

Sustainable Financing for a System of Protected Areas in Trinidad and Tobago

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List of Acronyms and Abbreviations

ABNPA	Antigua and Barbuda National Parks Authority
BHFNPS	Brimstone Hill Fortress National Park Society
BNPAS	Bahamas National Protected Area System
BNT	Bahamas National Trust
BPAF	Bahamas Protected Area Fund
CARICOM	Caribbean Community
CBD	Convention on Biological Diversity
CBF	Caribbean Biodiversity Fund
CBO	Community-based Organizations
CDA	Chaguaramas Development Authority
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DNRE	Department of Natural Resources and Environment
DNRF	Department of Natural Resources and Forestry
DRS	Deposit Refund System
EbA	Ecosystem based Adaptation
EMA	Environmental Management Authority
ESAs	Environmentally Sensitive Areas
ETF	Environmental Trust Fund
EU	European Union
FPAWC	Forestry, Protected Areas and Wildlife Conservation
FPAMA	Forest and Protected Areas Management Authority
FONAFIFO	National Forestry Fund
GBP	Green Bond Principles
GCF	Green Climate Fund
GFAC	Green Fund Advisory Committee
GFEU	Green Fund Executing Unit
GDP	Gross Domestic Product
GEF	Global Environment Facility
GORTT	Government of the Republic of Trinidad and Tobago
IFPAMTT	Improving Forest and Protected Area Management in Trinidad and Tobago
INGOs	International non-government organizations
IUCN	International Union for the Conservation of Nature
JCDT	Jamaica Conservation and Development Trust
NCTFs	National Conservation Trust Funds
NETPAT	North-East Tobago Protected Areas Trust

NGO	Non-Government Organization
NPASP	National Protected Areas System Plan
PA	Protected Area
PACT	Protected Areas Conservation Trust
PES	Payments for Ecosystem Services
SAA	Strategic Asset Allocation
SFP	Sustainable Finance Plan
SGP	Small Grant Programme
SLNT	Saint Lucia National Trust
STINAPA	Stichting Nationale Parken, Bonaire
TCMP	Tobago Cays Marine Park
THA	Tobago House of Assembly
TNC	The Nature Conservancy
T&T	Trinidad and Tobago
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

Executive Summary

Trinidad and Tobago (T&T), a small twin island republic in the Caribbean, while well known for its hydrocarbon resources, it is also well-endowed with a wide range of flora and fauna resources, which in turn provide ecosystem services that contribute positively to human well-being. Traditionally, the Government has provided the resources to cover the costs for the management of protected areas (PAs) in Trinidad and Tobago. However, with increasing challenges with respect to management of PAs, compounded by a contraction of oil revenues and increased financial constraints, the imperative of a sustainable financing model for PAs is more acute. According to the literature, sustainable financing of PAs is not just about obtaining financial resources to support PAs. Sustainable finance is achieved when the PA system is able to secure a stable, sufficient and diverse portfolio of financial resources, both traditional and innovative, and to allocate them in a timely manner and appropriate form, to cover the full costs of sustainable management of natural assets and biodiversity conservation[1,2].

In this regard, the aims of this study are to:

1) Analyse the current legal framework for public or private funding of protected area management including possibilities through the Green Fund.
2) Analyse the current expenditure and income levels for protected area management in Trinidad and Tobago including statutory bodies such as the Chaguaramas Development Authority.
3) Summarise and document past attempts and proposals to introduce user fees or other financial mechanisms to support PA management in Trinidad and Tobago and analyse why they were not introduced or implemented.
4) Develop possible scenarios for sustainable funding of protected area management including public and private financing models or a combination thereof.

Conclusions of the study are as follows:

- The policy framework proposes a number of mechanisms for financing PA management, but few have been operationalized.
- The revenue generated from the legal instruments for PA management that have been operationalized are not directly channeled into PA management.
- A considerable amount of money is spent on green issues by the State.
- The amount of revenue generated by key state agencies leading on protected area management is miniscule when compared to operating cost.
- The funding gap cannot be quantified because the present mode of accounting does not allow for determining how much money is currently generated or spent on protected area management in the state or the private sector.

[1] Emerton, Lucy, Joshua Bishop and Lee Thomas. 2006. Sustainable Financing of Protected Areas: A Global Review of Challenges and Options. Gland, Switzerland: IUCN – The World Conservation Union. https://portals.iucn.org/library/efiles/documents/PAG-013.pdf

[2] Hagedoorn, L., Dijkstra, H., van Beukering, P., Luján Gallegos, V. & Smith, M. 2017. Sustainable Finance in EU Overseas Territories - An assessment of sustainable finance mechanisms in the Caribbean region. JNCC Report No. 606. JNCC, Peterborough.

- Although collecting visitor fees has been often recommended, it does not seem to be politically feasible to charge visitor fees to access national parks. National parks, in the perception of the public are considered a public good and expected to be accessible by everybody.
- There is a potential for higher efficiency in the approach to management of protected areas.
- Less than 10% of the total accumulated revenue of the Green Fund has been approved for disbursement.
- Funds spent on protected area management do not cover key tasks needed for an efficient national system of protected area management.
- Sustainable financing is not an ad hoc revenue generating and collecting initiative; it is often pursued with an anchor in legislative and regulatory instruments.
- In all instances, the models examined in countries with similar management context to that of Trinidad and Tobago, the management of a particular PA was the responsibility of a single dedicated entity. Entities included non-governmental organisations, a statutory authority like the country's national trust, or protected areas authority.
- There are multiple revenue streams for protected area management in each country.
- Government provides core funding which is complimented by other sources.

While it is challenging at this time to estimate with any degree of accuracy the funding gap for PA management in Trinidad and Tobago given the paucity of data and the overall constraints with respect to data capture, it is possible, however, to propose a strategy for the sustainable financing of PAs. This would include:

- Creation of a legal framework to facilitate partnerships
- Clearly defining management actions to be financed at the system level and the site level
- Identifying and capitalizing a fund for PA management
- Redesigning of the Green Fund to align to national conservation targets
- Undertaking a Financial Needs Assessment for a National PA Management System
  -

1.0 Introduction: Protected Areas and Sustainable Financing Mechanism

Trinidad and Tobago (T&T), a small twin island republic in the Caribbean, while well known for its hydrocarbon resources, it is also well endowed with a wide range of flora and fauna resources, which in turn provide ecosystem services that contribute positively to human well-being. Like several other countries, T&T's biological resources have faced a number of threats. Poor land use practices have resulted in deforestation in some areas, soil erosion, and freshwater contamination. Recognising the importance of biological resources, and the key ecosystem services that they provide, the public authorities in T&T have taken a number of steps to protect the country's natural resources, including becoming a signatory to the Convention on Biological Diversity (CBD), and several other multilateral environmental agreements.

Having signed on to those Conventions, Trinidad and Tobago is required to develop the requisite policies, strategies and action plans to conserve and manage its biodiversity resources sustainably. Efforts to mainstream these are noted in Government's National Environmental Policy (2018) which promotes the integration of environmental considerations into the way business is conducted ('green economy') and in its Green Government Policy[3] which promotes environmentally sound practices in Government's operations.

Protected areas are an integral part of the CBD; such an area is defined as "a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives". In that regard, protected areas are seen as "the cornerstone of biodiversity conservation" in that "they maintain key habitats, provide refuge, allow for species migration and movement, and ensure the maintenance of natural processes across the landscape". However, the value of protected areas is not simply for conservation purposes, but a recognition that they also are a mechanism for securing the well-being of humanity itself[4] (CBD 2017).

