

Document of
The World Bank

Report No: ICR00004092

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-10220)

ON A

GRANT FROM THE GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF US\$8.75 MILLION

TO THE

THE NATURE CONSERVANCY

FOR THE BENEFIT OF

ANTIGUA AND BARBUDA, GRENADA, SAINT KITTS AND NEVIS, SAINT LUCIA, AND SAINT
VINCENT AND THE GRENADINES

FOR A

SUSTAINABLE FINANCING AND MANAGEMENT OF EASTERN CARIBBEAN MARINE
ECOSYSTEM PROJECT

June 26, 2017

Environment and Natural Resources Global Practice
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective June 26, 2017)

Currency Unit = Eastern Caribbean Dollar (XCD)
US\$1.00 = XCD2.7

FISCAL YEAR
January 1-December 31

ABBREVIATIONS AND ACRONYMS

BIOFIN	Biodiversity Financing Initiative
BMUB	Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (Germany)
CaMPAM	Caribbean Protected Areas Managers
CBD	Convention on Biological Diversity
CBF	Caribbean Biodiversity Fund
CCI	Caribbean Challenge Initiative
COP	Conference of the Parties
CRFM	Caribbean Regional Fisheries Mechanism
DRM	Disaster Risk Management
EC	Eastern Caribbean
ECDSS	Eastern Caribbean Decision Support System
ECMMAN	Eastern Caribbean Marine Managed Areas Network
EMF	Environmental Management Framework
EOP	End-of-Project
FM	Financial Management
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEO	Global Environmental Objective
GIS	Geographic Information System
ICR	Implementation Completion and Results Report
IEG	Independent Evaluation Group
IFR	Interim Financial Report
IO	Intermediate Outcome
ISR	Implementation Status Results Report
KfW	German Development Bank
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
METT	Management Effectiveness Tracking Tool
MMA	Marine Managed Area
MPA	Marine Protected Area
NCTF	National Conservation Trust Fund (also NPATF)
NGO	Nongovernmental Organization
NIE	National Implementation Entity
NPATF	National Protected Area Trust Fund (also NCTF)
NPC	National Project Coordinator
OECS	Organisation of Eastern Caribbean States
PA	Protected Area

PAD	Project Appraisal Document
PDO	Project Development Objective
RedLAC	Latin American and Caribbean Network of Environmental Funds
SDAP	Sustainable Development Action Plan
SIDS	Small Island Developing States
SIRF	Sustainable Island Resources Fund (Antigua & Barbuda)
TEEB	The Economics of Ecosystems and Biodiversity
TNC	The Nature Conservancy
UAS	Unmanned Aircraft System
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WBG	World Bank Group
WCCB MPA	Woburn Clarke's Court Bay Marine Protected Area
WET	Water Expert Team
WIMT	Windward Islands Marine Trail
WINDREF	Windward Islands Research
WRI	World Resources Institute Research and Education Foundation
WTP	Willingness to Pay
WWF	World Wildlife Fund

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ICR Team Leader: Nyaneba E. Nkrumah

**The Nature Conservancy
and Management of Eastern Caribbean Marine Ecosystem Project**

CONTENTS

Data Sheet

- A. Basic Information
- B. Key Dates
- C. Ratings Summary
- D. Sector and Theme Codes
- E. Bank Staff
- F. Results Framework Analysis
- G. Ratings of Project Performance in ISRs
- H. Restructuring
- I. Disbursement Graph

1. Project Context, Global Environment Objectives and Design	1
2. Key Factors Affecting Implementation and Outcomes	5
3. Assessment of Outcomes	12
4. Assessment of Risk to Development Outcome	21
5. Assessment of Bank and Borrower Performance	22
6. Lessons Learned	25
7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners	27
Annex 1. Project Costs and Financing	28
Annex 2. Outputs by Component	30
Annex 3. Economic and Financial Analysis	39
Annex 4. Bank Lending and Implementation Support/Supervision Processes	48
Annex 5. Beneficiary Survey Results	50
Annex 6. Stakeholder Workshop Report and Results	51
Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR	52
Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders	55
Annex 9. List of Supporting Documents	56

MAP

A. Basic Information			
Country:	OECS Countries	Project Name:	Sustainable Financing & Management of Eastern Caribbean Marine Ecosystem Project
Project ID:	P103470	L/C/TF Number(s):	TF-10220
ICR Date:	06/26/2017	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	REGIONAL: Antigua and Barbuda, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines
Original Total Commitment:	USD 8.75M	Disbursed Amount:	USD 8.74M
Revised Amount:	USD 8.74M		
Environmental Category:		Global Focal Area: B	
Implementing Agencies: The Nature Conservancy (TNC)			
Cofinanciers and Other External Partners: German Development Bank (KFW) United Nations Environmental Programme (UNEP)			

B. Key Dates				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	07/09/2009	Effectiveness:	11/18/2011	11/18/2011
Appraisal:	02/16/2011	Restructuring(s):		03/27/2014
Approval:	08/04/2011	Mid-term Review:	09/15/2014	09/16/2014
		Closing:	12/31/2016	12/31/2016

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Moderately Satisfactory
Risk to Global Environment Outcome	Moderate
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance			
Bank	Ratings	Borrower	Ratings

Quality at Entry:	Moderately Satisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Satisfactory	Implementing Agency/Agencies:	Moderately Satisfactory
Overall Bank Performance:	Moderately Satisfactory	Overall Borrower Performance:	Moderately Satisfactory

C.3 Quality at Entry and Implementation Performance Indicators

Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
GEO rating before Closing/Inactive status	Moderately Satisfactory		

D. Sector and Theme Codes

	Original	Actual
Sector Code (as % of total Bank financing)		

General Public Administration	40%	40%
General Finance Sector	40%	50%
General agriculture, fishing and forestry sector	10%	10%
Vocational Training	10%	
Theme Code (as % of total Bank financing)		
Biodiversity	40%	40%
Environmental policies and institutions	20%	20%
Climate Change	20%	20%
Other environment and natural resources management	20%	20%

E. Bank Staff

Positions	At ICR	At Approval
Vice President:	Jorge Familiar Calderon	Pamela Cox
Country Director:	Tahseen Sayed Khan	Francoise Clottes
Acting Practice Manager/Manager:	Paul Jonathan Martin	Laura Tuck
Project Team Leader:	Nyaneba E. Nkrumah	Dinesh Aryal
ICR Team Leader:	Nyaneba E. Nkrumah	
ICR Primary Author:	John Redwood	

F. Results Framework Analysis

Global Environment Objectives (GEO) and Key Indicators(as approved)

To contribute to enhancing the long-term sustainability of Protected Area Networks in the Participating Countries by: (i) establishing sustainable financing mechanisms; (ii) strengthening of Marine Protected Area (MPA) networks; and (iii) deploying a regional monitoring and information system for Protected Area networks.

Formally Revised Global Environment Objectives (as approved by original approving authority) and Key Indicators and reasons/justifications

The GEO was not revised.

(a) GEO Indicator(s)

The *Formally Revised Target Values* reflect the modifications undertaken for indicators during project restructuring.

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values (Restructured)	Actual Value Achieved at Completion or Target Years
Indicator 1 :	The Caribbean Biodiversity Fund (CBF) is operational with a Board, a Secretariat, an Asset Manager, a work program and has an endowment of US\$15 million for Participating Countries to generate income for Protected Areas (PAs) management.			
Value (quantitative or Qualitative)	No	The CBF is established, capitalized and fully operational		The CBF is legally established (09/2012) and operational (2014) and has an endowment of US\$ 32 million which has generated by the end of the Project, US\$2.4 million in income for the Participating Countries. Data was collected by the Asset Manager and CBF and shared in reports with the Board, TNC and the WBG.
Date achieved	08/04/2011	12/31/2016		12/31/2016
Comments (incl. % achievement)	Achieved. This indicator contributes to the achievement of the overall GEO as “enhancing the long-term sustainability of PA Networks in the Participating Countries” and GEO (i), establishing sustainable financing mechanisms. The CBF, which is the sustainable financing mechanism at the regional level is fully operational with a Board,			

	a Secretariat, an Asset Manager and a work program. It is therefore fully operational. The endowment amount has been surpassed and is US\$34.2 million and the fund continues to generate income for the countries. The endowment fund is sustainable because the funds are invested in stocks, bonds and other assets that, during the project years, have generated interest at a rate of between 7-8%. Some interest is likely to continue to be generated.			
Indicator 2 :	The National Protected Area Trust Funds (NPATFs) provide at least US\$ 1.5 million per year in total to the Participating Countries.			
Value (quantitative or Qualitative)	0	US\$1.5 million	The national level trust funds (NPATFs) provide recurrent financing for at least 3 of the 5 participating countries	0
Date achieved	08/04/2011	12/31/2016	12/31/2016	12/31/2016
Comments (incl. % achievement)	Not Achieved. NPATFs have not provided financing according to the original or restructured targets because the CBF has not transferred funds to them due to Project delays in the set up and operationalization of NPATFs. Although the NPATFs have been set up and are largely operational, fund transfer has not occurred. However, 2 NPATFs (Antigua and Barbuda and St Lucia) have signed agreements with the CBF (June 2017) (and 2 more by the end of 2017) triggering the release of funds. The fifth country is still likely to achieve this by 2018.			
Indicator 3 :	At least five new Marine Protected Areas (MPAs) are gazetted to increase the total area under MPA management, and the representativeness and resilience of the MPA network(s) in the region.			
Value (quantitative or Qualitative)		At least 5 additional MPAs are gazetted	The indicator and its target were dropped during restructuring	The indicator and its target were dropped during restructuring
Date achieved	08/04/2011	12/31/2016	12/31/2016	12/31/2016
Comments (incl. % achievement)	The indicator was dropped at restructuring (3/27/2014) at which time only 0.12 percent of the grant had been disbursed and therefore there had been no implementation of this activity. Some participating countries preferred to focus on consolidating their existing MPAs instead of on the gazettement of new MPAs.			
Indicator 4 :	At least two demonstration sites are established to generate useful MPA management information and lessons for other Participating Countries and for increased dissemination to MPA managers in the Caribbean region.			

Value (quantitative or Qualitative)	0	2		2
Date achieved	08/04/2011	12/31/2016		12/31/2016
Comments (incl. % achievement)	Fully Achieved (100%). This indicator contributes to the achievement of the GEO (ii). The demonstration sites were established in Grenada and in Antigua and Barbuda and publications have been generated and disseminated. In addition, seminars and workshops have been attended by global PA managers in the Caribbean and the region. The information is clearly useful to Government, PA managers and the University. The information on the drone activities is to be submitted for publication in a journal to ensure that lessons are shared widely and the water pollution demonstrations are to be used by Government and PA managers to help clean up the MPA.			
Indicator 5 :	A region-wide, open access, web-based monitoring system for effective PA management is operational and the outputs are available to natural resources managers at the national and regional levels.			
Value (quantitative or Qualitative)	Various databases exist but not a single one with all relevant indicators	User friendly PA data and reports are available for natural resource managers		Regional monitoring system is fully operational and user friendly data and reports available for natural resource managers. Data generated through the web based system and by TNC.
Date achieved	04/08/2011	12/31/2016		12/31/2016
Comments (incl. % achievement)	Fully Achieved (100%). This indicator contributes to the achievement of the GEO (iii). The region-wide, open access web-based monitoring system for PA management, CaribNode, a website with open access, was launched in 2014 and has generated reports (2016) that have been used by national and regional PA managers and other stakeholders.			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	The CBF is established with a governance structure and operating rules.			
Value (quantitative or Qualitative)	The CBF not established	The CBF is established along with a Secretariat, an Asset		The CBF was legally established and

		Manager and operating rules and by-laws		registered in the UK in 2012 and fully operational at the beginning of 2014 with a Board, Secretariat, an Asset Manager, operating rules, by-laws, capitalization plans and a CEO. Data furnished from CBF reports, attendance at Board meetings, TNC quarterly reports.
Date achieved	08/04/2011	12/31/2013		12/31/2016
Comments (incl. % achievement)	Fully Achieved (100%). The CBF was established with an active Board, an Asset Manager, operating rules, by-laws, capitalization plans and a CEO.			
Indicator 2 :	The CBF is generating investment income for disbursement to NPATFs			
Value (quantitative or Qualitative)	0	0.25 million (PAD)		2.4 million
Date achieved	08/04/2011	12/31/2014		12/31/2016
Comments (incl. % achievement)	Fully Achieved. An investment income of US\$2.4 million was generated by the end of the project, surpassing the PAD investment income estimate of US\$0.25 million. The funds are invested in a range of stocks, bonds, and other assets to arrive at an acceptable risk level for the Board.			
Indicator 3 :	Sustainable financing mechanisms provide resources for long-term management and use of PAs in each participating country.			
Value (quantitative or Qualitative)	0	At least 4 NPATFs receive US\$ 1.5 million annually	Sustainable financing mechanisms or Government equivalent complement resources for long-term management and use of PAs Target, US\$770,000 in 2	0

			countries	
Date achieved	08/04/2011	12/31/2016	12/31/2016	12/31/2016
Comments (incl. % achievement)	Not Achieved. One country, (St Lucia) has signed an agreement with the St Lucia trust (March, 2017) which receives voluntary hotel fees to receive a portion of the income. The amount St Lucia will receive to match the CBF funds is at least US\$190,000 which would complement the CBF's approximate US\$190,000 resulting in US\$380,000. However, this occurred after project close and will not be required to receive CBF funds for 2 years after the Vertical Agreements are signed.			
Indicator 4 :	National sustainable financing plans and strategies completed in all participating countries and adopted by at least four Governments and being implemented.			
Value (quantitative or Qualitative)	2	4 financing plans and strategies completed and adopted	Financing plans completed in all participating countries and adopted by at least 3 Governments	Financing plans completed by 3 countries with Government counterparts. Adoption was evident in Government's data generation of financial data for the plans. Data collected by the National Coordinators and shared with TNC and the WBG.
Date achieved	08/04/2011	08/05/2011	12/31/2016	12/31/2016
Comments (incl. % achievement)	Fully Achieved. (100% achieved according to the new target). Sustainable financing plans were completed with Governments in 3 countries. The remainder plans were dropped due to lack of resources in the Project to support their elaboration. The sustainable financing plans outlined the amount of funds the country spent on conservation, the amount of funds they received (in grants, Government allocations, and so on), the types of activities supported, and the financial gap between what they received and what was planned. The plan would specify how the Governments intended to service this gap in financing.			
Indicator 5 :	Each participating country adopted/implemented financing mechanisms to generate new and additional resources to at least match the investment income from the endowment fund for the country.			
Value (quantitative or Qualitative)	0	4 adopted/implemented	Each country adopted financing mechanisms or Government equivalent to generate additional resources	4 countries adopted financing mechanisms. Data collected by National Coordinators, TNC and the

			to at least complement the investment income from the endowment fund for the country (Target- in 2 countries)	NPATFs.
Date achieved	08/04/2011	08/05/2011	12/31/2016	12/31/2016
Comments (incl. % achievement)	Fully Achieved. (100%) against the restructured targets which clarified the uncertain wording of the original target (adoption/implementation). Cabinet has formally endorsed debt for nature swaps as their financing mechanism in Grenada and St Kitts and Nevis. A third country, St Lucia, has signed an agreement with the St Lucia Trust to share voluntary hotel tourism fees. A fourth country, Antigua and Barbuda, has stated that it will use wind farm proceeds and PA user fees to accrue funds for their NPATF. The requirement for implementation of the financing mechanism was dropped at restructuring but achieved in one country, St Lucia, a few months after the Project closed.			
Indicator 6 :	Demonstration of good management practices for MPAs are implemented in at least two MPAs.			
Value (quantitative or Qualitative)	0	2		2
Date achieved	08/04/2011	12/31/2014		12/31/2016
Comments (incl. % achievement)	Fully Achieved (100%). A drone monitoring system was implemented in the Cades Bay Marine Reserve in Antigua and Barbuda and a water quality monitoring system was implemented in the Woburn Clarke's Court Bay PA in Grenada. These activities contribute to the achievement of the GEO (ii) by providing valuable monitoring tools for MPA management that are essential for good management of an MPA.			
Indicator 7 :	Lessons learned from the two demonstration sites are disseminated through workshops, publications and websites among the MPA managers and policy makers in the Project's participating countries and more broadly in the region.			
Value (quantitative or Qualitative)	No	Lessons widely shared within the region		Lessons widely shared via webinar, training, RedLAC meetings, Conference of Parties on Biological Diversity, and other conferences in the region. Data was collected by TNC who attended the

				events.
Date achieved	08/04/2011	12/31/2016		12/31/2016
Comments (incl. % achievement)	Fully Achieved. (100%). In Grenada: 4 staff and community trainings, 1 regional conference, 1 on-line meeting (WebEx) (international). In Antigua and Barbuda: 2 staff trainings, 4 international conferences, 1 on-line meeting (Webex). This activity contributes to the achievement of the GEO (ii) by showcasing community monitoring for PA management, with lessons learnt shared both regionally and internationally.			
Indicator 8 :	Replication plans for scaling up of good practices from the demonstration sites are developed in the Participating Countries.			
Value (quantitative or Qualitative)	0	1 Replication Plan developed	This indicator was dropped at the time of restructuring	This indicator was dropped at the time of restructuring.
Date achieved	08/04/2011	12/31/2016	12/31/2016	12/31/2016
Comments (incl. % achievement)	This indicator was dropped at the time of restructuring			
Indicator 9 :	Relevant biodiversity, ecological, economic and social indicators for effective management of PA networks in the Participating Countries are identified and begin to be monitored.			
Value (quantitative or Qualitative)	Various indicators exist in different databases but are not consistently monitored)	Regional monitoring system is operational		Relevant data is identified and selected and regional monitoring and information system is operational.
Date achieved	08/04/2011	08/04/2015		12/31/2016
Comments (incl. % achievement)	Fully Achieved (100%). Data were collected for a regional monitoring system. This involved a consultancy that worked with stakeholders to identify social, ecological, economic and other indicators. PA managers and other stakeholders then decided on the final indicators to select. This activity contributes to achieve the GEO (iii) by identifying and collecting regionally important data on PA systems that are of use in monitoring PAs. The relevant data feeds into the Caribnode web based monitoring tool that is still functional. This data continues to be populated by TNC after project closure.			
Indicator 10 :	A standardized web-based information system for housing the data collected is established and made accessible to users in the region through an electronic portal.			
Value (quantitative or Qualitative)	No	Databases created for all the Participating Countries and website		Databases created for the countries and used to create

		established		an accessible website that is regional in scope
Date achieved	08/04/2011	12/31/2016		08/04/2014
Comments (incl. % achievement)	Fully Achieved (100%). The monitoring system is completed and fully operational and is being used at www.caribnode.org . This activity contributes to achieve the GEO (iii) by providing a user-friendly, internationally available tracking and monitoring tool for PAs in the OECS.			
Indicator 11 :	Natural resource managers and other key stakeholders apply the regional monitoring and information system outputs to the management of the PA network			
Value (quantitative or Qualitative)	No	User friendly PA data and reports are available for decision makers		User friendly PA data and reports available for decision makers. Data shared by TNC.
Date achieved	08/04/2011	12/31/2016		12/31/2016
Comments (incl. % achievement)	Fully Achieved (100%). Increased usage of the site after launch. Web-generated reports are possible i.e., Caribbean Coral Reef Report Cards. Users can download information and other reports from the site. Over 2000 users accessed the site during the launch. This indicator contributes to the GEO (iii).			
Indicator 12 :	Project staff including at the national and regional levels are in place and functioning at all times during the Project with sufficient capacity to carry out all Project activities			
Value (quantitative or Qualitative)	No	All personnel are hired to carryout Project		All personnel (5 national Project coordinators) were hired to carry out the Project. TNC had the rest of staff in-house. Data shared in quarterly technical reports.
Date achieved	08/04/2011	12/31/2016		12/31/2016
Comments (incl. % achievement)	Fully Achieved (100%). Project staff at the national and regional levels are in place and functioning at all times during the Project with sufficient capacity to carry out all Project activities.			
Indicator 13 :	Quarterly operational and financial status reports prepared and submitted to the Bank.			
Value (quantitative or	No	Quarterly operational and financial status		Quarterly operational and

Qualitative)		reports prepared and submitted to the Bank		financial status reports (20) prepared and submitted to the Bank. In addition, CBF financial reports are submitted to the Bank.
Date achieved	08/04/2011	12/04/2011	12/31/2016	12/31/2016
Comments (incl. % achievement)	Fully achieved (100%)			

G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	GEO	IP	Actual Disbursements (USD millions)
1	12/27/2011	Satisfactory	Satisfactory	0.00
2	06/22/2012	Satisfactory	Moderately Satisfactory	0.00
3	01/01/2013	Satisfactory	Moderately Satisfactory	0.01
4	07/09/2013	Satisfactory	Moderately Satisfactory	0.01
5	11/04/2013	Moderately Unsatisfactory	Moderately Unsatisfactory	0.01
6	05/10/2014	Moderately Unsatisfactory	Moderately Unsatisfactory	0.12
7	07/05/2014	Moderately Unsatisfactory	Moderately Satisfactory	7.55
8	11/07/2014	Moderately Satisfactory	Satisfactory	7.65
9	06/08/2015	Moderately Satisfactory	Moderately Satisfactory	7.85
10	12/29/2015	Moderately Satisfactory	Moderately Satisfactory	7.85
11	06/30/2016	Moderately Satisfactory	Moderately Satisfactory	8.14
12	12/23/2016	Moderately Satisfactory	Moderately Satisfactory	8.59

