet been made to engender the political will necessary for moving forward with the Trust Fund initiative.

Given the complexity of the SIRMM Project, and the severe time and financial constraints under which it was implemented, it was estimated at the time of Mid-Term Evaluation that about 60% of the Outcomes would be realised. However, given the commitment of the Project staff and Project Committees, and particularly the Project Manager and Project Coordinator, as well as the adaptive management approach taken throughout implementation, the Terminal Evaluation (TE) now estimates that about 75% of Outcomes were realised. The TE therefore assesses the Attainment of Outcomes as Satisfactory (S).

STATUS OF SIRM ACTIVITIES

Goal: To Evolve and Implement a Sustainable Island Resource Management Approach within Antigua and Barbuda. To Stabilise and Maintain Ecosystem Functions, thereby Providing a Basis for Continued Sustainable Economic Development.	
Activity as per Log Frame	**Status of the Activity**
Outcome 1: Easy and Reliable Access to Information for Environmental Management by all Stakeholders.	
1.1 Environmental Information Management and Advisory System (EIMAS) and Mechanism for Data for Use in Planning and Decision-Making Established	Completed
1.2 Island Ecosystem Resources, Function and Usage Patterns Assessed and Mapped	Completed
1.3 Modeling of Island Ecosystem Resources and Identification of Key Resources Required for Sustaining Island Ecosystem Integrity and Functionality	Completed
1.4 Environmental Variability and Extreme Events Forecasting	Completed
1.5 Long Term Monitoring Programme for Island Ecosystem Status and Function Established	Completed
1.6 Targeted Awareness and Sensitization	Completed
Outcome 2: Sustainable Resource Management Mechanism Developed and in Place	
2.1 Sustainable Island Resource Management Zoning Plan (SIRMZP) Prepared	Completed
2.2 Comparative Cost-Benefit Analysis of SIRM Zoning and Management Plan	Elements included in the SIRMZP
2.3 Advisory Brief for Commercial Resource and Livelihood Sustainability	Elements included in the SIRMZP
2.4 Strategy and Contingency Plan to address Environmental Variability	Elements included in the SIRMZP Documents Prepared by NODS
2.5 SIRM Plan Submitted to Government and Adopted	Completed
Outcome 3: Policy and Institutional Reforms Provides a Framework for the Implementation of the SIRM Policy	
3.1 Review of the Policy, Legislation, and Regulations Related to SIRM across the Different Sectors	Completed
3.2 Review of Institutional Structures and Mandates for SIRM Implementation	Completed
3.3 Reforms Recommended for the Streamlining of Policy, legislation and Institutional Arrangements	Completed
3.4 Identification of Suitable Financial Instruments and Fiscal Incentives, and other Sustainability Mechanisms to Support SIRM	Completed
Outcome 4: Requirements for the Implementation of the SIRM Plan in place as well as the Capture of Lesson Learned and Best Practices	
4.1 Project Coordination Unit and NCM for SIRM	Ongoing
4.2 Inter-Sectoral Training and Capacity Building Programme for SIRM	Completed
4.3 Implementation of Demonstrations of Integrated Ecosystem Management at Sites Identified as Hotspots or Sensitive Areas	
4.3.1 **Demonstration 1**: Rehabilitation of the Body Ponds Watershed	
A- Development of a Co-management Strategy for Body Ponds Watershed	Completed
B- Management Decisions are Supported by Accurate and Updated Information	Completed
C- Land and Watershed Restoration Approaches and Techniques as a Management Strategy	Completed

D- Implementation of Sustainable Land Management Practices in Body Ponds Watershed	Completed
E- Development of Financial Sustainability Mechanisms	Postponed
4.3.2 **Demonstration 2**: Integrated "Ridge to Reef" Management of the Southwest Coast of Antigua	
A- Southwest Regional Co-management Authority Identified and Established	Completed
B- Participatory Assessment and Mapping of the Watershed	Completed
Training and Capacity Building for Management	Completed
C- Carrying Capacity Study	Completed
D- Realignment of Legislation and Policy for Effective Zoning and Management of the Southwest Watershed Area	Completed
4. 3. 3 **Demonstration 3**: Integrated Management of Codrington Lagoon and Planning the Sustainable Development Waterfront	
A- Management and Sustainability of the Codrington Lagoon	Completed
B- Assessment and Mapping of Resources	Completed
C- Co-management Scheme Strengthened Through Installation of Requisite Infrastructure	Completed
D- Park Infrastructure and Capacity Support	Completed
4.3.4 **Demonstration 4**: Promoting Best Practices in Wastewater Disposal Water Conservation and Re-use in the Northwest Tourism Zone Antigua	
A- Establishment of Management Structure for Self-regulation of Tourism Industry	Completed
B- Adoption of Environmental Management Systems and Incentives by Tourism industry	Completed
C- Financial and Economic Instruments for Regulation of Wastewater Disposal, Water Resource Conservation and Watershed Management	Completed
4.4 Project Monitoring and Evaluation	Ongoing
4.5 Capture of Lessons and Best Practices	Ongoing

Relevance

Given the development context prevailing in Antigua and Barbuda at the time the Project was conceptualised and designed (see Section 3 of this Report), an Integrated Sustainable Island Resource Management strategy was clearly the most relevant approach for addressing the country's needs to stabilise and maintain ecosystem functions as the basis for sustainable economic development. The design of the Project was consistent with national priorities (see Section 4.1), and the adaptive management approach to implementation (see Section 4.2) was driven by a commitment to ensuring that the Project had maximum national impact. **The Terminal Evaluation therefore rates the Project as Relevant (R).**

Effectiveness and Efficiency

The Project Outcomes were commensurable with the expected Outcomes as articulated in the original Project Document, but the activities implemented to achieve the Outcomes differed in some cases from what was originally conceived. These modifications in approach were deliberate and required in order to ensure that the Outcomes could be realised to the greatest degree possible within the time and financial constraints prevailing during Project implementation (see Section 4.2).

The long delay between project design and project implementation meant that some activities were under-budgeted from the onset of implementation. Moreover, the global financial crisis that began in 2008, and the consequent IMF Programme for Antigua and Barbuda, meant that much of the co-financing originally envisaged did not materialise. This situation created significant challenges for project implementation. The fact that the Project was able to achieve an estimated 75% of Project Outcomes under the financial constraints prevailing is a strong statement that the Project was implemented in a highly cost effective manner.

Given the above, the Terminal Evaluation rates Effectiveness and Efficiency as Highly Satisfactory (HS).

Sustainability

There are several different sets of factors that influence the sustainability and further development of Project Outcomes over time. These include whether a sense of Country Ownership of Project activities has developed, whether Project activities and outcomes have been Mainstreamed nationally, whether Financial Resources will be available to support the continuation of Project activities, and whether there are Environmental factors that could impact on sustainability.

