Marine Protected Areas Sustainable Finance Needs Analysis Results

ANTIGUA AND BARBUDA – DOMINICAN REPUBLIC – SAINT LUCIA

SAINT VINCENT AND THE GRENADINES

Egide Cantin

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CARIBBEAN BIODIVERSITY FUND

KFW

BMZ Federal Ministry for Economic Cooperation and Development

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LIST OF ACRONYMS

AGRRA	Atlantic and Gulf Rapid Reef Assessment Program
CBF	Caribbean Biodiversity Fund
CCI	Caribbean Challenge Initiative
CEO	Chief Executive Officer
CAMMA	The Canaries and Anse la Raye Marine Management Area
GEBCO	General Bathymetric Chart of the Oceans
GIS	Geographic Information System
MEPA	Marine Ecosystems Protected Areas Trust (Antigua and Barbuda)
MMA	Marine Management Area
MOU	Memorandum of understanding
MPAs	Marine Protected Area System
NCTF	National Conservation Trust Fund
NGOs	Non-Governmental Organizations
PA	Protected Area
PAS	Protected Area System
PAN	Protected Area Network (Palau)
PES	Payment for Environmental Services
PoWPA	Program of Work on Protected Area
SINAP	Sistema National de Areas Protegidas
SFM	Sustainable Finance Mechanism
SLUNCF	Saint Lucia National Conservation Fund
SMMA	Soufriere Marina Management Association
SOPs	Standard Operation Procedures
SVG	Saint Vincent and the Grenadines
SVGCF	Saint Vincent and the Grenadines Conservation Fund
TNC	The Nature Conservancy
USD	United State Dollar

ACKNOWLEDGEMENT

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EXECUTIVE SUMMARY

This consultancy was commissioned by the Caribbean Biodiversity Fund to identify the financial needs of four selected Caribbean countries: Antigua and Barbuda, Dominican Republic, Saint Lucia and Saint Vincent and the Grenadines to meet Goal 1 of the CCI, which is to effectively conserve and manage at least 20% of the marine and coastal environment by 2020 in each member country (the 20-by-20 goal). This report provides an analysis of the current and prospective recurrent and investment costs for the Marine Protected Areas (MPAs) in four countries. To meet the goal, Antigua and Barbuda, Saint Lucia and Saint Vincent and the Grenadines have to expand by two to four times their current declared marine protected areas depending on the country.

The methodology used to assess the financial needs was participative. From the beginning of the process, managers or supervisors and government agencies involved in the management of Marine Protected Areas (MPAs) actively participated in all decisions related to the choice of sample sites, numbers, costing, revenue schemes to be adopted and steps to move forward. They also proposed strategies to achieve effective management. These included implementing science-based management plans; putting in place trained scientists and staff; paying PA staff according to the work that is expected of them; availability of proper and adequate materials and equipment to perform a professional work and also sufficient funding to ensure long-term stewardship.

The analysis started with the costing of selected samples of MPAs. A cost per square kilometer was subsequently calculated first for each site and secondly for all sample sites in each country. This data enabled the calculation of the total recurrent cost to effectively manage the marine and coastal square kilometer needed to meet the 20% target. At the same time, the amount of investment required to achieve effective management for each site was calculated. The extrapolation of this data resulted in the total investment cost required to reach the 20% marine and coastal area goal under effective management.

Note: The currency used in this report is USD.

KEY FINDINGS

- Each country has a recurrent cost shortfall per year as follows: $5.95 million for Antigua and Barbuda, $7.18 million for Saint Vincent and the Grenadines and $2.74 million for Saint Lucia. It is not possible to provide the amount of the shortfall for the Dominican Republic because the government appropriation to the MPAs was not available during the costing exercise.

- The management cost of small areas per square kilometer is much higher compared to that of larger areas. This has a tremendous impact on the affordability of the overall cost of the entire Protected Area System.

- The minimum investment cost needed to achieve the 20% goal for each country is the following: $11 million for Antigua and Barbuda, $3.6 million for Dominican Republic, $14.9 million for Saint Vincent and the Grenadines and $4.7 million for Saint Lucia.

- After discussing different sustainable finance mechanism schemes, stakeholders in each country agreed that a mandatory visitor's contribution was most likely the best option to substantially reduce these high shortfalls. Considering the thriving tourism sector in each country, participants agreed to move forward with this option although it was viewed as a complicated and a very long process with significant political negotiation.

RECOMMENDATIONS

Cost reduction is the best long-term financial strategy at this stage for Antigua and Barbuda, Saint Lucia and Saint Vincent and the Grenadines as they have to respectively double, triple and quadruple the current size of their MPAs to reach the 20% conservation Goal.

To lower the very high shortfall and consequently reduce the financial gap, the following strategies are proposed:

- Merge current small areas into contiguous larger areas even if building a conservation corridor is needed. Another option is to combine small areas among themselves to form a larger area under one Management Unit;
- Phase out the declaration of small sites as standalone PAs and make them part or of larger multifunctional or use areas;

- Commission an ecological footprint study to determine priority areas for conservation for the expansion of MPAs to reach the 20% goal and a zoning planning process to create larger conservation areas;
- Create a lean PA Coordination Center that ensures the coordination of each country's PA system and offers technical and scientific services to all PAs. The Management of this Center should include at least the government and non-government lead agencies involved in managing PAs in their respective country.

1. INTRODUCTION

1.1. Background

Established in September 2012, The Caribbean Biodiversity Fund (CBF) is a regional fund whose objective is to provide a sustainable flow of resources to support activities that contribute substantially to the conservation, protection and maintenance of biodiversity within the national protected areas systems or any other areas of environmental significance of its participating countries.

The CBF is an umbrella fund with permanent and non-permanent funding. One of CBF's key financial instruments is its endowment. Approximately US$42 million of initial financial commitments have been made to capitalize the CBF endowment. Donors to date include the Government of Germany through the German Development Bank (KfW), the Global Environment Facility (GEF) – through the World Bank and the United Nations Development Programme (UNDP), and The Nature Conservancy (TNC).

The CBF endowment will benefit partner national conservation trust funds (NCTFs) in the following countries:

- Antigua and Barbuda
- The Bahamas
- British Virgin Islands (future)
- Dominican Republic
- Grenada
- Haiti (future)
- Jamaica
- Puerto Rico (future)
- Saint Kitts and Nevis
- Saint Lucia
- Saint Vincent and the Grenadines

Partner national funds in turn will lead the grant-making programs at the national level.
One of the CBF's key principles is that partner NCTFs must create new, sustainable revenue to trigger a 1:1 match from the CBF. The revenue sources could be private and/or public.

The NCTFs from the eight original countries are now legally established and working towards becoming fully operational conservation trust funds that will seek to become official CBF recipients. Each of the NCTFs will enter into a legal agreement with the CBF that will govern the relationship between the CBF and each NCTF, including the expected payments and transfers, and how the match needs to be sources.

Within this context, The Caribbean Biodiversity Fund (CBF), with the support of the German Government through the German Development Bank – KfW, is implementing a project to:

1. Support the establishment of seven of the eight National Conservation Trust Funds in CBF member countries.
2. Conduct or update sustainable finance needs analyses and support the establishment of sustainable finance mechanisms (SFMs) in CBF member countries.
3. Support fundraising efforts of the CBF.
4. Support the Caribbean Challenge Initiative (CCI) Secretariat.

This consultancy was specifically commissioned by the CBF to address the second component of the above-mentioned project. The objective of this consultancy was to assist the CBF in assessing the overall financial needs for conservation in select CBF member countries, and specifically for the marine and coastal areas in an effort to identify the "marine financial gap" or attaining the 20% of effective conservation of the marine and costal environment under the CCI. The consultancy specified that an initial review on the sustainable finance gap would be conducted for the six (6) countries listed below, with an in-depth analysis for four (4) of the countries:

- Antigua and Barbuda
- Dominican Republic
- Grenada
- Jamaica
- Saint Lucia
- Saint Vincent and the Grenadines

The following four (4) countries were selected for the in-depth review:
Antigua and Barbuda, Dominican Republic, Saint Lucia and Saint Vincent and the Grenadines. These countries were selected based on the initial review of financial information available, need for assessing the gap, and the fact that these are four of the countries that are most advanced in the CBF process. The NCTFs Antigua and Barbuda, Dominican Republic, and Saint Lucia have now signed the Partnership Agreements with eh CBF and the trust fund in Saint Vincent and the Grenadines is expected to submit soon its official request to be declared CBF eligible.

1.2. Objective

The objective of this exercise was to have a clear understanding of the overall financial need of four selected CBF member countries: Antigua and Barbuda, Dominican Republic, Saint Lucia and Saint Vincent and the Grenadines to effectively conserve, protect, manage and expand their National Protected Area Systems, and to achieve at least 20% of their marine and coastal areas by 2020.

1.3. Principles of the financial needs analysis process

The guiding principles of the financial needs analysis process are based on the definition of the CCI Goal 1 which are:

1. Effectively conserve and manage the areas;
2. At least 20% of marine and coastal environment; and
3. Areas are part of a PA system.

1.4. Effective management

The following list of criteria ensures the effective management of PAs. It allows monitoring of the health of the biodiversity, by assessing whether it has been maintained, increased or decreased in each area. Also, these criteria allow to take actions to safeguard the biodiversity for the current and future generations of each nation. However, it may not include all aspects that might be needed in specific PAs. Effective management includes the following conditions:

- Science-based management plan is implemented;
- Trained scientific staff in place (PA or System level);
- Protected area staff is paid according to the work that is expected from them;
- Proper and adequate materials and equipment to perform their work professionally are available; and
- Sufficient funding to ensure long-term stewardship.

2. KEY CONCEPTS

The key concepts and methodological approach for this financial needs analysis are capacity building and ownership:

Building the capacity: protected area managers, government department supervisors and NGO directors and representatives understand the process of costing the financial needs of their site to achieve effective management.