According to the International Union for the Conservation of Nature (IUCN), protected areas can include "both land and sea, which is dedicated to the protection and maintenance of biodiversity, and of natural and associated cultural resources, and managed through legal or other effective means"[5]. It was also noted that PAs can be grouped into categories according to their management objectives. These include a range of different regimes ranging from strict protection, through non-consumptive use, to extractive resource utilization. In practice, most PAs combine several different management objectives.

The acknowledged importance of PAs, both for biodiversity conservation and sustaining livelihood, means that sufficient effort, at both the country (national) and international level, is required, in terms of policies and sustainable financing, an acknowledged weakness of many conservation and protected areas programmes. It is within this context that the Food and Agriculture Organization (FAO) of the United Nations (UN) is implementing the Global Environment Facility (GEF) funded project "Improving Forest and

[3] https://www.planning.gov.tt/sites/default/files/Green_Govt_Policy.pdf Green Government Policy

[4] https://www.cbd.int/protected/overview/ Convention on Biological Diversity website: Protected areas – an overview

[5] Phillips, Adrian. 2000. Financing Protected Areas: Guidelines for Protected Area Managers. Gland, Switzerland: IUCN – The World Conservation Union.

Protected Area Management in Trinidad and Tobago (IFPAMTT)"[6]. The overall goal of the project is to conserve globally important biodiversity, while the objectives are to facilitate the development of a new system of protected areas for T&T consistent with the country's approved 2011 Forest Policy and Protected Areas Policy.

While only six PAs in both Trinidad and Tobago were identified as pilots for the development of the PA management plans, it is the intention of the project to prepare a systematic plan for management of all PAs in Trinidad and Tobago. Traditionally, the government has provided the resources to cover the costs for the management of protected areas in Trinidad and Tobago. However, increasing challenges with respect to management of PAs, compounded by a contraction of oil revenues and increased financial constraints, the imperative of a sustainable financing model for PA is more acute. According to the literature, sustainable financing of PAs is not just about obtaining financial resources to support PAs. Sustainable finance is achieved when the PA system is able to secure a stable, sufficient and diverse portfolio of financial resources, both traditional and innovative, and to allocate them in a timely manner and appropriate form, to cover the full costs of sustainable management of natural assets and biodiversity conservation[7] [8].

Conscious of the need for a sustained flow of financing resources for PA management in Trinidad and Tobago, there were attempts at introduction of user fees for key biodiversity areas such as the Caroni Swamp Bird Sanctuary and San Fernando Hill. Unfortunately, these were not implemented due to various policy, legislative and other administrative challenges. In this regard, the aims of this study are to:

1) Analyse the current legal framework for public or private funding of protected area management including possibilities through the Green Fund.
2) Analyse the current expenditure and income levels for protected area management in Trinidad and Tobago including statutory bodies such as the Chaguaramas Development Authority.
3) Summarise and document past attempts and proposals to introduce user fees or other financial mechanism to support PA management in Trinidad and Tobago and analyse why they were not introduced or implemented.
4) Develop possible scenarios for sustainable funding of protected area management including public and private financing models or a combination thereof.

It should be noted the study was challenged by a serious lack of recorded data and information on how much public resources are currently spent on protected areas management. This lack of disaggregated data only allows for general observation and no detailed analysis but underlines the need for better record keeping and monitoring.

[6] The four-year project, which commenced in 2015, has a total budget of USD 30.5 million. It is being financed by a GEF grant of USD 2,790,000 with co-financing from the Government of Trinidad and Tobago (USD 2.300, 000), the Green Fund (USD 22,600.000), European Union (USD 2,100,000) and FAO (USD 750,000).

[7] Emerton, Lucy, Joshua Bishop and Lee Thomas. 2006. Sustainable Financing of Protected Areas: A Global Review of Challenges and Options. Gland, Switzerland: IUCN – The World Conservation Union. https://portals.iucn.org/library/efiles/documents/PAG-013.pdf

[8] Hagedoorn, L., Dijkstra, H., van Beukering, P., Luján Gallegos, V. & Smith, M. 2017. Sustainable Finance in EU Overseas Territories - An assessment of sustainable finance mechanisms in the Caribbean region. JNCC Report No. 606. JNCC, Peterborough.

2.0 Analysis of Current Policy and Legal Framework for Financing PAs

The Government of the Republic of Trinidad and Tobago (GORTT) has, over the years, considered a number of options and financial instruments to fund environmental conservation and protected areas in the country. Several of these instruments can be found in a number of policies and legislative instruments designating PAs. Unfortunately, most of these policy and legislative instruments have not resulted in the entrenchment of a sustainable financing mechanism.

2.1 Policy Framework for Financing Pas

Among the main policy instruments governing the establishment and management of protected areas and related financing instruments are the following:

1) National Forest Policy of 2011;
2) National Protected Areas Policy of 2011;
3) National Wildlife Policy of 2013; and
4) National Environmental Policy of 2006;

The National Forest Policy of 2011 proposes a number of incentives to "ensure the development of mechanisms for the sustainable financing of forest management". These include:

a) creation of a Forest and Protected Areas Fund as a mechanism to directly channel funds from users to forest management, including through the use of schemes for payments for ecosystem services that can provide incentives to private landowners;
b) provision of adequate annual budgetary allocations in relevant Ministries and agencies responsible for forest management;
c) use of carbon trading;
d) implementing the Green Fund in a manner that supports civil society participation in forest management; and
e) facilitating revenue collection through application of appropriate fees, payments for ecosystem services, taxes, penalties and charges for offences and caution fees or bonds to ensure restoration of degraded lands following potentially negative activities and development (including payments for external costs to the environment as a result of development activities).

Even though the policy documents identified above all advocated for the development of a Forest and Protected Areas Fund, to date, that Fund has not been operationalized. The government continues to make budgetary allocations, which eventually filter down to various departments or organizations that have a responsibility for management of a protected area.

The National Protected Areas Policy of 2011 recognizes that each protected area in T&T would require its own budget to finance its operations. It therefore recommends, the development of mechanisms for sustainable financing of protected areas as those which were proposed in the National Forest Policy.

The National Wildlife Policy of 2013 recommends a number of additional mechanisms for the GORTT to use to finance wildlife conservation (GORTT 2013). They include:

a) collection of revenue through the application of user fees for the access to wildlife resources;
b) use of caution fees, and bonds to cover the cost of restoration of critical wildlife habitats; and
c) provision of fiscal incentives to the private sector, and NGO enterprises that undertake the conservation of wildlife, and wildlife habitats.

2.2 Legislative Instruments for PA Management

Apart from the policy documents mentioned above, the GORTT has also legislated a number of fiscal instruments to facilitate the financing of PAs. These are as follows:

a) Green Fund;
b) EMA Trust Fund; and
c) Taxes on energy consumption.

The Green Fund Levy, first introduced in January 2001 under the Miscellaneous Taxes Act, is charged at a rate of 0.1% on gross sales of companies operating in T&T. In 2016, the rate was revised and raised to 0.3% (Laws of Trinidad and Tobago, 2015). The environmental tax has allowed the Green Fund to grow to TT$4.4 billion by the 2015-2016 financial year and TT$5,190,253,514 by the end of September 2017[9].