Country Ownership: Socio-Political Risks

The technical government staff in Antigua and Barbuda were fully committed to the Project and heavily involved in Project implementation as members of the PCC. As Project implementation progressed, there was also government buy-in at the highest political levels to the importance of Project activities and goals. Two of the largest NGOs in Antigua and Barbuda (GARDC and EAG) were fully committed to the Project and participated in its implementation. The Demonstration Projects were specifically geared to raise public awareness and appreciation of the value of Project activities, and to facilitate community participation, which they did with varying degrees of success. The general public was targeted with a comprehensive public awareness programme throughout Project Implementation, and there is a strong sense that the public is now more interested in and knowledgeable about what is required for ecosystem management and sustainable development in Antigua and Barbuda. As true for other SIDS in the OECS Antigua and Barbuda is primarily a two-party state, and changes do occur when government changes. However, the changes are more often in personnel and staff rather than in project or programme goals and priorities. It is concluded that the sustainability of the Project Outcomes in the context of Country Ownership/Socio-Political Risks is **Likely (L)**.

Mainstreaming: Institutional Framework and Governance

Mainstreaming of Project activities and outputs is facilitated when there is a strong sense of Country Ownership of outputs, but there are more specific indicators that the Project has made progress in mainstreaming SIRM activities in Antigua and Barbuda. The PCC was highly effective as a multi-sectoral Committee facilitating project implementation and management, and members of the PCC feel strongly that the integrated island resource management approach should be the management structure for all national environmental projects. National agencies are already mainstreaming best practices from the SIRMM Project into their work programmes. The PCC has merged informally with the National Coordinating Mechanism (NCM), and consideration is being given to merge the two entities formally. This would further mainstream SIRMM Project activities and outputs into the

national agenda in Antigua and Barbuda. The SIRMZP has been approved by Parliament and the necessary supporting Regulations are being developed. The Revised Draft Environmental Management Bill has been submitted to the Attorney General's Office for ultimate Parliament approval and implementation. Legislation required for Waste Water Management and Marine Protected Areas has been developed and submitted to the Central Board of Health and the Fisheries Division respectively for further advancement. The area that now requires further emphasis is the assessment and implementation of the institutional changes required for effective integrated island resource management. Given the above, it is considered **Moderately Likely (ML)** that the appropriate institutional framework and governance structure will be established and operationalized to ensure sustainability of Project Outcomes.

Financial Resources

Throughout Project implementation, Project staff were sensitive to the need to explore new sources of financing to continue the implementation and further development of SIRMM Project activities beyond the life of the Project. The Environment Division and UNEP have created the Sustainable Pathways, Protected Areas and Renewable Energy Project (SPPARE) which will replicate some of the successes of the Demonstration Project at Body Ponds, and further develop and implement the activities of the Ridge to Reef Demonstration Project. This project will be submitted to GEF through UNEP, and submission of the Project Identification Form (PIF) has already been successful. Several community groups, specifically 'Friends of Body Pond', the York Community Group and the Mount Obama community group have legally registered and have applied for GEF Small Grants funding to continue activities that began under the IWCAM and SIRMM Projects. Perhaps most importantly, at the heart of the Draft Environment Planning and Management Bill, is the establishment of the Antigua and Barbuda Sustainable Island Resource Framework (SIRF) Fund, which will therefore be legislatively established. The intention is that the SIRF Fund will be the principal financial driver of activities designed to further integrated island resource management and sustainable economic development in Antigua and Barbuda. Based on the above, the TE rates the sustainability of the Project Outcomes through the availability of financial resources as **Moderately Likely (ML)**.

Environmental

The goal of the SIRMM Project was to ensure the sustainability and maintenance of island ecosystem integrity, health and function through integrated planning and management of island resources. The expectation is therefore that, to the extent that project outcomes are achieved and sustained over time, the project will have a positive environmental impact in Antigua and Barbuda. This speaks to impacts of the project on the environment, not to impacts of the environment on the project outcomes. With respect to the latter, there is little likelihood of negative environmental impacts on the sustainability of project outcomes, apart from the possibility of major natural disasters that could undermine the future flow of environmental benefits. The sustainability of the Project Outcomes in the context of environmental risk is therefore **Likely (L)**.

The strong Country Ownership and the low Environmental Risk speak positively to the Sustainability of Project Outcomes, and some progress has been made towards Mainstreaming Project Outcomes into the Institutional Framework and Governance structure. Significant efforts have been made to seek the Financial Resources required for sustainability of Project Outcomes, but the ultimate success of these efforts is hard to predict. Given this, the TE assesses overall Sustainability as Moderately Likely (ML).

Impacts

For the Project to have significant national impact, Project Outcomes must be effectively delivered. The EIMAS system which underpins subsequent Project activities was developed and operationalized (see Section 4.3; Outcome 1). The SIRMZP, which is the foundation on which the SIRM Mechanism would be based, was developed and approved by Parliament (see Section 4.3; Outcome 2). Effective implementation of the SIRM Plan, and through its implementation, significant national impacts of the Project, has three broad categories of requirements. The first is that the appropriate policy and legislative frameworks have been established, and these have been discussed in the evaluation of Outcome 3. The second is that adequate technical capacity exists within the agencies responsible for implementation of the Plan, and the capacity development activities implemented by the SIRMM Project to ensure this have been documented in the evaluation of Outcome 3. The third is that the appropriate management structures to oversee the implementation of the SIRM Plan have been established (see Section 4.2). Beyond this, and most importantly, Project Staff were committed to ensuring that the Project had tangible impacts on the ground which could be appreciated by the general public, rather than being merely satisfied that the Project met its reporting requirements. Many of the changes agreed upon during implementation of the Project (see Section 4.2; Adaptive Management of Project Activities) were driven by the desire to ensure that the Project would have as large a national impact as feasible under the prevailing time and financial constraints. In addition, the Project placed substantial emphasis on delivery of the Demonstration Projects since these were seen as the principal vehicles to garner stakeholder support and demonstrate positive national impact.

Given the above, the Terminal Evaluation recommends an Impact Rating of Significant (S) for this Project.

5 Conclusions and Recommendations

The SIRMM Project Document was signed in August 2007, with an expected Project duration of 4 years, but there was a considerable lag between Project Design and the onset of Project implementation. Its emphasis on an integrated management approach to island resources meant that SIRMM was a complex project, requiring, among many other components, both policy and institutional changes. Given this, it was realised from early in the project that a re-scheduling and modification of activities would be required, particularly since some activities were under budgeted and the full co-financing expected could not be realised. Adaptive Management would clearly be required to meet as high a proportion of Project Outcomes as feasible. The PMU and the PCC displayed both flexibility and commitment during Project implementation. It is estimated that about 75% of Project Outcomes were realised and this was achieved in a highly cost effective manner. There was a strong emphasis throughout Project implementation on ensuring that Project activities were consistent with national priorities, were relevant, and had tangible national impact. Sustainability of Project Outcomes will now depend on continued lobbying and advocacy to ensure that the required institutional, policy and legislative frameworks are approved and operationalized, and that innovative and strategic approaches to acquiring the financial resources required are aggressively pursued.