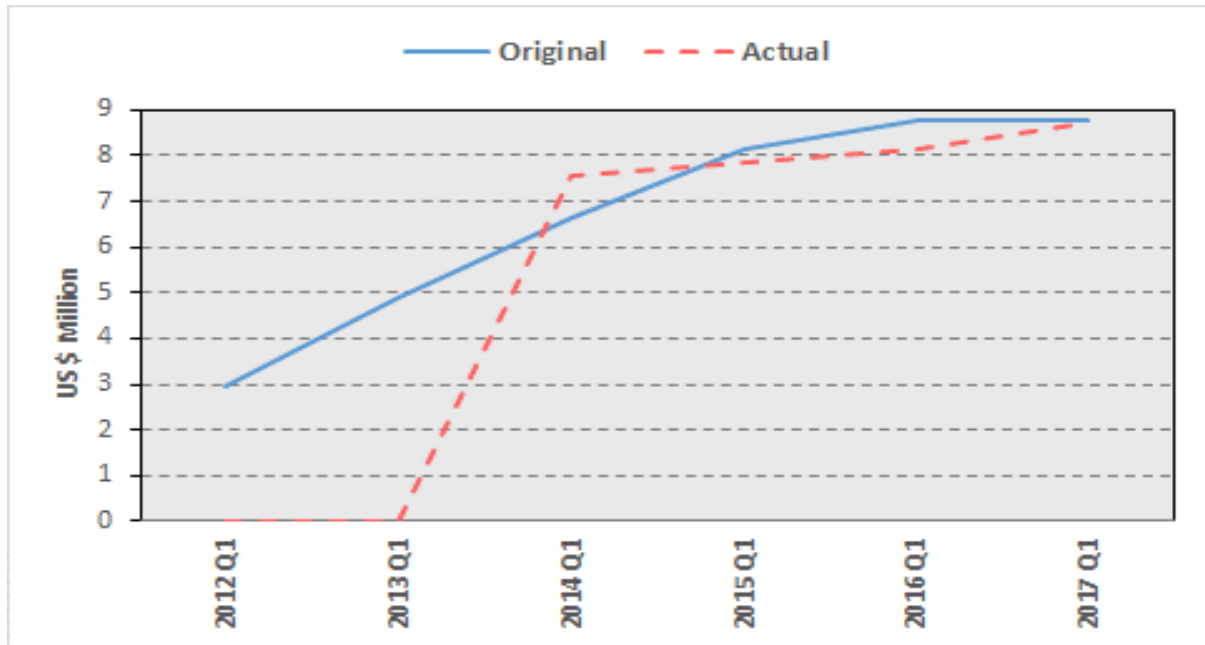
H. Restructuring (if any)

Restructuring Date(s)	Board Approved GEO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
03/27/2014	N	MU	MU	0.12	The main reasons for the restructuring were that a) the Project did not have sufficient

Restructuring Date(s)	Board Approved GEO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
					<p>funds to fully implement all activities as outlined in the PAD and b) some OECS Governments did not agree with the creation of new MPAs in their territories within the Project's time-line. The restructuring dropped outcome indicator 3 "<i>At least 5 new MPAs are gazetted to increase the total area under MPA management and the representativeness and resilience of the MPA network(s) in the area</i>" for the cited reasons:</p> <ul style="list-style-type: none"> • there was not enough funding to gazette the MPAs in the Project budget given that technical studies, stakeholder meetings, etc. were needed to define boundaries and there was only US\$140,000 available; • Gazettement required a long Parliamentary approval process; • Governments did not want to Gazette new areas and create "paper parks" without funds for management; • Governments were already extending or creating new MPAs but at their own pace which would take longer than the Project's time-scope. <p>In addition, as part of the restructuring, there were changes to Outcome indicator 2 to add greater flexibility in how countries achieved the 1:1 match to CBF funding required under the</p>

Restructuring Date(s)	Board Approved GEO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
					<p>Project to read "the national level trust funds (NPATFs) provide recurrent financing for at least 3 of 5 countries." The restructuring also clarified whether sustainable financing mechanisms of the NPATFs to generate a 1:1 match required implementation or not given the uncertain wording in the original indicator (adoption/implementation). The restructured language focused on the adoption of the mechanisms and not the implementation of these mechanisms because:</p> <ul style="list-style-type: none"> • There was inadequate financing to fully implement the financial mechanisms which needed time and resources to implement. • Since the NPATFs were delayed in being set up, the 2 years countries had to receive unmatched funding would be pushed out to beyond the project and countries did not want to give up 2 years of what was essentially free funds. <p>Finally, the restructuring was an attempt to get the Project back on course despite delays and lack of financing.</p>

I. Disbursement Profile



1. Project Context, Global Environment Objectives and Design

1.1 Context at Appraisal

1. The Organisation of Eastern Caribbean States (OECS) consists of ten island nations within the wider Caribbean Region, five of which (Antigua and Barbuda, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines) are beneficiaries of this Project. Considered together, these small island developing states (SIDS) are among the top five biodiversity hot spots in the world due to their rich marine and coastal ecosystems. The environmental services provided by these ecosystems contribute directly to the national economies, especially the tourism and agricultural sectors that heavily depend on services provided by the environment.

2. At the time the Project was appraised, the OECS countries possessed flora and fauna of global significance, including 51 regionally endemic vertebrate species, 250 species of reef fish, and over 50 species of coral. These marine and coastal resources, however, were overexploited and under-protected, threatening their quality and biodiversity and, thus, also the sustainability of the economic activities that depend on them. Among the reasons for this increasing degradation were improper use of the natural resource base, loss of natural habitats, changes in water quality and quantity, and the impact of climate change.

3. As a result, one study by the World Resources Institute (WRI), also cited in the Project Appraisal Document (PAD), had estimated that between US\$350 million and US\$870 million could be lost annually between 2015 and 2050, due primarily to declining fish stocks, reduced tourism activity, loss of shoreline protection, and coral reef degradation throughout the region.¹ The high economic and environmental value of the marine ecosystems in the Caribbean has recently been reiterated in a report on threats to this valuable ecosystem published by the World Bank Group (WBG) and undertaken with several other key partners.²

4. To address these threats, the Governments of the OECS countries developed policies and programs for the conservation and sustainable use of these resources and are parties to a number of pertinent international and regional treaties, including the United Nations' Convention on Biological Diversity (CBD) and the Cartagena Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region. The OECS countries have also prepared national biodiversity strategies and action plans and recognized the importance of protected areas (PAs) as a means to conserve biodiversity. Additionally, they participated in launching the Caribbean Challenge Initiative (CCI), which was established in 2008 with support from TNC and also includes the Bahamas, Dominican Republic, Haiti, Jamaica, and Puerto Rico, among other island countries in the region. This initiative has the ambitious goal of legally protecting 20 percent of nearshore areas by 2020 through the expansion and better management of marine protected area (MPA) networks.

¹ See Burke L and J. Maidens. 2004 *Reefs at Risk in the Caribbean*, World Resources Institute, Washington D.C.

² See Pawan G. Patil, John Virdin, Sylvia Michele Diez, Julian Roberts, and Asha Singh. 2016. *Toward a Blue Economy: A Promise for Sustainable Growth in the Caribbean*, Report No. AUS16344, WBG, Washington D.C., September. This was the product of a collaborative partnership between the WBG, Duke University's Nicholas Institute for Environmental Policy Solutions, the Commonwealth Secretariat, and the OECS.

5. While this commitment was encouraging, a number of significant gaps with respect to marine and coastal conservation were identified at the time of appraisal, including lack of reliable and consistent sources of funding.

6. The present Project would assist the participating OECS countries establish a regional endowment trust fund, known as the Caribbean Biodiversity Fund (CBF) and national-level revolving trust funds for long-term sustainable funding and secondarily to gazette additional nearshore and shelf marine habitat. It would also contribute to the goals of the CCI. This was the first such initiative for the Eastern Caribbean and, thus, was very innovative in nature at the regional level.

7. The Project involved complex institutional arrangements and the unusual circumstances of having an international NGO, TNC, become, at the same time, a grant recipient, co-financier, and implementing agency, which raised some issues in potential conflict of interest as the Project progressed. However, this arrangement came about during the Project preparation when it proved unfeasible³ to proceed with the original proposed grant recipient, the OECS Secretariat, and because of TNC's strong knowledge of and ongoing involvement in the Project region. The OECS Secretariat nonetheless continued to be an important partner, played an advisory role during Project implementation, and was fully informed of its activities as they evolved. For purposes of Project implementation, moreover, TNC signed a subsidiary agreement with the Caribbean Biodiversity Fund (CBF) once it was established under the Project and cooperation agreements with the OECS Secretariat.

1.2 Original Global Environment Objectives (GEO) and Key Indicators

8. The Project's GEO, which was also its Project Development Objective (PDO), as stated in both the PAD and the Global Environment Facility (GEF) Grant Agreement was to contribute to enhancing the long-term sustainability of Protected Area networks in the Participating Countries by (i) establishing sustainable financing mechanisms, (ii) strengthening of the Marine Protected Area networks, and (iii) deploying a regional monitoring and information system for the Protected Area networks.

9. Key Project indicators, as approved, were:

1. The Caribbean Biodiversity Fund (CBF) is operational with a Board, a Secretariat, an Asset Manager, a work program, and has an endowment of at least US\$15 million for Participating Countries to generate income for PA management;
2. The national protected area trust funds (NPATFs) are able to provide at least US\$1.5 million per year in total to the Participating Countries;
3. At least five new MPAs are gazetted to increase the total area under MPA management and the representativeness and resilience of the MPA network(s) in the region;
4. At least two demonstration sites are established to generate useful MPA management information and lessons for other Participating Countries and for increased dissemination to MPA managers in the Caribbean region; and
5. A region-wide open access, web-based monitoring system for effective PA management is operational and the outputs are available to natural resources managers at the national and regional levels.

³ The OECS had indicated, during preparation, that the funds available for Project management were insufficient to fully manage the Project. TNC, then stepped in and used a considerable amount of its own resources to aid in the implementation of Subcomponent 1A, particularly the establishment and operationalization of the CBF. This was captured in the Project's overall budget.

1.3 Revised GEO (as approved by original approving authority) and Key Indicators, and Reasons/Justification

10. The GEO was not revised during Project implementation although, one of the key indicators was subsequently modified and a second one was deleted. Outcome Indicator 2 was changed in March 2014, because of a Level 2 restructuring (see paragraph 18 and 25) to read “the national level trust funds (NPATFs) provide recurrent financing per year for at least 3 of the 5 participating countries” and the third indicator above was dropped when the respective subcomponent was canceled. The reason for the modification in Outcome Indicator 2 was that the original phrasing assumed a 1:1 match between the CBF funds and country generated funds. During implementation, the CBF added greater flexibility because countries complained significantly about the match requirement. The rephrasing allowed for the NPATFs, once established, to provide less than a full match and, as a result, the amount transferred would be lower than the original estimated US\$1.5 million. Outcome Indicator 3 was deleted along with its associated intermediate indicator because it proved unrealistic to attain (see paragraph 23).

1.4 Main Beneficiaries

11. The Project beneficiaries were not specifically identified in the PAD. However, they included the Governments of the five participating OECs countries and, directly and indirectly, the communities residing in or near coastal areas and/or dependent upon marine- and coastal-based economic activities, including fishing and tourism, where the pilot demonstration activities were undertaken. Future local beneficiaries will be much larger in number once the National Protected Area Trust Funds (NPATFs) become fully operational in the near future.

1.5 Original Components (as approved)

12. The Project had four components and was expected to involve total costs of US\$18.872 million, of which US\$8.75 million would be financed by the GEF grant. Each component and its anticipated costs and the GEF grant shares at the time of appraisal are briefly described in the following paragraphs and more completely in annex 1.

Component 1. Establishment of Sustainable Financing Mechanisms (US\$15.771 million, including US\$7.6 million from the GEF)

13. The purpose of this component was to (a) facilitate the establishment and capitalization of a regional biodiversity fund, the CBF, and carry out its initial capitalization to generate sufficient income to finance sustainable management activities in the PAs of participating countries through their respective NPATFs and (b) facilitate the establishment of the respective NPATF in each of the participating countries, and to facilitate the design and implementation of a capitalization strategy to generate additional financing to that provided by the CBF. Component 1 was allocated 86.7 percent of the GEF resources in the Project, with 82 percent earmarked for the endowment.

Component 2. Strengthening and Phased Expansion of Marine Protected Area Networks (US\$0.81 million, including US\$0.25 million from the GEF)

14. The objectives of this component were to (a) expand the systems of MPAs through the gazettement of new ones and (b) establish demonstration sites in participating countries to showcase best practices in the management of MPAs through the acquisition of goods and provision of technical advisory services and works. More specifically, it would seek to support a phased expansion of existing regional MPA networks by obtaining endorsement in participating countries for inclusion of new high priority sites that would contribute to the overall representativeness and resilience of MPA networks in the Eastern Caribbean.

Component 3. Deployment of a Regional Monitoring and Information System (US\$0.57 million, including US\$0.34 million from the GEF)

15. This component sought to (a) facilitate eco-regional and management effectiveness monitoring, including data collection on biophysical and socioeconomic indicators within the PA network, and assess management effectiveness; (b) establish an electronic database for an eco-regional environmental information system, including a web-based system to house, analyze, and make data accessible to key stakeholders; and (c) facilitate dissemination and learning networks to encourage sharing of results of the Project's monitoring and evaluation (M&E) system and accessibility of data for policy makers. This component would also involve the provision of technical advisory support, as well as equipment and training.

Component 4. Project Management and Coordination (US\$1.72 million, including US\$0.56 million from the GEF)

16. This component would finance Project coordination and supervision at the regional and participating country levels, including managerial, financial, and technical coordination of Project activities, staff training, and reporting through the provision of goods and technical advisory services and the funding of operational costs. Implementation planning and the M&E of Project interventions would also be supported through this component.

1.6 Revised Components

17. The Project underwent a Level 2 restructuring approved on March 7, 2014. At that time, less than 2 percent of the grant was disbursed. The restructuring modified the language of Outcome Indicator 2, canceled Project activities under Subcomponent 2A (Expansion of the System of Marine Protected Areas) for which there was insufficient resources (see paragraph 21), and reallocated the funding for it to for Subcomponent 2B (MPA Demonstration Sites). The main reason for this cancellation was that the Project funds allocated under this subcomponent (US\$140,000)⁴ were found to be insufficient to accomplish its objective. In addition, some of the participating country governments did not support the proposed gazettement of new MPAs because, even though they might be formally established on paper, no resources were available for their strengthening and, thus, these countries preferred to focus on consolidating their existing MPAs. Furthermore, the grant agreement was between the WBG and TNC and not the countries themselves, which complicated enforcing a requirement that would place a significant additional funding burden on the OECS Governments.

⁴ The other funds outlined at appraisal did not materialize so the GEF allocation was the fund available for the implementation of Component 2. Slightly less than half of the US\$0.25 million was allocated to the demonstration sites and the rest to the MPA expansion. After the restructuring, the entire amount was allocated to the demonstration site activities and dissemination.

1.7 Other Significant Changes

18. The restructuring also reflected the evolution of donor financing for the CBF (Subcomponent 1A) and minor changes in the Grant Agreement.⁵ It also made changes to the initial Results Framework to reflect the restructured activities and modify the language of some indicators and the Data Sheet for clarity (see the data sheet, reasons for the restructuring) and to increase implementation flexibility.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

19. **Soundness of background analysis:** As noted before, Project preparation benefitted from prior WBG and GEF experience with long-term financing for PAs, particularly for the establishment of conservation endowment trust funds. It also benefited from past and ongoing experience with other WBG and donor-administered GEF Projects. Most notably this included the OECS Protected Areas and Livelihoods Project (P073267), which was approved in May 2004 and closed in July 2011 with a Moderately Satisfactory outcome rating by the WBGs Independent Evaluation Group. Lessons learned from this experience that were highlighted in the PAD as having been reflected in Project preparation and design. It should be noted that overall, the idea for the Project was a remarkable one, because it sought to address the problem of long-term financing for conservation in the Eastern Caribbean. It was the first regional fund of its kind in the Caribbean, and while there are a few stand-alone funds to finance PAs and conservation, this one was remarkable in its regional approach, although correspondingly, this added a layer of complexity that was not fully anticipated.

20. **Assessment of project design:** The initial Results Framework was generally adequate in establishing the causal linkages between outputs and outcomes. However, some of the indicators were repeated and several targets written in the PAD differed from the targets in the Project portal. Given that the portal documents were what were approved by the Board, the WBG supervision team decided to follow the targets that were set in the initial Implementation Status and Results Report (ISR) and portal and these targets were followed and updated after the restructuring. As suggested earlier, the end-of-Project (EOP) targets proved to be too ambitious in several cases. In addition, some of the output and outcome indicators (for example, for MPA establishment, although this was later dropped at the restructuring) were essentially the same and, thus, were unnecessarily repetitious.

21. **Adequacy of government's commitment:** As the March 2014 restructuring revealed, there were some significant design shortcomings, which also suggest inadequate quality at entry. For example, the regional aspect of this funding strategy was not taken into significant account, with regard to funding or time. In addition, an important design shortcoming included the failure to ensure adequate National Government commitment to and local stakeholder involvement in the proposed Project objectives and design in the five participating OECS countries, particularly as applied to the creation of NPATFs by parliamentary approval.

22. **Assessment of risks:** The allocation of 82 percent of the GEF grant to the endowment, with a minimal amount remaining for setting up the institutions, including their operations, was shortsighted and resulted in financing problems during implementation because the necessary resources for successful

⁵ TNC reduced its overall contribution to the GEF from an initial US\$4.69 million down to US\$3.0 million. This reduction was in response to an agreement between TNC and KfW because KfW would then increase its contribution to the CBF to accommodate this shortfall (in reality, their contributions were way more than the shortfall), while TNC would increase their contribution to another Caribbean country that was part of the CBF but not funded under the GEF.

implementation of Subcomponent 2A for establishment of new MPAs was lacking and subsequently had to be dropped. Funding choices had to be made to ensure the NPATFs could be supported and this required some pre-financing from the CBF as well as dropping a few studies. However, as suggested above, Project institutional arrangements were complex and the initial risk assessment underestimated the difficulties in the establishment and operationalization of the CBF, especially the NPATFs.

2.2 Implementation

23. There were several Project changes during implementation. The first notable change came in how the NPATFs were formed. By the end of July 2016, the NPATF funds were legally and successfully created in all five countries as not-for-profit organizations.⁶ However, there were significant delays which eventually meant that the funds did not receive their allocations from the CBF before the end of the Project. The main reason for the observed delays in their establishment was the highly legalistic and political process⁷ in the participating countries which required going through the national cabinets and parliaments to create these funds in each country. The process of parliamentary approval was significantly delayed by the Government's concern that approving the creation of local NPATFs by law at the parliamentary level would mean that they would be financially responsible for meeting the grant match requirement.⁸ The WBG supervision team decided to pursue other legal methods of establishing the NPATFs and requested that the Project recruit a legal consultant to assess various options while continuing to pursue the parliamentary approach. In 2013, St. Lucia agreed to become a test case for an alternative approach, using the Company's Act followed by cabinet endorsement of the company thereby eliminating the need for parliament-level approval and abandoning the idea of establishing the NPATFs through national legislation. This new approach significantly shortened the legal and political approval process to within the Project's time frame. Other countries followed. Although the alternative legal process also took a lengthy time to complete in each country due to the legal drafting and the governmental processes involved in cabinet-level clearances and approvals, the process allowed the NPATFs to be legally established within the Project's lifetime.

24. Another change came when the Project was restructured, in part fueled by the problems encountered with establishing the NPATFs and the knowledge that the design would not allow for a successful implementation of the MPA expansion. The rationale and details of the restructuring are described in the data sheet and in section 1.6.

25. As indicated earlier, other more minor changes were also made, particularly, to the indicator wording. These changes were due in part to the quality at entry issues briefly described in the previous section and partly to the significant unexpected difficulties and delays experienced in establishing the five NPATFs. In the restructuring, the NPATFs were given new flexibilities in meeting the match requirement.

⁶ The NPATFs were formally established in St. Vincent and the Grenadines (the St. Vincent and the Grenadines Conservation Fund) in December 2015, Grenada (Grenada Sustainable Development Trust Fund) in February 2016, St. Lucia (St. Lucia National Conservation Fund) and Antigua and Barbuda (Marine Ecosystems Protected Area Fund) in May 2016, and St. Kitts and Nevis (Saint Christopher and Nevis Conservation Foundation) in July 2016.

⁷ The original design required the NPATFs to be set up by legislation. The process of getting the bill to cabinet and then to parliament involved many steps that all depended on political will and approval and finally on competing priorities.

⁸ The match requirement is referred also as the sustainable financing mechanisms or strategies by which countries were to provide a financial match to the funds coming from the CBF. This match was required to be a 1:1 match but after the restructuring, the match was required to be adopted, but not implemented, to take into account the PAD requirement that countries receive two years of funding without a match requirement. In addition, implementation costs to implement the match were deemed to require more funds than the project had available and for most of these countries this implementation would occur after the NPATFs have received their funds from the CBF and as part of their work program.