The Environmental Management Act (2000) established the Environmental Trust Fund (ETF) with the capacity to generate and provide funding for use by the Environmental Management Authority (EMA). Five members of the EMA Board of Directors are appointed by the President of T&T to act as Trustees for the ETF. The Trustees, in turn, are responsible for the administration of the fund (Laws of Trinidad and Tobago, 2000). Section 72 of the Environmental Management Act informs that the ETF is to be used to finance several activities including measures for reducing pollution, public awareness campaigns and operational expenses of the EMA. However, there is no record of its capitalization or its use in protected area management activities.

In 2015, the GORTT completed the drafting of the Forestry, Protected Areas, and Wildlife Conservation Bill, the aim of which was the establishment of a Forest and Protected Areas Management Authority to consolidate and manage all forest and protected areas in T&T. The Bill sought to consolidate the efforts of all the regulatory agencies in forest and protected areas management in T&T under one body. It also proposed the establishment of a Trinidad Fund which would be used to finance environmental management and conservation activity in Trinidad, while a Tobago Fund would be used to cover the corresponding expenses for Tobago.

The Funds were supposed to raise revenue from royalties, payments for services rendered, fees levied for issue of permits, user fees related to specific areas, fines from breaches of various environmental acts, grants from external sources, loans, as well as government subventions. In operation, monies from the Funds would be used to cover the operational expenses of the Forest and Protected Areas Management Authority, the cost of managing protected areas, and the cost of environmental projects. While the plan for the Forest and Protected Areas Management Authority was ambitious, it is still undergoing review by the current administration before being brought to Cabinet. Table 1 provides a summary of the PA financing considerations by the GORTT.

[9] Auditor General's Department 2018

Table 1. Status of Policy and Legislation Instruments for PA Financing in T&T

Initiative	Where introduced	Current Status
Government Allocations/ Subventions	▪ National Forest Policy of 2011 ▪ National Protected Areas Policy of 2011 ▪ Draft National Wildlife Policy of 2013	Implemented
Forest and Protected Areas Fund	▪ National Protected Areas Policy of 2011 ▪ National Forest Policy of 2011 ▪ Draft National Wildlife Policy of 2013	Not implemented
Environmental Trust Fund	▪ Environmental Management Act of 2000	Established, but no record of capitalization of the Fund or its use in PA management activities.
Green Fund	▪ National Forest Policy of 2011 ▪ National Protected Areas Policy of 2011 ▪ Draft National Wildlife Policy of 2013	Not fully in effect. Access limited to State entities, NGOs and CBOs. No funds released in the last fiscal year.
Tax on energy consumption	▪ National Environmental Policy of 2006	Not implemented
A fuel tax on diesel	▪ National Environmental Policy of 2006	Not implemented
Revenue collection through fees, taxes, and fines for offences	▪ National Forest Policy of 2011 ▪ Draft National Wildlife Policy of 2013	The CDA, the EMA and the THA can keep collected funds. Game wardens must submit collected fees to the Comptroller of Accounts
Carbon trading	▪ National Forest Policy of 2011	Not implemented
Use multilateral and bilateral donor grant funding	▪ National Protected Areas Policy of 2011	Agencies can use donor funding whenever received. However, donor funds are usually project related and rarely exceed a five-year implementation schedule.
Trinidad Fund Tobago Fund	▪ Draft Forestry, Protected Areas and Wildlife Conservation Bill 2015	Not implemented.

2.3 Conclusions

Key points for consideration include:

- ***The policy framework proposes a number of mechanisms for financing PA management, but few have been operationalized.***
- ***The revenue generated from the legal instruments for PA management that have been operationalized are not directly channeled into PA management.***

3.0 Current Expenditure and Income Levels

A considerable amount of funds is spent on green issues by several state agencies and non-governmental entities. A conservative estimate, averaging expenditure for Forestry Division, Tobago House of Assembly, Department of Natural Resources and Forestry and the National Reforestation and Watershed Rehabilitation Programme (NRWRP), from 2009 to 2016 is estimated at TTD 1.357 billion (averaging approximately TTD 170 million per year). The state agencies receive the majority of their funds through annual budgetary allocations from the state and generate a very small proportion of their yearly subvention from the sale of produce, licenses, fee payments for services and rental of properties and facilities.

The Green Fund, at the end of the financial year 2016-2017 had a balance of TTD 5.2 billion and had approved for disbursement approximately 7.2% of the fund balance. Data on the revenue streams of the non-governmental entities was not accessible. However, data available for Nature Seekers seems to indicate that the majority of revenue for these entities are sourced from grants. Details of the revenue and expenditure are provided below.

3.1 Current expenditure and income levels: Governmental entities

Under the present legislative framework, the Forestry Division is the main entity mandated to manage terrestrial protected areas on the island of Trinidad, while the Tobago House of Assembly (THA) is the counterpart manager for the island of Tobago. As noted in previous sections, several other governmental agencies are also given authority for PA management under various policies and pieces of legislation. These include:

- Environmental Management Authority (EMA);
- Chaguaramas Development Authority (CDA);
- Fisheries Division;
- Water and Sewerage Authority;
- National Trust of Trinidad and Tobago; and
- Commissioner of State Lands.

In sections below, the key agencies involved in protected area management will be examined. These are the Forestry Division, the Tobago House of Assembly and the Chaguaramas Development Authority. As the prime objective of the other entities is not in conservation, their effort in protected area management is negligible.

3.1.1 Forestry Division

The Forestry Division is solely financed by allocations from the GORTT on an annual basis (See Table 2). Most of the allocation over the years has been used for recurrent costs, that is, to pay salaries and general operational expenditures. Funds allocated under the Public Sector Investment Programme (PSIP) from 2006-2016 accounted on average for 13.95% of the entire allocation.

Discussions with the officials from the Forestry Division revealed that with the current accounting system, it cannot be determined how much is spent on protected area management through recurrent expenditure or through the PSIP.

Table 2. Financial Allocation to the Forestry Division, 2006 – 2016[10]

Year	Financial Allocation GORTT	Total Recurrent Cost	Projects Being Undertaken (PSIP)	Percentage (PSIP)
2006	87,079,300	73,169,300	13,910,000	15.97
2007	79,624,500	65,624,500	14,000,000	22.70
2008	113,336,000	88,313,000	25,023,000	22.08
2009	92,785,375	79,985,375	12,800,000	13.80
2010	100,043,000	85,943,000	14,100,000	14.09
2011	107,992,660	89,192,660	18,800,000	17.41
2012	120,534,500	101,474,500	19,060,000	15.81
2013	112,594,000	109,744,000	2,850,000	2.53
2014	125,597,000	112,747,000	12,850,000	10.23
2015	142,490,500	123,110,500	19,380,000	13.60
2016	148,516,500	114,806,000	33,710,500	22.70

The Forestry Division currently generates revenue from the sale of forest produce, licenses, fines for convictions of breaches to the Forest Act, and the Conservation of Wild life Act and rental of premises for events. All revenue earned by the Forestry Division is deposited into the Consolidated Fund. Table 3 presents data available from royalties, the sales of permits and forest and wildlife offences.