The following key recommendations emanate from this evaluation and are intended to contribute to the sustainability of Project Outcomes, as well as to add value to future projects.

- Project budgets should be re-visited to ensure adequacy for financing project activities if there a significant time lag between project design and project implementation.

- Adherence to the original project design and proposed activities should not be such as to prevent the flexibility required for an Adaptive Management approach in project implementation.

- Projects should seek to ensure, not only that indicators are monitored and reporting requirements are met, but that there is adequate focus on achieving tangible national impacts through the activities implemented.

- Continue the public awareness programme emphasising the benefits of a comprehensive and integrated approach to island resource management as a prerequisite for sustainable economic development, and build this into the work programme of an appropriate government agency.

- Support the efforts of community groups in Antigua and Barbuda to formally register and seek small grants to continue and expand project activities.

- Continue to advocate for Parliamentary approval of the necessary policy frameworks for supporting and implementing SIRM, and for the necessary supporting Regulations to be developed, approved and operationalised.

- Continue to advocate for the necessary changes in institutional arrangements required to effectively operationalize SIRM to be identified and implemented.

- To facilitate the required integrated approach to island resource management, institutionalise the PCC/PMC, with additional membership as required, as an effective multi-sectoral committee and support its merger with the National Coordination Mechanism.

- Aggressively support the establishment and operationalization of the Antigua and Barbuda Sustainable Island Resource Framework (SIRF) Fund, and support the activities identified to be supported under the Fund.

- Re-visit the requirements for effective operation of the Barbuda National Park, including advocating for the development of the proposed Trust Fund which is required for effective operation of the Park.

- Lobby to increase the number of hotels on the Northwest Coast participating in the Environmental Management System.

- Expand the number of connections to the Sewage Treatment Plant on the Northwest Coast and support the commissioning of the Plant.

- Support the further data collection required for the EIMAS, as well as its continuous updating and capacity expansion.

- Support the strengthening and effective operationalization of the Development Control Authority.

- Seek better dialogue between the UNDP and the Government of Antigua and Barbuda since this could reduce disbursement delays and enhance the efficiency of project implementation.

- UNDP and Project staff should collaboratively work to leverage funds from other sources when the funds provided by GEF and the co-financing available are inadequate to support all project activities required.

6 Lessons Learned

Important lessons learned from the implementation of the SIRMM Project in Antigua and Barbuda include:

- Project design and scheduling must allow a realistic project duration when deliverables include new policies and institutional changes that require Parliamentary approval.

- Adaptive Management that seeks consistency with national priorities and emphasises the achievement of tangible national impacts is required for successful project implementation. Project Managers need the flexibility for Adaptive Management to achieve project outcomes.

- Stakeholders, including the general public, the private sector and the political directorate, are more likely to appreciate tangible national impacts emerging from the project than to learn that the project is meeting its reporting requirements.

- To manage a project with a budget as large as SIRMM requires a dedicated accountant and a clearly identified financial management system, even if the accountant is hired by pooling resources from several projects.

- There needs to be a person dedicated to managing and documenting the information, knowledge and reports being developed by the project, so that these are readily retrievable and do not depend on the memories of persons who may be transient in the project.

- To achieve high quality Projects outputs and reports requires strong technical reviewers, but is a time-consuming task drawing from a limited pool of persons. Such reviewers need to be compensated to ensure their continued engagement.

- Project Managers and Project Coordinators who understand the local environment and culture in which the project is being implemented are essential for project success.

- Personal dedication and commitment of staff is critical for project success.

- An effective and engaged multi-sectoral Project Committee, supported by Technical Advisory Committees as required, can significantly contribute to project success, particularly if the right technical and policy mix of people serve on the Committee.

- Some project activities need to be sequentially implemented for maximum effectiveness, but this becomes difficult if time constraints demand simultaneous implementation.

- Government staff should not merely be seconded to execute and manage projects, but should have specific project contracts with clearly identified expectations. Persons serving on important Project Committees should be given fiscal incentives to do so, where feasible and appropriate.

- When international and regional consultants are hired to execute project activities, they should be paired with local/national consultants, since this ensures that consultant reports adequately

capture national/cultural priorities and that there is capacity building of nationals as consultants.

- Given that this was UNDP's first Full Sized Project in the region, it required a dedicated UNDP Project Manager to provide the level of oversight, support and guidance required, but one was never appointed.

- Persons can seldom afford to work as volunteers, no matter how philosophically committed, and financial strategies must be developed to engage their participation as an alternative livelihood.

- Appropriate framing of environmental and natural resource management as underpinning sustainable economic development is important, since the case for environmental management is often more difficult to make than the case for economic development.

- An informed, engaged and active public is important in garnering political support for project activities.

- Weekly updates to senior public servants and frequent presentations to Parliament can be very effective in garnering high level political support for project activities and requirements.

- Training in basic biological skills, such as taxonomy, is required for effectively executing biodiversity projects.

7 Annexes

ANNEX 1– List of Documents Reviewed by Evaluator

- Project Document – Demonstrating the Implementation of a Sustainable Island Resource Management Mechanism in a Small Island Developing State
- Auditors Reports for 2009 and 2010
- PIR for 2009 and 2010
- Project Inception Workshop Report
- Project Coordination Committee Minutes
- Project Management Committee Minutes
- Mid-Term Evaluation
- The Management Response to the MTE
- UNDP/GEF Guidance Policies on the Evaluation Process

ANNEX 2 - Schedule of Interviews

Terminal Evaluation / UNDP Monitoring and Evaluation Schedule

Date	Time	Issue	Location	Responsible parties
7th April	8:30am All day	Briefing with Project Manager and Project Coordinator Hon. Hilson Baptist-Minister of Agriculture, Lands, Housing and the Environment Permanent Secretary, Prime Minister's Office, UNDP Focal Point. **Mrs. Paula Fredericks-Hunte** Meeting with the Project Management Committee	Environment Division Ministry of Agriculture Environment Division Environment Division	Ruleta Camacho Amb. Diann Black-Layne
8thApril	9:30am All Day	Meeting with Demo Project Coordinators and Site Visits Dr. Linroy Christian: Northwest Coast – Tourism and Waste Water Ms. Tricia Lovell: Ridge to Reef; Wallings Forest Mr. Adriel Thibou: Body Ponds	Island-wide Antigua only	Ruleta Camacho
9th April	9:30am All Day	Group Consultation with Agencies involved in the implementation of activities. • Development Control Authority-**Fredrick Southwell (Chief Town and Country Planner)** • National Office of Disaster Services **-Mr. Philmore Mullin (Director)** • Nelsons Dockyard National Parks- **Dr. Brian Cooper (Environmental Unit)** • Barbuda National Parks**-Ogden Burton** • Surveys Division**-Mr Vernon Bird** Delamine please insert other agencies present, I misplaced my Sheet recording presence Meeting with Project Coordinator Update and debriefing with Project Manager	Environment Division Environment Division Environment Division	