The specific changes in the Project’s intermediate outcome indicators (compared with their wording at the time the Project was approved) are presented in table 1.

Table 1. Original and Revised Intermediate Outcome Indicators at Restructuring

Original Intermediate Outcome Indicator	Revised Intermediate Outcome Indicator
1.3 Sustainable financing mechanisms provide resources for long-term management and use of PAs in each participating country (measured with financial scorecard)	1.3 Sustainable financing mechanisms and/or Government equivalent complement provide resources for long-term management and use of PAs in each participating country
1.4 National sustainable financing plans and strategy studies carried out in all participating countries and adopted by at least four Governments and being implemented	1.4 National sustainable financing plans completed in all participating countries and adopted by at least three Governments
1.5 Each participating country adopted/implemented financing mechanisms to generate new and additional resources to match the investment income from the endowment fund for the country	1.5 Each participating country adopted financing mechanisms or Government equivalent complement to generate and additional resources to at least complement the investment income from the endowment funds
2.2 At least five new MPAs which contribute to biogeographic representativeness and network resilience are gazetted and baseline data using the GEF Tracking Tool for management and effectiveness are collected for each MPA	2.2 Demonstration of good management practices for MPA are implemented in at least 2 MPAs.
2.4 Replication plans for scaling up of good practices from the demonstration sites are developed in the participating countries	This indicator was deleted

26. The impact of the restructuring was to free up funding for implementation of Subcomponent 2B and eventually, the Project did respond by moving from Moderately Unsatisfactory status to Moderately Satisfactory status. During implementation, the Project successfully created the CBF. This regional fund was established as a registered charity in the United Kingdom in September 2012, and, in March 2014, registered to operate in the Bahamas. As of end of December 2016 (Project closing), the CBF had approximately US\$34.2 million under investment (much higher than the PAD’s expected US\$15 million), including US\$7.2 million from the GEF in the endowment. These resources also included €15 million donated by KFW (approximately US\$20,286,126.00), of which US\$10 million went to the project’s OECS countries and the rest to other countries. This was approximately €10 million more than was pledged at preparation, and transferred in June 2013. The WBG’s funding was transferred later, in July 2014, after the CBF was fully operational (December 30, 2013) as required by the Project. Overall returns on this investment from the open market using the asset managing company at the time of Project closing were approximately US\$2.4 million, far exceeding the PAD’s expected estimate of US\$0.25 million.

27. While the restructuring did result in the successful establishment of five NPATFs within the Project’s time scope, the delays in their formation impeded the timely transfer of financial resources from

the CBF to the national funds during the Project's time frame. The steps toward receiving funding from the CBF required the NPATFs to sign a 'Vertical Agreement' with the CBF. The signing represented the 'readiness' of the NPATFs to receive funds. As of end of December 2016, three of the five participating countries had met these criteria, including establishing a bank account, constituting a Board, holding active Board meetings, and producing grant manuals. Two Vertical Agreements have been signed at the CBF Annual Conference (June, 2017) with one more expected at the end of 2017. In the meantime, a stopgap measure was established by the CBF to help the participating countries resolve the lack of funding for operationalization of the NPATFs, which was insufficiently allocated in the Project's design. St. Lucia and Antigua and Barbuda have received this pre-financing.

28. There were no marked issues with the implementation of Component 2 after the restructuring. The Project was able to leverage US\$50,000 from, the Water Expert Team (WET) at the WBG, to develop a study⁹ on waste water treatment options for a rum factory that was the main polluter in Woburn Clarke's Court Bay Marine Protected Area (WCCB MPA). The study is available in the WBG's document repository, WB Docs. There were also no marked issues with the implementation of Component 3.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

29. **Design of the M&E system.** The Results Framework and Monitoring Analysis Framework contained in the PAD required the Project performance indicators to be monitored, although there was an unnecessary duplication of Project outcome and intermediate outcome indicators in relation to establishment and capitalization of the regional and national financing mechanisms and to the creation of new MPAs. The design built on the known capacity of TNC to provide effective monitoring. TNC employed a network of five national Project coordinators (NPCs), one per country who were recruited to work with the National Implementing Entity (NIE)¹⁰ and these NPCs were responsible for tracking the Project as well as steering on the ground implementation. TNC had regular interaction with the NPCs, as well as monthly calls and semiannual in-person meetings to ensure close follow up. For purposes of evaluation, baseline and impact studies were to be contracted with TNC in charge of technical supervision in consultation with the respective NIEs, with results sent to the WBG in real time for review and follow up.

30. Despite these well-designed elements, the design for Component 3, which was to collect ecosystem-related data and establish a regional web-based ecosystem monitoring system was not well articulated. In particular, the design did not address the issue of capacity building for database managers in the Caribbean nor sustainability of the web-based system, or its ultimate utility, all key aspects of data management. These details were developed during implementation.

31. **Implementation.** In general, M&E implementation was of high quality from start to finish. Part of this was helped by the fact that TNC was doing the monitoring for its own purposes as well, and used both Project resources, as well as its own resources to finance staff, offices, and equipment necessary to ensure a good monitoring system. TNC regularly sent quarterly progress reports to the WBG, depicting the Project's current performance in relation to each of these indicators during the reporting period,

⁹ Grenada Distilleries (Clarks Court) Ltd. Sustainable Wastewater Treatment.

¹⁰ The NIE for Antigua and Barbuda was the Environment Division within the Ministry of Agriculture, Lands, Housing, and the Environment. For Grenada, the NIE was the Department of Fisheries and Forestry within the Ministry of Agriculture, Forestry, and Fisheries. For St. Kitts and Nevis the NIE was the Ministry of Sustainable Development, and for St. Lucia the NIE was the Ministry of Finance.

including country-by-country status of the sustainable revenue-generating mechanisms for the NPATFs. A tracking database tracked not just the outcomes and indicators as presented in the Results Framework, but also each minute step of implementation required to achieve the intended outcome. This detailed tracking, highlighting the time required to achieve a result, was instrumental in the team's decision to seek alternatives to the parliamentary approval route for the NPATFs.

32. With regard to the demonstration site activities under Component 2, the study¹¹ in the Woburn Clark Courts Bay (WCCB) MPA set up a community monitoring system for water quality as part of its demonstration. The study, which took place over a year, focused on identifying the key pollutants coming into the bay as well as their point sources. The community, along with the MPA staff, was then trained on how to take basic water quality measurements such as temperature and Ph, and in the collection of samples for more complex tests such as copper, iron, organic pollutants, and so on. There were a total of three six-week sampling sessions across five sampling sites, as well as extensive sample preparation and lab analysis. Community partnerships were critical in carrying out the assessments of the watershed and water quality. The community, as well as the MPA staff and St. Georges University students were taught how to collect samples and do some basic analysis. The second demonstration focused on using drone technology to map mangroves and other MPA biological indicators in Antigua and Barbuda (see component by component description in annex 2). This innovative technology generated a paper that is seen as extremely useful to MPA practitioners and a scientific paper based on the results will be submitted for publishing.

33. For Component 3, the MPA baseline management effectiveness studies foreseen at appraisal were carried out by the OECS Commission in 2013 using the GEF Management Effectiveness Tracking Tool (METT) for MPA effectiveness within the first few months of implementation for WCCB MPA in Grenada and the West Coast Marine Management Areas in St. Lucia (the two original demonstration sites). Two studies¹², one for each MPA, set the baseline for these MPAs, though ultimately the West Coast Marine Management Area was not used as a demonstration site and the utility of these studies was questionable given that the Project itself did not seek to improve the management of MPAs. The studies, however, will prove useful if, down the line, grants from the CBF are used to improve MPA management. In addition, a second consultancy provided much of the core data needed to build the web-based ecosystem monitoring system¹³. On this basis, the Project designed and implemented the Eastern Caribbean Decision Support System (ECDSS), also known as CaribNode (www.caribnode.org), a web-based tool that was launched in 2014. This platform was also populated with biophysical data for the OECS countries and, more recently, with additional data collected under the complementary Eastern Caribbean Marine Managed Areas Network (ECMMAN) Project.

34. **Utilization.** The demonstration site activity at the WCCB MPA in Grenada (Component 2) yielded data that has had high utility for the Woburn Clarke community and for the MPA managers (Grenada Fisheries Division). The study identified the major pollutants to the MPA (organic acids, sulfides, ammonium, phosphates, copper, iron, and organic matter), as well as the sources. The data has been used to (a) confirm the main point source polluter as a locally run rum factory, thus giving solid scientific backing to communities who had already pinpointed the source of the pollution; (b) inform the key polluter of the results—the rum factory had already engaged in talks with the WBG, culminating in the WBG acquiring US\$50,000 in WET financing to assess options for solid waste management for the polluter; the study was already completed and discussed before the findings of this study; (c) give the

¹¹ Development of a Water Quality Improvement Plan (WQIP) for Woburn Clarke's Court Bay Marine Protected Area in Grenada- Task 1-6 and WQIP – Water Quality Testing to Establish Baseline (July, 2015).

¹² Scorecard West Coast Marine Management Area- St Lucia (August 16, 2012) by OECS and Woburn Clarke Court's Bay- Grenada

¹³ Five Country Eastern Caribbean Regional Marine Protected Area Monitoring and Evaluation Plan

Government a scientific reason to follow up pollution abatement strategies with the factory and other point source polluters, which included yachters, who release solid waste into the bay. The health state of the MPA was found to be at the initial stage of eutrophication with high amounts of fecal coliform, not linked to rainfall runoff, thereby rendering it unsuitable for many tourism activities. The culmination of the consultancy was a water improvement plan, which the Fisheries Division plans to implement with the community. The utility of the second demonstration activity under Component 2 is likewise particularly important for PA managers who seek to collect spatial data using a method (Unmanned Aircraft Systems [UAS] or drones) that costs a fraction of the cost of other methods. This is of particular importance to less developed countries. The mode of operation of this study¹⁴ has been written up as a study¹⁵ that will be published (draft available in WB Docs).

35. The web-based regional monitoring system (www.caribnode.org) established by the Project (Component 3) is now operational and brings together authoritative data from national and regional entities that make it possible to create new tools for natural resource management across the region, for example the Caribbean Reef Report Cards and Coral Reef Assessment Tool¹⁶ that provide access to standardized indicators that allow monitoring of the status and trends regarding the marine environment. Usage data shows that the views were up to 2,000 between May and June of 2015 when it was initially launched, but because the platform was established two years ago, this has declined, perhaps more realistically, to 200–300 hits per month. In particular, the website provides decision-making tools for PA managers and others, incorporating current ecological, socioeconomic, and climate change data and can be accessed both for individual countries and for the region as a whole (see annex 2 for details).

2.4 Safeguard and Fiduciary Compliance

Safeguard Compliance

36. **Safeguard compliance is Satisfactory.** Although the Project's impacts on the environment were expected to be largely positive, it was placed in Category B for safeguard purposes due to the potential for small-scale, localized impacts associated with the proposed demonstration Projects in selected PAs. It triggered five specific policies: OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats), OP 4.36 (Forests), OP 4.11 (Physical Cultural Resources), and OP 4.12 (Involuntary Resettlement). Because the specific PAs to be benefitted under the Project and the associated demonstration subprojects had not yet been identified at the time of appraisal, an Environmental Management Framework (EMF) was prepared, including measures to screen for eventual environmental impacts and identify existing and additional mitigation measures needed to address them.

37. During implementation, only the two pilot demonstration Projects under Component 2 were subject to an environmental assessment and as the Project involved no civil works, there were no environmental or social impacts of significance and no mitigation measures were required. More specifically, there were no impacts on physical cultural property or any need for involuntary resettlement, especially once the subcomponent on the establishment of new MPAs was canceled.

Fiduciary Compliance

38. **Procurement.** Overall, compliance was Satisfactory. Project procurement was carried out by a certified contract specialist at TNC who possessed experience in managing or implementing WBG and

¹⁴ Environmental Information Management and Advisory System Data Management Protocol (July, 2016).

¹⁵ Baldwin, K., Schill, S., Williams, J., Raber, G., 2016. *Drones for Conservation- Lessons Learned in Antigua and Barbuda*

¹⁶ Coral Reef Report Cards (zip file) in WB Docs

other donor-financed activities. TNC also gained experience with WBG procurement requirements through its implementation of the GEF Project preparation grant. All goods and technical services procured under the Project followed WBG guidelines. However, procurement problems occurred during the initial year of Project implementation, which contributed to a significant start-up delay. This was due to differences in WBG procurement requirements and those which TNC, as an NGO in the United States, was required to follow under American law and which took nine months of discussions and negotiations between the two institutions to resolve. Procurement subsequently improved and the WBG carried out a post review in September 2014 whose results were deemed satisfactory.

39. **Financial management.** Overall, compliance was Satisfactory. TNC grants specialist, who was responsible for all Project accounting and reporting, was very diligent in overseeing compliance with WBG financial management (FM) requirements during implementation. Financial transactions were recorded using TNC's Insight accounting software, which facilitated timely preparation of quarterly interim financial reports. The Project funds have been audited by external auditors, as part of the entity-wide financial statements prepared by TNC. The issued audit reports covering the life of the Project, including the appropriate disclosure of this specific Project, were well prepared, provided on time, and acceptable to the WBG. TNC also promptly submitted audited financial reports that were issued unqualified opinions and were deemed free of any internal control inadequacies pertaining to this Project. In addition, the CBF financial transactions and reports were reviewed by the financial specialist on the WBG team. In particular, its asset management transactions, as well as its financial reporting, expenditures, and audits were reviewed by the WBG and found Satisfactory.

2.5 Post-completion Operation/Next Phase

40. The original project ended at the point where the NPATFs had received funds from the CBF, and may have matched those funds, although this target was not very clear. The restructured project anticipated the same end point but anticipated that NPATFs would establish their 1:1 match or equivalent after the project ended. There is no doubt that this will occur because the CBF funds have been raised and continue to garner interest income beyond what was expected. In addition, two NPATFs have signed their Vertical Agreements with the CBF in June 2017,¹⁷ triggering the release of funds without a match requirement for the first two years after signing. Two more are expected to sign in 2017. In the next phase then, the NPATFs will a) begin to implement their 1:1 match mechanisms or negotiate their equivalent match. St Lucia has already implemented its match as discussed earlier but will also find other strategies as part of its work plan to raise even more funds for its local NPATF. Two other countries are in the midst of working on Debt for Nature swaps with TNC's financial and technical assistance; b) at the same time as they are implementing the 1:1 match, the NPATFs will issue calls for proposals since they have two years of unmatched funds available and they will therefore immediately begin financing sub-projects according to their grant manuals to help strengthen and eventually expand national marine and coastal protected area PAs. The CBF will be intrinsically involved, as it currently has been, in steering the NPATFs through the process of selecting grantees. A 15-year subsidiary agreement between TNC and the CBF, brokered by the WBG as an effectiveness condition, will continue to guide and monitor the post-Project period as intended and it is clear, from TNC's and the CBF's continued implementation and financial and technical support after project closure, that this progress will continue way beyond the project.

¹⁷ Antigua and Barbuda and St. Lucia have signed their respective Vertical Agreements with this regional fund in June 2017 and St. Kitts and Nevis, and St. Vincent and the Grenadines will sign by the end of 2017. The timing in this regard, with respect to Grenada, is less certain, as the National Government is undecided whether the CBF resources would be transferred to the Grenada Sustainable Development Fund or to the Blue Innovation Institute of Grenada.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design, and Implementation

41. **Relevance of objectives: High.** The Project’s objective—to contribute to enhancing the long-term sustainability of Protected Area networks in the Participating Countries by (a) establishing sustainable financing mechanisms, (b) strengthening of the Marine Protected Area networks, and (c) deploying a regional monitoring and information system for the Protected Area networks—was highly relevant at the time of appraisal given the economic and environmental importance of the marine ecosystems in the Eastern Caribbean whose integrity and protection it sought to enhance. It was consistent with the WBG’s Regional Partnership Strategy for 2010–2014 by contributing to its Results Area Three on strengthening resilience to climate change. It also addressed a number of priority Focal Areas for the fourth GEF replenishment (GEF-4), including biodiversity conservation, international waters, and adaptation to climate change. More specifically, it targeted Biodiversity Strategic Programs 1 (‘Sustainable Financing of Protected Area Systems at the National Level’) and 2 (‘Increasing Representation of Effectively Managed Marine PAs in Protected Area Systems’) by increasing sustainable financing for PA networks at the national level through establishment of a regional endowment fund and the NPATFs.

42. This objective continues to be highly relevant both for the OECS countries and for future WBG assistance, as the threats to regional marine biodiversity and local livelihoods and insufficient funding to deal with these threats not only persist but appear to be becoming more severe—for example, the adverse impacts on coral reefs because of increasing global climate change and growing pressures on other marine and coastal resources. The WBG’s Regional Strategy for the OECS for FY2015–2019 issued in October 2014 (Report No. 85156-LAC) clearly recognizes this and highlights the region’s rising vulnerability to extreme weather events associated with climate change. It states (paragraph 43, page 25), for instance, that “going forward, increased threats to marine and coastal resources in the OECS may have further negative effects on tourism and growth.” It likewise affirms (paragraph 78, page 37) that “in coordination with other donors, and capitalizing on available trust funds and grants, the WBG will continue helping OECS countries increase their resilience to natural hazards and climate change impacts, through a combination of resilience-building policy advice and capacity building,” while at the same time preserving its critical marine and coastal ecosystems, or as the document puts it for “aligning economic growth with ocean health.”¹⁸

43. **Relevance of design: Modest.** The Project design sought to reduce several existing barriers to better MPA management in the Eastern Caribbean. Such constraints included (a) the lack of reliable and consistent sources of funding, (b) lack of functioning and well-defined legal and institutional frameworks for PA management, (c) lack of coordination among participating countries, and (d) overexploitation of natural resources. The establishment of a regional and five national trust funds to support strengthened biodiversity conservation, including for marine ecosystems and coastal areas, was viewed as an important first step in establishing the financial and institutional structure to begin to address these the problem of over-exploitation of the natural resources and poor MPA management. However, the need to create this large infrastructure and the costs associated with putting this structure in place could have been better

¹⁸ See Pawan G. Patil, John Virdin, Sylvia Michele Diez, Julian Roberts, and Asha Singh. 2016. *Toward a Blue Economy: A Promise for Sustainable Growth in the Caribbean*, Report No. AUS16344, WBG, Washington D.C., September.

assessed. Similarly, expansion of the existing network of MPAs in the region through the creation of such new areas in each of the participating countries, thereby increasing the total area under legal protection, would also be a significant step forward, particularly if well assessed and with strong Government commitment. Similarly, strengthening the management of existing MPAs by piloting and testing new approaches to monitoring environmental quality and ecosystem integrity at two demonstration sites was expected to illustrate new information that would improve protection measures, while establishing a new eco-regional environmental information system was expected to aid decision making by PA managers and pertinent policy makers in the region. Finally, the requirement of the NPATFs to raise their own funds every year through a financial mechanism was innovative and could lead to longer terms sustainability of the PA financing system if finances and time requirements were well assessed.

44. However, while an innovative and important approach, this design proved overly ambitious with respect to its intention to form five different NPATFs in five countries, each with its own structural needs (office, executive director, staff, and so on) with a limited allocation of funds. It also underestimated the difficulties that would be encountered in legally establishing the NPATFs, which substantially delayed implementation of this part of the Project. An alternative design with the same resource allocation could have been explored, perhaps one establishing one large national trust with one locally based executive director in the country or some other variation. However, it is important to note that countries stated that this design was their preference since it gave them a degree of ownership and stressed that the GEF funds used were their countries GEF allocation. In addition, the decision to include the gazettement of five MPAs overestimated the participating OECS countries level of commitment to this goal within the Project's time frame, as well as the available financial resources that the Governments would, without a signed agreement, be willing to commit to this subcomponent. Finally, the design should have realized that with the word "implementation" brings high financial and transactional costs, especially in five countries, and therefore any requirement for five NPATFs to raise their own funds through an implemented self-sustaining mechanism would be as intricate as setting up the CBF to raise funds. It would therefore be difficult to achieve within the project's time-frame. These were serious shortcomings, which considered together, lead to a Modest rating for the relevance of Project design.

45. **Relevance of implementation:** With regard to implementation, the Project team made adjustments during implementation to put the Project in the best possible position to obtain its objectives. The Results Framework was adjusted and although delayed, the use of the Company's Act redirected the Project enough so that the NPATFs were formed and largely established before the end of the Project. The regional biodiversity fund (CBF) was well capitalized and made operational, and the eco-regional system implementation capitalized on synergies with another WBG Project, as well as TNC's ECCMAN Project, to ensure that a regional web-based eco-monitoring system was developed and that it would be sustainable and of use to the region. The removal of the expansion of the MPA system, which was not feasible for reasons explained earlier, allowed the Project to redirect funding and staffing to ensure a more solid delivery of the other components. However, the delays in the Project meant that the NPATFs did not receive funds from the CBF (with the exception of St. Lucia, which received some funds for its operationalization) during the Project's life-span. However, according to the CBF CEO, the Vertical Agreements have been signed with St Lucia and Antigua and Barbuda, with two additional to be signed before the end of 2017.