Ownership: once participants understood that costing each sample site led to the development of a balance sheet determining the financial needs of the country's MPA system, they got involved in the whole process and all decisions regarding the choice of sites, numbers, costing and revenue schemes to be adopted. Further, they defined themselves the next steps to move forward applying the lessons learned from this process.

It is very important to understand that all data and numbers presented in this report came from government representatives and PA managers and supervisors. The consultant acted as a facilitator for the process, verified the coherence of the numbers provided and ensured that numbers were organized into different tables to present a clear picture of the true cost to effectively manage to the 20% level.

This work was not about any particular MPA. It focused mainly on finding the MPA systems' costs and financial needs. The Dominican Republic was the exception as the size of their declared MPAs is already beyond the 20% goal, unlike the other three countries.

3. METHODOLOGY

Desk review

A desk review was undertaken for six countries: Antigua and Barbuda, Dominican Republic, Grenada, Jamaica, Saint Lucia and Saint Vincent & the Grenadines. From this, four countries were selected for an in-depth financial needs analysis. Information was collected from a wide range of documents related to PAs from local and international organizations, government departments, countries' Program of Work on Protected Area (PoWPA). A list of questions related to current status of PAs and PA systems, and past financial needs analysis and sustainable finance plans were also reviewed for each country. (See Annex 1)

The amount of information varied from country to country. It was found out that Jamaica had two sustainable financial plans for their PA system in the last 10 years and Grenada was behind the other countries in the CBF process of setting up its National Conservation Trust Fund (NCTF). Having an in-country NCTF in operation was important in carrying out this process, as they were responsible for organizing workshops, selecting and inviting participants. More importantly, NCTFs were expected to take ownership of the financial needs analysis process and results and move them towards the agreed next steps in each country.

Approach

Eight national workshops were organized and delivered in the four selected countries. To identify the financial need of each country to effectively conserve, protect, manage and expand their national protected area systems, and to achieve at least 20% of their marine and coastal areas by 2020, four components were key to ascertain. These are:

- The investement cost needed to upgrade the current management to the level of effective management and expand the system to reach the 20% targets;
- The recurrent cost per year needed to sustain the investment and effective management;
- The shortfall which is the result of subtracting the whole recurrent cost per year of the Protected Area System with the stable income that is generated through existing revenue stream;
- The gap that is determined by finding the difference between the estimated amount of the shortfall minus the total estimation of all new revenues that can be generated.

To determine each of the above component the process were devided into four steps as follow:

First step: Preparation

1. Gathering of relevant in-country information on current PA system management and sustainable financial needs analysis and conducted a desk review of each country's documentation.
2. Review of the in-country National Conservation Trust Funds (NCTFs) design and implementation plans for sustainable finance mechanisms.
3. Identification of the four countries that needed an in-depth costing and financial needs analysis based on the assessment results.
4. Pre-selection of samples of MPAs that could be costed and agreed with each country's NCTF on the first two-day workshop dates and the process to be adopted. Participants were required to have knowledge/background in PA operational budget for their

organization and or government departments. They were representatives of:

- NCTF's Board members and CEO (as applicable);
- Key Government Departments (Environment, PA Authority, Fisheries, Forestry, Economy & Planning, Tourism, Finance, Terrestrial and Council);
- Managers or key representatives of selected PAs;
- NGOs that support work in PAs.

Second step: In-country workshops

5. PowerPoint presentation on sustainable finance and sustainable finance costing process and methodology.
6. Selection and agreement on representative sample of small, medium and large PAs to be costed.
7. Training on the use of the costing spreadsheet. Participants were divided into groups, selected a PA to be costed and appointed a lead person for each PA.
8. Costing of the selected PA with peer review. Calculation of the replacement cost of all equipment/material was done and discussed as a group.
9. Review of a sample of a costed PA, to demonstrate the process and accuracy of numbers and the spreadsheet.
10. Identification of the current revenue from government appropriation, PA user fees and other revenue by participants.
11. Brainstorming on potential new sustainable finance mechanisms.

Third step: Follow-up on the first costing workshop

12. Assisted by email and skype, work with each identified PA lead person to complete and review their PA costings.
13. Calculation of recurrent cost for each PA.
14. Calculation of cost per km^2 for each costed PA.
15. Development of preliminary balance sheet.

Fourth step: Second in-country workshops

16. Completion of the in-country PA costings.
17. Sharing of the initial results of the individual PA costing and the cost per km^2. (See Annex 2)
18. Addressing the questions related to the high cost per km^2 for small area versus lower cost for large area, including providing examples on cost reduction.
19. Extrapolation of the sample PAs' cost per km^2 to reach the 20% km^2 target and assessment

of the feasibility of the total recurrent cost needed.

20. Discussion of the investment amount needed to reach the 20% km^2 target.
21. Assessment, with participants, of the initial balance sheet to effectively manage 20% of its marine and coastal environment and how it related to their current vision for MPAs.
22. Discussion of next steps in line with the financial needs analysis results.

The consultant participated in two regional workshops organized by CBF in Miami and Puerto Rico. The Miami workshop was an opportunity to meet the CBF team as well NCTFs board members and Directors. It was also an opportunity for the consultant to do a presentation about different aspects of sustainable finance in relation to the internal organizational structure of Trust Funds. During the CBF-NCTFs Exchange Session in Puerto Rico, the consultant gave a presentation about "Working toward building sustainable finance" to all eight National Conservation Trust Funds partners of CBF. (See Annex 3) Another presentation of the preliminary costing results example from the financial needs analysis process was also given during the CCI-CBF Solutions Dialogue Day. (See Annex 4)

Determination of the 20% marine and coastal target

The assistance of The Nature Conservancy (TNC) GIS specialist for the region was valuable in determining the 20% target per country (in km^2) and finding a set of data that can be compared among the countries. Under his advice and recommendations, the General Bathymetric Chart of the Oceans (GEBCO) data was used for this work given that the GEBCO team had used the same set of parameter for all countries. This enabled comparison between countries.

Table 1 below shows the GEBCO data related to the Ocean Shelf (in km^2) for each CBF country. The 20% goal per country to be achieved was calculated from this.

Table 1: 20% goal in km^2 for each country

2016	Ocean shelf km^2	20% GOAL km^2	Currently Protected km^2	Costing sample km^2
Antigua & Barbuda	**3,923**	**784**	**360**	**180.8**
Bahamas	124,877	24,975		
Dominican Republic	**11,796**	**2,359**	**8,502**	**3346**
Grenada	2,596	519		
Jamaica	13,995	2,799		
Saint Kitts & Nevis	885	177		
Saint Lucia	**623**	**125**	**40**	**40.18**
Saint Vincent & Grenadines	**2,039**	**408**	**85**	**76.9**
Total		**3,676**		

Data from, John Knowles TNC GIS specialist - GEBCO data.

Selection of PA sample for costing

For Antigua and Barbuda, Saint Lucia and Saint Vincent and the Grenadines, the list of the current designated MPAs per country as written in the Atlantic and Gulf Rapid Reef Assessment Program (AGRRA) coral reef report card was the basis for the selection of the sample sites. For the Dominican Republic, participants used the SINAP official report on Protected Areas to choose areas to be costed. These lists were then used by PA managers and government lead agencies to undertake a primary screening of potential PAs at the first workshop based on the following criteria:

- Need to have a range (small, medium size and large areas) which will amount to a representative sample of what is currently under some form of management;
- Geographic representation;
- Availability of information;
- Management plans being an asset;
- Tourism/income potential and
- Non-tourist income potential.

A proposed PA or paper park per country was also selected for costing by participants to provide them with an overview of the expansion cost to reach the 20% target and for participants to know the cost involved in starting a new protected area.

4. RESULTS

4.1. Cost per km^2

The costing exercise with PA managers and supervisors was the building block to determine the cost per km2 to effectively manage each area. The costing process had to account for the establishment cost, the current cost and what was missing to achieve effective management.

As seen in Table 2, the most constant feature for all four countries is the level of cost per km2 indicating a very expensive cost for small areas compared to a relatively low cost for large areas. This feature presented in the second workshop had all participants in each country realize the impact that the cost per km2 of small PAs has on the whole system's affordability. This can be illustrated with the following examples from Antigua and Barbuda:

The proposed PA of Willoughby Bay+5 is a small area of 6.5 km2 and costs $64,000 per km2. When this amount is multiplied by 784 km2 which is the size to reach the 20% goal, the total amount gives a prohibitive recurrent cost of 51 million dollars per year. On the other hand, the average

cost per km2 of the two largest conservation areas of Northeast Marine Manage Area (NEMMA) and Codrington Lagoon is $4,896. When this amount is multiplied by 784 km2, the total cost per year is $3,850,000. These cases clearly demonstrate the high cost impact of small area on the whole MPA system.

Table 2: Cost per km²

Conservation area	Area km²	Optimal RC USD P/Y	Cost per km² USD
Antigua and Barbuda			
NEMMA	107.5	449,598	4,182
Codrington Lagoon	66.8	374,717	5,610
Willobughy Bay + 5	6.5	418,651	64,408
TOTAL	**180.8**	**1,242,966**	**6,875**
Saint Vincent and the Grenadines			
Tobago Cays	51.8	438,618	8,468
Mustique Island	6.2	303,365	48,930
South Coast	2.6	345,461	132,870
Union Palm Island	12.9	155,490	12,053
TOTAL	**73.5**	**1,242,934**	**16,911**
Saint Lucia			
SMMA / CAMMA	26	333,623	12,782
Pointe Sable - Ma kote, Maria Island	10.38	382,727	36,872
Laborie MMA	3.7	70,788	19,132
TOTAL	**40.1**	**787,138**	**19,590**
Dominican Republic			
Arrecifes del Suroeste	2,705	231,448	85
Francisco Alberto Caamaño Deñó	587	357,372	608
Bahia Luperon	24	239,093	10,174
Isla Catalina	17	97,872	5,740
La Caleta	11	187,172	17,016
TOTAL	**3,346**	**1,102,518**	**333**

NOTE: Dominican Republic is the only country that is beyond the CCI Goal 1 of 20% of declared conservation area. The five MPAs sample finalized during the costing process represented 28.37% of their marine area. Therefore, CBF decided to keep this percentage because the CCI goal is defined as: “at least 20% of costal and marine area are effectively managed”.