Table 3. Income of the Forestry Division, 2011 – 2018

Year	Prohibited beach permit sales	Forest Offences	Wildlife Offences	Timber Royalties	Total
2011-2012	78,374.00	31,550.00	6,320.00	5,779,788.00	5,896,032.00
2012-2013	94,167.00	2,500.00	44,960.00	4,647,738.00	4,789,365.00
2013-2014	-	500.00	-	865,001.00	865,501.00
2014-2015	79,093.00	8,000.00	26,300.00	4,787,795.00	4,901,188.00
2015-2016	79,818.00	-	10,800.00	-	90,618.00
2016-2017	50,428.00	-	34,600.00	8,347,489.00 *(for 1st, 2nd, 3rd quarters of 2017)*	8,432,517.00
2017-2018	46,236.00	-	68,300.00	-	114,536.00
2018-2019	-	-	11,650.00 *(to Feb.2019)*	-	11,650.00

Source: Forestry Division

For the Fiscal year 2017/2018, San Fernando Hill reported revenue was TTD 2,184,136.00 for the rental of the site for 267 events. The Division also has available other sites for rental, but no fee is charged.

Currently the National Reforestation and Watershed Rehabilitation Programme (NRWRP) is under the purview of the Forestry Division. Its original mandate in 2004 was to reforest 33,030 acres of denuded lands, including 11,000 acres of watersheds in 10 years. Some of the activities of the project have occurred in protected areas but undoubtedly, the majority of activities of the project have indirectly contributed to

[10] Draft Estimates Ministry of Finance. http://www.finance.gov.tt/category/draft-estimates/

conserving biodiversity. As of 2018, a total of approximately TTD 840 million has been spent. Table 4 gives yearly expenditure on the project.

Table 4: Expenditure NRWRP, 2004 – 2018

Year	Expenditure (TTD)
2004	10,048,521
2005	45,468,863
2006	50,611,032
2007	54,040,712
2008	66,785,090
2009	57,921,816
2010	54,890,630
2011	58,124,891
2012	57,615,312
2013	60,370,211
2014	64,889,361
2015	76,097,358
2016	92,170,500
2017	89,901,474
2018	87,056,235

Source: NRWRP Project Unit

3.1.2 Tobago House of Assembly

As with the Forestry Division, the financing of protected area management in the Tobago House of Assembly (THA) is totally dependent on allocations from Central Government. Two Departments of the THA have responsibility of managing protected areas. The Department of Natural Resources and Forestry (DNRF) has the responsibility for the terrestrial sites and Department of Marine Resources and Fisheries (DMRF) for the marine sites. Table 5 presents financial allocations to DNRF.

Table 5. Financial Allocation to the THA's DNRF, 2009 - 2016[11]

Year	Total Financial Allocation	Projects Being Undertaken (PSIP)	Recurrent Allocation
2009	11,806,980	500,000	11,306,980
2010	15,524,445	640,000	14,884,445
2011	14,328,603	525,000	13,803603
2012	13,251,703	560,000	12,691,703
2013	12,315,351	410,000	11,905,351
2014	11,469,000	350,000	11,119,000
2015	6,712,750	00	6,712,750
2016	7,083,750	00	7,083,750

[11] Draft Estimates Ministry of Finance. http://www.finance.gov.tt/category/draft-estimates/

Table 6 presents the recurrent estimates for DMRF for 2018 and 2019 and Table 7 presents the details on the estimates for the PSIP for the same period. The majority of the allocation under PSIP seems to be targeted to supporting the fishing industry and not to protected area management.

Table 6. Recurrent allocation to the THA's DMRF

Recurrent Expenditure	2018	2019
Personnel	2,304,000	6,317,900
Goods and Services	4,727,000	21,748,400
Minor Equipment Purchases	104,000	1,365,000
Transfers and Subsidies – Boat Subsidy	150,000	150,000
Transfers and Subsidies – Subsidy for fishermen	450,000	1,500,000
Transfers and Subsidies – Fish Processing Company of Tobago	3,000,000	5,000,000
Transfers and Subsidies – Tobago Cold Storage and Warehouse Facility	1,200,000	3,000,000

Table 7. PSIP Allocation to the THA's DNRF

PROJECT DESCRIPTION	2017 Actual Oct – Sept	2018 Estimates	2019 Estimates
Improvement to beaches and landing facilities	2,730,889	4,302,704	10,000,000
Improvement to Buccoo Reef Marine Park, management and ecological monitoring	1,169		950,000
Improvement to reefs at Buccoo and Speyside			200,000
Construction of fishing facilities at Pigeon Point and Delaford	603,3008	144,000	
Establishment of fishing tournament for local fishermen	137,150	150,000	
Water quality monitoring programme		1,400,000	
Construction of jetty at Roxborough	556,187		
Installation of mooring buoys around Tobago		350,000	
Coastal zone light – beach project monitoring		300,000	
Coastal zone protection programme	1,184,728		
Ecological monitoring reef check			200,000

3.1.3 Environmental Management Authority

Revenue deposited in the Environmental Trust Fund from 2006-2015 is presented in Table 8 below. These deposited funds represent annual budgetary allocations provided by the State and revenue generated from fees for permitting and compliance. Unlike the Forestry Division and the THA, the EMA does not have to remit all the revenue it generates to the Consolidated Fund; a portion of its review can be deposited into the Environmental Trust Fund, which is under the control of the EMA's Board of Trustees for the Fund.

In addition to funds provided by the State through its annual budgetary allocations and the revenue that it generates, the EMA has the power to enter into contracts and other arrangements with international, regional and national donor agencies. In this regard, the EMA is an eligible entity that could access grant funding under the national environment fund, the Green Fund. The EMA, has accessed grants from the Green Fund in the sum of TTD 248,263,888 to implement four projects (See Table 11). The EMA has also accessed funds from the Global Environment Facility (GEF), the Global Mechanism and the United Nations Development Programme to undertake projects relating to biodiversity management.

Table 8. Income of the Environmental Trust Fund, 2006 - 2015

Year	External project funding	Income from fees and permits	Government budgetary allocations	Other income (UNDP, Green Fund etc.)	Total TT$
2006	26,603,679	4,582,450	24,378,000	1,269,870	56,833,999
2007	29,906,942	2,945,506	29,295,000	1,452,945	63,600,393
2008	31,832,603	1,403,019	36,070,000	3,745,684	40,588,306
2009	34,222,947	1,171,833	38,898,521	547,826	44,041,127
2010	40,996,690	973,500	41,560,523	817,358	84,348,071
2011	41,364,884	1,079,257	43,163,042	6,819,421	92,426,604
2012	46,365,227	1,711,679	48,264,929	2,237,161	98,578,996
2013	45,954,605	1,695,363	45,711,281	6,530,984	99,892,233
2014	45,396,798	1,982,457	45,545,226	9,119,450	102,043,931
2015	48,632,677	3,281,006	45,151,763	12,446,292	109,511,738

Source: Accessed from the Trinidad and Tobago Parliament's website and the Ministry of Planning and Development

3.1.4 Chaguaramas Development Authority

The CDA generates on average TTD 26.8 million per year (see Table 9). The majority of income is collected from rental of properties and not from revenue affiliated with protected area management. However, the recent Joint Select Committee report indicated the Authority is in serious debt and there is considerable expenditure on salaries and wages. Similarly, as in the other institutions above, financial accounting is not disaggregated to collect specific information on protected area management.