3.2 Achievement of Global Environmental Objectives

Rating: Substantial

46. The Global Environmental Objective, to contribute to enhancing the long-term sustainability of PA networks in the five participating OECS countries based on a set of performance indicators, was largely achieved, especially following the Project's restructuring in early 2014. Most importantly, the

Project succeeded in establishing and capitalizing (to a greater extent than originally anticipated) a regional endowment trust fund for biodiversity conservation, which will serve other Caribbean countries and has attracted significant support from other donors, particularly KfW. This is the highlight of the Project's achievement, largely because it was able to set up a sustainable financing structure that will serve the Caribbean for the long term. The level of success that the CBF has had in attracting funds will allow the CBF to provide greater than expected resources to help capitalize the NPATFs that were also formally established under the Project, albeit with delays, and thus provide financing for marine and coastal PAs in the five small island states that are the ultimate beneficiaries of the Project, and whose economies and local livelihoods depend significantly on the quality and sustainability of these valuable, but increasingly threatened, natural resources. However, Project accomplishments varied somewhat across its three sub objectives, each of which will be briefly discussed in the following paragraphs. A more detailed description of Project outputs by component is presented in annex 2.

Sub-Objective 1: Establishment of Sustainable Financing Mechanisms

Rating: Substantial

47. This objective was largely achieved. At the regional level, the CBF was legally established in September 2012, is fully operational with a Board, a secretary, and an asset manager, and has been well capitalized to date. The establishment of the CBF was an intricate process of legal work and included setting up an office in the Bahamas, recruiting skeleton staff, including a CEO, establishing the CBF Board, holding board meetings, establishing the financial and procurement systems including the CBF's capitalization strategy, hiring an asset management firm, ensuring that the Board approved the investment strategy, and much more¹⁹ (details in annex 2). At the time of Project closing, according to TNC, the CBF's actual capital endowment, at close to US\$34.2 million, was more than twice the target value set at appraisal (US\$15 million).²⁰ This was largely due to the decision by the German Government, through KfW, to increase its initial donation to the fund from US\$4.5 million to US\$20 million, together with the GEF grant allocation of US\$7.2 million, and accrued returns of US\$2.4 million by the end of September 2016. These returns, along with the capital endowment, have ensured the longer term financial sustainability of the fund. In addition, a capitalization strategy has been developed to attract further financing to the fund. This has already proved useful. An additional commitment by KfW of €25 million (roughly US\$26.7 million equivalent) to the CBF as a separate sinking fund to establish the Caribbean Ecosystem-based Adaptation Facility was announced during the 22nd Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) in Morocco on November 17, 2016. Reflecting also the German Government's support for the mission and high degree of confidence in the operational effectiveness of the CBF, the present Project and its associated GEF grant have, thus, helped leverage substantial additional financing for this fund, as well as the extension of its operations to another important environmental priority for the Eastern Caribbean Region, greater adaptation of its vulnerable ecosystems to the effects of climate change.

48. In terms of the establishment of the NPATFs, this was achieved though not without difficulty and delays, which ultimately led to delays in their financing from the CBF. The five NPATFs were all legally established between December 2015 and July 2016, thus establishing the legal framework. Three of the

¹⁹ The CBF had to be legally created and fully operational with staff, offices, strategies, financial plans, and so on and had to be evaluated by the WBG before the WBG released its GEF grant allocation. Therefore, the WBG did not release its funding until mid-2014.

²⁰ The CBF's personal goal is to ultimately reach an amount of US\$42 million for the endowment fund. So far, through this Project, US\$34.2 million has been raised (including US\$2.4 million in interest income). The funds include €20 million from KfW (of which €15 million was deposited and amounted approximately to US\$20 million), US\$8 million from TNC for eight countries but only US\$1.5 to the five OECS countries under this Project (this US\$1.5 million has been deposited), US\$7.2 million from the present (WBG-administered) GEF Project.

participating OECS countries have met the requirements for operationalization, including establishing a bank account, realizing active Board meetings, preparing grant manuals, and all the requisite policies for setting up the NPATFs to attract additional funding. Two NPATFs have signed Vertical Agreements with the CBF at the June, 2017 Annual Meeting, thereby allowing them to start receiving regular donations from the regional fund. In addition, four countries had identified and adopted self-generating financing mechanisms, two of which (Grenada and St. Kitts and Nevis) have received endorsement at the cabinet level for a debt-for-nature swap brokered by TNC that will swap debt and free up funds, some of which will go to the NPATFs and others identified and developed—in Grenada, the Windward Islands Marine Trail concept²¹ that would provide a trail for the yachting community through specific marinas and in St. Lucia, the Blue Bertha Program²² which entailed working with existing marinas to establish a berthing fee system from which a percentage would go to the NPATF. In addition, St. Lucia has finalized a partnership with the Hotel and Tourism Association to receive funds from its Tourism Enhancement Fund, which is capitalized with voluntary contributions of US\$2 by hotel guests. In Antigua and Barbuda, a National Fund, the Sustainable Island Resources Fund (SIRF), was established as its NPATF and will be financed through an environmental levy and proceeds from a wind farm Project currently being implemented. These mechanisms will, after the two-year grace period during which strategies will be fully implemented, generate additional income for the NPATFs. The project delay in establishing the NPATFs, however, means that the two-year grace period happens after the project has closed. However, the existence of a subsidiary agreement between TNC and the CBF, brokered by the Bank at project design, means that the CBF will continue to work with the countries to ensure that their self-generating financial mechanisms are implemented. Despite the delay, this sub-objective is substantially established because the CBF is established with a sustainable financing mechanism and this funding is already allocated to the NPATFs, with St Lucia and Antigua and Barbuda already signed with the CBF (June, 2017) as ready to receive this funding.

Sub-Objective 2: Strengthening of the Marine Protected Area networks

Rating before restructuring: Modest; after restructuring: Substantial; Composite Rating: Substantial

49. This objective, as originally envisioned, was fully achieved after the restructuring and partially achieved before the restructuring, in that the initial intent to support expansion of national MPA networks was canceled at the time of Project restructuring in March 2014 for reasons already articulated under section 2.2. However, the second activity, establishment of demonstration sites for the MPAs, was fully achieved both in Grenada (implementation of a water quality improvement plan for a badly polluted PA in part through systematic participatory monitoring by local communities) and in Antigua and Barbuda (enhanced monitoring of mangroves using an innovative drone system). In total, two demonstration site activities in two MPAs were used to pilot and test new approaches to monitoring environmental quality and ecosystem integrity and to illustrate their use. The utility of the exercise to MPA managers has been captured in written lessons learnt that have been widely disseminated. The following paragraphs describe the activities and impact.

50. In Grenada, the WCCP MPA demonstration involved determining water quality baselines and designing a community-based water quality monitoring and improvement program. The water quality testing took place in June 2015 to establish a baseline. A second round of tests took place in August 2015, both to ensure dry and wet weather data. The ‘water quality improvement plan’ was developed and training on suitable testing methods was provided to MPA staff, community members, and university

²¹ Sustainable Finance Mechanism to Fund the National Conservation Fund of Grenada (March, 2015) and Implementation Plan for the Windward Islands Marine Trail in Grenada (March, 2015).

²² Sustainable Finance Mechanism to Fund the National Conservation Fund in St. Lucia (September, 2014) and Implementation Plan for the Blue Waters Conservation Program in St Lucia.

students. Therefore, the work associated with this program included watershed assessment, mapping, water quality testing, engagement with the MPA community members, training, and, finally, a water quality improvement plan for the MPA. The results have been disseminated and the plan has been integrated into the work program of the MPA authority in the Ministry of Agriculture, Forestry, and Fisheries. In addition, the program showcased methods to train and incorporate community members into MPA planning. At the beginning of the exercise, community members were fed up with all the promises made regarding this MPA and the fact that nothing had been done about the pollution. It was difficult to engage them but by the end of the exercise, some members voiced that they were willing to take on more responsibility in the MPA with regards to water sample collection and general observation of the MPA. There were several recommendations for greater education about the importance of the MPA as well as engagement of the community in the future. Another recommendation was to repeat this water quality exercise every year. A webinar took place (December 7, 2016) to share the results of the demonstration. In addition, before this, an MPA staff training was conducted on October 22, 2015 for 11 attendees (MPA staff along with members of Fisheries Division, Ministry of Agriculture, Lands, Forestry, Fisheries, and the Environment); there was also a presentation at the 2016 Gulf and Caribbean Fisheries Institute Conference in Grand Cayman and a regional WebEx event was hosted by TNC and the consultants in December 2016. For the utility see the M&E section of the ICR.

51. In Antigua and Barbuda, the Project demonstration, based in the Cades Bay Marine Reserve, supported the use of drone equipment to demonstrate enhanced monitoring of mangroves and other biophysical indicators in PAs and buffer zones. In February, UAS mapping experts, from TNC and the University of Southern Mississippi, provided a ‘training of the trainers’ to seven people from the Department of Environment, Surveys and Mapping Division, Fisheries Division, Development Control Authority, Environmental Awareness Group, and the University of the West Indies (UWI). The process involved equipping participants with skills in the operation of UAS ‘drone’ technologies and in the application of innovative 3D mapping and monitoring methods to support conservation. The use of this equipment over the mangrove area yielded valuable data and insight on how technology could be applied in resource-scarce environments. The training received favorable media attention in the country. This caused a heightened awareness of the need to get accurate data to monitor the countries’ PAs and to better understand the state of the mangroves and reefs, as well as to identify additional areas for protection. The demonstration has proved very innovative and provides a low cost, high resolution option for measuring the health of PAs. Further visibility occurred as the activity was highlighted at the Latin American and Caribbean Network of Environmental Funds (RedLAC) assembly (Brasilia, November 2016) and the Conference of Parties to the Convention on Biological Diversity (Cancun, December 2016). A Webex on-line meeting hosted by TNC, in December 2016, was also put together for about 40 participants.

Sub-Objective 3: Deploying a regional monitoring and information system network

Rating: Substantial

52. This objective was fully achieved. As described in the M&E section (section 2.3), this activity was substantially achieved by 2014, with data collected and the establishment of a web-based ecosystem monitoring site at www.caribnode.org. For dissemination, TNC facilitated a workshop in September 2014 during which CaribNode was further improved, making it capable of providing accessible decision-making tools with current ecological, socioeconomic, and climate change data. PA managers have been trained to use the system and collect data on a set of core regional coral reef indicators (see annex 2 for more details).

Overall Project GEO: Contributing to Enhancing the Long-term Sustainability of the Protected Areas Networks in the Participating Countries

Rating: Substantial

53. This was the overall Project GEO to which the three objectives and the Project design were intended to contribute. The most important Project intervention to achieve this objective was the establishment and operationalization of the CBF, to create sustainable financing for the region, the sustainability deriving from the investment income. The Project was not only fully successful in this regard, but, in fact, also substantially exceeded appraisal expectations in the level of its capitalization. Thus, the creation of a sustainable, new financing source for PA networks in the participating Eastern Caribbean countries is assured. Likewise, the five respective NPATFs have been established and at the time of Project closing were at various stages in the process of establishing the necessary conditions for signature of the Vertical Agreements with the CBF that would allow Project resources to be transferred to them for purposes of enhancing the quality and protection of their national, coastal, and MPAs. Domestic funding sources to help capitalize the NPATFs on a sustainable basis were also in the process of being identified and formalized with the continued support of both the CBF and TNC. A regional environmental monitoring system has also been put in place under the Project as have two demonstration Projects involving innovative approaches to local monitoring of PA quality and management with the potential for being replicated elsewhere.

54. As the Project restructuring included changes in its principal outcome indicators, it is also important to consider its EOP performance both against the original and the revised version of these indicators, and weight this performance against the relative shares of the GEF grant disbursement before (1.4 percent) and following (98.6 percent) restructuring. This analysis is shown in table 2 for each indicator.

Table 2. Weighted Project Overall Outcome Rating

Project PDO	Against Original Project Objectives	Against Revised Project Objectives	Overall
Rating	Moderately Unsatisfactory	Moderately Satisfactory	
Rating Value	3	4	-
Weight (% disbursed before/after restructuring)	1.4	98.6	100
Weighted Value	0.042	3.944	3.986 or 4 with rounding
Final Rating			Moderately Satisfactory

55. Based on the data presented in table 2 regarding Project achievements in relation to the main outcome indicators monitored, as well as the percentages of the grant disbursed before and after the February 2014 restructuring, the overall rating for the achievement of the Project outcomes (efficacy) is Substantial. In summary, despite the satisfactory results with respect to establishment, capitalization, and operation of the CBF, the two pilot demonstration Projects in MPAs, launch of the eco-regional and PA management effectiveness monitoring system, and the creation of the five NPATFs has taken longer than initially anticipated and none of NPATFs had received funding from the CBF at the time the Project

closed. However, their future and long-term prospects in this regard are very positive, especially considering the higher than anticipated level of capitalization of the CBF and its continuing technical, operational, and financial support (see also the section on Risk to Development Outcome), from the CBF and TNC.

3.3 Efficiency

Rating: Substantial

56. **Cost Effectiveness:** While no ex post cost-benefit analysis was carried out on completion, data supplied by the CBF gives credence to the cost-effectiveness of the Project because it resulted in a much higher rate of return than anticipated and a higher amount available for conservation. The Project at preparation (PAD page 69) estimated that the CBF “would receive, from the donors, US\$2.94 million per country by year 4 of the Project, which, assuming a 7 percent return (net of the CBF management fees) would generate US\$0.25 million in year 5, bringing the total to US\$3.19 million per country.” The NPATFs, in turn, would receive approximately (when rounded up) US\$0.17 million per year from the CBF, and would then generate a match equal to that so that a total of US\$0.33 million was available for PAs through the NPATFs. If one subtracts the running costs of the NPATFs, as estimated in the PAD (15 percent),²³ this means that US\$0.28 million per country would be available each year for conservation. However, contrary to the assumptions made in the PAD, at the end of September 2016, the CBF had already achieved accrued significantly greater returns (US\$2.4 million) on an initial capital endowment formed by the US\$7.2 million provided out of the GEF grant as well as the significant KfW contribution. While the rate of return of the funds has been approximately 7 percent as predicted, the additional grant to the endowment made by KfW²⁴ (US\$20 million was placed in the fund with US\$10 million allocated to the five OECS countries), as well as the early placement of that amount into the fund for investment, has resulted in an increase in interest income from the US\$0.25 million predicted to US\$2.5 million. Therefore, at the Project close, the CBF received, instead of US\$2.94 million per country, US\$4.275 million per OECS country representing a 31 percent increase in available funds per country by year 4.

57. This has clearly enhanced the CBF’s potential to provide financial support to the NPATFs once they become fully operational and will reduce the conservation funding gap in each country that was identified at Project appraisal. The CBF has not allocated the revenue income among the countries sub-accounts; so using just the per country CBF allocation of US\$4.275, each NPATF would now receive US\$0.213 million per year instead of what was predicted in the PAD (0.17) (representing a 20 percent increase from the appraisal estimation). If the NPATF match were attained, and it is highly likely for four of the countries, then this would result in a total of well over US\$0.426 million per NPATF per year available for conservation. This amount would go a longer way (than estimated at preparation) towards addressing the financing gaps²⁵ in the country for conservation financing. In addition, deliberate cost

²³ This cost was very much underestimated. In conservation financing, most national funds have costs higher than this due to office space, salaries for staff, including an executive director, and so on. The CBF therefore is pre-financing the start-up costs of the NPATFs (St. Lucia received approximately US\$80,000) already and others are eligible for this adjusted cost. Economizing (using Government or NGO donated space, and so on) will bring down costs but still are much higher than what was estimated at preparation.

²⁴ A recent statement by the asset manager, UBS, indicated that, as of February 27, 2017, the CBF had a total value of more than US\$33.9 million, of which approximately US\$15.6 million was in fixed income and US\$15.9 million in equity, with the remaining nearly US\$2.5 million in cash (UBS Client Review 2017). See annex 3 for further details on this report.

²⁵ The PAD estimates this gap for conservation financing at US\$1.7 million per year in Grenada and US\$ 1 million in St Vincent and the Grenadines.

savings were made using the WBG staff expertise where necessary, as well as leveraging funds (US\$50,000 from the WBG’s WET), and dropping some financing plans (because the completed ones could serve as data proxies for the remaining countries) allowed funds to be allocated for the operationalization of the NPATFs.²⁶

58. **Future Benefits of the Project:** The cost benefit analysis for the Project shows that it is generating positive economic returns (in the future) even under conservative assumptions and throughout different scenarios (see table 3 below and annex 3 for details). Benefits are assumed to be generated through the decline of coral reef (to 99%) and mangrove degradation, generating benefits in the form of biodiversity (80%), tourism and recreation (14.4%), flood prevention (4.5%), as well as fishery products and timber and C-sequestration. This analysis contrasts the actual costs with economic benefits from the establishment of a long-term functional sustainable financing mechanism for marine protected areas as well as the eventual strengthening of the marine protected areas that will occur as the funds become available in the region as well as the implementation of a regional monitoring and information system, discounted to 2013 (the year of the first disbursement). Future benefits from setting up the CBF and actual investment down the line are assumed to lead to the decline of coral reef and mangrove degradation.

59. The Net Present Value of the Project is estimated to be US\$23.5 million, and the Benefit Cost Ratio is 3.92. To verify the result’s robustness different discount rates (3%, 5%, and 10%) are applied and a reduction of the economic benefits by 20% and 50% in subsequent analysis is used. The benefits are more than two times larger than the costs in four scenarios and costs outweigh the benefits only in two scenarios. Yet, in reality, the Project benefits might be far greater, as this analysis is very conservative regarding the assumed effects on coral reefs and mangroves. The results of the analysis are robust in that very conservative assumptions regarding the benefits were made and only a few selected Project benefits were included in the economic analysis. The assumed rates of degradation decline for coral reefs and mangroves are conservative measures. The actual benefits might be much larger than assumed for this economic analysis. The assumed monetary values of the benefits are conservative values adding to the robustness of the positive impact. Furthermore, the quantitative analysis was limited to benefits generated only from the positive effect on coral reefs and mangroves. The analysis disregards for instance benefits from hydrologic and other watershed services, and amenity and bequest values, are not accounted for, as well as potential benefits for other Caribbean countries who can profit from the monitoring system and the CBF, thereby enhancing the conservation of biodiversity in the Caribbean. Given that CBF funds have not yet been given out in grants for conservation, the relative contribution from future benefits are yet to be fully realized.

Table 3 Results of cost benefit analysis between 2013 and 2042

	<i>Baseline</i>		<i>Baseline (-20%)</i>		<i>Baseline (-50%)</i>	
	NPV	BC-Ratio	NPV	BC-Ratio	NPV	BC-Ratio
Discount Rate 3%	23,536,791	3.92	17,218,593	3.14	7,741,298	1.96
Discount Rate 5%	13,549,297	2.75	9,294,462	2.20	2,912,209	1.38
Discount Rate 10%	1,737,610	1.25	-7,166	1.00	-2,624,331	0.62

NPV = Net Present value; BC-Ratio = Benefit Cost Ratio

²⁶ At the close of the Project, the funds set aside for this purpose were sent to the CBF to ensure funding for the operationalization of all the NPATFs.

3.4 Justification of Overall Outcome Rating

Rating: Moderately Satisfactory

60. The overall outcome rating is Moderately Satisfactory, which is underpinned by a High rating for relevance of objective, a modest rating for relevance of design, a Substantial rating for efficacy, and Substantial rating for efficiency. The achievement of the Project's GEOs is rated Substantial (that is, that each of the three objectives, as well as the overall one weighted by the percent of disbursements at the time of the restructuring was Substantial). The Project's most important investment and outcome was the successful creation and operationalization of the CBF, whose capitalization, to date, has significantly surpassed appraisal expectations. In addition, while this required greater time than anticipated in Project design, all five NPATFs were established and were well-advanced in the process of receiving funds at the time the Project occurred. The region-wide environmental monitoring system was developed and is now fully operational, providing useful information to PA managers and other national and regional stakeholders. However, despite being later successfully corrected by the supervision team through the restructuring, the serious design shortcomings nevertheless resulted in substantial implementation delays, the elimination of part of the original MPAs component, and an inability for the CBF to fully fund the NPATFs before Project closing.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

61. Project interventions were not anticipated to have major direct poverty, gender, or social development impacts, although, according to the PAD (paragraph 62, page 18), it was expected to "catalyze positive social outcomes...related to the improvement of natural resources and environmental conditions and potential economic benefits to local populations from improved tourism and other economic opportunities." These potential benefits were primarily associated with the proposed establishment of new MPAs in each of the participating OECS country, which, in practice, did not occur. Moreover, the Project design did not contain any targets, including gender-specific ones, in this regard, and actual Project impacts with respect to poverty, gender, and social development, in any case, were not specifically monitored.

62. The recipient's completion report nonetheless affirms that Project interventions "have the potential for generating more income and improving the livelihood of the communities", as it was expected that grants from the NPATFs would be "allocated to communities to create livelihoods from biodiversity and natural resources conservation" by June 2017. Similarly, the recipient's ICR affirms that "eligible women engaged in conservation work would benefit from grants received from CBF and NCTFs" (National Conservation Trust Funds). However, there is no analysis or explicit statement in this report regarding the potential of future Project-related actions to promote women's empowerment or enhance shared prosperity (that is, to improve the income share received by the poorest 40 percent) in the participating OECS countries.