4.2. Cost reduction strategy

The results of the costing exercises show that the Caribbean region follows the international pattern for higher management cost of small areas versus large areas as illustrated in Table 3. Most

of the time, the exception that allows to have a small area with a lower cost compared to a slightly larger one is when they are managed by the local communities.

Table 3: Cost of small protected area (Dr. Eric Verheij, Palau PAN Coordinator, 2006)

Marine Sanctuary name	US$/ km^2	km^2
Namwen Naningih	$ 187,219	0.3
Nahtik	$ 81,679	0.6
Namwen Na	$ 71,587	0.6
Kehpara	$ 88,319	1.0
Dehpehk/Takaieu	$ 31,749	1.6
Sapwitik	$ 28,310	1.6
Mwahnd	$ 5,966	8.0

Table 1: comparing the size and the management costs of marine sanctuaries in Pohnpei State.

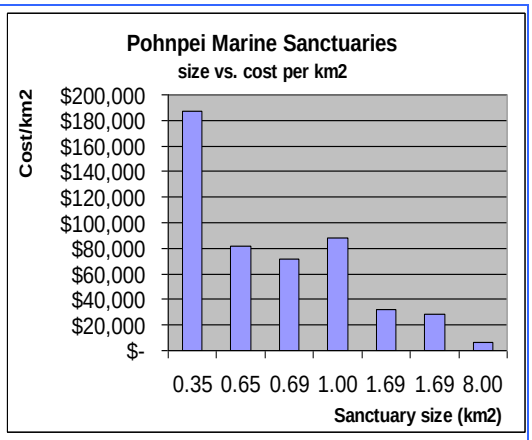

Figure 1: comparing the size and the management cost of marine sanctuaries in Pohnpei State

This critical feature of cost of small area versus large area is very important to understand for the future design of PAs for countries that need to expand their current PA system to reach the 20% goal. Workshop participants requested examples of how to reduce the cost of small areas. Three main schemes were proposed as follows:

- To integrate current small areas into larger multifunction PAs. This strategy has already been undertaken in Saint Lucia with Pointe Sable EPA (10.38 km^2) that now incorporates Ma Koté Marine Reserve (< 1 km^2) and Maria Island Reef Marine Reserve (< 1 km^2). Also, Soufriere MMA (17 km^2) has now merged with Canarie Anse la Raye MMA (9.1 km^2) forming a new entity SMMA/CAMMA of 26.1 km^2 under one management unit for economies of scale.
- To design proposed small PAs to either be part of a larger multifunction area or to be integrated into adjacent or contiguous larger area with a conservation corridor if necessary.
- To expand outward the sea to two nautical miles as in the case for Saint Kitts and Nevis.

It is of the utmost importance to understand that reducing costs is often equivalent to the largest and most important fundraising strategy that a country can undertake. Ultimately, lowering the cost per km^2 means less money to fundraise for each year.

4.3. Coordination and System support

Another cost reduction strategy that was proposed during this process is for each country to have a lean Protected Area Coordination Center with seven to fifteen high level, qualified staff who provide not only high-quality services and technical expertise, but also coordinate and ensure expertise and management capacity among PAs. These functions include but are not limited to:
(i) set up of PA policy and system plan, (ii) law and regulations- sites and system, (iii) declaration & designation, (iv) Standard Operation Procedures (SOPs) & monitoring, (v) training and development of rangers, (vi) management plan, (vii) research and development, (viii) promotion (marketing and public awareness), (ix) financing, (x) MOU for specific site management among others.

Depending on the country, the estimated **recurrent cost** per year of a PA Coordination Center is between $500,000 to $900,000 for the operation and overall management of the PA system. Whereas, the **investment cost** was estimated at around $700,000 to $ 1,000,000 if the government of the country does not provide neither a land nor a building to host this PA Coordination Center. This investment cost can be reduced if the PA Coordination Center is working in partnership with other organizations to acquire an office.

Participants also agreed to include the annual recurrent cost of $100,000 for specific targeted research that includes specialized coral reef and socio-economic studies; investment in compatible enterprise development; sustainable livelihood and others that might be undertaken by local and international institutions.

4.4. Recurrent Costs

Table 4 shows the recurrent cost that each country will need per year to effectively manage their MPA system to achieve the 20% marine and coastal conservation goal. The difference of the cost per km^2 between the countries can be explained by the size of their respective conservation areas. The high cost per km^2 for Saint Vincent and the Grenadines and Saint Lucia can be explained by the fact that they have mainly small MPAs. As demonstrated earlier, the management cost of small areas is higher than that of larger areas.

Table 4: Recurrent cost per year to achieve 20% effective conservation

Countries	Cost per Km^2	20% Km^2 target	Plus Coordination Center & Research Rec. Cost	Cost USD
Antigua and Barbuda	$6,875	784	1,000,000	6,400,000
Saint Vincent and the Grenadines	$16,911	408	1,030,000	7,900,000
Saint Lucia	$19,950	124	750,000	3,200,000
Dominican Republic	$333	3,346	1,000,000	2,100,000
Total	**Recurrent cost per year 4 selected countries**			**19,600,000**

These recurrent costs per country are the second building block to create the initial recurrent cost balance sheet which will include for each country the recurrent cost of the PA Coordination Center.

4.5. Investment needed

According to their managers, none of the sample sites were currently being effectively managed. This costing process allowed PA managers and supervisors to calculate the establishment and investment cost for the effective management of theirs MPAs. The extrapolation of these data with the addition of the cost of the PA Coordination Center enabled the finding of the total investment cost needed to reach the 20% marine and coastal area under effective management.

Table 5: Summary of the four selected countries MPAs investment needed to achieve 20% CCI goal

Description	Investment needed now sample site USD	Factor of extrapolation from sample sites total km² to reach total km² 20% target	Plus PA Coordination Center investment cost	Investment needed to reach 20% USD Round up
Antigua and Barbuda				**784 Km²**
NEMMA	677,155			
Codrington Lagoon	858,807			
Willobughy Bay + 5	810,707			
	2,346,669	**4.3**	**900,000**	**11,000,000**
Saint Vincent and the Grenadines				**408 Km²**
Tobago Cays	657,948			
Mustique Island	910,734			
South Coast	499,491			
Union Palm Island	428,524			
	2,496,696	**5.6**	**930,000**	**14,900,000**
	Saint Lucia			**124 Km²**
SMMA / CAMMA	478,462			
Pointe Sable - Ma Koté, Maria Island	420,428			
Laborie MMA	386,634			
	1,285,524	**3.1**	**700,000**	**4,700,000**
Dominican Republic				**3,344 Km² 28%**
Arrecifes del Suroeste	862,350			
Francisco Alberto Caamaño Deñó	835,242			
Bahia Luperon	419,880			
Isla Catalina	160,563			
La Caleta	328,557			
	2,606,591	**nil**	**1,000,000**	**3,600,000**
GRAND TOTAL	**8,735,480**			**34,200,000**

Investment cost include but not limited to : additional staff, training of staff, supplementary of new equipment and materials such as boats and engines for surveillance, pickup truck, motorcycles, bicycles, moorings, diving equipment, PA office, extra gas or fuel for monitoring, base line study, and science based management plan.

4.6. Balance sheet

The second set of workshops focused on looking for the elements to build the MPA system balance sheet for each country. Investment and recurrent costs must be calculated separately because the long term recurrent costs will be inflated if they incorporate the investment. Therefore**, the Balance Sheet will address only the recurrent cost for each country per year.**

The Balance sheet per country starts with the total recurrent cost that was calculated in Table 4.

4.6.1. Existing revenue stream

It was identified during the workshops that the two most significant sources of revenue for MPA System in the four countries are: 1) government budget appropriations and 2) access or user fees.

4.6.2. Shortfall

Shortfall is the result of subtracting the whole recurrent cost of the Protected Area System with the stable income that is generated through existing revenue stream. Table 6 shows the calculations for each country.

Table 6: Countries total shortfall per year

SHORTFALL	Amount USD
Antigua and Barbuda	5,950,000
Saint Vincent and the Grenadines	7,176,743
Saint Lucia	2,740,000
Dominican Republic	Revenue not available
Sub-Total Per year	**15,866,743**

4.6.3. New revenue options

Participants identified a range of revenue options that can potentially contribute to fund the identified shortfall. These options include but are not limited to:

- Green Cards- contribution.
- Raise anchor and mooring fees.
- Visiting souvenirs.
- PES - Water / electricity, drinking and bottle.
- Voluntary conservation surcharge by a number of hotels.
- Research restricted area for pharmaceutical industries / medicine.
- Advertising –sponsorship.
- Branding recognition to significant contribution to Park.
- Upgrade current fees.
- Grant funding for specific areas (sinking fund).
- International Donors.
- Debt swap.

The options mentioned above are worth exploring, yet experience has demonstrated that income from most of these propositions provide revenue mainly for the most iconic sites or specific areas. These revenues are not significant enough to fund the whole system except for the debt swap arrangement if it is possible for the country.

Tourism was another revenue option that was proposed to participants. Considering the positive experience of other countries in the region and internationally that have introduced mandatory visitor contributions as a revenue option to support their PA system, it can be a significant scheme to finance a large part of the shortfall. Initially, participants were reluctant about the idea of initiating a mandatory visitor contributions for all foreign visitors as it was perceived to be complicated and a very long process with a low chance of success, as this scheme involves politics. However, after realizing that setting up a sustainable finance mechanism (SFM) is a long-term process that can take 7 to 10 years from its conception to becoming fully operational and requires political will and constituency building, participants agreed that a nation-wide mandatory visitor fee is the most rational way to address their important shortfall. The estimation of the potential revenue from a mandatory visitor's scheme was done for Antigua and Barbuda, Saint Vincent and the Grenadines and Saint Lucia.