Table 9. Revenue generated by the CDA, 2010 - 2017[12]

Year	Income Collected (TTD)
Oct 2010 – Sept 2011	24 633 133.16
Oct 2011 – Sept 2012	26 006 896.64
Oct 2012 – Sept 2013	29 319 828.35
Oct 2013 – Sept 2014	30 382 926.59
Oct 2014 – Sept 2015	28 041 529.65
Oct 2015 – Sept 2016	31 284 704.44
Oct 2016 – Apr 2017	18 389 737.56

3.1.5 Green Fund

The major provider of direct financing for PAs is the Green Fund. The Green Fund provides financing for projects related to remediation, reforestation and the conservation of the environment in Trinidad and Tobago. The Green Fund Regulations of 2011 makes provision for companies registered under the Companies Act, groups registered under the Ministry with responsibility for Community Development in

[12] Ninth Report of the Joint Select Committee. Local Authorities, Service Commissions and Statutory Authorities (including the THA). On an Inquiry into certain aspects of the operations of the Chaguaramas Development Authority (CDA). Third Session (2017/2018), 11th Parliament. http://www.ttparliament.org/reports/p11-s3-J-20180327-LASC-r9-CDA.pdf

Trinidad as community-based organizations (CBOs) or NGOs, and community groups and NGOs registered with the THA to access funding. At the end of financial year 2016-2017, the Green Fund balance was TTD 5.2 billion (Table 10).

Table 10. Green Fund's Income Statement, 2007-2017[13]

Financial Year	Receipts	Payments ($TT)	Balance ($TT)
2007-2008	276,153,569		1,146,191,463
2008-2009	447,109,843		1,593,301,306
2009-2010	313,539,852		1,906,841,158
2010-2011	342,599,046	5,480,144	2,581,557,613
2011-2012	346,504,418	11,913,692	2,916,148,340
2012-2013	369,674,741	33,637,034	3,252,186,047
2013-2014	370,000,000	67,700,000	3,565,863,826
2014-2015	335,000,000	122,400,000	3,789,261,585
2015-2016	265,837,080	118,364,278	4,396,918,503
2016-2017	793,335,010	-	5,190,253,513

Since its inception, twenty-one activities/projects have been approved totaling TTD 372,804,906. This is approximately 7.2% of the fund balance as at the end of the financial year 2016-2017. A listing of approved projects is provided in Table 11. Nine of the twenty-one projects seem to address green issues; these total TTD 153,847,864 - an estimated 41% of the funds approved for disbursement.

Table 11. Certified activities of the Green Fund

	Activity	Amount	Green
1	**Fondes Amandes Community Reforestation Project – *Sustainable Community Forestry Initiative* [Completed]**	1,914,806	X
2	**Greenlight Network – *Plastikeep* [Completed]**	901,205	
3	**Environmental Management Authority – *National Restoration, Carbon Sequestration , Wildlife and Livelihoods Project***	68,545,511	X
4	**Environmental Management Authority – *Pilot Installation of Solar-Powered Equipment and Solar Power for Surveillance Cameras at 13 Police Surveillance Bays along the Uriah Butler and Solomon Hochoy Highways***	9,635,191	
5	**Greenlight Network – *Plastikeep – Phase 2* [Completed]**	8,680,532	
6	**Fondes Amandes Community Reforestation Project – *Sustainable Community Forestry Initiative – Phase 2* [Completed]**	1,310,243	X
7	**Toco Foundation – *Water Harvesting in the Northeastern Region of Trinidad***	16,938,688	
8	**Nature Seekers – *Matura Development Initiative of Awareness, Management and Eco Tourism for Natural Resource Conservation***	8,303,867	X
9	**Realize Road Environmental Club – *Greening the Plastic Planet Recycling Project* [Completed]**	293,900	

[13] Auditor General's Department (2018), (Auditor General Annual Reports various years)

10	**University of Trinidad and Tobago – *Anthropogenic Hydrocarbon Pollution Impact of Coastal Areas along the West Coast of Trinidad.***	4,485,338	
11	**Institute of Marine Affairs – *Experimentation into the Feasibility of a Hatchery Management Programme for Leatherback Turtles and changes in fishing operations to reduce negative impacts on offshore foraging adults***	588,960	X
12	**San Fernando City Corporation – *San City Green Expo 2013* [Completed]**	1,064,003	
12	**Turtle Village Trust – *National Sea Turtle Conservation Project***	29,711,765	X
14	**UWI – *The provision of Baseline Biological Data for the Management of the Aripo Savannas Environmentally Sensitive Area***	5,336,813	X
15	**St. Andrews Golf Club – *Engineering Surveying Services within that portion of the Maraval River falling within the boundaries of St Andrews Golf Club* [Completed]**	82,173	
16	**Environmental Management Authority – *National Beverage Containers Bill Clean-Up Project***	62,328,755	
17	**Institute of Marine Affairs - *Control and Management of the Invasive Lionfish (Pterois volitans) in Trinidad and Tobago***	3,929,466	X
18	**Basel Convention Regional Centre – *Development of a Waste Oil Management System for Trinidad and Tobago***	3,509,860	
19	**Water and Sewerage Authority (WASA) – *Expansion of the Adopt a River Program***	34,206,433	X
20	**Environmental Management Authority (EMA) – *Recyclable Solid Waste Collection Project***	107,754,431	
21	**Greenlight Network (GLN) – *Plastikeep (Phase 3)* [Completed]**	1,097,947	
22	**University of the Southern Caribbean – *Renewable Energy and Environmental Development Project***	1,225,875	
23	**Naparima District Scout Council – *The Design for Greening the Building for the Naparima District Scout Headquarters Project***	959,144	

Source: Green Fund Coordinating Unit

3.2 PA Management expenditures and income: Not-for-profit non-governmental entities

Several Non-Governmental Organizations (NGOs) in Trinidad and Tobago are involved in protected area conservation and management and like the GORTT have been the beneficiaries of project funds from various multilateral agencies as well as private sector companies in Trinidad and Tobago.

One of the major donors has been the UNDP's Small Grant Programme (SGP) which has, since 2011, contributed US$450,000 towards nine projects (each of those projects would have received approximately US$50,000.00) to support initiatives by various NGOs aimed at species or ecosystem conservation throughout Trinidad and Tobago.

NGOs in T&T also benefit from contributions from a number of corporate entities in Trinidad and Tobago. These contributions are usually in response to a request for donations for a particular project or activity and vary widely. Also, several of these NGOs generate a small amount of revenue or obtain in-kind contributions from international donors. However, the revenue that an NGO can raise each year varies and is quite insignificant when compared to their overall cost of operations. Nature Seekers, one of the leading community-based organizations involved in PA management (primarily turtle conservation), has reported that a considerable portion of their income is from grant funding (see Table 12). Most CBOs are unwilling to share their financial statements on income and expenditure at this time.

Table 12. Percentage distribution of Nature Seekers' revenue and expenditure

Year	Revenue				Expenses			
	Project Grants	Tours	Contracts	Other	Overhead	Training and Travel	Project Activities	Other
2004–2005	41	33	23	3	12	5	81	2
2006–2007	45	36	16	3	18	5	76	1
2008–2009	62	21	17	0	17	3	76	4
2015	88		6	6	27		73	

Estimated income of private tour operators – The example of the Caroni Swamp

The Caroni Swamp (Bird Sanctuary), the largest mangrove wetland in Trinidad and Tobago and home to the national bird, the Scarlet ibis *(Eudocimus ruber)*, is one of the most popular natural attractions in Trinidad and Tobago. It is estimated that every year approximately 13,000 visitors take a tour to view the Ibis and other natural attractions (flora and fauna) found in that wetland. While the annual cost to the government for providing maintenance services to the Caroni Visitor Centre is approximately TTD 473,000[14], the annual income generated by the tour operators is estimated to be TTD 780,000. This estimate is based on an average fee of TTD 60 per person for the tour and 13,000 visitors per year. The tour operators do not contribute to the maintenance of the Visitor Centre.