ANNEX 3 – Questionnaire

Design of the Project

- Were there any changes to the logical framework and workplans during the implementation of the project? If yes, why? What were the changes? Did they then help to accomplish the Outcome?
- Were the project Outcomes as described in the project document in line with the final Outputs as produced under the project?
- In your opinion, was the method of implementation of the Project effective? If yes, examples. If no, how could it have been improved?
- Was the length of the project sufficient to achieve project outcomes as stated in the Project Document? If no, why not/what were the obstacles?
- Did the SIRMM Project support the national environment and sustainable development objectives of Antigua and Barbuda? Examples (develop/strengthen the legislation/programmes/national plans)
- What was the level of stakeholder ownership during implementation?
- In your opinion did the project take into account the national realities (presence or absence of institutional and policy framework) in its design and implementation?
- Were the outcomes relevant?

Financial Planning

- Were the GEF funds sufficient for the implementation of the project? If no, what was not achieved/could have been done better?
- Was the Government co-financing still possible give the economic situation in Antigua and Barbuda? If yes, evidence.
- Were the accounting and financial systems in place adequate for project management and the production of accurate and timely financial information?
- Outcome 3 speaks to the identification of suitable financial instruments and fiscal incentives and other sustainability mechanisms to support SIRMM, has this been achieved? If no, why? If yes, evidence.

Effectiveness

- Is this project a national priority? Why or Why not?
- Which NGOs were involved in the implementation of the project? What were their roles? Were they effective in their participation?
- How would you rate stakeholder participation in the project on a scale of 1-5, with 5 being the highest rating? If low, why and which stakeholder was responsible?

- What would you consider to be the greatest achievement of the project to date?
- What are the visible changes/impacts noticed as a result of the implementation of the project? Could these have been improved?
- How would you describe the general operational relationships between the various institutions and other stakeholders involved in the implementation of the project?
- Did these contribute to the overall effective achievement of Outcomes? Give examples – training/new lines of communication/better cooperation.
- The MTE suggested that there should be more dialogue and public awareness between end users and Government stakeholders through seminars, capacity strengthening exercises and policy forums set up by the project. Has there been any progress with this initiative?
- What was the area that you consider to need more input (human resources/finaicial/expertise) to be realized? (weakness of the project)
- What changes could have been made to the project in order to improve its efficiency/effectiveness?

Sustainability (Outcome 2)

- Has the Draft Environmental Management Legislation been enacted? If yes, when? If no, what is the estimated time remaining?
- Has the National Environmental Management Strategy been approved by Cabinet? Was the SIRMM Project involved in the process? (this was a recommendation of the MTE)
- Was the Sustainable Island Resource Management Zoning Plan developed?
- According to the Mid Term Evaluation the funding received was not sufficient to complete the Comparative Cost Benefit Analysis of SIRMM Zoning and Management Plan or the Advisory Brief for Commercial Resource and Livelihood Sustainability. Was any other source of funding forthcoming to have covered any part of these activities? If so, from what source? What was developed? Documentation needed.
- Is the Strategy and Contingency Plan to address Environmental Variability completed? Evidence (document). If not, why? What is needed to complete it? If yes, was it submitted to Government and adopted?
- In your opinion has the Outcomes of the project been integrated into the existing institutional/national framework?
- Has national capacity been developed in this area? Examples (training/ development of tools (manuals/modules)/workshops) If yes, where is it being engaged/used? At the institutional level/individual/policy level.
- The MTE recommended that there be training in economic valuation for all stakeholders and especially target policy makers. Has this been achieved? If no, are there any future plans to conduct this training?
- Are there any risks against the persistence (continuance of the Outcomes) as developed in the project? (Databases, Plans developed, Demonstration Projects continued and expanded)

Impact

- Is there a recognisable impact at the national level or the impact of the project? Is the public aware of the project/ is there community buy-in of the concept?
- How was information produced and disseminated by the project?
- To what extent were partnerships/linkages between institutions/organizations encouraged and supported?
- What was the level of efficiency of cooperation and collaboration among agencies/units/departments? What worked best?
- Has the project provided any opportunity for replication in other areas/scaling up/influencing relevant policy?
- Is the work of the Project Management Unit sustainable? (given the existing resources and staff responsibilities).

Demonstration Projects

- The MTE recommended that a series of project case studies be developed and documented including each of the demonstration projects, and include the overall project and any policy changes that occurred. Has this been achieved?
- In addition a budget should be allocated for the sharing of these lessons in various formats – case studies and policy briefs. Was this achieved?

Lessons Learned

- What are the key lessons learned during the implementation of the project?
    - Is there anything noteworthy/special/critical that was learned during project implementation this year that is important to share with other projects so they can avoid this mistake/make use of this opportunity?
    - What would you do differently if you were to begin the project again?
    - To what extent have UNDP GEF projects been relevant to national / local efforts to reduce poverty / enhance democratic governance? Please explain.

ANNEX 4 – Terminal Evaluation TERMS OF REFERENCE

The Report length should not exceed *60* pages in total (not including annexes).

I Opening page:

- Title of UNDP supported GEF financed project
- UNDP and GEF project ID#s.
- Evaluation time frame and date of evaluation report
- Region and countries included in the project
- GEF Operational Program/Strategic Program
- Implementing Partner and other project partners
- Evaluation team members
- Acknowledgements

Acronyms and Abbreviations
(See: UNDP Editorial Manual5)

1 Executive Summary

- Project Summary Table
- Project Description (brief)
- Evaluation Rating Table
- Summary of conclusions, recommendations and lessons

2 Introduction

- Purpose of the evaluation
- Scope & Methodology
- Structure of the evaluation report

3 Project description and development context

- Project start and duration
- Problems that the project sought to address
- Immediate and development objectives of the Project
- Baseline Indicators established
- Main stakeholders
- Expected Results

4 Findings
(In addition to a descriptive assessment, all criteria marked with (*) must be rated)

4.1 Project Design / Formulation

- Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
- Assumptions and Risks
- Lessons from other relevant projects (e.g., same focal area) incorporated into project design
- Planned stakeholder participation
- Replication approach
- UNDP comparative advantage
- Linkages between project and other interventions within the sector