4.6.4. Gap

Even with the best intention and effort to generate as much new revenues as possible, it is most likely that country will be short of being capable to cover the shortfall amount. "GAP" is determined by finding the difference between the estimated amount of the shortfall minus the total estimation of all new revenues that can be generated. Table 7 below shows the potential gap amount after all potential revenues were exhausted to fill the shortfall.

Table 7: Potential gap amount per country

GAP	Amount USD
Antigua and Barbuda	$ 1,265,000
Saint Vincent and the Grenadines	$ 5,431,743
Saint Lucia	$ 1,270,000
Dominican Republic	Not available
Sub-Total	**7,966,743**

5. CONCLUSION / RECOMMENDATIONS

Cost reduction is the best long-term financial strategy at this stage for Antigua and Barbuda, Saint Lucia and Saint Vincent and the Grenadines as they have to respectively double, triple and quadruple the current size of their marine protected area to reach the 20% conservation goal. To lower the high amount of the shortfall and consequently reduce the financial gap, the following strategies are proposed:

- Merge current small areas into a contiguous larger area, even if building a conservation corridor is needed. Another option is to combine small areas among themselves to form a larger area under one Management Unit;
- Phase out the declaration of small protected area as standalone area and make them part of larger multifunction or use area;
- Commission an ecological footprint study to determine priority areas for conservation for the expansion of MPA to reach the 20% goal and a zoning planning process to create large conservation areas;
- Create a lean Protected Area Coordination Center that ensures the coordination of each country`s PA system and offers high technical and scientific services to all PAs. The management of this Center will include at least all government lead agencies that are managing protected areas in their respective country.

Table 8: Summary of Sustainable Finance Needs Analysis of the four countries

Countries	Cost per Km^2	20% Km^2 target	Plus Coordination Center & Research	Total Recurrent Cost per Year	Current Revenues	Shortfall per year	New revenues & Potential	Gap per year	ONE TIME INVESTMENT
Antigua and Barbuda	6,875	784	1,000,000	**6,400,000**	450,000	**5,950,000**	4,685,000	**1,265,000**	**11,000,000**
Saint Vincent and the Grenadines	16,911	408	1,030,000	**7,900,000**	723,257	**7,176,743**	1,745,000	**5,431,743**	**14,900,000**
Saint Lucia	19,950	124	750,000	**3,200,000**	460,000	**2,740,000**	1,470,000	**1,270,000**	**4,700,000**
Dominican Republic	333	3,346	1,000,000	**2,100,000**	N/A	**N/A**	N/A	**N/A**	**3,600,000**
TOTAL				**19,600,000**					**34,200,000**

This financial needs analysis process highlighted the investment and recurrent costs needed per country to achieve effective management in the current and future MPAs that will comprise the 20% target as shown in table 8. Investment and recurrent costs are an integral part of the same equation to achieve effective management and should be treated equally. It can be said that recurrent costs per year maintains the investment done. To align the investment cost with recurrent cost in a funding scheme, it can be put into an example of someone building a house. The investment is initially needed to build the house. Subsequently, the owner will need money to pay for the yearly recurrent cost to pay for the mortgage and the maintenance of the house.

COUNTRY`S IN-DEPTH FINANCIAL NEEDS ANALYSIS RESULTS

6. ANTIGUA AND BARBUDA

To achieve the CCI Goal 1 which is to effectively conserve and manage at least 20 % of the marine and coastal environment, Antigua and Barbuda (A&B) needs to have 784 km^2 under effective conservation management. For this exercise, five protected areas totaling 197.7 km^2 were costed by their respective managers/supervisors in A&B: three marine PAs (180.8 km^2) and two terrestrial PAs for a total of (16.92 km^2). As this financial needs analysis focusses on Marine Protected Areas, only the costing results of the three marine areas are included in this report.

6.1. Costing Results

Table 9 shows the cost per km^2 to manage the three MPAs, the recurrent cost per year for the sample sites and the total recurrent cost to effectively manage 20% of the marine and coastal area of the Country that equal 784 km^2. The costing results are the following:

1) The average cost per km2 for the two largest marine protected areas is $4,896;
2) The smallest area cost per km^2 is $64,408. This is an increase of 13 folds if compared to the largest area. This small area increases the overall cost per km^2 by almost 1/3 or $2000 per km^2 and represents only 4% of the total area that was costed. This clearly indicates the tremendous impact of small PAs on the overall cost and affordability of the PA system.
3) From the sample sites calculation, the overall recurrent cost to manage 20% of the marine and coastal MPA system of A&B was estimated at $5,389,853 per year. This result was calculated by multiplying the the total average cost per km^2 of the sample sites: $6,875 by the total number of km^2 needed to reach the 20% goal: 784 km^2.

Table 9: MPA cost per km^2 and the total recurrent cost to expand 20% goal which is 784 km^2

	Site 1	Site 2	Site 3	TOTAL Site marine & cost per km^2	20% marine & coastal Recurrent cost per year
Conservation area	**NEMMA**	**Codrington. Lagoon**	**Willoughby Bay + 5 km^2**		
Area (km^2)	107.5	66.8	6.5	180.8	**784**
Optimal budget USD	449,598	374,717	418,651	1, 242,966	**5.4 million**
Cost per km^2 USD	4,182	5,610	64,408	**6,875**	6,875

6.2. Recommendations

The objective of conserving and effectively managing 20% of A&B marine and coastal areas can be reached at an affordable cost for all parties if the following premises are followed:

Creation of a Protected Area Coordination Center

A Coordination Center that will provide system services to all PAs is recommended to achieve economies of scale and an efficient redistribution of technical services to all marine and terrestrial PAs. The Coordination Center will:

- Comprise between 7 and 15 highly qualified staff to assist all protected areas. It will be supervised by a PA Committee composed of all lead Government Agencies and other potential members to be determined.
- Fulfill the coordination function needed for all PAs, to ensure shared expertise and management capacity. These functions include but not limited to: (i) set up PA policy and system plan, (ii) law and regulations- sites and system, (iii) declaration & designation, (iv) Standard Operation Procedures (SOPs) & monitoring's, (v) training and development of rangers, (vi) management plan, (vii) research and development, (viii) promotion (marketing and public awareness), (ix) financing, (x) MOU for specific site management and others.
- Develop the System Management Plan and ensure its harmonious implementation into the recommended phases.

Combination of smaller MPA into larger multifunction area

This costing exercise with PA managers and supervisors demonstrated the necessity for combining small areas into a larger area system to be managed as multiple function like NEMMA, to achieve economies of scale and affordability.

Example of potential combination of areas:

1) Willoughby Bay Wetlands/Christian Cove Wetlands 1.7 + 5 km^2 is combined with Nelson's Dockyard 41 km^2**.** This gives a total of 47.7 km^2 under one coordinated management unit. This will reduce the recurrent cost per km^2 of Willoughby Bay +5 from $ 64,408 to $ 8,814.

2) If Willoughby Bay +5 is combined with even larger areas comprising Nelson Dockyard (41 km^2), Cades Bay (18.2 km^2) and the proposed Cades Bay Marine Reserve (10.7 km^2), the total area would be 76.6 km^2. This larger size PA would reduce the recurrent cost of Willoughby Bay +5 from $ 64,408 to $ 5,465 per km^2.

3) Codrington Lagoon (currently 66.8 km^2) can be merged with Two Foot Bay (48.4 km^2), Goat Island Fish Sanctuary (4.4 km^2) and the proposed Goat Island Wildlife Reserve (21.9 km^2). This will give an area of 141.5 km^2. Codrington Lagoon could also include the management of the Lagoon Sanctuary which is a contiguous area of 21.2km^2. This will give a total area of 162.7 km^2 under one management unit, which will significantly lower the cost not only for Codrington Lagoon but also for each of the current and proposed MPA mentioned.

Table 10: Example of reduction of cost for smaller area being part of larger multifunction area

Willoughby Bay optimal Recurrent cost budget USD		**$418,650**
	Km2	**Cost per km^2**
Willoughby Bay Original size	**1.7**	**$ 246,265**
Willoughby Bay/Christian Cove Wetlands (1.7 + 5 km2)	**6.5**	**$ 64,408**
If part of Nelson dock yard (6.5 + 41 km2)	**47.5**	**$ 8,814**
If part of Nelson Dock yard 41 km2 + Cades Bay 18.2 km2 + proposed Cades Bay marine reserve 10.7 km2 + W B 6.5 km2 = 76.6 km2	**76.6**	**$ 5,465**

Cessation of designating small conservation area as standalone area.

In the following list of proposed marine conservation areas now being considered, seven areas are below or equal to 1 km^2 and eight areas are under 5 km^2. Four others are below 10 km^2. Many of these areas can be easily merged with larger existing areas or other proposed areas to create larger and more efficient PAs with multiple uses and managed by one Management Unit.