3.3 Conclusions

The following provides key points from the analysis of the available data:

- ***A considerable amount of money is spent on green issues by the State.*** A conservative estimate, averaging expenditure for Forestry Division, Tobago House of Assembly, Department of Natural Resources and Forestry and the National Reforestation and Watershed Rehabilitation Programme (NRWRP), from 2009 to 2016 is TTD 1.357 billion (averaging approximately TTD 170 million per year). In addition, there is little monitoring and evaluation to deduce the conservation benefits from this level of expenditure.

- ***The amount of revenue generated by key state agencies leading on protected area management is miniscule when compared to operating cost.*** For example, in the financial year 2016-2017, Forestry Division generated only 6.8% of its operating cost of approximately TTD 123 million. Arguments have been advanced that suggest that visitor fees and royalties could be increased to cover the gap. Table 13 presents visitation data for several recreational sites managed by Forestry Division. Visitation at these sites is estimated at 422,000. Given this data, if an entrance fee of TTD 50 was charged for each visitor for all the sites in 2016-2017, revenue of TT$27,953,450 would be generated. However, this figure, when added to revenue, would amount to only 30% of the operating costs.

[14] Forestry Division

Table 13. Visitors to recreational site (source FD)[15]

Site	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	Total
Cleaver Woods Recreation Park	150,000	34,000	15,700	6,500	6,000	N/A	8,500	20,000	25,000	**265,700**
Matura National Park	75,000	16,000	14,000	9,600	14,000	N/A	20,000	25,000	10,000	**183,600**
Aripo Savannas Scientific Reserve	10,000	311	515	994	1500	N/A	750	750	532	**15,352**
River Estate Museum and Waterwheel	50,265	400	445	3,620	3000	N/A	1085	1500	15,000	**75,315**
Lopinot Historical Complex	150,000	55,000	60,000	42,180	55,000	N/A	60,000	70,000	56,906	**549,086**
Fort George	51,000	12,000	12,900	36,300	25,000	N/A	29,200	40,000	40,000	**246,400**
Fort Picton	500	0	0	0	0	0	0	0	0	**500**
Quinam Bay Recreational Park	4,500	53,000	50,000	11,400	12,000	N/A	30500	25,000	25,000	**211,400**
Caroni Visitor Center	8,735	N/A	N/A	N/A	30,400	N/A	33,440	30,000	30,000	**132,575**
Nariva Swamp	N/A	N/A	N/A	N/A	2,500	N/A	2,750	3,540	3,500	**12,290**
Caura Recreation Site	N/A	60,000	42,483	50,007	50,500	N/A	31,500	300,000	227,000	**761,490**
San Fernando Hill	N/A	150,000	250,000	420,000	430,000	N/A	270000	120,000	126,131	**1,766,131**
Total	**500,000**	**380,711**	**446,043**	**580,601**	**629,900**	**N/A**	**487,725**	**635,790**	**559,069**	**4,219,839**

Source: Forestry Division

[15] It should be noted that some of these figures seem to be averages.

Further, given the present management approach, implementing new user fees will translate to greater expenditure on salaries and wages and an even smaller proportion of revenue generation to income.

- ***The funding gap cannot be quantified.*** The present mode of accounting does not allow for determining how much money is currently generated or spent on protected area management in the state or the private sector. Cost can be determined through a collated system which is informed by separating from other operational costs the cost of management actions specific to sites. The required cost for a national system of protected areas can be estimated using estimates from other countries in the region with similar management context.

- ***Currently there is only a rental fee charged for the San Fernando Hill Park.*** There is no charge imposed for access to the Park, but only a rental fee for the use of the facilities for social events, mostly weddings. All attempts to collect visitor fees have not been realized. In the past, the collection of visitor fees was also recommended for visiting the Caroni Swamp, but to date, no visitor fee has been introduced. Although collecting visitor fees has been often recommended, it does not seem to be politically feasible to charge visitor fees to access national parks. National parks, in the perception of the public, are considered a public good and expected to be accessible by everybody.

- ***There is a potential for higher efficiency in the approach to management of protected areas.*** Although there have been projects addressing emergent issues over the years (reforestation, wildlife surveys, reef monitoring, etc.) the impact of these huge investments on the management of green issues is not evident. The approach is project based, implemented and fiercely owned by a single entity. Similar equipment is bought by several state agencies and used for a specific project and commonly left to languish as maintenance requirements are not covered after the life of the project. Site selection for actions is not aligned to national conservation targets. A host of unskilled labour is engaged who need considerable capacity building to efficiently perform desired tasks. In addition, the approach customarily includes actions on several themes and no planned effort at overall analysis, replication of best practices at other sites and no effort is made to formulate strategies and actions to sustain these initiatives in the national system of protected areas.

  Further, several management functions currently being performed by the State can be performed more efficiently by external entities. Personnel cost for the Caroni Swamp per annum is estimated at approximately TTD 473,860. No revenue is collected from user fees at the site. Maintenance of the plant is covered by the Government. In comparison, the Pigeon Point Heritage Park, a similar natural asset in Tobago which is managed by a board of management, generates funds to pay its staff and contributes to maintenance of the plant.

- ***Less than 10% of the total accumulated revenue of the Green Fund has been approved for disbursement.*** There is an opportunity here to redesign the Fund so that activities can contribute to achieving national PA management targets.

- ***Funds spent on protected area management do not cover key tasks needed for an efficient national system of protected area management.*** These tasks include:
  - *Long term research and monitoring* which is critical to inform planning and management activities;
  - *Sustainable livelihood development* which considers the socioeconomic development of people living in around the PAs; and
  - *Mitigation and restoration* that can focus on limiting deleterious impacts on sites in the system and channel/invest resources to restore damaged areas and contribute to increasing redundancy in the system.

4.0 Financing Mechanisms for Protected Areas in Other Countries

The mechanisms that have been used to finance the management of protected areas in other countries are examined below under four categories. These are:

- Site-level mechanisms;
- National-level mechanisms;
- International sources; and
- Innovative mechanisms.

4.1. Description of financial mechanisms

4.1.1 Site-level mechanisms

There are many ways of generating revenue at sites. These include:

- User fees
- Cause-related marketing
- Adoption programmes
- Donations (Corporate, individual)
- Site membership and friend schemes

People visit protected areas to enjoy the goods and services that they provide. For this reason, people pay a fee to access these goods and services. Revenue generation mechanisms could include fees and other fund-raising mechanisms which each site can support based on its various natural attractions and other visitor interests and attractions. A range of user fees are used to help cover the cost of managing a protected area, some of which include:

- Entry, parking and admission;
- Camping and picnicking;
- Placing antennas and infrastructure in the protected area;
- Rentals for events;
- Recreational (e.g., yachting and cruise ship);
- Licenses for firms such as tour guides, to operate in the protected area; and
- Concession fees charged to businesses operating in the protected area.

4.1.2 National-level mechanisms

These include taxes and incentives imposed by national governments, funds made available through philanthropic foundations, Trust funds and debt-for-nature swaps.