- Management arrangements

4.2 Project Implementation

- Adaptive management (changes to the project design and project outputs during implementation)
- Partnership arrangements (with relevant stakeholders involved in the country/region)
- Feedback from M&E activities used for adaptive management
- Project Finance:
- Monitoring and evaluation: Design at entry and implementation (*)
- UNDP and Implementing Partner implementation / execution (*) coordination, and operational issues

4.3 Project Results

- Overall results (attainment of objectives) (*)
- Relevance(*)
- Effectiveness & Efficiency (*)
- Country ownership
- Mainstreaming
- Sustainability (*)
- Impact

5&6 Conclusions, Recommendations & Lessons

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives
- Best and worst practices in addressing issues relating to relevance, performance and success

7 Annexes

- ToR
- Itinerary
- List of persons interviewed
- Summary of field visits
- List of documents reviewed
- Evaluation Question Matrix
- Questionnaire used and summary of results
- Evaluation Consultant Agreement Form

ANNEX 5 – List of Reports Produced by SIRMM Project

Outcome	Document Title	Author
Outcome 1	Draft Report on Indicators and Baseline Assessment (SIRMM)	Dr. Janil Gore-Francis
	Indicators for the Assessment of the Impact of the SIRMM Project	Dr. Janil Gore Francis
	GPS/GIS Trainings in Support of Environmental Information Management Advisory System [EIMAS] in Antigua and Barbuda, March, 2013	Rebecca Boger Assistant Professor Department of Earth and Environmental Sciences Brooklyn College, 2900 Bedford Avenue, Brooklyn, NY 11210 718 – 951 – 5000 ext. 2159 Email: beckyboger@gmail.com
	The Geospatial Dimension of Sustainable Development-A Case for Investment in a National Infrastructure for Geospatial Information- September 7, 2009	Prepared by: GIS User Group
	Assessment and Mapping of Antigua and Barbuda's Ecosystem Resources • Antigua and Barbuda Data List • Antigua and Barbuda EMIAS methodology • Barbuda Natural Resource Mapping List • Natural Resource Baseline • Antigua and Barbuda Data Gap Analysis • Antigua and Barbuda EIMAS and Map Products-Thematic Maps • National Action Plan and Publicity Campaign • Long Term Monitoring Targets and Indicators • Final Project Report	
	Data capture report. UWI Undergraduate	Kyle Alexander and Rowmell

	Student Interns – Pilot Agency Capacity Building Exercise	Grosvenor Department of Geomatics Engineering and Land Management The University of West Indies
	Integrating GIS, GPS and Database: Temporal Variations in the Water Quality on the Northwest Coast of Antigua, W. I.	Jason Williams, Data Manager Environment Division
	Environmental Variability and Extreme Events Forecasting	Esal and Associates (2009)
	Victoria Park Botanical Gardens Management Plan	Author, 2013
Outcome 2	Sustainable Island Resource Management Zoning Plan for Antigua and Barbuda (including Redonda)	Genivar (Trinidad and Tobago) 2011
	State of the Country Report	Genivar (Trinidad and Tobago) 2010
	Draft Antigua and Barbuda National Agriculture Policy (ABNAP- 2010)	PCC Committee
	Methodology for the Preparation of Local Area Plans	Kevin Edwards, Shaun George, Delamine Andrew
Outcome 3	Review of institutional structure and mandates for SIRMM implementation	Philmore Hughes
	Sustainable Island Resource Framework Fund Brief	Diann Black Layne
	The Antigua and Barbuda Environmental Protection and Management Bill 2013	Judy Daniel
	Regulations for the Antigua and Barbuda Physical Planning Act 2003	Judy Daniel
	Regulations for Marine Protect Areas	Judy Daniel
	The Public Health (Wastewater Management) Regulations	Mykl Fuller
Outcome 4	Body Ponds Watershed Land Use Zoning and	Lucia Mings (Environment Tourism

Body Ponds Demonstration Project	Local Area Management Plan	Consulting Ltd.) 2010
	Sustainable Land Management Practices in Body Ponds Watershed	Esal and Associates (2009)
	Review and Recommendations on Administrative and Legislative Requirements for the Integrated Watershed Management	Esal and Associates (2009)
	Water Quality Guidelines for Watershed	Esal and Associates (2008)
	Ecological Characterization of the Body Ponds Watershed, Antigua	Kevel C Lindsay, Jean-Pierre Bacle (2009)
	Assessment of Rehabilitation Options (Body Ponds Watershed Assessment)	Brian Cooper (2008)
	Body Ponds Site Assessment and Demo Site Indicators Report	Lucia Mings (2010)
	Proposed Long-term Monitoring System for the BPW and Related areas	Lucia Mings (2010)
	Cost Benefit Analysis for the Demonstration Study Area, Body Ponds Watershed	Lucia Mings (2010)
	BPW Stakeholder Involvement Report	Lucia Mings (2009)
	Environmental and Social Impact Assessment for the Body Ponds Watershed	Lucia Mings (2010)
	Qualitative Assessment of Sediment Sources and Guidelines for the Design of a Runoff and Sediment Yield Monitoring Strategy for Body Ponds Watershed	Dr. Carlos E Ramos Scharron (2009) Island Resources Foundation
	Drainage Considerations for Body Ponds Watershed-Sustainable Farming	ESAL and GARDC
	Environmental Impact Statement-For Development Work Within the Body Ponds Demonstration Site	ESAL
	Report on Organic Farming Workshop	Aljoscha Wothke Eco Project Ltd. Springfield Avenue, Valsayn, Trinidad, Trinidad & Tobago W.I.

		Marcus Braun Eco Livity Jamaica
	Alternative Agriculture/Sustainable Farming Techniques for the Body Ponds Watershed	The Gilbert Agricultural and Rural Development Centre (GARDC)
Ridge to Reef Demonstration Project	Terrestrial Field Characterizations and Assessments for the Assessment and Mapping of the South West Region of Antigua for the Ridge to Reef Demonstration Project of the SIRMM	Island Resources Foundation Kevel C Lindsay, Brian Cooper etal. (2011)
	Marine Biodiversity and Natural Resource Assessment for the Assessment and Mapping of the South West Region of Antigua for the Ridge to Reef Demonstration Project of the SIRMM	Island Resources Foundation Kevel C Lindsay et. al. (2011)
	Literature Review for the Assessment and Mapping of the South West Region of Antigua for the Ridge to Reef Demonstration Project of the SIRMM	Island Resources Foundation Kevel C Lindsay et. al. (2011)
	Indicators for Ridge to Reef	Tricia Lovell
	Stakeholder Analysis and Co-management Feasibility	ESAL Esal and Associates
	Ridge to Reef Brochure	Mykl Clovis
	Ridge to Reef Public Awareness Plan	Mykl Clovis
	Ridge to Reef Posters	Mykl Clovis
	SIRMM Ridge 2 Reef Educators Resource	Mykl Clovis
	Proposal for the Co-Management of the Wallings Visitor Centre, Wallings Reservoir, Fig Tree Drive, St. Mary's, Antigua	Adriel Thibou, Tricia Lovell and Ruleta Camacho.
Ridge To Reef (Co-financing	Wallings Forest Conservation Area Management Volume 1: Current Conditions and	Dr. Arthur Mitchell