Current Proposed A & B Conservation Area

Site	**km^2**
1) McKinnon's Pond Wetlands	0.8
2) Fort Bay Pond Wetlands, Beach & Fort	0.6
3) Yepton's Pond Wetlands	1.0
4) Galley Bay Wetlands	0.2
5) Hansen Bay Flashes Coastal Reserve	15.9
6) Jabberwock Beach and Coastal FR	3.4
7) Long Island Marine Reserve	5.4
8) Fitches Creek Wetlands	2.0
9) Fitches Creek2 Wetlands	0.5
10) Parham Harbor Wetlands	3.0
11) Guiana Bay Islands Marine Reserve	16.6
12) Mercers Creek Wetlands	3.2

13) Green Island Indian Town Point MR	9.3
14) Ayers Creek & Black Ghaut Wetlands	2.5
15) Fryes & Darkwood Beaches Coastal Reserve	0.8
16) Cades Bay Marine Reserve	10.7
17) Carlisle Bay Wetlands	0.7
18) Willoughby Bay Wetlands/Christian Cove Wetlands	1.7
19) Half Moon Bay Beach & Coastal Reserve	0.5
20) Goat Island Wildlife Reserve	21.9
21) Frigate Bird Reserve	6.7
22) Highlands Cliffs and Caves Reserve	30.9
23) Palmetto Point Reserve	3.1
24) Gravenor Bay Reserve	8.4

6.3. System Management Plan

A comprehensive System Management Plan (SMP) that will define every component and function of the system needs to be created. The SMP will be of vital importance for the support of current MPAs and for the establishment and operation of new MPAs to achieve the 20% goal. This SMP will also define each component's time frame and phase. A six to nine years' time frame divided into three equal phases is recommended for this process. Further, the SMP will have to integrate the development of the future agreed sustainable finance mechanisms to ensure long-term funding for the whole system.

6.4. Total Recurrent and Investment Cost

Cost to establish and operate 20% MPA system

The magnitude of the financial challenge for A&B was calculated and is summarized in Table 11. It is composed of:

- The **Recurrent Cost** which is the amount needed every year to operate the MPA system at the level of effective management for 20% of Antigua and Barbuda marine and coastal territory. The participants agreed that the whole recurrent cost includes also the cost to operate the PA Coordination Center per year and an annual budget of 100 thousand dollars for needed research.
- The **Investment Cost** which is the amount needed to bring the proper level of staffing, equipment, materials and scientific based management plan that are the basic elements for effective management.

As mentioned in point 4.6 above, the Investment and recurrent costs must be calculated separately because the long term recurrent costs will be inflated if they incorporate the investment. However both need to be addressed if the country wants to reach the effective management goal.

Table 11: Cost to establish and operate Antigua and Barbuda's 20% MPA system

RECURRENT COST	Description	**Cost USD**
Recurrent Cost km2 to achieve 20 %	Annual recurrent cost $6,875 * 784 km2	$5,390,000
Coordination Center	National government inputs, system management & coordination, SOPs, scientific monitoring, rangers training, mgt. plan, science and sustainable finance/ promotion & marketing	**750-900,000**
Targeted research	Research and specialized studies	**$100,000**
Total	**Recurrent Cost per year**	**6.25 - 6.4m**
INVESTMENT	**Description**	**Cost USD**
Investment Now	For the 3 MPA sites for effective management	**$2,3466,669**
Investment	Needed to expand to 20%	**$10,100,000**
Investment Coordination Center	Equipment's/ Materials	**550-900,000**
Total	**Investment to expand to 20%**	**10.7 -11 m**

Financing the required investment

To provide the system with tools, equipment and required staff to achieve 20% conservation goal, a one-time investment of about 11 million is needed as shown in Table 11. This investment is necessary to bring each site and the system at the level of effective management. The recurrent cost of about 6.4 million per year is to maintain the effective management in all subsequent years.

As mentioned in the general report, it is of paramount importance to consider that the above recurrent and investment cost could be significantly reduced by the adoption of larger multifunction MPAs. This will in turn have a substantial impact not only on the total amount of the recurrent cost per year, but also on the sustainable financing mechanism scheme and the size of the gap if any.

6.5. Balance sheet

A. Marine Protected Area Recurrent Cost Balance Sheet

Table 12 shows that the recurrent cost of **$**6.4 million less the estimation of the current revenue that is provided to the MPAs gives a **Shortfall** of 5.95 million per year. Different types of sustainable financial mechanisms were proposed and discussed during the workshop but it

became obvious that a mandatory visitor's contribution is the best in-country option to provide for a substantial part of the shortfall.

Table 12: 20% Recurrent Cost Balance Sheet

20 % Total Recurrent Cost	Recurrent cost to cover 784 km^2 + PA Coordination Center	**$6,400,000**
Current Revenues	MPA entry fees + Government appropriation	**$450,000**
SHORTFALL	PAS costs minus existing revenue	**$5,950 ,000**
New Revenue		
MEPA – Green cards contribution	MEPA $270,000 -	**$270,000**
Mandatory Visitor Contributions proposal for new revenue for whole A&B PA System jointly with Tourism	Mandatory Visitor contributions 800,000 Visitors at US $15 to split between tourism infrastructure $7.5 and PA System $7.5 less collection cost 13.3%. Marine conservation area is 8.6 time larger than terrestrial -	**$4,600,000**
	Cost for management, disbursement and monitoring of visitor contributions, by MEPA	**-$185,000**
GAP		**$1,265,000**
International support	Endowment of $25,500,000 return 5% per year net in perpetuity	**$1,275,000**
TOTAL Balance		**$10,000**

This scheme proposes a mandatory visitor contributions of $15 that will be split between the Tourism Department and the Protected Area System (PAS) less the collection cost of about 13.3%. The roles of the Tourism Department comprise the maintenance and upgrade of the tourism infrastructure, whereas the roles of the PAS is to establish and maintain effectively managed Protected Areas in the country for the benefit of the nation. It was calculated that the PAS portion of the visitor contributions will amount to 4.6 million for the marine PA, if shared proportionally by the amount of km^2 between the marine and terrestrial. The proposed mandatory visitor's contribution scheme with all other in-country revenues could provide A&B's PA system 81% of the total recurrent cost needed per year. A change in that proposed scheme will change the amount in the balance sheet. It will lower or increase the gap and, by the same way, lower or increase the amount of the necessary endowment to cover the gap.

The **GAP** is identified when all potential new revenue generation possibilities to cover the shortfall in a significant way are exhausted. The Gap for Antigua and Barbuda identified in this costing process is of about 1.265 million.

B. Leveraging international investment

To cover the gap of 1.265 million per year, international assistance will be required to supplement the proposed or similar new revenue scheme. To generate an estimated 1.265 million per year,

an endowment of approximately $25.5 million could be pursued with a number of multilateral, bilateral and private opportunities. It is recommended that A&B starts to look for opportunities with potential donors like the GEF 6 and 7 among others.

C. Fund management

Workshop participants recognised the value of an independent entity to administer and disburse funds for the A&B PAS. The new A&B Marine Ecosystems Protected Areas Trust (MEPA) can be in charge of receiving and disbursing a revolving fund generated through the mandatory visitor's contribution. MEPA can also be the recipient of the proposed endowment created with the support of bilateral, multilateral partners, private foundations and private partnerships. It is worth noticing that MEPA has already received supports from the Antigua and Barbuda's government and the Caribbean Biodiversity Fund.

6.6. Next steps

The following key tasks were identified by participants during the last Antigua & Barbuda`s workshop to advance the sustainable finance process to achieve the effectively managed 20% goal.

Tasks	Lead
1. Need for a draft PA system coordination mechanism document that shows range of activities and range of discussion.	1. Consultant
2. Need to get the PA agencies around the table.	2. MEPA
3. Advocate the PA System Coordination Mechanism idea to donors to obtain funding to design and set up the System.	3. MEPA & DOE
4. MEPA potential source of funding to advance further the process through a grant.	4. MEPA
5. Need a plan to implement the System: • Issue of scale as presented today. • Issue of effective management.	5. Consultant
6. Present Financial needs analysis results and the new option to downsize the cost to a realistic level for the System to each lead agency	6. MEPA
7. Develop a message to TAC that includes: • Value of larger Area Management; • Need for coordination; • Need endorsement from line agencies and cabinet especially the finance Ministry.	7. MEPA, DOE
8. Need a draft realistic cost per km2 and balance sheet with new options to be presented to the Finance Minister.	8. MEPA, DOE
9. To raise awareness and promotion, design with the assistance of a marketing agency a map representing the current and future PA that will be part of the country system.	9. MEPA

7. SAINT VINCENT AND THE GRENADINES

To achieve the CCI Goal 1 which is to effectively conserve and manage at least 20 % of the marine and coastal environment, Saint Vincent and the Grenadines (SVG) needs to have 408 km^2 under effective conservation management. Workshop participants selected four declared Marine Protected Areas (MPAs) that represent a total of 73.5 km^2 to be costed by their respective managers/supervisors.

7.1. Costing Results

Table 13 shows the cost per km^2 to manage the four MPAs, the recurrent cost per year for the sample sites and the total recurrent cost to effectively manage 20% of the marine and coastal area of the Country that equal 408 km^2. The costing results are as follow:

1) The cost per km^2 for Tobago Cays, the largest marine protected areas is $8,468;
2) The smallest area cost per km^2 is $132,870. This is an increase of 14.7 folds if compared with the largest area. This small area increases the overall cost per km^2 by $1,760 and represents only 4% of the total area that was costed. This clearly indicates the tremendous impact of small PAs on the overall cost and affordability of PA system.
3) From the sample site calculation, the overall recurrent cost to manage 20% of the marine and coastal MPA system of SVG was estimated at $6,899,688 per year. This result was calculated by multiplying the the total average cost per km^2 of the sample sites: $16,911 by the total number of km^2 needed to reach the 20% goal: 408 km^2.

Table 13 : MPA cost per km^2 and total recurrent cost to expand to 20% which is 408 km^2

	Site 1	Site 2	Site 3	Site 4	TOTAL Site Marine & cost per km2	20 % marine & coastal recurrent per year
Conservation area	**Tobago Cays**	**Mustique Island**	**South Coast**	**Union Palm Island**		
Area (sq. km)	51.8	6.2	2.6	12.9	73.5	**408**
Optimal Budget USD	438,618	303,365	345,461	155,490	**1,242,934**	**6,899,688**
Cost per km2 USD	**8,468**	**48,930**	**132,870**	**12,053**	**16,911**	**16,911**

7.2. Recommendations

The objective of conserving and effectively managing 20% of SVG marine and coastal area can be reached at an affordable coast for all parties if the following premises are followed:

Creation of a Protected Area Coordination Center

A Coordination Center that will provide system services to all PAs is recommended to achieve economies of scale and an efficient redistribution of technical services to all marine and terrestrial PAs. The Coordination Center will:

- Comprise between 7 and 15 highly qualified staff to assist all protected areas. It will be supervised by a PA Committee composed of all lead Government Agencies and other potential members, to be determined.
- Fulfill the coordination function needed for all PAs, to ensure shared expertise and management capacity. These functions include but not limited to: (i) set up PA policy and system plan, (ii) law and regulations- sites and system, (iii) declaration & designation, (iv) Standard Operation Procedures (SOPs) & monitoring's, (v) training and development of rangers, (vi) management plan, (vii) research and development, (viii) promotion (marketing and public awareness), (ix) financing, (x) MOU for specific site management and others.
- Develop the System Management Plan and ensure its harmonious implementation into the recommended phases.