(b) Institutional Change/Strengthening

63. The Project's most important institutional contribution entailed supporting the creation and capitalization of the CBF at the regional level. It likewise supported the establishment and institutionalization of conservation trust funds in each of the five participating OECS countries, although this process took considerably longer than initially anticipated and required a significant change in how they were eventually created—that is, by using the provisions under existing Company Acts with cabinet endorsement rather than seeking parliamentary approval, which was politically more difficult to achieve.

This notwithstanding, establishment of the CBF and the NPATFs has reportedly been instrumental in launching public-private partnerships to support conservation activities in the participating countries and these partners act on the Boards of the NPATFs. In St. Lucia, for example, this partnership includes the St. Lucia National Trust Board, the Soufriere Marine Management Association, St. Lucia Bar Association, the St. Lucia Hotel and Tourism Association, and the Caribbean Environmental Use Network. Important links between the Government and civil society were also forged, as again illustrated by St. Lucia, where its NPATF's Board of Directors includes representatives of several local environmental NGOs. The Project likewise sought to strengthen the capacity of national environmental management institutions through the implementation of technical workshops on ecological and socioeconomic data collection and a sustainable financing architecture for marine conservation, while also strengthening communication among them across the various participating countries.

(c) Other Unintended Outcomes and Impacts

64. The Project benefited from its close collaboration with the RedLAC in capacity building and knowledge management. It likewise deepened engagement with tourism-related entities at the national level, which is potentially very important as their engagement in efforts to protect natural resources will help promote future tourism in the region, thereby contributing to its economic growth. The idea of using the WIMT (see annex 2) in several of the participating countries as a regional financing mechanism was developed during implementation based on a consultant's report, and the Project also enhanced the level of cooperation among the OECS countries with respect to marine conservation, as well as promoting strengthened collaboration between the Governments and other stakeholders in each of the countries themselves. As a result, biodiversity conservation in general and in marine and coastal areas in particular is now receiving greater attention in the region in both the public and private sectors.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

65. No formal beneficiary survey was carried out, while stakeholder workshops were limited to those associated with both the design and dissemination of the results of the pilot demonstrations Projects in Grenada and Antigua and Barbuda. However, country representatives engaged in the Project were polled in a short informal survey that asked questions on positive and negative aspects of the Projects, lessons learned, and so on. A synopsis of their responses is found in annex 8.

4. Assessment of Risk to Development Outcome

Rating: Moderate

66. The CBF is now fully operational, well-capitalized, and about to receive additional funding from the German Government through KfW for a related purpose (that is, adaptation to climate change). Approximately US\$4.275 million is available in a subaccount for each of the OECS countries, not including the interest income which is not yet allocated. The five NPATFs are also now legally established and are in the process of soon receiving funding from the CBF. This funding transfer from the CBF to the NPATF is ready to occur for St. Lucia and Antigua and Barbuda, who signed their Vertical Agreement with the CBF to receive the funds in June 2017 and will occur in two additional countries by the end of 2017. Thus, they are also expected to begin to move beyond the project to invest in PAs in 2018 and beyond. Under the current arrangement, there will be a two-year grace period once the Vertical Agreements are signed, after which they will need to provide domestically raised matching resources on a one-to-one basis but this is already at the implementation stage for 2 countries and already implemented in 1 so the risk to the DO is much reduced. The regional monitoring and information system for PA networks is, likewise, up and running and has been further strengthened through the complementary

ECMMAM Project, also managed by TNC (see paragraph 54), while the two pilot demonstration Projects have been successfully completed and their results disseminated.

67. There are nonetheless some continuing risks to the Project's development outcomes. The NPATFs in one or two countries may have difficulty or, in an extreme case, be unable to raise the resources necessary to meet the one-to-one matching requirement after the first two years of the NPATF operation, which is a key element in the operationalization of the Project's financial architecture and would represent a significant potential risk for their sustainability. While St Lucia has already raised funds as described earlier, several of the countries have chosen debt-for-nature swaps at the cabinet level, the setting up of these systems is often highly legalistic and requires substantial investment of time, resources, political will, and suitable debt. Although this work has already begun, the process may not be concluded within two years. For this reason, the CBF has suggested that the countries look at multiple ways of meeting the match. However, in the interim, the CBF will continue to provide support to these countries with respect to their efforts to put such mechanisms in place. Thus, overall the risk to development outcomes is rated Moderate.

5. Assessment of Bank and Borrower Performance

5.1 Bank

(a) Bank Performance in Ensuring Quality at Entry

Rating: Moderately Satisfactory

68. The Project design was sound in the sense that the proposed Project activities, would ultimately have resulted in the achievement of its overall objective unaltered if time and finances were not a factor. However, several quality-at-entry shortcomings meant that this design could not be fully implemented. The most significant of these refer to the failure to allocate sufficient financial resources to support the establishment and proper management of new MPAs in the five participating OECS countries and underestimation of the legal and political difficulties involved in creating the NPATFs, even though this was recognized as a Substantial risk in the PAD (page 14). However, while the proposed mitigation measure for this risk—technical assistance (TA) to prepare draft legislation and operating rules for the NPATFs (which did occur)—led the PAD to lower the 'residual risk' to Moderate, this nevertheless proved to be a major roadblock until an alternative solution (that is, using the Companies Act to avoid the need to go through parliament) was pursued. It also led to substantial delays for this subcomponent, thereby constraining the Project's overall effectiveness during its implementation period.

69. In retrospect, the recipient's ICR clearly recognized these factors as elements that adversely affected Project implementation and outcomes, together with what it characterizes, not inappropriately, as 'ambitious Project design' (especially with regard to the 'lengthy process' involved in the expansion of the MPA network)²⁷ and similarly ambitious performance indicators and targets in the Results Framework.²⁸ The Project design, likewise, underestimated the political will needed at the participating

²⁷ More specifically, it observes that "in each of the five Caribbean countries, gazetting of an MPA is a legal process in which the Government, by law, requires various steps, including extensive studies, mapping, and establishing MPA boundaries. The process also required participatory stakeholder consultation with the MPA users and the surrounding communities which, on average, takes 5–7 years."

²⁸ Examples in this regard included that (a) the Project design expected the CBF to be created within three months, but, after effectiveness, it became evident that this expectation was unrealistic and the actual process took nearly a year and (b) the original design called for the NPATFs to provide a minimum of US\$1.5 million a year for all five countries, but this also proved to be unrealistic and had to be removed when the Project was restructured, among other necessary revisions.

level to proceed with an increase in the number of MPAs. These elements, which clearly constituted serious potential risks, should have been better anticipated and assessed by the WBG during Project preparation and appraisal, while either the necessary additional financing and more adequate risk mitigation measures should have been incorporated in Project design or it should have been made less ambitious in view of the amount of the GEF and other donor resources available and the Project's proposed five-year implementation period.

(b) Quality of Supervision

Rating: Satisfactory

70. To the WBG's credit, the abovementioned quality at entry issues were recognized during the early stages of Project supervision, which led to cancelation of the expansion of MPAs subcomponent and adjustment of the associated and several other performance indicators in the Results Framework at the time of the Level 2 restructuring in March 2014. This made the revised Project design more realistic. However, even then significant implementation delays were encountered, especially for establishment of the NPATFs, and, as a result, Project outcomes on the ground in the participating OECS countries before the Project's closing date, while positive, were limited.

71. The WBG's supervision helped identify and address the issues experienced during implementation. It also brought on board additional Bank experts, one who had considerable expertise in conservation trust funds in the Africa portfolio and another who had expertise in water pollution. Both these experts gave critical advice where needed and this had positive results. The recipient credits the WBG for having 'adequately and intensively' supervised and 'closely monitored' the Project, as well as for alerting the participating Governments and TNC 'to problems with Project execution' and facilitating adoption of 'remedies in a timely manner, in conformity with WBG procedures'. However, it also pointed to the 'high turnover' of WBG task team leaders, which occurred once²⁹ during Project implementation, and which it alleged 'led to lack of continuity and different approaches to Project supervision'. However, these changes did not adversely impact the Project in any way and, in general, the recipient was very positive with regard to the quality of the WBG's supervision support.

72. The supervision quality was Satisfactory, with bi-yearly larger supervision missions, monthly audio calls with the countries and the TNC as well as numerous informal meetings with TNC given that their offices were a few metro stops away from the Bank offices. Supervision in-country included participation at CBF Annual meetings as well as several mission to discuss the roll out of the Project. The larger mid-term review mission (including TNC, CBF and all the OECS countries) that took place in St Kitts and Nevis was helpful in bringing together stakeholders to discuss the restructuring face to face and to re-chart the Project's course. Supervision missions included oversight of recipient's application of WBG fiduciary and safeguard policies and the supervision team was largely unchanged throughout implementation and possessed the necessary technical and operational skills.

(c) Justification of Rating for Overall Bank Performance

Rating: Moderately Satisfactory

²⁹ The Project had a turnover from the preparation task team leader in December 2011. The supervision task team leader took over at approval (December 2011) and was away on an overseas assignment from August 2015 to September 2016 before resuming task team leadership. During that one-year period, the team members assumed co-TTLship, and implementation continued strongly.

73. While supervision was Satisfactory, because of the quality at entry shortcomings briefly described above, which ultimately impeded Project interventions for the establishment of new MPAs and delayed them in strengthening existing ones through the NPATFs, which were not yet fully operational at the time the Project closed, the overall WBG performance is rated Moderately Satisfactory.

5.2 Borrower

(a) Government Performance

Rating: Moderately Satisfactory

74. While commitment to the Project's objectives by the Governments of four of the five participating OECS countries at the time of preparation was reportedly strong, the quality of their actual performance varied. In some cases, there was reluctance to support the establishment of new MPAs, with some countries, in fact, saying that this was no longer a priority for them and others stating that they would do so at their own pace even though this had apparently been discussed during appraisal. This reluctance was, in part due to the insufficient resources in the Project for this purpose and an understandable concern on the countries' part that they would need to financially manage the proposed new PAs once they were legally created (that is, to avoid the risk of their becoming mere 'paper parks').

75. The participating countries also experienced difficulties in establishing their NPATFs through parliament and in identifying and bringing to fruition the sources of the required matching resources for these national trust funds, which was one of the critical preconditions for their being able to receive donations from the CBF. In addition, one of the participating countries initially expected to carry out a demonstration activity subsequently proved unable to do so and was replaced by a different one in a second country. Despite these issues, both pilot demonstration activities were successfully completed before Project closing. Countries were generally positive about the Project and appreciated its intent. They participated in monthly audio calls with the WBG to give updates and discuss any implementation issues and concerns. To varying degrees the countries led the process to get the NPATFs approved within their various Government ministries, some actively championing the process, while others were led more by the NPCs.

76. However, it is important to point out, that in the present Project, the grant recipient was neither the participating country governments nor the OECS Secretariat, but TNC, a Washington area-based international NGO. TNC has ample past and ongoing experience in the Caribbean Region as a whole and in the Eastern Caribbean Region in particular and is continuing to directly support the participating countries after the Project closed, using its own resources and those from other donors. Thus, in the present case, unlike the majority of WBG-supported Projects, the recipient and the implementing agency are the same. Considered in its capacity as grant recipient and co-financier, TNC's performance can be rated Satisfactory because it successfully contributed US\$3.35 million to the Project to help capitalize the CBF, although this figure was lower than anticipated at appraisal due to the much larger than expected contribution to this endowment fund by KfW (see annex 1). In addition, TNC, as a donor, also was very much needed as it provided stopgap measures for the CBF (office space) and the ecosystem monitoring (web hosting) to ensure sustainability and continuity as the Project took shape. Without this contribution, and its overall involvement, the Project implementation would have been decidedly more complex.

(b) Implementing Agency or Agencies Performance

Rating: Moderately Satisfactory

77. As an implementing agency, TNC was committed to the Project's objectives and design and demonstrated generally good management capacity. Initially, some OECS countries had complained of a possible conflict of interest because of TNC's dual role as implementer and donor for the Project. This issue was brought to TNC's attention and, as a result, it made substantial changes in its implementation approach and messaging, which brought about its ultimate acceptance by all the participating countries. TNC's oversight arrangements were effective and provided strong coordination with the involvement of the OECS Secretariat and close collaboration with the WBG team. As observed in the pertinent sections of this report, TNC carried out its FM, safeguards and M&E-related responsibilities with the required due diligence. However, there was an initial, perhaps avoidable, long (that is, nine month) start-up delay with respect to procurement, which delayed Project implementation more generally, and contributed to the greater than anticipated time required to get both the CBF and NPATFs fully operational.

(c) Justification of Rating for Overall Borrower Performance

Rating: Moderately Satisfactory

78. In this case, the GEF grant recipient was not a National Government or a regional organization (such as the OECS). Rather, it and the implementing agency were one and the same. Despite TNC's generally positive performance both as recipient and co-financier, because there were some shortcomings with respect to procurement leading to general implementation delays, its overall performance is rated Moderately Satisfactory.

6. Lessons Learned

79. Useful lessons can be drawn from the design and implementation experience of the Project. In addition, the recipient's completion report also puts forward a number of practical lessons that have emerged from the two pilot demonstration Projects that is, for water quality assessment and monitoring and for the use of drone technology to monitor marine and coastal PAs.

80. **Regional conservation financing is decidedly complex and budgetary allocations (and time requirements) need to be at the forefront in design planning.** First, an assessment of WBG conservation financing must be done and lessons learned included in the design. Lessons learned from previous Projects may have shown that setting up the NPATFs and financing their running costs can be between US\$80,000 and US\$125,000 a year, the lower value if some of the running costs are supported by the Government, an NGO, or other support institutions.

81. **The establishment of PA trust funds at the same time in a number of countries in addition to a single regional 'umbrella' conservation trust fund may prove to be particularly difficult.** The experience of the present Project in this regard should serve as a caution and perhaps an alternative Project design should be considered should a similar situation arise in the future. Both political and legal/bureaucratic barriers may need to be overcome in the process and ample prior stakeholder consultation, which does not appear to have occurred sufficiently in the present Project, is likely to be necessary to ensure the strong local commitment to this process that will be required.

82. **Requiring countries to completely match donor funds each year for the next 20 years or more, particularly for countries facing economic difficulty, may be onerous and a full assessment of their capacity and commitment to do so, as well as a full assessment of the alternative options available, should be assessed at the design stage.** While the match is theoretically a good idea, in practice, requiring the Governments to enact tax laws or bargain with cruise ships and airline industries to garner matching funds without doing the detailed assessment of these possibilities becomes difficult when the Project expects financing to come from these sources. In reality, these are already carefully brokered

relationships, which often require years of negotiation to change existing contracts and modus operandi. A pre-assessment could have altered the design—and the requirements.

83. **Various options for designing regional funds should be assessed for financing, implementation, Government buy-in, and so on before settling on a single design.** The Project could have chosen a design that set up one regional fund, which distributed funds at the country level without having to create in-country NPATFs, which could ultimately end up competing with the CBF for funds. This would have made sense with the limited budget and time constraints and most likely would still have garnered country-level support because the countries would be represented on the board. Other options could have been explored—perhaps the CBF and one regional OECS fund which may have been more suitable for the financing available and the Project life-span.

84. **For complex activities that involve the Government or other institutions to move an activity forward under their own institutional processes, it is important to have a very detailed step-by-step plan of what actions are necessary to obtain the desired result.** This is because often there are a number of clearances, similar to bank clearances that happen internally and are not obvious at the design stage and therefore are not obvious to task team leaders. Taking the time to map out these detailed steps will allow teams to make appropriate time and budget allocations. Asking them to map out the process for a recently cleared and similar activity may help chart this out.

85. **Seeking donor financing to support GEF resources is key to successful implementation of regional Projects.** In this Project, the GEF finances, on their own, could not have resulted in the success experienced by the Project. It took KfW's considerable resources, as well as TNC's resources with regard to budget and staff, to achieve the outcomes and outputs expected by the Project.

86. **Involving the Ministry of Finance of the countries in these types of Project is very important,** particularly if they become champions of the Project. In the country where Ministry of Finance was the NIE, there was stronger engagement. This is likely because that ministry is better able to assess the financial aspects especially as it comes to understanding the Project and proposing solutions.

87. **Additional donor support, while important and useful, may come with added layers of complexity, and it is important to assess and agree upon what each donor will bring to the table and under what conditions.** Donor requirements that are significantly different from the WBG (as was the case for procurement rules and United States' country requirements for a United States agency) can lead to extreme delays if these are not discussed and negotiated upfront. In other cases, a donor may become the lead donor by a significant amount as was in the case of this Project. This, however unintentional, can result in redefining of priorities that has to be carefully brokered to ensure that each donor achieves their objectives. Despite these complexities which should be identified upfront as a risk and mitigated, the donor presence was of immense benefit to the Project.

88. **In addition, supervision budgets for regional Projects—that is, those involving a number of countries—should be adjusted to permit adequate opportunity for the Project teams to provide the needed oversight and implementation support to all of the participating countries.** Insufficient administrative budget resources allocated by the GEF constrained the WBG Project team's ability to supervise the Project on the ground, and the GEF Secretariat should consider alternative supervision budget coefficients for regional Projects which necessarily require greater resources than single country operations.

89. **Private sector participation should be an important factor in marine conservation and improved environmental management.** This is especially the case for the tourism industry and other sectors that depend heavily on the quality of a country's natural, including marine and coastal, resources,

as is clearly the case in the Eastern Caribbean Region. Thus, Projects, such as the present one, should seek to maximize local private sector involvement, both in financial and other ways, toward the achievement of their objectives.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners
(a) Borrower/implementing agencies

87. Please see the summary of the borrower's ICR (annex 7)

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in US\$, Million equivalent)

Components	Appraisal Estimate (US\$, millions)	Actual/Latest Estimate (US\$, millions)	Percentage of Appraisal
Establishment of Sustainable Financing Mechanisms	15.771	20.706 ^a	131.3
Strengthening and Phased Expansion of Marine Protected Area Networks	0.808 ^b	0.209	25.9
Deployment of a Regional Monitoring and Information System	0.572 ^c	0.183	32.0
Project management and M&E	1.721	1.115	64.8
Total Baseline Cost	18.872	22.212	117.7
Physical Contingencies	0.00	0.00	
Price Contingencies	0.00	0.00	
Total Project Costs	18.872	22.212	117.7
Project Preparation Facility (PPF)	0.00	0.00	
Front-end fee IBRD	0.00	0.00	
Total Financing Required	18.872	22.212	117.7

Note: The value at appraisal is not representative for Components 2 and 3 where the contribution by others did not materialize. The values therefore for Component 2 are actually US\$0.250 million from the GEF and likewise for Component 3, the amount is US\$0.350. The corresponding values for percentage of Project budget used are therefore really 83.6 percent for Component 2 and 52.2 percent for Component 3.

a. The amount for the OECS countries alone and not for the wider CBF countries.

b. This amount did not materialize.

c. This amount did not materialize.

(b) Financing

Source of Funds	Type Cofinancing	Appraisal of Estimate (US\$, millions)	Actual/Latest Estimate (US\$ millions)	Percentage of Appraisal
Borrower	In kind	0.93	0.00	0.00
Global Environment Facility (GEF)	Grant	8.75	8.63	98.6
Germany: (KFW)	Grant	4.50	10.15	225.6
Foundation/s (TNC)	Grant	4.70	4.17	88.7
Total Financing		18.8	22.212	

Annex 2. Outputs by Component

1. This annex summarizes the outputs by Project component.

Component 1. Establishment of Sustainable Financing Mechanisms

2. This component had two subcomponents: (a) establishment and initial capitalization of the CBF and (b) establishment and strengthening of a policy, legal, and institutional framework for generating additional financing for PAs. Each subcomponent, in turn, had two parts. In the case of Subcomponent 1A these were (i) financing of technical advisory services for establishment of the CBF as a United Kingdom-based charitable organization with a Board of Directors and Secretariat and (ii) establishment of five country subaccounts of US\$2.94 million each with US\$1.44 million from the GEF and the remainder in the form of donations from KfW and TNC. Endowment returns would be closely monitored to ensure that each subaccount was credited its share and disbursed into the respective NPATF, on an annual basis, in accordance with agreed performance targets and co-financing from the Government and other sources.

3. Likewise, the Subcomponent 1B had two parts: (i) establishment of the five NPATFs to finance sustainable management of national PAs, including critical marine ecosystems, each one to be managed by an independent majority nongovernment Board and supported by the Project through the provision of TA in a number of areas³⁰ and (ii) elaboration of a capitalization strategy for the CBF to fill the PA financing gaps in the participating countries, as the initial capital used to create this regional fund would not generate sufficient resources for this purpose. TA would be provided for this activity, as well as to develop a communications and outreach program for the CBF.

4. **Activity 1A (i). Establishment of the Caribbean Biodiversity Fund.** The CBF was legally established as a charitable organization in September 2012, slightly more than a year after the GEF grant became effective. The WBG carried out a technical and fiduciary assessment, which certified that the CBF's Board and management had the necessary capacity and experience to exercise control over the use of funds.

5. The CBF is now fully operational. The fund's Operational Manual and accompanying policies and procedures have been completed, and in December 2013, the CBF signed a letter of agreement with a Bahamas-based accounting firm to establish appropriate accounting systems. It signed a similar agreement with a new accounting firm in June 2016. At the time the Project closed, an operational management system with FM software customized for the CBF was nearing completion. The accounting firm will provide the CBF with monthly and quarterly financial statements for both the CBF Secretariat operations and the CBF endowment and other accounts.