from OECS)	Management Prescriptions Volume 2: Annex	
Ridge to Reef and Codrington Lagoon	Biodiversity Inventory and Status Assessment Report for the Proposed Wallings Forest Protected Area (Antigua) and the Codrington Lagoon National Park (Barbuda	Island Resources Foundation
Codrington Lagoon – Barbuda National Park Demonstration Project	Codrington Lagoon National Park Management Plan 2009-2019	Allen Putney 2008
	Management of Biodiversity Management and Conservation Issues: Codrington Lagoon National Park	Kevel Lindsay and Brian Cooper (2009)
	Preparation and Implementation of a Public Awareness Strategy for the Codrington Lagoon National Park	Search Antigua Inc. 2008
	Codrington Lagoon National Park Manual of Biodiversity Management and Conservation	Kevel C. Lindsay & Brian Cooper, PhD. 2009
	Codrington Lagoon National Park Infrastructural Development Plan	State of the Art Development Co. Prepared by Leroy Gore and Freeston Thomas 2009
	Codrington Lagoon National Park Financial Sustainability Plan	Allen Putney 2008
	Long-Term Monitoring Programme: Codrington Lagoon National Park	Environment Tourism Consulting Lucia Mings (2009)
	Sustainable Livelihoods Plan for the Codrington Lagoon National Park	Effinah Norbert 2009
Northwest Coast – Tourism and Wastewater Demonstration Project	Development of a Wastewater Management Strategy for St. John's with Specific Focus on the Northwest Coast Tourism Zone	Caribbean Water Treatment Ltd. Lower Dickenson Bay Street, P.O. Box W219, St. John's, ANTIGUA Tel: (268) 462-6565 Fax: (268) 460-9929 Email: cwt@candw.ag

	Documented Strategies For Improvement Of Water And Waste Water Control Systems	HARCON, November 2011
	Development Of a Costing and Implementation Plan for the Proposed Natural Treatment System	HARCON January 2012
	Report on Recommendations to Refine Policies and Legislation with Respect to Waste Water Re-Use	HARCON April 2012
	The Environmental Information Management Advisory System (EIMAS) Component Of The Antigua Wastewater Project.	HARCON April 2012
	Report on Recommendations to Refine Policies and Legislation with Respect to Waste Water Reuse	HARCON April 2012
	Proposed Wastewater Management System for Hotels Under The SIRMM Demonstration Four Project Final Report And Implementation Plan	Mykl Clovis Fuller, Environmental Consulting in association with Caribbean Water Treatment Ltd. St. John's, Antigua. Aptil 2013
	Draft Regulations Waste Water Management	Mykl Clovis Fuller, Environmental Consulting in association with Caribbean Water Treatment Ltd. St. John's, Antigua. April 2013

ANNEX 6 – List of Workshops Organised and Conducted with Support of the SIRMM Project

ANNEX 7 – Members of Project Committees and Project Management Unit

Project Management Unit

- Project Manager - Mrs. Dianne Black Layne
- Project Coordinator – Ms. Ruleta Camacho
- Technical Assistant - Ms. Delamine Andrew
- EIMAS Data Manager – Mr. Jason Williams
- Ms. Monique Miller – Administrative Assistant
- Mr. Adriel Thibou – Project Coordinator for the Body Ponds Demonstration Project
- Dr. Linroy Christian – Project Coordinator for the Northwest Coast – Tourism and Wastewater Demonstration Project
- Ms. Tricia Lovell – Project Coordinator for the Ridge to Reef Demonstration Project
- Ms. Patricia Black – Senior Administrative Assistant-Accounting
- Please add anyone I am missing

Project Coordination Committee/Project Management Committee

- Environment Division
- GARDC
- EAG
- DCA
- NODS
- Ministry of Finance
- Forestry Unit
- Ministry of Tourism
- Fisheries Division
- Central Board of Health
- Department of Analytical Services
- Barbuda Council
- Lands Division
- Survey Division
- NBSAP Team Leader
- Biosafety Project - Plant Protection Unit
- IWCAM Team Member
- Extension Officer – Ministry of Agriculture
- AUPU
- National Solid Waste Management Authority
- Nature Conservancy

ANNEX 8 - List of Equipment Bought by SIRMM Project

Statement of Assets and Equipment

as at 31st March 2014

UNDP Country Office: Barbados		
Project title: Demonstrating the Development and Implementation of a Sustainable Island Resource Management Mechanism		
Award ID:	**45493**	
Project ID:	**53747**	

For asset value of a minimum of 1000$

ACQUISITION DATE	ITEM DESCRIPTION (make and model)	PROJECT No.	FUND	CONDITION	RESPONS. PERSON/entity	US$ VALUE	EC$ VALUE
23-Sep-13	Cannon iRL74559	53747	GEF	Good	Office	$1,586.68	
30-Sep-13	File Cabinet (Black)	53747	GEF	Good	Environment Division	$ 10,801.94	$ 29,347.80
30-Sep-13	Steel Shelves	53747	GEF	Good	Environment Division	$ 1,440.25	$ 3,913.02
30-Sep-13	Office Chairs	53747	GEF	Good	Environment Division	$ 13,054.66	$ 35,468.20
30-Sep-13	Guess Chairs	53747	GEF	Good	Environment Division	$ 11,830.73	$ 32,142.90
3-March-14	Desk	53747	GEF	Good	Environment Division	$ 511.29	$ 1,389.13
9-Apr-14	Conference Tables	53747	GEF	Good	Environment Division	$ 1,569.07	$ 4,263.00
1-Apr-14	Conference Tables	53747	GEF	Good	Environment Division	$ 1,804.43	$ 4,902.45
27-Apr-14	Alarm System	53747	GEF	Good	Environment Division	$ 3,460.85	$ 9,402.77
27-Jan-14	HP Proliant	53747	GEF	Good	Environment Division	$ 7,066.88	$ 19,200.00
27-Jan-14	HP Midline Hard Drive	53747	GEF	Good	Environment Division	$ 2,301.15	$ 6,252.00
27-Jan-14	Mic Windows	53747	GEF	Good	Environment Division	$ 1,484.04	$ 4,032.00
						$56,911.97	**$150,313.27**