Combination of smaller MPA areas into larger multifunction area

This costing exercise with PA managers/supervisors demonstrated the necessity to combine small areas into a larger area system to be managed as a multifunction larger area to attain economies of scale and affordability.

- On Saint Vincent mainland, the reef to ridge ecosystem base management approach is recommended because the water that flows downhill in each catchment has a great impact on the current and proposed marine PA.
- South Coast MPA (2.6 km^2) could include its buffer zone and its whole catchment area. The water running down the catchment and any alteration to the catchment has an impact on the marine area below as the water passes through different types of settlements and roads. The catchment, the buffer zone and the marine PA could be under one Management Unit of 11 km^2 as South Coast MMA.
- If the above recommendation is adopted the new South Coast MMA recurrent cost per km^2 will drop 4 folds from $132,870 to $31,400 per km^2. This would reduce the overall system recurrent cost per year by $715,000.

Cessation of designating small conservation area as standalone area.

In the following list of proposed marine conservation areas now being considered, four areas are below 5 km^2 and two areas under 10 km^2. Many of these areas can be easily merged with existing areas or other proposed areas to create larger more efficient and practical PAs with multiple uses and managed by one Management Unit.

Currently Proposed SVG Conservation Area

Site	km^2
1) South Coast Marine Park	3.2
2) Sandy Island/Oyster Bed Marine Protected area	7
3) Tobago Cays Marine Park	54.7
4) Bequia Marine Conservation Area	3.7
5) Isle de Quatre Marine Reserve	3.35
6) Mustique Marine Conservation Area	6.5
7) Canouan Marine Reserve	12.5
8) Union- Palm Island Marine Conservation area	13.6
9) Petit St. Vincent Marine Conservation Area	1.2

7.3. System Management Plan

An update of the current System Management Plan (SMP) which would include a re-examination of the current systems approach for larger PAs is recommended. This new SMP version will also comprise the establishment and operation of new MPAs to achieve the 20% goal. It will also define each component's time frame and phases. A six to nine years' time frame divided into three equal phases is recommended for this process. Further, the SMP will have to integrate the development of the future agreed sustainable finance mechanisms to ensure the long-term funding for the whole system.

7.4. Total Recurrent and Investment costs

Cost to establish and operate the 20% MPA system

The magnitude of the financial challenge for SVG was calculated and is summarized in Table 14. It is composed of:

- The **Recurrent Cost** which is the amount needed every year to operate the MPA system at the level of effective management for 20% of Saint Vincent and Grenadine's marine and

coastal territory. The participants agreed that the whole recurrent cost includes the cost to operate the PA Coordination Center per year and an annual budget of 100 thousand dollars for needed research.

- The **Investment Cost** which is the amount needed to bring the proper level of staffing, equipment, materials and scientific based management plan that are the basic elements for the effective management.

As mentioned in point 4.6 above, the Investment and recurrent costs must be calculated separately because the long term recurrent costs will be inflated if they incorporate the investment. However both need to be addressed if the country wants to reach the effective management goal.

Table 14: Cost to establish and operate Saint Vincent and the Grenadines 20% MPA system

RECURRENT COST		Cost USD
Recurrent Cost km2 to achieve 20 %	Annual recurrent cost $16,911,136 * 408 km2	$6,899,688
Coordination Center	National government inputs, system management & coordination, SOPs, scientific monitoring, rangers training, mgt. plan, science and sustainable finance/ promotion & marketing	750-900,000
Targeted research	Research and specialized studies	$100,000
Total	**Recurrent Cost per year**	7.75 -7.9m
INVESTMENT		
Investment now	**For the 4 sample MPA sites to upgrade to effective management**	$2,496,696
Investment	Needed to expand to 20%	$14,000,000
Investment Coordination System	Equipments/ Materials	$930,000
Total	Investment	$14,930,000

Financing the required investment

To provide the system with tools, equipment and required staff to achieve 20% conservation goal, a onetime investment of about 14.9 million is needed as shown in Table 14. This investment is necessary to bring each site and the system at the level of effective management. The recurrent cost of about 7.9 million per year is to maintain the effective management in all subsequent years.

As mentioned in the general report, it is of paramount importance to consider that the above recurrent and investment cost could be significantly reduced by the adoption of larger multifunction MPAs. This will in turn have a substantial impact not only on the total amount of the recurrent cost per year, but also on the sustainable financing mechanism scheme and the gap.

7.5. Balance sheet

A. Marine Protected Area Recurrent Cost Balance Sheet

Table 15 shows that the recurrent cost of 7.9 million less the estimation of the current revenues that is provided to the MPAs gives a Shortfall of 7.177 million per year. Different types of sustainable financial mechanisms were proposed and discussed during the workshop, but it became obvious that a mandatory visitor's contribution is the best in-country option to provide for a substantial part of the shortfall.

Table 15: 20% Recurrent Cost SVG Balance Sheet

20 % Total Recurrent Cost	Recurrent cost to cover 408 km^2 + PA Coordination Center	**$7,900,000**
Current Revenues	MPA entry fees + Government appropriations	**$723,257**
SHORTFALL	PAS costs minus existing revenue	**$7,176,743**
NEW REVENUE		
- SVGCF Increase mooring & passengers fees	SVGCF = $270,000 Increase mooring fees and double passengers fees =$160,000	**$430,000**
Mandatory Visitor Contributions – Proposal for new revenue jointly with Tourism	Mandatory Visitor Contributions 200,000 Visitors at $15, less a collection cost 7% to be spilt 1/3 for improving tourism infrastructure and 2/3 to support SVG PA system. Marine = 4 out of 5 of the SVG surface to be protected	**$1,485,000**
	Cost for management, disbursement and monitoring of visitor contributions by SVGCF to the SVG PA system	**-$170,000**
GAP		**$5,431,743**
International Support		
TOTAL Balance		**-5,431,743**

This scheme proposes a mandatory visitor's contribution of $15 that will be split between the Tourism Department 1/3 and the Protected Area System (PAS) 2/3 less the collection cost of about 7%. The roles of the Tourism Department comprise the maintenance and upgrade of the tourism infrastructure, whereas the roles of the PAS is to establish and maintain effectively managed Protected Areas in the country for the benefit of the nation. It was calculated that the PAS portion of the visitor's contribution will amount to 1.48 million for the marine PA, if shared proportionally by the amount of km2 between the marine and terrestrial.

The proposed mandatory visitor contributions scheme with all other in-country revenues could provide SVG's PA system 37 % of the total recurrent cost needed per year. A change in that proposed scheme will change the amount in the balance sheet. It will lower or increase the Gap and, by the same way, lower or increase the amount of the necessary endowment to cover the gap.

The **GAP** is identified when all potential new revenue generation possibilities to cover the shortfall in a significant way are exhausted. The Gap for SVG identified in this costing process is of about 5.4 million.

B. Leveraging international investment

To cover the gap of 5.4.million per year, international assistance will be required to supplement the proposed or similar new revenue scheme.

C. Fund management

Workshop participants recognised the value of an independent entity to administer and disburse funds for the PAS in SVG. The new Saint Vincent and the Grenadines Conservation Fund (SVGCF) can be in charge of receiving and disbursing a revolving fund generated through the mandatory visitor's contribution. SVGCF can also be the recipient of a proposed endowment created with the support of bilateral, multilateral partners, private foundations and private partnerships to sustainably support a portion of the gap. It is worth noticing that SVGCF has already received supports from the Saint Vincent and the Grenadine's government and the Caribbean Biodiversity Fund.

D. Total SVG recurrent cost reduction example – cost simulation

Participants acknowledged that the total recurrent cost per year of 7.9 million is too high to be supported by the country. **A cost simulation** was done to show that merging smaller sites to larger one can substantially reduce the overall cost of a PA system. This is illustrated by the case of the new expansion of Tobago Cays, Mustique, Union Palm and South Coast as proposed by the Grenadine Bank (Grenada/Saint Vincent & the Grenadines) new conservation areas as follow:

	Current size	**New area**	**Total km^2**
Tobago Cays Marine Park	51.8 km^2	54.7 km^2	106.5 km^2
Mustique Marine Conservation Area	6.2 km^2	6.5 km^2	12.7 km^2
Union- Palm Island	12.9 km^2	13.6 km^2	26.5 km^2
South Coast	2.6 km^2	8.4 km^2	11 km^2

Table 16: Cost simulation- Integrating the size of the proposed new expansion of the sample area

Saint Vincent and the Grenadines						
	Site 1	Site 2	Site 3	Site 4	TOTAL Site Marine & cost per km2	20 % marine & coastal recurrent cost per year
Conservation area	Tobago Cays	Mustique Island	South Coast	Union Palm Island		
Approx Area (sq. km)	106.5	12.7	11	26.5	156.7	408
Optimal Budget USD	606,908	404,487	460,615	207,320	1,679,330	4,372,474
Cost per km2 USD	5,699	31,849	41,874	7,823	10,717	10,717

From the original sample areas optimal budget, 1/3 was added to the cost simulation to take into account the expansion future cost. This costing simulation significantly reduced the recurrent cost per km^2 (Table 13) by $6,194. As a result, the original recurrent cost dropped from 6.9 million to 4.37 million. This is a reduction of 2.5 million per year.