6. A new CEO, for the CBF, was hired in January 2014 and was reappointed for each subsequent year to the present (2017). In addition to the accounting firm, the CBF Secretariat contracted a Swiss global financial company to manage its investments and it has established an office in the Bahamas and was registered to operate in that country in March 2014. At the time of Project closing, the CBF's Board had two members, TNC and KfW, but new members are expected to join once the new NPATFs sign

³⁰ According to the PAD, the activities envisioned for support in this regard could include (a) technical assistance (TA and studies to support targeted efforts to develop new financing mechanism for PAs such as payment for environmental services, dedicated user fees, and taxes; (b) TA and studies to demonstrate tourists' willingness to pay to support national PA systems; (c) TA to carry out economic evaluations of natural resource services to accurately demonstrate the value that PAs and healthy ecosystems provide to local and national economies; and (d) establish, strengthen, and consolidate a policy, regulatory, and institutional framework across the participating countries so as to harmonize activities for sustainable PA financing.

their respective Vertical Agreements with the CBF and nominate a member to represent them at the regional level on the Board.

7. The Fourth CBF Annual Meeting took place in St. Lucia in September 2016 during the first meeting of the CCI. All 10 CBF Governments participated in this event together with representatives of Cuba, Dominica, and Haiti, who attended as observers, and of the CBF donors (that is, KfW, TNC, UNDP, and GEF). During this meeting, the 2020 CBF Strategic Plan was approved, as was the CBF FY2017 annual work plan and budget. The CBF Fundraising Strategy is an important component of the broader 2020 Strategic Plan and the fund is now working to establish a more in-depth Fundraising Action Plan and identify additional public, private, and foundation donors.

8. **Activity 1A (ii). Initial Capitalization of the CBF.** Once the disbursement conditions were met, the KfW, TNC, and WBG, on behalf of the GEF, released funds into the CBF's account in 2013 and 2014. At the time of Project closing US\$31.8 million was transferred and is under investment. The remaining, €5 million pledged by the German Ministry of Environment through KfW and TNC, will be transferred as soon as key benchmarks are met, including the signing of Vertical Agreements with the NPATFs, four of which are expected to occur during 2017. Since its inception, the CBF has generated an investment income of approximately US\$2.4 million, increasing the total amount, presently invested, to approximately US\$34.2 million.

9. **Summary of outputs.** The creation of this sustainable financing structure involved

- (a) Establishing the CBF as a registered charity in the United Kingdom (September 2012), a process which took almost a year given the legal paperwork and filings;
- (b) Setting up the Board and holding Board meetings (15 were held by the end of the Project, as well as 4 Annual CBF meetings attended by stakeholders from all countries and other CBF members who are not part of this Project). The Fourth CBF Annual Meeting took place between September 19 and 24, 2016 in St. Lucia and was attended by all 10 CBF participating governments, CBF donors, KfW, TNC, United Nations Development Business, and the GEF Secretariat, including the Bahamas Minister of Environment and Housing;
- (c) Establishing an office in the Bahamas, which took more than a year to set up, given that the country has very stringent requirements for operating a business from the island (March 2014);
- (d) Setting up financial and procurement systems and the recruitment of a financial firm (Baker Tilly Gomez, a Bahamas-based accounting firm in December 2013 and subsequently a new one in June 2016) to manage the financial aspects of the CBF;
- (e) Recruiting an asset managing company and creating a CBF Finance Committee which holds quarterly calls with the asset firm to track portfolio performance;
- (f) Recruiting a CEO (the first CEO was recruited in 2013, and the Board replaced this CEO with the current CEO, Yabanex Batista, on January 15, 2014);
- (g) Signing a subsidiary agreement between TNC and the CBF;
- (h) Revising and finalizing an investment strategy and communications manual; and

- (i) Articulating the financing agreement ‘Vertical Agreement’ between the CBF and the OECS countries to determine terms by which countries would be funded and the requirements for the NPATFs to be funded (bank account, operating manual, board members, requisite board meetings, grant manual, and so on).

10. **Subcomponent IB (i). Establishment of National-level Conservation Trust Funds.** The NPATFs have been legally established in all five participating OECS countries. The funds were established as not-for-profit organizations under the laws and have been endorsed by the cabinets of ministers in each country during the following months: (a) St. Vincent and the Grenadines - December 2015 (b) Grenada - February 2016 (c) St. Lucia and Antigua and Barbuda - May 2016 and (e) St. Kitts and Nevis - July 2016.

11. At Project closing, the stakeholders in all countries were in the process of operationalizing their respective funds, including recruitment of their executive directors with the following progress achieved:

- Antigua and Barbuda - legal instrument finalized and filed; company registered
- Grenada - legal instruments finalized and trust fund incorporated (February 2016)
- St. Kitts and Nevis - foundation created; first Board meeting held (June 2016).
- St. Lucia - fund legally established; executive director on board (but subsequently resigned and a new one is in the process of recruitment)
- St. Vincent and the Grenadines - fund incorporated; first Board meeting held (March 2016)

12. **Subcomponent IB (ii). Capitalization Strategy/Sustainable Financing Mechanism Status.** The initial capital used to create the CBF was not intended in and of itself to generate sufficient funds to fill the financing gap for the expansion and strengthening of PAs in the five participating OECS countries. To help reduce this gap, additional capital was expected to be raised by the CBF according to its capitalization strategy together with a strong communications and outreach program to attract other donors. In addition, each of the participating countries was required to identify financing mechanisms to provide funds to match the CBF donations to their respective NPATFs. At the time of Project closing, the status of this process and next steps in each of the participating countries was as follows:

- **Antigua and Barbuda**
 - **Status.** A national fund, the Sustainable Island Resources Fund (SIRF) was established and was expected to be financed in part through an environmental levy and proceeds from a wind farm Project presently being designed, which could provide the match for the CBF resources.
 - **Next steps.** The legal relationship between SIRF and the Marine Ecosystems Protected Area Trust Fund, established under the present Project, has been clarified and sustainable mechanisms need to be implemented to ensure a match is provided in 2 years.
- **Grenada**

- **Status.** Sustainable financing mechanism consultations and workshops took place in July 2014 based on which the Windward Islands Marine Trail (WIMT)³¹ concept was developed and a debt-for-nature swap is also being explored with TNC's assistance³² and has been endorsed in principle by the cabinet.
- **Next steps.** Financing for a subregional WIMT is expected to provide an essential source of domestic financing, but, according to TNC, a source or sources of financing for this initiative is yet to be determined. In addition, the Government, as another strategy, has endorsed, at the Cabinet level, a move to initiate a debt-for-nature swap brokered by TNC. This other mechanism is under implementation.
- **St. Kitts and Nevis**
 - **Status.** A potential debt swap, which TNC is helping to bring about, has been identified and endorsed by Cabinet as the most promising sustainable financing mechanism and was endorsed by the cabinet during the first quarter of 2016.
 - **Next steps.** An action plan will be finalized with the Government, creditors, and donors.
- **St. Lucia**
 - **Status.** The agreement is finalized with the Hotel and Tourism Association concerning a partnership with its Tourism Enhancement Program, which is capitalized with voluntary US\$2 contributions by hotel guests (added to the hotel bill with an 'opt out' clause).
 - **Next steps.** For other income, financing for a subregional WIMT will likely flow from Project K resources³³ that are expected to generate further buy-in for the mechanism and promote the execution of the implementation plan.
- **St. Vincent and the Grenadines**
 - **Status.** A sustainable finance mechanism consultant conducted a fact-finding visit in mid-2014, which led to a roundtable conference in February 2016 and a similar idea to that of Grenada—a subregional WIMT from Project K resources.

13. In summary, legally independent NPATFs have been established under local laws in all five participating OECS countries, and they are all making significant progress in operationalizing their respective funds by (a) identifying and training Board members (all countries have constituted their Boards), (b) convening Board meetings (all countries have achieved this), (c) revising and adopting bylaws (all countries have achieved this), (d) developing terms of reference for key positions (all countries have achieved this), and (e) developing Operational Manuals (most countries have achieved this). By Project closing in December 2016, four of these countries had developed grant-making frameworks to help inform their respective Boards' grant-making decisions. These frameworks were developed by a consultative, stakeholder-driven process that took into account national biodiversity strategies and action plans, PA systems plans, and other policy and strategy documents and will identify (a) key threats to ecosystem health and statements of need for effective management of PAs; (b)

³¹ The WIMT is an innovative financial mechanism that is expected to provide access to an untapped donor base (the yachting community) and strengthen the link between the tourism sector and conservation in the Eastern Caribbean.

³² According to the former Project coordinator in TNC, it has US\$25 million available to finance debt-for-nature swaps in the Eastern Caribbean.

³³ Project K is a special Project built on the results and lessons learned from the RedLAC Capacity Building Project and aims to enhance the funds' portfolio of innovation, to diversify sources of funding to address conservation challenges and promote knowledge and best practice transfer through peer-to-peer learning and online tools.

indicative national trust fund conservation goals and priorities; and (c) guidelines for funding allocations. At Project closing, the national funds in the Eastern Caribbean were preparing to enter into the Vertical or Partnership Agreements with the CBF, with four anticipated to be signed in 2017.

Component 2. Strengthening and Phased Expansion of Marine Protected Area Networks

14. Component 2 also had two subcomponents: (a) expansion of the system of MPAs by the designation and gazetting of at least three new MPAs in the participating countries based on a set of agreed criteria that would include biogeographic representativeness, system resilience, political will, stakeholder buy-in, and contribution to the overall network of such PAs and (b) establishment of demonstration sites to showcase best practices in MPA management. A number of potential demonstration activities were listed in the PAD,³⁴ but, while the sites themselves were chosen during Project preparation, the two actual initiatives that would be supported under the Project would be selected on the basis of stakeholder consultations and analysis of site-specific characteristics during Project implementation. For both subcomponents, consulting services would also be provided by the Project.

15. **Activity 2A. Expansion of the System of MPAs.** This activity was canceled at the time of the restructuring and resources initially allocated for it were transferred to Activity 2B.

16. **Activity 2B. Establishment of Demonstration Sites to Showcase Best Practices.** Based on a set of selection criteria agreed by the participating countries, two sites were prioritized during Project appraisal: (a) West Coast Marine Management Area in St. Lucia and (b) Clarke's Court/Woburn in Grenada. During implementation, the activities identified for the St. Lucia site (purchase of a glass-bottom boat for tourism that could generate fees for the required match financing) could not be realized due to logistical and budgetary constraints, and an alternative demonstration Project was identified in Antigua and Barbuda. These Projects were completed and are briefly described in the following paragraphs.

17. **Grenada.** In Grenada, work by local communities has been ongoing for the past three years to assess water quality, help control point source pollution from a nearby rum factory, and undertake participatory monitoring of the WCCB MPA. Therefore, the pilot demonstration activity was community requested and involved determining water quality baselines and designing a community-based water quality improvement program at the WCCB MPA. The water quality testing to establish the baseline took place in June 2015. A second set of tests was conducted in August and December 2015 with assistance provided by the Windward Islands Research and Education Foundation WINDREF with its office located at St. George's University to provide essential TA to develop the indicators to select for testing, carrying out the testing, and providing training to the community for community-based monitoring of the bay. The objectives of the TA were to identify specific point source polluters and train the community and prepare it to continue monitoring the water quality beyond the scope of the Project

18. As part of this demonstration activity, the rum factory at Woburn Clarke's Court Bay was identified as one of the major polluters and a series of discussions ensued between the Government, the WBGA, and the rum factory to identify alternative and cleaner ways of disposing of their raw waste into the bay. A sum of US\$50,000 was leveraged from WET and a study was carried out to determine cost-

³⁴ These possible activities were (a) development of managed dive sites with moorings, markers, and signage; (b) development of managed snorkel trails with moorings, markers, and signage; (c) multiple use zoning and demarcation activities; (d) education and outreach programs; (e) capacity building at the community level for ecotourism; (f) incentives for fostering partnerships with research institutions; and (g) Sustainable Development Action Plans as needed.

effective options for cleaning and treating the waste before disposal. The study is available in the portal³⁵. At the time of Project completion, the rum factory was still considering the options and was looking to solicit funding to embark on one of the possible options. A number of training events have been realized with the participating communities and a webinar on the demonstration occurred in early December 2016.

Training and Dissemination

19. The following trainings were conducted: an Ocean Health Class held at St. George's University School of Arts and Sciences Marine Biology on September 14, 2015 for nine students; and community meetings to inform community members about the Project and to train individuals on water testing on October 6, 2015 - 7 attendees, and on October 8, 2015 - 4 attendees. Lessons learned have been derived quite apart from the report and both have been disseminated through a webinar which took place on December 7, 2016 to share the results of the demonstration. In addition, before this, an MPA staff training was conducted on October 22, 2015 for 11 attendees (MPA staff along with members of Fisheries Division, Ministry of Agriculture, Lands, Forestry, Fisheries, and the Environment). There was also a presentation at the 2016 Gulf and Caribbean Fisheries Institute Conference in Grand Cayman and at a regional WebEx event hosted by TNC and the consultants in December 2016. For the utility see the M&E section of the ICR. Lessons Learnt included a) that the communities were critical to carrying out the studies and analysis. Without the generous support of these groups, including Grenada Distillers Ltd., the reports would have been delayed and would not have been as comprehensive; b) any improvement in water quality in the WCCB MPA is going to require extensive partnerships and engagement between WCCB community members, businesses, NGO, and the relevant ministries and individuals from the Government of Grenada. This collaborative effort cannot be understated.

20. **Antigua and Barbuda.** This demonstration activity at the Cades Bay Marine Reserve entailed the use of UAS (that is, drones) equipment to demonstrate enhanced monitoring of mangroves and other biophysical indicators in PAs and buffer zones in Antigua and Barbuda. This demonstration activity is complete. In the first quarter of 2016, two 3DR Solo drones equipped with high-resolution cameras and PiX4D mapping software were acquired for the Department of Environment. An Operational Manual was developed for the use of the drones and training to operate drone technology was provided to the PA managers and others in Antigua in April 2016. A temporal comparison of the extent and health of the mangroves at Johnson's Point in the Marine Reserve was also completed.

Training and Dissemination

21. In February, 2016 UAS mapping experts from TNC and the University of Southern Mississippi, provided a 'training of the trainers' to seven people from the Department of Environment, Surveys, and Mapping Division, Fisheries Division, Development Control Authority, Environmental Awareness Group, and the University of the West Indies. The process involved equipping participants with skills in the operation of UAS 'drone' technologies and in the application of innovative 3D mapping and monitoring methods to support conservation. The training received favorable media attention in the country. This has caused a heightened awareness of the need to get accurate data to monitor the countries' PAs and to better understand the state of the mangroves and reefs, as well as to identify additional areas for protection. A consultant, contracted under the Project, has developed a remote sensing protocol and methodology for the UAS technology, as well as a research Project comparing the extent and health of a mangrove wetland

³⁵ Grenada Distilleries (Clarks Court) Ltd. Sustainable Wastewater Treatment

in the Cades Bay Marine Reserve. The demonstration has proved very innovative and provides a low cost, high resolution option for measuring the health of PAs. A staff training workshop was held on June 22, 2016. The Project results and lessons learnt were presented in several international fora, including at a United Nations Conference of Space Technology and Applications for Wildlife Management and Protecting Biodiversity in Nairobi, Kenya in June 2016, the consultant facilitated a regional Webex session and presented the outcome of the activity at the USISA Caribbean GIS Conference from September 2 to 4, 2016. Lessons learned dissemination occurred at the Gulf and Fisheries Conference which brought together multiple users of ocean resources to make informed decisions about how to sustainably use these resources and incorporate this knowledge into MPA management (Grand Cayman, November 7–11, 2016). Further visibility occurred as the activity was highlighted at the RedLAC assembly (Brasilia, November 2016) and the Conference of Parties to the Convention on Biological Diversity (Cancun, December 2016). A Webex hosted by TNC in December 2016 was also put together for about 40 participants.

Component 3. Deployment of a Regional Monitoring and Information System.

22. There were three subcomponents for this component, the first being for eco-regional and management effectiveness monitoring. Eco-regional monitoring would consist of regular observation and data collection for a number of biophysical and socioeconomic indicators within the PA network, which would be adopted as an output of the Project. These would include monitoring of the resilience of the system to disturbance events, such as its ability to recover after an acute shock (for example, coral bleaching associated with an El Niño event or a hurricane), which are occurring more often in the region as the likely result of global climate change. The monitoring of PA management would extend beyond the eco-regional monitoring data to include other factors that affect management effectiveness, including the governance and cultural context that can also influence ecological and social outcomes and PA management goals. This aspect would be achieved by implementing the GEF METT Tracking tool for MPAs.³⁶

23. The second subcomponent involved setting up a web-based system to house data, analyze it, and make it accessible to key stakeholders in the region and elsewhere. In doing so, the system was expected to provide the basis for cost-effective periodic eco-regional status assessments for the Project area and to serve as a repository for monitoring data from Project sites and permit evaluation of conservation outputs and outcomes. The third subcomponent would entail dissemination of the outputs of the monitoring system to decision makers by converting the data collected and analyzed into reports and other media for natural resource managers at the site level, as well as regionally and nationally in the participating countries.

24. With regard to implementation achievements, a GEF METT Tracking Tool assessment was completed for the two demonstration site MPAs which outlined the state of the MPA in terms of management effectiveness. This exercise was completed by the OECS Secretariat as part of its contribution to the Project. The actual scoring was done at a series of stakeholder meetings, including MPA managers, government officials, NGOs, and others. The utility of this exercise, however, had little immediate value as the Project did not dedicate any financing to improve management effectiveness, except, perhaps by exposing the MPA staff to training as outputs of the demonstration Projects (Component 2). Then, under the Management Effectiveness Monitoring and Eco-regional Monitoring subcomponent, data was collected on biophysical and socioeconomic indicators within the PA network in consultancy with Blue-Earth financed by the Project. Consensus on the type of indicators to select resulted in a largely biophysical dataset as this was determined to be of greater use to PA managers. This

³⁶ The GEF METT for MPAs was a modification of the tool for PAs and assessed whether PAs had clear boundaries, how they were managed, financing and staffing, and so on.

dataset was sourced primarily from already established databases, because there was insufficient funding to launch raw data collection on a regional scale. This dataset was then fed into the regional web-based monitoring and information system (described in detail in the M&E section of the ICR). Additional data from TNC was populated with the data collected under the complementary Eastern Caribbean Marine Managed Areas Network (ECMMAN) Project.³⁷

25. Under the electronic database for an eco-regional environmental monitoring system subcomponent, a standardized web-based regional monitoring and information system was established and made accessible to PA managers and other interested stakeholders through an electronic portal, CaribNode. Because the design elements of the ecosystem web-based monitoring system were not well articulated during preparation, the WBG team called upon the technical advice of a WBG's Disaster Risk Project (the Caribbean, Open Data for Resilience Initiative) that was ongoing in the OECS at the same time, as well as a technical expert in TNC. The Disaster Risk Project was establishing Geonode as a database platform in the OECS, and was providing training for database managers in its use in four of the five OECS countries. Based on their technical advice, the Project decided to use Geonode as the database platform because (a) it was open-access and could be used without fees, (b) the Project, which had no allocated funds to train database managers or build any capacity in managing data could capitalize on an already ongoing WBG Project that would do the training, and (c) Geonode was relatively easy to use and the system could be easily obtained by all countries in the OECS. A final consultancy was used to build the regional web-based system. The resulting system, CaribNode (www.caribnode.org), has been established and is in use by PA managers. At its launch, over 2,000 practitioners and others accessed the site, which largely shows coral reef data, PA boundaries, exclusive economic zones, and mangrove and seagrass indicators across the five OECS countries. Although this has dwindled to 200–300 people accessing the site (hits), this still shows its relevance. In addition, with continued TNC funding, PA managers and others continue to collect additional data on a set of core regional coral reef indicators to expand the system. The monitoring system brings together data from national and regional entities, making it possible to create tools for resource management across the region. Examples include the Caribbean Coral Reef Report Cards and the Coral Reef Assessment Tool that provide access to standardized indicators that allow the monitoring of status and trends regarding the marine environment, the effectiveness of its management, and the health of the communities that rely on its resources. In September 2014, TNC facilitated a workshop during which CaribNode was further improved, making it capable of providing accessible decision-making tools with current ecological, socioeconomic, and climate change data. All users have been trained to use the system and collect data on a set of core regional coral reef indicators.

Component 4. Project Management and Coordination

26. TNC was effective in carrying out Project management and coordination, including procurement, FM, reporting, and disbursements. It submitted all required quarterly reports on time and the reports provided valuable feedback on Project implementation progress covering all activities. The status of Project indicators was included in all such reports and provided a useful input for the WBG supervision

³⁷ This Project, which is being financed with a €4 million grant to TNC from the German Federal Ministry of the Environment, Nature Conservation, Building and Nuclear Safety for 2013–2017 and will be implemented by TNC in partnership with the OECS Secretariat, the UNEP acting through the Caribbean Marine Protected Areas Managers (CaMPAM) network, and the Secretariat for the Caribbean Regional Fisheries Mechanism that (CRFM) has as its objectives to (a) declare new marine managed areas and strengthen existing ones in the region, (b) build strong constituencies for sustainable livelihoods and ocean use, (b) improve and update the Eastern Caribbean Decision Support System (ECDSS established under the present GEF Project, and (d) institute sustainability mechanisms to support the regional marine managed areas network, including political commitments and actions, collaboration mechanisms on marine and coastal resources, and sustainable financing. Its beneficiary countries are Antigua and Barbuda, Dominican Republic, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.

reports. Project planning and coordination activities reportedly improved over time. For example, in the third year of Project implementation, TNC developed a detailed tool that helped track the various steps to be followed to deliver Project outputs and achieve the associated outcomes.