Statement of Assets and Equipment

as at 31st March 2014

UNDP Country Office: Barbados		
Project title: Demonstrating the Development and Implementation of a Sustainable Island Resource Management Mechanism		
Award ID:	**45493**	
Project ID:	**53747**	

For asset value of a minimum of 1000$ per item

ACQUISITION DATE	ITEM DESCRIPTION (make and model)	PROJECT No.	FUND	CONDITION	ITEM LOCATION	US$ VALUE	EC$ VALUE
30-Sep-13	Easel	53747	GEF	Good	Environment Division	$ 272.07	$ 739.19
30-Sep-13	Utility Cart	53747	GEF	Good	Environment Division	$ 624.12	$ 1,695.66
30-Sep-13	Step Ladder	53747	GEF	Good	Environment Division	$ 60.94	$ 165.57
30-Sep-13	Wall Clock	53747	GEF	Good	Environment Division	$ 36.81	$ 100.00
30-Sep-13	Projector Screen	53747	GEF	Good	Environment Division	$ 272.05	$ 739.13
30-Sep-13	Basket Ball Hoop	53747	GEF	Good	Environment Division	$ 944.17	$ 2,565.22
30-Sep-13	Shredder	53747	GEF	Good	Environment Division	$ 368.07	$ 1,000.00
30-Sep-13	Craft Box	53747	GEF	Good	Environment Division	$ 259.27	$ 704.40
30-Sep-13	Flexi Cart	53747	GEF	Good	Environment Division	$ 208.04	$ 565.22
30-Sep-13	White Board	53747	GEF	Good	Environment Division	$ 232.08	$ 630.55
30-Sep-13	Labeler	53747	GEF	Good	Environment Division	$ 94.42	$ 256.52
30-Sep-13	Industrial Mop bucket	53747	GEF	Good	Environment Division	$ 130.01	$ 353.22
27-Jan-14	Mic Windows 2012 Cals	53747	GEF	Good	Environment Division	$ 360.71	$ 980.00
28-Mar-14	Writing Desk	53747	GEF	Good	Environment Division	$ 938.57	$ 2,550.00
28-Mar-14	16X20 Picture frames	53747	GEF	Good	Environment Division	$ 66.25	$ 180.00
28-Mar-14	Sliding glass Cabinet	53747	GEF	Good	Environment Division	$ 224.15	$ 609.00
28-Mar-14	Pigeon Hole Cabinet	53747	GEF	Good	Environment Division	$ 224.15	$ 609.00
11-Mar-14	Glass Top table	53747	GEF	Good	Environment Division	$ 672.46	$ 1,827.00
11-Mar-14	Glass Top table	53747	GEF	Good	Environment Division	$ 672.46	$ 1,827.00
11-Mar-14	Hurcules Credenza	53747	GEF	Good	Environment Division	$ 304.02	$ 826.00
11-Mar-14	Hurcules Credenza	53747	GEF	Good	Environment Division	$ 304.02	$ 826.00
						$ 7,268.83	**$ 19,748.68**

List of Equipment Bought for Demonstration Projects

ANNEX 9 – STATUS OF SIRM ACTIVITIES AND FINANCES (July 2014)

STATUS OF SIRM ACTIVITIES AND FINANCES

Activity as per original Log Frame	Total Budget	**Total Sending 2008**	**Total Sending 2009**	**Total Sending 2010**	**Total Spent 2011**	**Total Spent 2012**	**Total Spent 2013**	**Total Spent 2014**	**Total spent to date**	**Status of the Activity**
1.1 Environmental Information Management and Advisory System (EIMAS) and mechanism for data for use in planning and decision-making established.(completion 4th Quarter 09)	$53,770.00	$20,137.00	$14,527.00	$1,527.00	$12,423.00	$5,156.00	$-	$-	$53,770.00	Completed
1.2 Island ecosystem resources, function and usage patterns assessed and mapped (completion 2nd quarter 2110)	$84,700.00	$4,500.00	$45,463.00	$34,732.00	$-	$-	$-	$-	$84,695.00	Completed
1.3 Modeling of island ecosystem resources and identification of key resources required for sustaining island ecosystem integrity and functionality (3rd Quarter 2012)	$85,960.00	$10,000.00	$55,105.00	$210.00	$4,200.00	$3,704.00	$219.58	$777.80	$74,216.38	Completed
1.4 Environmental variability and extreme events forecasting(completion 3rd Quarter 2009)	$25,000.00	$-	$16,450.00	$20,178.00	$-	$-	$-	$-	$36,628.00	Completed
1.5 Long term monitoring programme for island ecosystem status and function established (completion 3rd quarter 2010)	$69,600.00	$10,000.00	$2,667.00	$10,089.00	$23,159.00	$16,775.00	$1,963.75	$4,005.00	$68,658.75	Completed
1.6 Targeted								$-	$98,465.44	Completed

Awareness and Sensitization(ungoing until 2012)	$98,481.00	$20,409.00	$7,057.00	$23,036.00	$13,554.00	$15,955.00	$18,454.44			
2.1 Sustainable Island Resource Management Zoning Plan (SIRMZP) Prepared	$99,000.00	$2,000.00	$33,452.00	$24,654.00	$38,833.00	$-	$-	$-	$98,939.00	Completed
2.2 Comparative Cost-Benefit Analysis of SIRM Zoning and Management Plan	$33,000.00	$-	$3,823.00	$-	$19,900.00	$-	$9,277.00	$-	$33,000.00	Elements included in the SIRMZP
2.3 Advisory Brief for Commercial Resource and Livelihood Sustainability	$21,000.00	$500.00	$5,587.00	$-	$-	$-	$1,989.63	$12,955.60	$21,032.23	Elements included in the SIRMZP
2.4 Strategy and Contingency Plan to address Environmental Variability	$20,500.00	$-	$-	$-	$-	$10,161.00	$-	$3,482.50	$13,643.50	Elements included in the SIRMZP Documents prepared by NODS
2.5 SIRM Plan submitted to government and adopted	$31,420.00	$-	$-	$-	$21,994.00	$9,426.00	$-	$-	$31,420.00	Completed
3.1 Review of the policy, legislation, and regulations related to SIRM across the different sectors	$31,000.00	$3,000.00	$2,801.00	$-	$-	$23,060.00	$2,020.42	$-	$30,881.42	Completed
3.2 Review of institutional structures & mandates for SIRM implementation	$29,420.00	$7,000.00	$9,359.00	$-	$-	$7,918.00	$5,407.21	$-	$29,684.21	Completed
3.3 Reforms recommended for the streamlining of policy, legislation and institutional arrangements	$23,000.00	$-	$-	$-	$-	$8,915.00	$16,103.26	$-	$25,018.26	Completed
3.4 Identification of suitable financial instruments and fiscal incentives, and other sustainability	$72,279.00	$-	$-	$-	$-	$3,764.00	$80,018.77	$-	$83,782.77	Completed