4.1.2.1 Taxes, levies, surcharges and tax incentives

Governments have imposed taxes, levies, surcharges and tax incentives to generate funds for conservation actions. For example, in Belize[16], the government charges a USD 3.75 tourist tax for each passenger arriving in the country by plane or cruise ship. These funds go to a national conservation trust

[16] https://www.ramsar.org/sites/default/files/documents/library/iucn_handbook5_financing_protected_areas.pdf

that supports protected areas and other conservation activities. Other countries, for example, Aruba, impose a tourism tax on the price of hotel rooms. In August 2013, an Environmental Tax came into effect in Aruba. For lodging houses and hotels, the environmental tax amounts to USD 3 per night. For timeshare resorts, the tax amounts to USD 10 per stay for a studio, USD 15 per stay for a one-bedroom apartment and USD 25 per stay for other rooms[17]. Taxes can also be applied to the sale of recreational equipment, forestry concessions, licences for fishing, hunting, or filming and electricity and water bills. Tax incentives can be used to encourage activities, such as land donations and easements, for additional sources of revenue.

4.1.2.2 Philanthropic foundations

Philanthropic foundations also provide significant amounts of financing for conservation activities. Traditionally, foundations fund activities/projects and are not usually a useful source of income for recurrent or core costs.

4.1.2.3 Trust funds

Since 1990, national environmental funds have been established in more than 30 countries, with combined assets of more than USD 500,000,000[18]. Belize's Trust Fund was established for financing the country's entire protected area system. Protected area trust funds are legally independent, grant-making institutions. Due to their independence, they can also act as an effective means for mobilizing large amounts of additional funding, especially from multilateral donor organisations. Protected area trust funds raise funds which are used to provide grants to NGOs and CBOs, to supplement actions funded directly by the government.

Trust funds can be structured financially in three ways. An option is creating an endowment fund which allows the capital to be invested; only income from those investments is used to finance activities. Another option involves sinking funds, disbursing the entire principal and investing income over a fixed period, usually a relatively long period, e.g. 15 years. Finally, revolving funds provide for the receipt of new resources on a regular basis – e.g. proceeds of special taxes designated to pay for conservation programs – which can replenish or augment the original capital of the fund and provide a continuing source of money for specific activities. Any particular fund can combine these features as part of its mix of resources[19].

4.1.2.4 Debt-for-Nature Swap

Debt-for-nature swap financing is an agreement between two countries, between which there is a loan. The debt is forgiven or written-off, in exchange for the debtor country agreeing to allocate its corresponding debt service payments towards environmental conservation projects. These projects may include natural resource management; educational programmes; park personnel training; designation, conservation and management of protected areas.

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[17] https://www.visitaruba.com/about-aruba/money-and-currency/

[18] https://www.ramsar.org/sites/default/files/documents/library/iucn_handbook5_financing_protected_areas.pdf

[19] Nature Conservancy. 2001. "Funding Protected Areas in the Wider Caribbean: A Guide for Managers and Conservation Organizations." Accessed January 10, 2018. http://www.cep.unep.org/issues/Funding(E)-final.pdf

4.1.3 International sources

External and multilateral sources, such as multilateral development banks, are interested in providing development finance which can be used towards covering the cost of the conservation activities, institutional strengthening and capacity enhancement for the management of protected areas[20]. Multilateral sources may provide funding as grants to undertake a series of projects or as long-term loans. Multilateral grant financing is highly advantageous over multilateral loan financing, as it allows for the achievement of project objectives without increasing a country's external public debt. However, multilateral loan financing also has positive aspects, as these usually come with conditionalities for strong project reporting, transparency, accountability, and would be spread over a long period, which commits governments and key stakeholders to the development process.

Some examples of multilateral funding include:

- Development banks (e.g. the World Bank, the Inter-American Development Bank);
- Donor agencies (Global Environment Facility, the Green Climate Fund, the International Union for Conservation of Nature);
- Bilateral agencies (e.g. the European Union LIFE Fund, the Norwegian Agency for Development Cooperation, the Swedish International Development Cooperation Agency, the United States Agency for International Development); and
- Foundations (e.g. the Blue Ridge Parkway Foundation, the Society for the Protection of Animals Abroad, the European Centre for Nature Conservation, and the International Anti-Poaching Foundation).

4.1.4 Innovative Financing Mechanisms

Several additional mechanisms have been used to complement financing from the traditional mechanisms described above. The main mechanisms include:

- Payment for Ecosystem Services;
- Climate Finance;
- Green Bonds; and
- Impact investments.

4.1.4.1 Payment for Ecosystem Services

The Payment for Ecosystem Services (PES), which was initially pioneered in Costa Rica in the 1990s, is an arrangement in which the beneficiaries of ecosystem services provide payment to the providers of ecosystem services[21]. It is also a mechanism available for creating incentives for conservation on private lands[22].

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[20] Emerton, Lucy, Joshua Bishop and Lee Thomas. 2006. Sustainable Financing of Protected Areas: A Global Review of Challenges and Options. Gland, Switzerland: IUCN – The World Conservation Union. https://portals.iucn.org/library/efiles/documents/PAG-013.pdf

[21] Smith, Steven, Petrina Rowcroft, Mark Everard, Laurence Couldrick, Mark Reed, Heather Rogers, Tomas Quick, C. Eves, and Chris White. 2013. "Payments for ecosystem services: a best practice guide." Accessed May 31, 2018. https://www.cbd.int/financial/pes/unitedkingdom-bestpractice.pd

[22] Hansen, Kristiana, Esther Duke, Craig Bond, Melanie Purcell, and Ginger Paige. 2018. "Rancher Preferences for a Payment for Ecosystem Services Program in South-Western Wyoming. *Ecological Economics* 146: 240-249.

PES operates on a principle which recognises that those who provide ecosystem services should be compensated for doing so. PES uses incentives to encourage the providers of ecosystem services to continue and increase the supply of the ecosystem services. PES follows the "beneficiary pays principle", rather than the "polluter pays principle," the latter of which forces commercial enterprises to internalise their negative externalities[23].

In practice, PES often involves payments to land or other natural resource managers in exchange for a guaranteed supply of ecosystem services. Payments are made by the beneficiaries of the ecosystem services in question, for example, individuals, communities, and businesses[24]. PES encourages good stewardship of land and water resources on private lands and provides an opportunity for farmers, especially in rural communities, to diversify their income[25].

The economic agents that pay for ecosystem services are:

- the government, through tax revenues from water, fossil fuels, and to a lesser extent, from forestry;
- the private sector, through voluntary deals (such as hydroelectric companies), as well as the international sales of carbon credits; and
- international banks, and bilateral agencies which provide grants and loans.

4.1.4.2 Climate Finance

Climate finance refers to the use of financial instruments channelled towards the financing of projects for climate change adaptation and mitigation. Forest Reserves are natural sinks for carbon and other greenhouse gases. Therefore, the preservation of forests in Forest Reserves would encourage the natural capture and storage of anthropogenic carbon, which in turn can limit global temperature increase and mitigate against climate change.

Several climate finance instruments have been used over the years. The popular ones include:

- debt-for-climate swaps;
- international grants; and
- green bonds.

International grants for climate change adaptation and mitigation can be used to finance several conservation projects in protected areas. After the 2015 Paris Climate Change Agreement, several developed countries, multilateral organisations, and donor agencies made significant pledges for climate finance. The financial pledges from developed countries for climate finance to the Green Climate Fund in 2014 totalled USD 10.1 billion[26].