27. This generally positive performance notwithstanding, there were also a few issues with Project management. In 2015, the Project coordinator was given added responsibilities as acting director of external affairs for the Caribbean Operating Unit at TNC for eight months until a full-time director could be put in place. As a result, the rating for Project management was downgraded to Moderately Unsatisfactory during that period. In addition, due to TNC's multiple roles as donor, implementer, and NGO operating in the region, on occasions, the lines of these three functions appeared somewhat ambiguous and raised concerns about possible conflicts of interest. According to its completion report, however, TNC "made concerted efforts to operate in a transparent manner."

Annex 3. Economic and Financial Analysis

1. The PAD did not contain a cost-benefit analysis due to lack of data. It did, however, present an economic and financial analysis in an annex. This annex covered the following topics: (a) the contribution that the financial mechanisms expected to be created under the Project (that is, the CBF and the five NPATFs) could make in terms of meeting the estimated PA financing needs of the participating countries; (b) the most promising options that these countries had to generate the additional financing necessary to match the financing expected to be received from the CBF; and (c) the potential, but not quantified, benefits expected to be generated by Project activities. Some of these will be assessed below.

Meeting Protected Area Financing Needs in the Eastern Caribbean

2. According to the PAD, two assessments undertaken with the support of TNC and United States Agency for International Development's Parks in Peril Program revealed that substantial gaps existed between PA funding needs and the financial resources available in the OECS countries, giving specific examples of Grenada, where a 2005 needs assessment found a gap of US\$1.7 million a year, and St. Vincent and the Grenadines, where the financing gap was estimated at US\$1 million annually.

3. These needs were expected to be met, in part, by the conservation trust funds planned to be set up under the Project. At the time of Project appraisal, the CBF, as an endowment trust fund, was expected to be able to initially establish subaccounts for each of the participating OECS countries' US\$2.94 million, which would come from the following sources: (a) GEF grant - US\$ 1.44 million, (b) KfW - US\$ 0.9 million, and (c) TNC - US\$ 0.6 million. The resources in each of these subaccounts would be paid out to the respective NPATFs at a 5 percent rate on an annual basis (or roughly US\$170,000 per year assuming a 7 percent return on the CBF's investments) as credited to each of the subaccounts, while any earnings above this rate would be retained and reinvested by the CBF to guard against inflation. The NPATFs would have to generate an equivalent amount to the CBF payout, thus requiring a 1:1 matching amount between the NPATF and the CBF for the former to be eligible to receive a transfer from the latter. However, there was a two-year period that no matching funds would be required to receive a payout once the Vertical Agreements were signed.

4. As a result of these arrangements, it was assumed that the CBF would receive donor contributions equivalent to US\$2.94 million per country (or a total of nearly US\$10.7 million) by year 4 of the Project, which, in practice, was exceeded due to KfW's subsequent decision to increase its donation from US\$4.5 million to US\$20 million, of which approximately US\$10 million was slated for the five OECS countries in this Project. On this basis, and assuming that each NPATF would generate an amount similar to the US\$170,000 expected to be transferred from the CBF, once the 15 percent NPATF management fee is subtracted, it was estimated that approximately US\$280,000 would be available to each country through its respective NPATF to invest in expanding and strengthening its PA network, thereby directly contributing to reduction of the financing gaps identified above.

5. A financial statement regarding the CBF by its asset manager, UBS, based in San Diego, California, dated February 24, 2017 updates the status of the fund. According to this source, the total value of the fund on that date was US\$33,941,653.83, of which US\$15,881,901.78, or 46.8 percent, was in equity (both United States and international), US\$15,597,814.06, or 26 percent, was in fixed income assets, and the remaining US\$2,461,937.98 (7.2 percent) was in cash. The total expected cash annual flow from the fund, in turn, was US\$807,643.52, and, thus potentially available for distribution to the NPATFs once fully operational. The overall time weighted annual rate of return on the fund's investments from January 25, 2015 through February 24, 2017 was estimated at 2.69 percent (2.4 percent at Project close), although it was substantially higher between December 31, 2015 and the latter date (3.05 percent) than

during 2015, reflecting overall financial market trends over this period (that is, as benchmarked against United States Treasury bills and numerous other financial instruments).

Benefits from Improved PA financing in the Eastern Caribbean

6. **The significance of ecosystems is seldom adequately recognized in economic markets, government policies or land management practices.** The tendency to underestimate the value of ecosystems is related, for the most part, to their “public good” quality. Ecosystems and the services they provide are owned by all and thus protected by none. They generate shared benefits and so encourage free riding. Being publicly provided, they are under-priced or un-priced and thus tend to be over-used and abused. Since the benefits are shared and ownership is collective, there is a tendency to free-ride on contributions for the provision of these goods. Collectively these features lead to pervasive degradation of ecosystems as a consequence of systemic market failures.³⁸

7. **There is evidence for declines in the health of marine ecosystems throughout the Caribbean, their principle drivers being habitat degradation, over-exploitation of resources and pollution.** Studies found that many of the Caribbean islands conservation efforts are, among other things, constrained by a lack of sufficient personnel and financial means³⁹. These constraints are addressed by the Project. In acknowledging the challenge of sustainable natural resource management and conservation of the environment, this Project aimed to enhance the management of marine PA by (a) extending the area under protection and (b) improving the operational effectiveness and institutional sustainability of the protected area system in the country. This annex presents an analysis of the Project’s economic and financial benefits. By estimating the (partial) values of changes to ecosystem services, one can compare the economic and financial benefits at different degrees of Project achievements considering various interventions^{40,41}

8. **This section presents an analysis of the economic (welfare) benefits generated by the proposed investment.** By estimating the (partial) values of changes to core ecosystem services, and comparing them against the cost of the proposed investment, the overall economic welfare generated by the Project is assessed.

1. Economic Benefits generated by the Project

12. **With its different components and multiple areas of investments, the Project generated a diverse portfolio of economic benefits ranging from direct, tangible benefits to indirect, intangible benefits.** A direct, tangible benefit is, for example, the increase in tourism income through an increase in tourists and increase in PA accession and (potential for) concession fees. On the other side of the scale, indirect and intangible economic benefits of the Project are, for example, the improvement of the public

³⁸ http://www.esa.org/education_diversity/pdfDocs/ecosystemservices.pdf

³⁹ Forster et al. 2011

⁴⁰ Nunes, P.A.L.D. and J.C.J.M. van den Bergh. “Economic Valuation of Biodiversity: Sense or Nonsense?” *Ecological Economics*, 2001, vol. 39, issue 2, pages 203-222

⁴¹ Ecosystem valuation is a difficult and controversial task, and economists have often been criticized for trying to put a “price tag” on nature. However, agencies in charge of protecting and managing natural resources must often make difficult spending decisions that involve tradeoffs in allocating resources. These types of decisions are economic decisions, and thus are based, either explicitly or implicitly, on society’s values. Therefore, economic valuation can be useful, by providing a way to justify and set priorities for programs, policies, or actions that protect or restore ecosystems and their services. <http://www.ecosystemvaluation.org/1-02.htm>

administration and the associated delivery of public services triggered by the capacity building of the protected area administration supported by the Project. Table 3 provides a limited overview of selected examples of the four categories of benefits that could be associated with the Project.

13. **Given the difficulties of assigning monetary benefits to the entire range of economic benefits generated by the Project, only few specific economic benefits were included in the quantitative ex-post economic assessment of Project.** For this Project, the ex-post economic analysis was based on the generation of benefits created by lowering degradation rates of coral reefs and mangroves through the significant strengthening of PA management by implementing a monitoring system and providing a sustainable financing mechanism for the PA management through the CBF, which will also allow for the provision of new proposed protection by 2020. Other economic benefits that were not included are, for example biodiversity values other than of coral reefs, bequest values, and many more. Further, the economic benefits included in the analysis were strictly limited to those immediately generated and associated with the Project.

Selected economic benefits generated by the Project
Underlined benefits are included in the quantitative economic analysis

	Tangible	Intangible
Direct	<u>Tourism</u> <u>Sustainable timber use</u> <u>Increased fish stock (sustainable fishing use)</u>	Reduction in soil erosion Reduction in degradation of Coral Reefs, Mangroves and Seagrass <u>Biodiversity conservation</u> <u>Reduction in GHG emissions</u> <u>Recreation</u> Habitat protection Improved PA management
Indirect	<u>Flood prevention</u> Increased resilience to external shocks Habitat Improved watershed services (e.g. for drinking water)	Strengthened self-governance capacity of communities and community groups Improved PA management for other Caribbean countries Research and Education Reduced pressure on protected areas

2. Main assumptions and cost factors

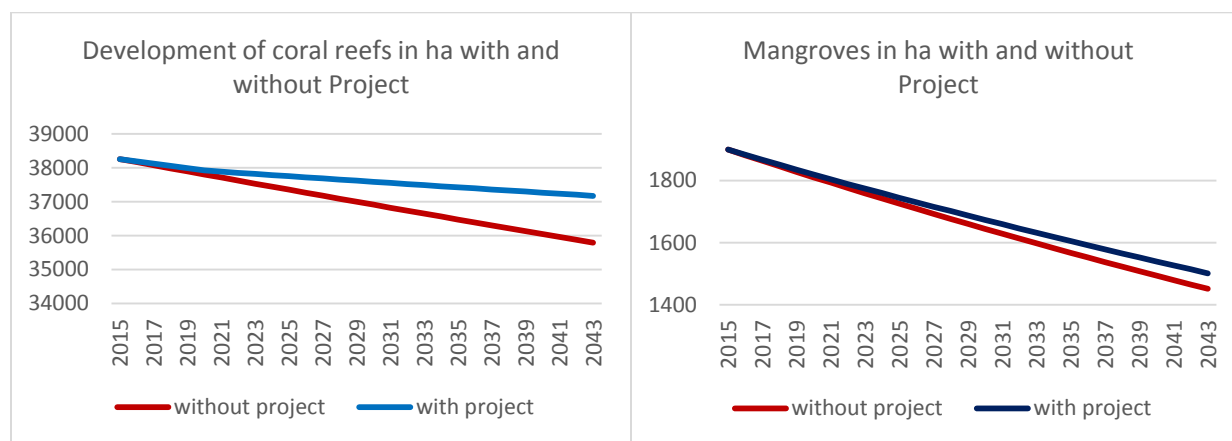
14. **Cost-Benefit-Analysis was applied to conduct the economic efficiency assessment for this Project.** Sensitivity analysis is applied for the main simulation parameters notably discount rate and Project horizon. For the discount rate, alternative rates of 3%, 5%, and 10% are applied. To test the robustness of initial results the economic benefits are reduced by 20% and 50% in subsequent analysis.

All sensitivity analyses are run for all discount rates scenarios. The results of the quantitative results will be complemented with qualitative benefits to conclude overall Project feasibility. It is assumed that improvements in protected area management only start with the implementation of the monitoring system and that further improvements start after 2017 through the disbursement of the CBF funds.

Time

15. The distribution of costs and benefits over time follow the actual disbursement of the Project as closely as possible. This means benefits start only to arise after the implementation of the monitoring system in 2014. Further benefits are expected starting 2017 by finally making the NPATFs fully functional.

Reduction of Coral Reef and Mangrove degradation



Development of coral reefs and mangroves with and without the Project

16. The improved management of the Marine Protected Areas (MPAs) will slow the rate of degradation of inter alia coral reefs, seagrass and mangroves, which are the most characteristic ecosystems in the Caribbean. Selig and Bruno (2010) conducted a study on the effectiveness of Marine Protected Areas in preventing coral loss and found that there was no significant change in coral cover over time within MPAs, whereas the cover declined significantly for unprotected reefs. They also pointed out that their estimates are rather conservative estimates for MPAs since many of the MPAs they studied suffer weak enforcement. Thus, it can be expected that well managed MPAs will have even stronger positive effects on coral reefs. Furthermore, they found that the effectiveness strongly depends on the time that has passed since the implementation of the MPA with effects increasing over time.

17. It is assumed that the rate of degradation of corals will fall from a 0.27% annual average decline (estimated by Selig and Bruno) in unprotected areas to a coral cover slight increase of 0.05% in MPA. As mentioned this is a conservative estimate since most protected areas in the Caribbean where not well managed (only 30% of MPAs in the Caribbean are considered to be adequately managed⁴²) and are rather new. For mangroves a yearly decline of 1% was assumed for this economic analysis⁴³. According to Miteva, Murray, Pattanayak (2015) the degradation is reduced by 28% within

⁴² Chape S, Spalding M, Jenkins M.D.(2008) The World's Protected Areas. Prepared by the UNEP World Conservation Monitoring Centre. University of California Press. Berkeley, USA.

⁴³ Miloslavich P, Diaz JM, Klein E, Alvarado JJ, Diaz C, Gobin J, et al. (2010) Marine Biodiversity in the Caribbean: Regional Estimates and Distribution Patterns. PLoS ONE 5(8): e11916.

protected areas. The estimated development of coral reefs and mangroves that was used in the analysis for with and without Project simulations can be seen in figure 1. The assumed rates of degradation decline are conservative measures. The actual benefits might be much larger than assumed for this economic analysis.

18. Since the Project's actual total costs account for less than one third of the CBF fund the benefits were reduced accordingly and only 27% of the benefits will be credited to Bank contribution in this economic analysis.

Benefits generated from the reduction of degradation of Coral Reefs and Mangroves

Fishery products and timber

19. **Marine protected areas and coastal mangroves provide valuable breeding grounds for fish, ensuring the populations do not collapse as well as providing spillover effects into surrounding waters⁴⁴.** Overfishing and degradation of coastal and marine areas reduces fish stocks. Caribbean-wide reef degradation has been estimated to have cut fish catches by between 30 and 45 percent. While fisheries in the participating countries are largely small-scale and artisanal, thus accounting for relatively minor shares of GDP, they are nonetheless important for local food security. For the Caribbean Burke and Maidens (2004) estimated that Coral reefs generate benefits related to fish of 119 USD/ha/year. For mangroves Hamilton and Snedaker (1984) estimated a value of 125 USD/ha/year through fish products and 70 USD/ha/year through timber collection. These values were used for the economic analysis. It can be noted that they are relatively conservative compared to for instance estimated benefits of 800 USD/ha/year for fish services from mangroves estimated for El Salvador by Turner et al. (2003).

Tourism and Recreation

20. **One of the most widely recognized economic benefits of protected areas is tourism.** It is a major source of jobs and livelihoods for those living in and around protected areas⁴⁵. Studies suggested that degradation of the marine ecosystems used by tourists in the region would result in reduced tourists' willingness to pay (WTP) to obtain access to them. Furthermore, tourist would be willing to pay to help conserve and improve them. Such studies, however, had not been undertaken for the participating OECS countries per se, but it was affirmed that "degradation could lead divers to opt for other destinations entirely" and that they tended to spend "almost twice as much more as the average visitor to the Caribbean." Values estimated for the benefits of tourism and recreation vary widely. Numbers found in studies in the Caribbean for the benefits of tourism created by coral reefs range between 808 USD/ha/year⁴⁶ and 54393 USD/ha/year⁴⁷. Following a conservative approach, the baseline value assumed for this analysis is 808 USD/ha/year for the benefits generated from tourism from the protection of coral

⁴⁴ Stolton, S., Dudley, N., Avcioğlu Çokçalışkan, B., Hunter, D., Ivanić, K.-Z., Kanga, E., Kettunen, M., Kumagai, Y., Maxted, N., Senior, J., Wong, M., Keenleyside, K., Mulrooney, D., Waithaka, J. (2015) 'Values and benefits of protected areas', in G. L. Worboys, M. Lockwood, A. Kothari, S. Feary and I. Pulsford (eds) Protected Area Governance and Management, pp. 145–168, ANU Press, Canberra, Australia.

⁴⁵ Ervin, J., N. Sekhran, A. Dinu. S. Gidda, M. Vergeichik and J. Mee. 2010. Protected Areas for the 21st Century: Lessons from UNDP/GEF's Portfolio. New York: United Nations Development Programme and Montreal: Convention on Biological Diversity.

⁴⁶ Burke, L. and J. Maidens 2004.

⁴⁷ Burke, L., S. Greenhalgh, D. Prager and E. Cooper (2008) Economic valuation of coral reefs in Tobago and St. Lucia. Final report. World Resources Institute, Washington, D.C.

reefs. Following Hamilton and Snedaker (1984) recreation was valued at 200 USD/ha/year for mangroves and 1000 USD/ha/year for coral reefs⁴⁸.

Flood prevention

21. **Protected areas can also help countries in disaster mitigation, defined as the ability of a country to predict, prevent and mitigate the impacts of natural disasters.** This is especially significant because many disasters will likely be enhanced by climate change. The protected areas will most likely play a role in reducing and mitigating flooding. Burke and Maidens (2004) estimated that coral reefs create benefits of 565.5 USD/ha/year in the Caribbean. Other estimates go as high as 6630.15 USD/ha/year (estimated for French Polynesia)⁴⁹. As before, the more conservative value was adopted for the Economic Analysis.

C-sequestration

22. **The quantification of carbon benefits applied for this economic analysis follows a conservative approach.** Only C-sequestration benefits from the slowing down of mangrove degradation was accounted for. For a case study of benefits from mangroves in Jamaica, Cesar and Chong (2004) stated associated benefits amount to USD 82 per hectare per year (ha/year). A different study for Tanzania by Turpie (2000) stated values for the same service to be as high as 650 USD/ha/year. For this analysis a rather conservative value of 82 USD/ha/year is assumed.

Biodiversity

23. **The Caribbean is a global-scale hot spot of marine biodiversity.** It has the greatest concentration of marine species in the in the Atlantic Ocean. However, species extinction has reached unprecedented rates⁵⁰. The improvement of MPAs that will be able to access the endowment fund and the establishment of new ones in the future, as well as the monitoring and information system will help protect this biodiversity and prevent it from degrading further. Even though the value of biodiversity is not easy to quantify it is clear that a place as rich in biodiversity as the Caribbean will have relatively large biodiversity conservation benefits. Ruitenbeek and Cartier (1999) estimated these benefits to be 45,907 USD/ha/year for the conservation of coral reefs only. This value was reduced to a more conservative amount of 10,000 USD/ha/year for this analysis.

Project Costs

24. **Project costs are approximated using the investment costs of the proposed Project totaling USD 8.59 million.** The costs are distributed over the years according to their actual disbursement. We do not differentiate between the different components of the Projects and also do not include potential second party contributions such as working hours of staff that is being trained in a workshop. The Project's actual total cost at exit is more than three times higher (USD 31.67 million based on the CBF endorsement donors deposit table). Bank commitment of \$US 7.637 million to the CBF represents about 24% of total CBF cost. About 27% of the benefits will be credited to Bank contribution in this economic analysis (due to additional benefits coming from the monitoring system and benefits from the demonstration sites the percentage was increased).

⁴⁸ As a more conservative value compared to 1654 USD/ha/year estimated by Chong, Ahmed and Balasubramanian (2003)

⁴⁹ Aubanel, A. (1993) Socioeconomic values of coral reef ecosystems and of its resources: a case study of an oceanic island in the South Pacific (Moorea, Society Islands). Universety Michel de Montange, Bordeaux, France.

⁵⁰ Miloslavich P, Diaz JM, Klein E, Alvarado JJ, Diaz C, Gobin J, et al. (2010) Marine Biodiversity in the Caribbean: Regional Estimates and Distribution Patterns. PLoS ONE 5(8): e11916.

3. Methodology

25. **A net present value analysis is applied to compare Project’s net benefits and net costs at the time of the first payment (2013).** In addition to applying conservative values for the quantitative assessment, sensitivity analysis is applied in various ways for the key simulation parameters, notably discount rate, assessment of benefit variation and shorter Project horizon. Alternative discount rates of 3%, 5, and 10% are chosen. Quantitative results will be contrasted with qualitative benefits to arrive at overall Project feasibility.

26. **As is required for the economic analysis of Projects, a “with-” and “without-” Project situation is used for estimating incremental benefits generated by the Project.** The incremental difference between the “with-” and “without-” Project situation is simulated using the cost values outlined in the previous section. For the area of the MPA that is brought under improved management with the endowment funds, it is assumed that the MPA works inefficiently without the Project, meaning that only 30% is actually protected and efficiently with the Project.

27. **A 30-year and 20-year period is assumed to assess the economic feasibility of the Project.** While Project costs only occur during the Project implementation period, benefits are assumed to be generated beyond the lifetime of the Project. To harmonize Project benefits and costs through the calculation of a present value of costs and benefits, a discount rate needs to be determined. In line with the WBG’s guidance note on Discounting Costs and Benefits in Economic Analysis of Projects and given the often significant impact of the choice of the discount rate on economic analysis outcomes, and the common difficulty in determining discount rates reflecting economic discounting behavior, a sensitivity analysis is applied considering discount rates of 3%, 5%, and 10%.