mechanisms to support SIRM										
4.1 Project Coordination Unit and NCM for SIRM(continuous)	$179,700.00	$55,423.00	$57,919.00	$48,187.00	$15,667.00	$694.00	$138.28	$1,656.10	$179,684.38	Ongoing
4.2 Inter-sectoral Training and Capacity Building Programme for SIRM	$398,000.00	$46,000.00	$96,473.00	$62,920.00	$135,348.00	$56,139.00	$(2,606.09)	$2,642.00	$396,915.91	Completed
4.3 Implementation of demonstrations of integrated ecosystem management at sites identified as Hotspots or Sensitive Areas	$-	$-	$-	$-	$-	$-	$-	$-	$-	
4.3.1 Demonstration 1. Rehabilitation of the Body Ponds Watershed	$-	$-	$-	$-	$-	$-	$-	$-	$-	
A-Development of a co-management strategy for Body Ponds Watershed	$59,400.00	$43,915.00	$7,262.00	$8,223.00	$-	$-	$-	$-	$59,400.00	Completed
B-Management decisions are supported by accurate and updated information	$167,070.00	$76,527.00	$10,645.00	$35,707.00	$-	$-	$-	$-	$122,879.00	Completed
C-Land and watershed restoration approaches and techniques as a management strategy	$28,350.00	$-	$58,322.00	$14,219.00	$-	$-	$-	$-	$72,541.00	Completed
D-Implementation of sustainable land management practices in Body Ponds watershed	$297,600.00	$49,215.00	$3,061.00	$32,062.00	$37,921.00	$35,749.00	$110,851.36	$4,755.20	$273,614.56	Completed
E-Development of financial sustainability mechanisms	$21,900.00	$-	$-	$574.00	$-	$-	$20,768.93	$-	$21,342.93	Postponed

4.3.2 Integrated "ridges to reef" management of the SW coast of Antigua	$-	$-	$-	$-	$-	$-	$-	$-	$-	
A. SW regional co-management authority identified and established	$40,800.00	$-	$14,761.00	$29,899.00	$2,807.00	$-	$-	$-	$47,467.00	Completed
B: Participatory assessment and mapping of watershed	$99,200.00	$-	$-	$46,373.00	$46,075.00	$-	$-	$-	$92,448.00	Completed
Training and capacity building for management	$17,700.00	$-	$-	$4,038.00	$8,178.00	$4,750.00	$-	$135.90	$17,101.90	Completed
D: Carrying capacity study	$120,700.00	$-	$-	$8,244.00	$13,496.00	$24,612.00	$58,998.96	$16,153.30	$121,504.26	Completed
E. Realignment of legislation and policy for effective zoning and management of the southwest watershed area	$15,700.00	$-	$-	$-	$-	$-	$10,895.38	$4,742.70	$15,638.08	Completed
4. 3. 3 Integrated Management of Codrington Lagoon and Planning the Sustainable Development Waterfront	$-	$-	$-	$-	$-	$-	$-	$-	$-	
A. Management and sustainability of the Codrington Lagoon	$72,380.00	$17,153.00	$16,435.00	$8,384.00	$1,224.00	$-	$-	$-	$43,196.00	Completed
B. Assessment and mapping of resources	$41,590.00	$-	$56,548.00	$15,987.00	$-	$-	$-	$-	$72,535.00	Completed
C. Co-management scheme strengthened through installation of requisite infrastructure	$52,910.00	$-	$2,863.00	$42,249.00	$6,038.00	$-	$-	$-	$51,150.00	Completed
D. Park infrastructure and capacity support	$129,800.00	$12,033.00	$68,767.00	$47,519.00	$1,481.00	$-	$-	$-	$129,800.00	Completed
4.3.4 Promoting best	$-	$-	$-	$-	$-	$-	$-	$-	$-	

practices in waste water disposal water conservation and re-use in the Northwest tourism zone Antigua										
A: Establishment of management structure for self-regulation of tourism industry	$66,150.00	$-	$33,970.00	$8,382.00	$-	$23,724.00	$-	$-	$66,076.00	Completed
B: Adoption of Environmental Management Systems and incentives by tourism industry	$131,500.00	$-	$-	$44,888.00	$68,177.00	$18,155.00	$-	$-	$131,220.00	Completed
C: Financial and economic instruments for regulation of wastewater disposal, water resource conservation and watershed management	$79,540.00	$-	$-	$-	$-	$35,146.00	$50,700.02	$1,699.90	$87,545.92	Completed
4.4 Project Monitoring and Evaluation	$93,580.00	$5,000.00	$2,778.00	$-	$24,176.00	$20,553.00	$44.44	$-	$52,551.44	Ongoing
4.5 Capture of Lessons and Best Practices	$104,230.00	$-	$-	$-	$13,494.00	$33,674.00	$4,281.15	$-	$51,449.15	Ongoing
Totals	$2,995,930.00	**$382,812.00**	**$626,094.00**	**$572,282.00**	$508,129.00	**$358,030.00**	$389,526.48	$53,006.10	$2,889,879.58	

ANNEX 10 – GOVERNMENT FINANCING

IN EC$									
	In KIND					CASH			
YEAR	**2010**	**2009**	**2008**	**2007**		**2010**	**2009**	**2008**	**2007**
Agency									
Environment	$3,382,920.00			$3,942,417.00					
Fisheries		$429,440.00	$317,979.00	$118,545.00					
DCA	$86,829.00	$216,276.00	$200,888.00	$244,827.00					
NODS									
Survey Division						569,000.00			
ZARAGOZA							143100	531900	
TOTAL	$3,469,749.00	$645,716.00	$518,867.00	$4,305,789.00	$0.00	$569,000.00	$143,100.00	$531,900.00	$0.00

CO- FINANCING

Co-financing Type/Source	**IA own Financing (US$ in thousands)**		**Government (US$ in thousands)**		**Other* (US$ in thousands)**		**Total (US$ in thousands)**		**Total Disbursement (US$ in thousands)**	
	Planned	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**
Grants	**470,000**	**675,000 (ZARAGOZA) 250,000(OECS) 300,000(USAID)**	**1,235,000**	**569,000 1,296,296.00 (McKinnons)**	**325,000 (Private sector)**		**2,030,000**	**1,314,23600**		
Loans/Concessional (compared to market rate)										
Credits										
Equity investments										
In-kind support	**80,300**		**2,054,100**	$3,764,718.	**538,900 (private sector)**		**2,673,300**	**3,764,718.00**		
Other (*)										
Totals	**550,300**	**1,225,000.00**	**3,214,100**	**5,630,014.00**	**863,900**		**4,628,300**	**3,764,718.00**		