Table 17: Cost simulation - Total recurrent cost per year of the SVG MPA system

RECURRENT COST	Description	Cost USD
Recurrent Cost km2 to achieve 20 %	Annual recurrent cost $10,717 * 408 km2	$4,372,474
Coordination Center	National government inputs, system management & coordination, SOPs, scientific monitoring, rangers training, mgt. plan, science and sustainable finance/ promotion & marketing	750-900,000
Targeted research	Research and specialized studies	$100,000
Total	**Recurrent Cost per year**	5.2-5.35m

Table 17 show the new total recurrent cost for the SVG PA system is now 5.35 million per year. With this new amount, the recurrent cost balance sheet below was recalculated.

Table 18: Cost simulation – Recurrent Cost Balance Sheet including the expansion

20 % Total Recurrent Cost	Recurrent cost to cover 408 km^2 + PA Coordination Center	5,350,000
Current Revenues	**MPA entry fees + Government appropriation**	$723,257
SHORTFALL	**PAS costs minus existing revenue**	$4,626,743
New Revenue		
SVGCF – Increase mooring & passengers fees	SVGCF = $270,000 Increase mooring fees and double passengers fees =$160,000	$430,000
Mandatory Visitor Contributions- proposal for new revenue jointly with Tourism	Mandatory visitor contributions 200,000 Visitors at $15, less a collection cost 7% to be spilt 1/3 for improving tourism infrastructure and 2/3 to support SVG PA system. Marine = 4 out of 5 of the SVG surface to be protected	$1,485,000
	Cost for management, disbursement and monitoring of visitor contributions by SVGCF to the SVG PA system	-$170,000
GAP		$2,881,743
International Support	Endowment of $50,000,000 return 5% per year net in perpetuity	$2,500,000
	Other Payment for environmental services	$385,000
Subtotal		$2,885,000
TOTAL Balance		$3,257

This cost simulation exercise demonstrates that the overall recurrent cost per year can be reduced by creating larger multifunction area. This can still be reduced much further if the size of proposed new areas are reconsidered according to the proposed ecological footprint base line study results.

7.6. Next steps:

The SVG workshop participants identified the following steps to advance the sustainable finance process to achieve the effectively managed 20% goal.

- Design new larger conservation areas in line with the lesson learned from this costing exercise to achieve the 20% goal at an affordable cost.
- Undertake an ecological footprint base line study this year to map out the area to be integrated in the expansion process.
- To raise awareness and promotion, design with the assistance of a marketing agency a map representing the current and future PA that will be part of the country system.

8. SAINT LUCIA

To achieve the CCI Goal 1: "to effectively conserve and manage at least 20% of the marine and coastal environment", Saint Lucia need to have 124 km^2 under effective conservation management. In Saint Lucia, workshop participants selected three declared Marine Protected Areas (MPAs) that represent a total of 40.18 km^2 to be costed by their respective managers/supervisors.

8.1. Costing Results

Table 19 shows the cost per km^2 to manage these three MPAs, the recurrent cost per year for the sample sites and the total recurrent cost to effectively manage 20% of the marine and coastal area of the Country that equals 124 km^2. The costing results are the following:

1) The cost per km^2 for the largest marine protected areas is $12,782;
2) The smallest area of 3.7 km^2 has a lower cost per km^2 than any other small areas that was costed in the four countries, because this area is a community base managed area. This is in line with International results emphasizing that when a PA is community base managed, the cost is significantly lower than any other type of external management. However, the cost is still high per km^2 at $19,132;
3) The cost per km^2 of Pointe Sable (10.38 km^2) is three time higher than the cost of SMMA/CAMMA (26.1 km^2) though Pointe Sable is 2.5 times smaller.
4) The overall recurrent cost to manage 20% of the marine and coastal MPA system of Saint Lucia MPA was estimated from the sample site calculation at $2,429,196 per year. This result was calculated by multiplying the the total average cost per km^2 of the sample sites: $19,590 by the total number of km^2 needed to reach the 20% goal: 124 km^2.

Table 19 : Cost per km^2 for Marine Protected Area and total recurrent cost to expand to the 20% goal which is 124 km^2

Saint Lucia					
	Site 1	**Site 2**	**Site 3**		**20 % marine & coastal recurrent cost per year**
Conservation area	**SMMA / CAMMA**	**Pointe Sable, Ma Koté & Maria Island**	**Laborie MMA**	**Total or average & Cost per km2 / ha**	
Area (sq. km)	26.10	10.38	3.7	**40.18**	**124**
Optimal Budget USD	333,623	382,727	70,788	**787,138**	**2,429,196**
Cost per km2 USD	12,782	36,872	19,132	**19,590**	**19,590**
Cost per Ha USD	196.25	368.72	191.32	**196**	**196**

8.2. Recommendations

The objective of conserving and effectively managing 20% of Saint Lucia marine and coastal areas can be reached at an affordable cost for all parties if the following premises are followed:

Creation of a Protected Area Coordination Center

A Coordination Center that will provide system services to all PAs is recommended to achieve economies of scale and efficient redistribution of technical services to all marine and terrestrial PAs. The Coordination Center will:

- Comprise between 7 and 10 highly qualified staff to assist all protected areas. It will be supervised by a PA Committee composed of all lead Government Agencies and other potential members to be determined.
- Fulfill the coordination function needed for all PAs, to ensure shared expertise and management capacity. These functions include but not limited to: (i) set up PA policy and system plan, (ii) law and regulations- sites and system, (iii) declaration & designation, (iv) Standard Operation Procedures (SOPs) & monitoring's, (v) training and development of rangers, (vi) management plan, (vii) research and development, (viii) promotion (marketing and public awareness), (ix) financing, (x) MOU for specific site management and others.
- Develop the System Management Plan and ensure its harmonious implementation into the recommended phases.

Reducing cost per km^2 by combining smaller MPA to larger area example:

This costing exercise with PA managers and supervisors showed the necessity to combine small areas into a larger area system to be managed as multiple functions area to attain economies of scale and affordability. Saint Lucia has already adopted this concept to get economies of scale in the management of small separated area that can be merged together. For example:

- The Soufriere Marine Management Area (SMMA) (17 km^2) is now incorporating Canarie Anse la Raye MMA (CAMMA) (9.1 km^2) forming a new entity SMMA/CAMMA of 26.1 km^2 under one Management Unit.
- Pointe Sable EPA (10.38 km^2) incorporating Ma Koté Marine Reserve (< I km^2) and Maria Island reef Marine Reserve (< 1 km^2).

Cessation of designating small conservation area as standalone area.

In the following list of proposed eight marine conservation areas now being considered, three areas are below or equal to 1 km^2 and two areas are under 5 km^2. The last three areas are below 10 km^2. Many of these areas can be easily merged with other proposed areas to create more efficient PAs with multiple uses and managed by one Management Unit. If they are communities base managed, they can be under the supervision of the proposed PA Coordination Center. As example: East Coast MMA2 can be merged with East Coast MMA3 – 4 -5, Dennery Island NR and Praslin Island NR to form an area of 24 km^2 under one Management Unit. Laborie MMA can be expanded further along the South coast down to Ceasar-Mathurin MR and Point Sable boundaries.

Currently Proposed Saint Lucia Conservation Area

	Site	**km^2**
1)	East Coast MMA 1	5.9 km^2
2)	East Coast MMA 2	6.5 km^2
3)	East Coast MMA 3	1.0 km^2
4)	Dennery Island NR	<1 km^2
5)	East Coast MMA 4	4.9 km^2
6)	Praslin Island NR	<1 km^2
7)	East Coast MMA 5	9.6 km^2
8)	Laborie MMA	3.7 km^2

8.3. System Management Plan

A comprehensive System Management Plan (SMP) needs to be created. It will define each component and function of the system that includes the support of the current MPAs as well as the establishment and operation of new MPAs to achieve the 20% goal. This SMP will also define each component's time frame and phases. A six to nine years' time frame divided into 3 equal phases is recommended for this process. Further, the SMP will have to integrate the development of the future agreed sustainable finance mechanisms to ensure the long-term funding for the whole system.

8.4. Total Recurrent and Investment costs

Cost to establish and operate 20% MPA system

The magnitude of the financial challenge for Saint Lucia was calculated and is summarized in Table 20. It is composed of:

- The **Recurrent Cost** which is the amount needed every year to operate the MPA system at the level of effective management for 20% of Saint Lucia marine and coastal territory. The participants agreed that the whole recurrent cost includes the cost to operate the PA Coordination Center per year and an annual budget of 100 thousand dollars for needed research.
- The **Investment Cost** which is the amount needed to bring the proper level of staffing, equipment, materials and scientific based management plan that are the basic elements for effective management.

As mentioned in point 4.6 above, the Investment and recurrent costs must be calculated separately because the long term recurrent costs will be inflated if they incorporate the investment. However both need to be addressed if the country wants to reach the effective management goal.

Table 20: Cost to establish and operate Saint Lucia's 20% MPA system

RECURRENT COST		Cost USD
Recurrent Cost km^2 to achieve 20%	Annual recurrent cost 19,590 * 124 km^2	$2,430,000
Coordination Center	National government inputs, system management & coordination, SOPs, scientific monitoring, rangers training, mgt. plan, science and sustainable finance/ promotion & marketing	500-650,000
Targeted research	Research and specialized studies	$100,000
Total	**Recurrent Cost per year**	**3 - 3.2m**
INVESTMENT		
Investment now	**For the 3 sample MPA sites to upgrade to effective management**	**$1,285,524**
Investment	Needed to expand to 20%	**$4,000,000**
Investment Coordination Center	Equipment/ Materials	**$700,000**
Total	Investment	**$4,700,000**

Financing the required investment

To provide the system with tools, equipment and required staff to achieve 20% conservation goal, a onetime investment of about 4.7 million is needed as shown in Table 20. This investment is necessary to bring each site and the system at the level of effective management. The recurrent cost of about 3.32 million per year is to maintain an effective management in all subsequent years.