28. **In addition to testing the impact of different discount rates on simulation results, other sensitivity analyses are applied that account for possible variations in key input parameters to test the robustness of simulation results.** In addition to varying discount rates, simulation results are tested against changing benefit values. Although all assumed benefit values are already conservative estimations, focus on five core benefit categories only, only account for benefits generated from coral reef and mangrove protection (not accounting for instance for lower seagrass degradation) and are only applied the area brought under improved management plans (excluding spillover effects and positive externalities resulting from improved policy frameworks, research and monitoring), benefit reductions of minus 20% and minus 50% are tested. It has to be noted that in addition to using already conservative values, those are not adjusted from their publication year to current prices, which would result in an increase in values. This set of sensitivity assessments enables a comprehensive analysis of the economic robustness of the Project vis-à-vis changing or differentiated value parameters.

4. Results

29. **Under the baseline scenario,** with a 3% discount rate, the estimated Benefit-Cost ratio was 3.92, with a Net Present Value of US\$23.5m, resulting from the decline of coral reef degradation (to 99%) and mangrove degradation, generating benefits in the form of biodiversity (80%), tourism and recreation (14.4%), flood prevention (4.5%), as well as fishery products and timber, and C-sequestration.

30. **Overall, it is judged that the results demonstrate the robustness of the analysis and confirm the positive economic impact generated by the Project.** As initial assessments for Project benefits were

already done in a conservative manner and the fact that a reduction of benefits by 50% reflects a rather unusual scenario – but still yields positive results in some situations – confirms the assumptions of positive economic results that would be achieved at Project design stage. Given that many economic benefits are excluded, possible true economic returns are assumed to be much higher. Only at higher discount rates and a rather high reduction of already conservatively assumed benefits of 20% and 50% the Project results start to indicate negative Net Present Values with a below 1 BC-ratio. When reducing the timeframe of the Project benefits to 20 years high discount rates as well as high reductions of the benefits also lead to negative Net Present Values. Numerical results of economic simulations are summarized in below.

Results of cost benefit analysis between 2013 and 2042

	Baseline		Baseline (-20%)		Baseline (-50%)	
	NPV	BC-Ratio	NPV	BC-Ratio	NPV	BC-Ratio
Discount Rate 3%	23,536,791	3.92	17,218,593	3.14	7,741,298	1.96
Discount Rate 5%	13,549,297	2.75	9,294,462	2.20	2,912,209	1.38
Discount Rate 10%	1,737,610	1.25	-7,166	0.999	-2,624,331	0.62

NPV = Net Present value; BC-Ratio = Benefit Cost Ratio

Sensitivity analysis using benefits over 20 years only

	Baseline		Baseline (-20%)		Baseline (-50%)	
	NPV	BC-Ratio	NPV	BC-Ratio	NPV	BC-Ratio
Discount Rate 3%	5,773,731	1.72	3,008,146	1.37	-1,140,232	0.86
Discount Rate 5%	2,690,804	1.35	607,668	1.08	-2,517,037	0.67
Discount Rate 10%	-1,605,466	0.77	-2,681,627	0.62	-4,295,868	0.39

5. Discussion

31. This ex-post economic efficiency analysis conducted for the Sustainable Financing and Management of Eastern Caribbean Marine Ecosystem Project confirms the positive economic impact the Project was expected to generate. The results of the quantitative simulations are also robust across a range of sensitivity analyses assuming significant changes in discount rates and key benefit parameters. Throughout the analysis, it was emphasized that benefit assumptions were always done conservatively using lower-bound values of associated non-market benefits attributed to the Project.

32. **The results of the analysis are based on very conservative assumptions regarding generated benefits.** The degradation decline that was assumed for coral reefs and mangroves in this economic analysis are conservative measures. The actual benefits might be much larger than assumed. Further, throughout the analysis conservative monetary values of the benefits were assumed, adding to the robustness of the positive impact of the Project.

33. **The quantitative analysis was also strictly limited to values that can be clearly attributed to the Project.** In addition, to the stated benefits generated by the Project, additional benefits can be associated with benefits generated from reduction of degradation other than coral reefs and mangroves, such as seagrass, as well as additional benefits from the reduction of degradation of coral reefs and mangroves such as their existence value, habitat protection and benefits for education and research, to name just a few. Further, it was assumed that benefits would not have any spill-over effects, even though this is highly likely. While this approach systematically undervalues Project impacts, it provides a high degree of robustness. If additional and downstream Project benefits had been considered the simulations would have yielded even stronger results.

34. **A 30-year and 20-year period was assumed to assess the economic feasibility of the Project.** In reality benefits are very likely to be created for a period of time way beyond 30 years. Moreover, as Selig and Bruno (2010) noted benefits from increasing the effectivity of protected areas and from new protected areas tend to increase over time, not least because fish stock requires time to rebound after previous exploitation. Lower Net Present Values for simulations with higher discount rates and shorter time periods are explained inter alia since Project benefits only started to be generated towards the end of the Project, compared to the costs, which occurred relatively early.

35. **Probably one of the most important, though so far unstated, economic impacts of the Project relate to the capacity building of government institutions at central and decentralized levels.** Enhanced capacities of government institutions will be improving public service delivery with numerous benefits and positive economic impacts. Especially with the continuing challenges of natural resources management – not least due to climate change – the aspect of enhanced functioning of public institutions cannot be underestimated, particularly in a “with” and “without” Project scenario. Enhanced functioning of government institutions will also facilitate the implementation of future Projects and investments that will build on and continue the achievements of this Project. Similar considerations apply to knowledge generation and management achieved by the Project.

36. **In summary, based on this economic evaluation, it is concluded that the Project has resulted in significant positive impacts.** The consideration of only a few of those benefits into the quantitative analysis sufficed to yield positive economic results. Although there were some delays and parts of the Projects were dropped the achieved economic benefits comply largely with what was anticipated during the design stage of the Project. This supports the design and implementation of the Project, in particular the selection of activities in which the Project invested.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team Members

Names	Title	Unit
Dinesh Aryal	Sr Natural Resources Mgmt. Specialist	GEN01
Robert Ragland Davis	Sr Forestry Specialist	GEN2B
Kevval Andrea Hanna	Operations Analyst	CSASC - HIS
Marea Eleni Hatzios	Consultant	GMF02
Svetlana V. Klimenko	Lead Financial Management Specialist	OPSPF
Anton Leis Garcia	E T Consultant	LEGLA-HIS
Glenn S. Morgan	Adviser	OPSPF
Judith C. Morroy	Consultant	GHNDR
Stefano P. Pagiola	Senior Environmental Specialist	GENGE
Karin Shepardson	Program Manager	GCCCF
Nyaneba Elisabeth Nkrumah	Senior Natural Resource Management Specialist (TTL)	GEN04
Sylvia Michele Diez	Environmental Specialist	GEN04
Nathalie Weier Johnson	Senior Environmental Specialist	GEN03
David I	Senior Financial Management Specialist	GG022
Alexander V. Danilenko	Senior Water and Sanitation Specialist	GWAGP
Sonia Cristina Rodriques Da Fonseca	Senior Procurement Specialist	GGO04
M.Yaa Pokua Afriyie Oppong	Senior Social Specialist	GSU07

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of Staff Weeks	US\$, thousands (including travel and consultant costs)
Lending		
FY09	10.73	35.31
FY10	25.32	124.96
FY11	22.7	110.04
FY12	2.08	8.96
Total:	60.83	279.28
Supervision/ICR		
FY12	12.98	64.51
FY13	16.27	77.87
FY14	13.63	67.12
FY15	10.41	60.32
FY16	12.74	69.21
FY17	8.85	48.4
Total:	81.62	406.387
Grand Total:	142.45	685.66

Annex 5. Beneficiary Survey Results

No beneficiary survey was carried out in connection with Project implementation.

Annex 6. Stakeholder Workshop Report and Results

(if any)

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

1. The SIDS of the Eastern Caribbean are endowed with rich biodiversity and species that are unique to this region. These nations rely heavily on biodiversity assets both for tourism, which accounts for 75 percent of the OECS collective GDP, and as a source of livelihoods for a significant proportion of the population (mainly fishing and agriculture).

2. Despite significant progress and strong Government commitments, key gaps still remain in the conservation of these critical marine and coastal areas due to (a) lack of reliable and consistent sources of funding for the management of PAs; (b) lack of functioning and well-defined legal and institutional frameworks; (c) increased pressure on marine resources due to overfishing, unregulated tourism, and other human activities; (d) fierce competition within and among SIDS for tourism that has ramifications for financing and sustainably managing national and regional PAs; (e) current and expected impacts from climate change; and (f) lack of sufficiently trained professionals in the monitoring, conservation, and PA management of marine ecosystems and biodiversity.

3. To address these threats, the goal of this Project was to contribute to enhancing the long-term sustainability of the Protected Area networks in the Participating Countries by (a) establishing sustainable financing mechanisms; (b) strengthening of the Marine Protected Area networks; and (c) deploying a regional monitoring and information system for the Protected Area networks. The Project had three substantive components. The first, to which the bulk of the Project resources were dedicated, supported the establishment of sustainable biodiversity/PA financing mechanisms in the five participating countries, (that is, a regional endowment fund, national-level conservation trust funds, and mechanisms to generate funds on a revolving basis). The second component financed demonstration activities showcasing good practices in PA management. The third supported deployment of a regional monitoring and information system, the CaribNode (www.caribnode.org). TNC served both as co-financier and the Project Management Unit.

Table 7.1 TNC Actual Cash and In-Kind Contributions to the Project

	Component 1	Component 2	Component 4	Total
Cash (US\$)	337,882.86	27,223.23	582,334.47	947,440.56
In-kind (US\$)	903,981.56	—	—	903,981.56
Contribution to the CBF endowment (US\$)	1,500,000.00	—	—	1,500,000.00
Total	2,741,864.42	27,223.23	582,334.47	3,351,422.12

4. This Project was one of four GEF Projects supporting a larger program called the CCI, an innovative platform that brings together governments, corporations, small businesses, NGOs, and other partners to protect the Caribbean's marine and coastal environment. The two principal goals of the CCI are to (a) conserve and effectively manage at least 20 percent of the marine and coastal environment in each participating country or territory by 2020 and (b) provide long-term, reliable funding to ensure conserved marine and coastal areas are sustainably managed into the future. All of the Eastern Caribbean countries targeted by this Project, as well as the Bahamas, the Dominican Republic, and Jamaica, have joined the CCI. The key partners include the GEF, KfW, the UNDP, the UNEP, and the WBG.

5. Perhaps the Project's greatest achievement relates to its support for the launch, capitalization, and operationalization of the CCI's unique architecture for financing conservation in the Caribbean region, particularly its contributions to the design and launch of a regional fund, the CBF and five associated partner environmental funds in the Eastern Caribbean Region. Established in 2012, the CBF now has US\$32 million (of a total of US\$42 million of initial commitments) under investment. This is part of a permanent endowment that will support PA expansion and management in the region. Donors, to date, include the Government of Germany through KfW, the GEF—through the WBG and the UNDP—and TNC. Recently, KfW committed an additional €25 million to the CBF for a sinking fund that will finance ecosystem-based adaptation Projects in the region, a strong indication of the confidence that partner institutions have in the CBF.

6. The investment income generated by the CBF's initial endowment capital (expected to be between US\$150,000 and US\$190,000 per annum for each Eastern Caribbean country in the first phase) will be channeled to NCTFs—a type of public-private partnership—to help close PA financing gaps. Long after the present Project is closed, these funds will continue to support national biodiversity conservation priorities in participating countries to help close PA funding gaps; build capacity among grantees (from the public and private sectors); promote the diffusion of knowledge about the importance of biodiversity, PAs, ecosystem-based adaptation to climate change, and other environmental priorities; and help cultivate change agents and form new coalitions, which can be powerful actors in the national biodiversity and development discussions.

7. Of particular note, the Project—through the opportunities for public-private collaboration afforded by the NPATFs—deepened engagement between conservation and tourism-related entities in participating countries, for example, between hotel and tourism associations and conservation agencies. While the Project was not able to fully implement revenue-generation tools in the participating countries before it closed, it did produce designs for a number of mechanisms for St. Lucia and Grenada that can help national-level trust funds meet their match obligations. The Blue Marinas and WIMT sustainable revenue-generation designs are directly linked to these partnerships. These tools will help promote tourism in the OECS countries and ultimately contribute to national and regional economic growth, as well as yield positive conservation outcomes.

8. Under Component 2, the Project financed two MPA management demonstration Projects. The first, in Antigua and Barbuda, demonstrated how drone technology can be used to support conservation efforts in Antigua and across the region. Potential applications include terrestrial and marine habitat mapping, vegetation health assessment, high resolution elevation data for modelling watersheds, post-disaster (hurricane/flood) recovery efforts, monitoring and inspection in remote areas, sea turtle, seabird and other wildlife monitoring, as well as various surveillance, enforcement, and evidence gathering applications. In Grenada, the Water Quality Improvement Project aimed to establish baseline water quality conditions in the WCCB MPA and identify nonpoint sources of pollution to provide a framework to evaluate the effectiveness of conservation interventions within and adjacent to the WCCB MPA.

9. The Project also provided the OECS countries with a regional platform, CaribNode on which to share technical conservation data. CaribNode is an online regional database comprising authoritative and standardized geospatial data on five of the Project's focal countries: Antigua and Barbuda, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Grenada. This assemblage of data has been compiled through the contributions of the public sector agencies of each country, TNC, and the International Union for Conservation of Nature. CaribNode will serve as a platform to store and share information and create resource management tools. Examples of these tools include the Caribbean Coral Reef Report Cards; infographic documents which, using standardized indicators, summarize the condition of key marine resources in participating countries. One limitation is that no regional entity has been found

to host the CaribNode system long term and in-house as yet. Similarly, there is a continued reliance on TNC staff to maintain datasets and host the system.

10. While the Project had many positive outcomes, there were key experiences and lessons learned that should be recognized. Of particular note, the time frame needed to establish the NPATFs and revenue-generation mechanisms in participating countries was much longer than anticipated. Moving forward, a longer time should be given in similar Project designs. Similarly, the resource needs (human, financial) of the new NPATFs were much greater than anticipated. Future Projects should program more funds for the NPATF operationalization and capacity building.

11. These issues notwithstanding, the Project has built a strong foundation for promoting sustainable resource management in the Eastern Caribbean Region that future Projects may leverage. Already, TNC, CBF, GEF, and other partners are exploring the possibility of developing new Projects for this purpose. These could focus on one or more of the following:

- Design and implementation of sustainable revenue-generation tools (which could not be completed under the Project)
- New tools to support biodiversity conservation objectives, for example, BIOFIN (Biodiversity Finance Initiative) or TEEB (the Economics of Ecosystems and Biodiversity methodologies)
- Private sector engagement to explore tourism-conservation linkages
- Climate change adaptation initiatives
- Strengthening and capacity building of trust funds

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

A request was made to the countries and stakeholders engaged in some aspect of implementation to receive their comments. The questions asked were the following:

A) Are there any aspects of the Project design that you would have changed and if so what?

Commenters indicated that this Project was novel to them, it was the first of its kind and the time line given was not realistic. A commenter also felt that more capacity building was needed. One noted that more capacity-building trips, such as the one to the RedLAC meeting would have been useful particularly for the NPATF Board members.

From the countries' perspective, they would have wished for, in the design, a more frequent in-person meeting space where countries and donors could come together to discuss implementation issues and to share progress. This, they felt would have helped implementation progress.

B) What are some of the positive outcomes of this Project?

The countries felt that the NPATFs have been created and this is a huge step but felt the burden of work ahead to get the matching funds even as the ideas are on the table. They also felt that having the CBF was a big step toward having support for the national funds. The countries felt that creating the NPATFs would change the way conservation is financed. They also felt that the Project did well to engage the highest level of Government (permanent secretaries).

C) What are some lessons learned (positive or negative) that you can share with us?

- Engaging at the highest level of Government is always good
- Ensure that the right people are identified to take positions that is, at the national steering committee level
- Be mindful of the political scene which can impede progress as the Governments change over the Project cycle
- Ensure that the national steering committee is representative of stakeholders and can get ideas to the right people
- Project management has to be adaptive as in the case of this Project

D) Do you see a follow-on Project to this one? If so, what would be of most interest/use to the country?

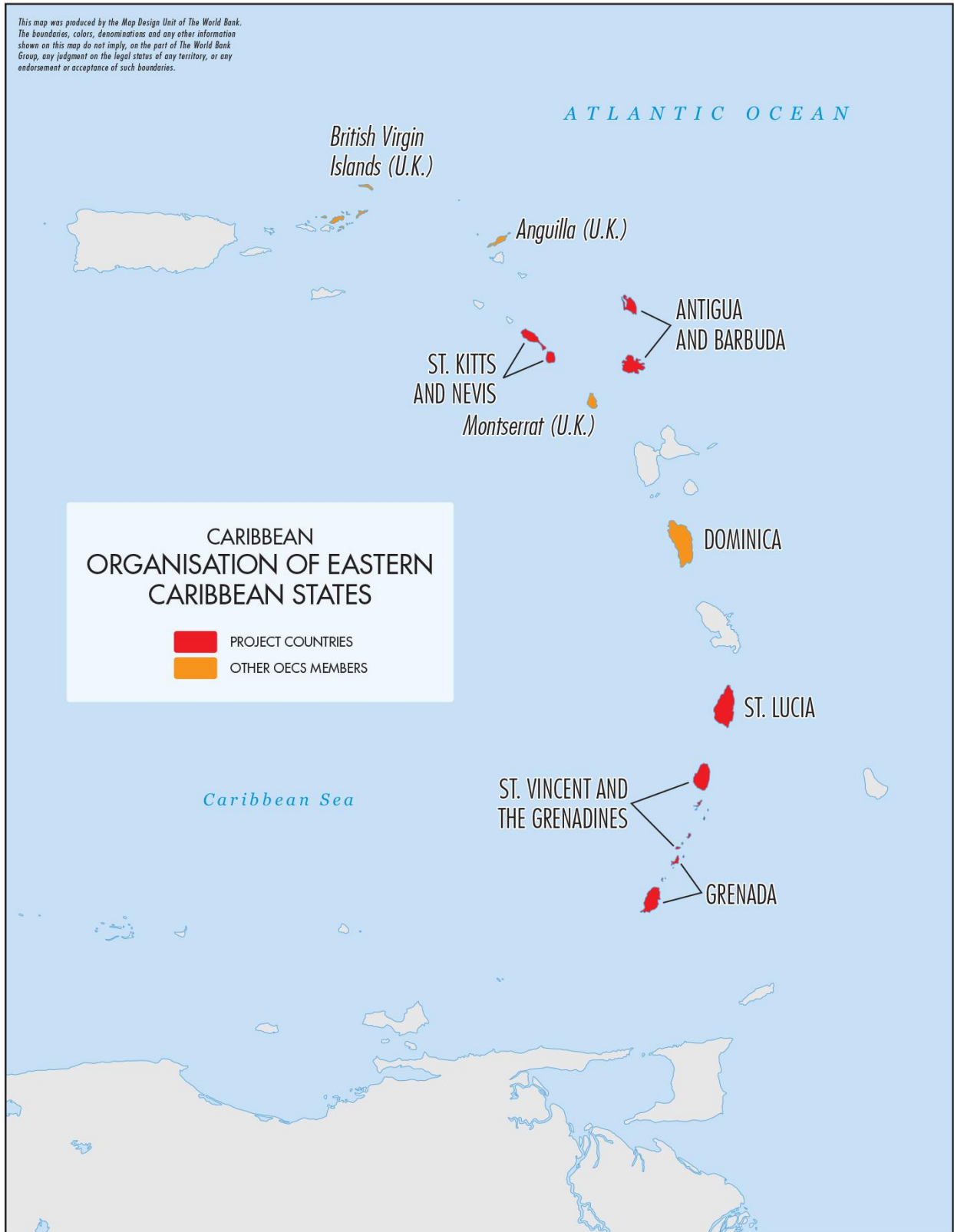
- Follow-on Project to support the NPATFs and enhance their strategy to get additional funds and recognition at global levels
- Regional networking for the wider Caribbean to enhance learning

Annex 9. List of Supporting Documents (in World Bank Documents)

1. Coral Reef Report Scorecard (zip file)
2. Data Management Platform (Consultancy by Point 97)
3. Water Quality Improvement Plan (for Woburn Clarke Courts Bay)
4. Sustainable Financing Mechanism (SLU)
5. Sustainable Financing Mechanism (Grenada)
6. Webinar Invitation Drones for Conservation
7. World Bank Grenada Report (WET team)
8. CBF Investment Policy
9. Operationalization of NPATFs in the Caribbean (White Paper)
10. CBF Quarterly Report (Sample)
11. NPATF Establishment Status (June, 2015)
12. 3rd meeting of the CBF finance committee (sample)
13. CBF Endowment (Donor Contributions)
14. Drones for Conservation (slides)
15. Drones for Conservation (article and abstract)
16. CBF Eligibility Approval Procedures
17. Blue Earth Consultancy
18. Grenada Distilleries Ltd. Sustainable Wastewater Treatment
19. GEF METT for Woburn Clarke Courts Bay
20. GEF METT for West Coast Marine Management Area
21. Five Country Eastern Caribbean Regional MPA Monitoring and Evaluation Plan

MAP

IBRD 38502



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