As mentioned in the general report, it is of paramount importance to consider that the above recurrent and investment cost could be significantly reduced by the adoption of larger

multifunction MPAs. This will in turn have a substantial impact not only on the total amount of the recurrent cost per year, but also on the sustainable financing mechanism scheme and the gap.

8.5. Balance sheet

A. Marine Protected Area Recurrent Cost Balance Sheet

Table 21 shows that the recurrent cost of 3.2 million less the estimation of the current revenues that is provided to the MPAs gives a Shortfall of 2.74 million per year. Different types of sustainable financial mechanisms were proposed and discussed during the workshop but it became obvious that a mandatory visitor contributions is one of the best in-country option to provide for a substantial part of the shortfall that needed to be covered or a debt swap that the country has started to initiate. If the debt swap is concluded successfully in coming years, the recurrent cost shortfall will be covered by a financial mechanism that will be agreed in the debt swap agreement.

Table 21: 20% Recurrent Cost Saint Lucia Balance Sheet

20 % Total Recurrent Cost	Recurrent cost to cover 124 km² + PA Coordination Center	**$3,200,000**
Current Revenues	MPA entry fees + Government appropriations	**$460,000**
SHORTFALL	PAS costs minus existing revenue	**$2,740,000**
NEW REVENUE		
- SLUNCF - other	SLUNCF = $270,000	**$270,000**
Mandatory Visitor Contributions – Proposal for new revenue	Mandatory visitor contributions 300,000 Visitors at $10. Less collection cost. To be split in half between Marine and Terrestrial	**$1,300,000**
	Cost for management, disbursement and monitoring of visitor contributions by SLUNCF to the Saint Lucia PA system	**-$100,000**
GAP		**$1,270,000**
International Support	Endowment of $25,500,000 return 5% net per year in perpetuity	**$1,275,000**
TOTAL Balance		**$5,000**

This scheme proposes a mandatory visitor contributions of $10 that will be split between the marine and terrestrial Protected Areas (PAS) to achieve the 20% goal. It was calculated that the Marine PAS portion of the visitor contributions will amount to 1.3 million. The proposed mandatory visitor contributions scheme with all other in-country revenues could provide Saint Lucia Marine PA system 63% of the total recurrent cost needed per year. A change in that proposed scheme will change the amount in the balance sheet. It will lower or increase the Gap and, by the same way, lower or increase the amount of the necessary endowment to cover the gap.

The GAP is identified when all potential new revenue generation possibilities to cover the shortfall in a significant way are exhausted. The costing process revealed that the Gap is of about 1.27 million for Saint Lucia.

B. Leveraging international investment

To cover the gap of 1.27 million per year, international assistance will be required to supplement the proposed or similar new revenue scheme. To generate an estimated 1.27 million per year an endowment of approximately 25.5 million could be pursued with a number of multilateral, bilateral and private opportunities. It is recommended that Saint Lucia starts to look for opportunities with potential donors like the GEF 6 and 7 among others.

C. Fund management

Participants recognized the value of an independent entity to administer and disburse funds for the Saint Lucia PAS. The new Saint Lucia National Conservation Fund (SLUNCF) can be in charge of receiving and disbursing a revolving fund generated through the mandatory visitor's contribution. SLUNCF can also be the recipient of the proposed endowment that can be created with the support of bilateral, multilateral partners, private foundations and private partnerships. It is worth noticing that SLUNCF has already received supports from the Caribbean Biodiversity Fund.

8.6. Next steps:

From the lessons learned from this costing process, Saint Lucia's workshop participants determined that the next step are:

- Assessing the expansion of the current Marine PA if the coastal boundaries are expanded toward the sea by two nautical miles like in Saint Kitts and Nevis.
- To raise awareness and promotion, design with the assistance of a marketing agency a map representing the current and future PA that will be part of the country system.

9. DOMINICAN REPUBLIC

To achieve the CCI Goal 1: "to effectively conserve and manage at least 20% of the marine and coastal environment", Dominican Republic (DR) needs to have 2,359 km^2 under effective conservation management. It was observed that DR surpasses the 20% target of declared MPAs. In this exercise, seven protected areas totaling 36,857.6 km^2 were costed by their respective managers/supervisors. Two PAs did not meet the criteria for this financial needs analysis because one area was an offshore area and the other a terrestrial one. The costing results of five MPAs totaling 3,346 km^2 are included in this report and represent 28.37% of the country's marine and coastal area.

9.1. Costing results

Table 22 shows the cost per km^2 to manage the five MPAs, the recurrent cost per year for the sample sites and the total recurrent cost to effectively manage 28.37 % of the marine and coastal area of the Country that equal 3,346 km^2. The costing results are the following:

1) The cost per km^2 for the largest marine protected is $85. This low cost is understandable because of the very large size of this area;
2) The smallest area cost per km^2 is $17,016. This clearly indicates the impact of small PAs on the overall cost of the MPA system.
3) From the sample site calculation, the overall recurrent cost to manage 28.37 % of the marine and coastal MPA system of DR was estimated at $1,112,958 per year. This result was calculated by multiplying the the total average cost per km^2 of the sample sites: $333 by the total number of km^2 needed to reach the 20% goal: 3,346km^2.

Table 22: MPA cost per km^2 and the total recurrent cost for 28.37 % which is 3,346 km^2

Dominican Republic						
	Site 1	Site 2	Site 3	Site 4	Site 5	TOTAL Site Marine & cost per km2 28.37 km^2
Conservation area	Arrecifes del Suroeste	Francisco Alberto Caamaño Deñó	Bahia Luperon	Isla Catalina	La Caleta	
Area (sq. km)	2,707.1	587.48	23.5	17.05	11	3,346.1
Optimal RC Budget USD	231,448	357,372	239,093	97,872	187,172	1,112,957
Cost per km2 USD	85	608	10,174	5,740	17,016	333

9.2. Recommendations

The objective of conserving and effectively managing 28.37 % of DR marine and coastal areas can be reached at an affordable cost for all parties if the following premises are followed:

Creation of a Protected Area Coordination Center

A Coordination Center that will provide system services to all PAs is recommended to achieve economies of scale and efficient redistribution of technical services to all marine and terrestrial PAs. The Coordination Center will:

- Comprise between 10 and 15 highly qualified staff to assist all protected areas. It will be supervised by a PA Committee composed of all lead Government Agencies and other potential members to be determined.
- Fulfill the coordination function needed for all PAs, to ensure shared expertise and management capacity. These functions include but not limited to: (i) set up PA policy and system plan, (ii) law and regulations- sites and system, (iii) declaration & designation, (iv) Standard Operation Procedures (SOPs) & monitoring's, (v) training and development of rangers, (vi) management plan, (vii) research and development, (viii) promotion (marketing and public awareness), (ix) financing, (x) MOU for specific site management and others.
- Upgrade the System Management Plan and ensure its harmonious implementation into the recommended.

9.3. Total Recurrent and investment cost

Cost to operate 28.37 % of the MPA system

The magnitude of the financial challenge for Dominican Republic was been calculated and is summarized in Table 23. It is composed of:

- The **Recurrent Cost** which is the amount needed every year to operate the MPA system at the level of effective management for 20% of Saint Lucia marine and coastal territory. The participants agreed that the whole recurrent cost includes the cost to operate the PA Coordination Center per year and an annual budget of 100 thousand dollars for needed research.

- The **Investment Cost** which is the amount needed to bring the proper level of staffing, equipment, materials and scientific based management plan that are the basic elements for effective management.

As mentioned in point 4.6 above, the Investment and recurrent costs must be calculated separately because the long term recurrent costs will be inflated if they incorporate the investment. However both need to be addressed if the country wants to reach the effective management goal.

Table 23: Cost to operate 28.37 % DR MPA system

RECCURRENT COST	Description	Cost USD
Recurrent Cost km^2 for 5 sites 28.37 %	Annual recurrent cost $333 * 3,346 km2 –(PA Staff salaries, equipment, constructions, field operations, monitoring, surveillance, other)	$1,114,218
Coordination Center	National government inputs, system management & coordination, SOPs, scientific monitoring, rangers training, mgt. plan, science and sustainable finance/ promotion & marketing	750-900,000
Targeted research	Research and specialized studies	$100,000
Total	**Recurrent Cost per year**	**2 to 2.1M**

INVESTMENT	Description	Cost USD
Investment now	Needed now to effectively manage 28.37 %	$2,606,591
Coordination Center initial Investment needed	Equipment/ Materials	$1,000,000
Total	**Investment**	**$3,606,591**

Financing the required investment

To provide the system with the necessary tools, equipment and required staff to effectively manage 28.37 % of DR MPAs, a one-time investment of about 3.6 million is needed as shown in Table 23. This investment is necessary to bring each site and the system at the level of effective management. The recurrent cost of about 2.1 million per year is to maintain an effective management in all subsequent years.

9.4. Balance sheet

Marine Protected Area Recurrent Cost Balance Sheet

Unfortunately it was not possible to complete the Balance sheet in table 24 for DR because the amount of the current sustainable revenue was not provided by the participants and government representatives. Only the amount of the new revenue from Fondo MARENA was available as shown below.

Table 24: 20% Recurrent Cost Balance Sheet

Total Recurrent Cost	Recurrent cost to cover 3,346 km^2 + PA Coordination Center	**$2,250,000**
Current Revenues	**MPA entry fees + Government appropriation**	**n/a**
Shortfall	**PAS costs minus existing revenue**	
New Revenue		
- Fondo MARENA, other	**Fondo MARENA**	**S900,000**
GAP		
Sub Total		
TOTAL Balance		

9.5. Next steps:

Workshop participants decided:

- To explore new options to secure funding for MPAS.
- To raise awareness and promotion, design with the assistance of a marketing agency a map representing the current and future PA that will be part of the country system.