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[23] Smith, Steven, Petrina Rowcroft, Mark Everard, Laurence Couldrick, Mark Reed, Heather Rogers, Tomas Quick, C. Eves, and Chris White. 2013. "Payments for ecosystem services: a best practice guide." Accessed May 31, 2018. https://www.cbd.int/financial/pes/unitedkingdom-bestpractice.pd

[24] Smith, Steven, Petrina Rowcroft, Mark Everard, Laurence Couldrick, Mark Reed, Heather Rogers, Tomas Quick, C. Eves, and Chris White. 2013. "Payments for ecosystem services: a best practice guide." Accessed May 31, 2018. https://www.cbd.int/financial/pes/unitedkingdom-bestpractice.pd

[25] Hansen, Kristiana, Esther Duke, Craig Bond, Melanie Purcell, and Ginger Paige. 2018. "Rancher Preferences for a Payment for Ecosystem Services Program in South-Western Wyoming. *Ecological Economics* 146: 240-249.

[26] EXTERNAL PRESS RELEASE / 10 DEC, 2014. Green Climate Fund Exceeds $10Billion. Retrieved from https://unfccc.int/news/green-climate-fund-exceeds-10billion

Green Bonds are fixed income securities issued by the government or a government agency, which are used to finance green projects. Projects have included: enhancing energy efficiency; pollution prevention; sustainable agriculture; fishery and forestry; the protection of marine and forested ecosystems; clean transportation; and sustainable water management. Green bonds possess the basic characteristics of regular bonds – a par value, coupon, yield, and maturity date. However, their major difference is that they are used solely for financing green projects[27].

While green bonds can be used for financing of any "green project" and hence for the sustainable finance of protected areas in Trinidad and Tobago, this study does not recommend them. A green bond is a debt instrument which will add to the total public debt of Trinidad and Tobago, which stood at approximately 60% of GDP by year end 2016. Although Trinidad and Tobago's debt to GDP is still low relative to several services exporting economies in the Caribbean, a debt to GDP ratio of 60% of GDP is high for a developing country. Increases in the debt to GDP ratio beyond 60% of GDP would increase a country's debt service payments and increase the likelihood of a country experiencing debt overhang.

4.2 Achievements in other countries

In order to inform the preparation of a sustainable financing mechanism for PA management in Trinidad and Tobago, financing models in several countries in the Latin America and Caribbean (LAC) were assessed. Many of those countries have partial or complete self-sufficient management entities for their protected areas. Some notable examples are:

- Protected Areas Conservation Trust (PACT) in Belize;
- National Forestry Fund (FONAFIFO) in Costa Rica;
- Bahamas National Trust (BNT) in the Bahamas;
- Jamaica Conservation and Development Trust (JCDT);
- Antigua and Barbuda National Park Authority (ABNPA) in Antigua;
- Stichting Nationale Parken Bonaire (STINAPA Bonaire) in Bonaire;
- Brimstone Hill Fortress National Park Society (BHFNPS) in St. Kitts;
- Saint Lucia National Trust (SLNT) in Saint Lucia; and
- Marine Parks Authority in St. Vincent and the Grenadines

As evidenced in Table 14, all of the entities have a diversified financing base. Among the many revenue generating mechanisms in operations are site level mechanisms – entrance fees, leasing of sites and/or facilities, sale of memorabilia and donor support. Notwithstanding their effort at revenue generation, several entities still require some governmental support to close their funding gap. For instance, in Belize, PACT is faced with a USD 6 million funding gap [28]. Likewise, in the Bahamas, despite an annual subvention of USD 1 million, the BNT still incurred a funding gap (as noted in its 2017 financial statement) of $13.1 million to manage the system of protected areas in the Bahamas adequately. Given the size of this funding gap, a key recommendation was the need to establish a Protected Areas Trust Fund as a mechanism for

[27] Velloso, 2017. The rise of green bonds. Financing for development in Latin America and the Caribbean. Retrieved from https://repositorio.cepal.org/bitstream/handle/11362/42230/1/S1700985_en.pdf

[28] Baldon, Annabelle, Essam Yassin Mohammed, and E. J. Milner-Gulland. 2014. "A Review of Conservation Trust Funds for Sustainable Marine Resources Management: Conditions for Success." Retrieved from http://pubs.iied.org/pdfs/16574IIED.pdf

sustained funding for the Bahamas National Protected Area System (BNPAS)[29]. In Jamaica, the JCDT receives about 30% of the annual budget for the National Park from the Government of Jamaica. Also, the SLNT receives approximately ECD 500,000 (USD 185,185) in subventions from the Government of Saint Lucia annually. It is very evident that, notwithstanding the efforts of several entities to achieve some level of self-sufficiency, they still do require some level of governmental support to minimize their shortfalls.

Table 14. Sustainable Financing of Protected Areas in the Caribbean

Country/Organisation	Status and Mandate	Financing Instruments
Belize **Protected Areas Conservation Trust (PACT)**	Authority	• Government subventions; • Environmental tax on visitors; • Interest on term deposits; • Concession fees, licence and permit fees; and • Donations
Costa Rica **National Forestry Fund (FONAFIFO)**	Created by the Forest Act to finance small and medium producers	• PES (Ecotax); • Donations (Issue of "Environmental Service Certificates")
The Bahamas **Bahamas National Trust**	Bahamas National Trust is an NGO with a mandate to manage PAs (Terrestrial and Marine) in the Bahamas	• Government subventions; • Grants, donations, and income from membership dues; • Endowment fund – BPAF – with interest generated from the capital investment being utilised for protected area projects; and • Regional fund – CBD
Jamaica **Jamaica Conservation and Development Trust (JCDT)**	The JCDT is an NGO with a mandate to conserve the natural environment. Trust Blue and John Crow Mountains National Park	• Government subventions • Grants • Donations, and • Income from the National Park's recreational areas
Antigua and Barbuda **Antigua and Barbuda National Park Authority (ABNP)**	Primarily concerned with the management of Nelson's Dockyard National Park	• Entry fees; • Leases local businesses; and • Sales from the operation of the yacht dockage facilities
Bonaire **STINAPA**	An NGO delegated management responsibility by the government to manage the Bonaire National Marine Park	• Admission fee to the site; and • Donation (Sea Turtle adoption program)
St. Kitts	BHFNPS, is a voluntary organization registered as a	• Membership subscriptions; • Private donations;

[29] Based on that recommendation the Bahamas Protected Area Fund (BPAF) Act 2014 was proclaimed, establishing the Fund. This fund was conceived as an endowment fund with interest generated from the capital investment being utilized for PA projects across the Commonwealth of the Bahamas

Society for the Restoration of Brimstone Hill	non-profit company. It was given the responsibility for the management of the national park.	• Grants from multilateral donors; • Entry fees; • Cruise ship (Visitor) fee; • Gift and souvenir shop profits; • Rental fees for banquets; and • License fees for telecommunication antenna sites. It no longer requires subventions from the government.
Saint Lucia **Saint Lucia National Trust (SLNT)**	SLNT is an NGO with a mandate to protect parks, monuments and historical sites in Saint Lucia. Its flagship project is the management of the Pigeon Island National Park.	• Entry fee; • Leasing out of the facilities for special events; • Government subventions • Souvenir sales • Membership dues • Grants and donations
St. Vincent and the Grenadines **(Tobago Cays)**	Tobago Cays Marine Park, Saint Vincent and the Grenadines	• Entry fees on marine vessels; • Mooring fees; • Licenses for local operators; • Permits

4.3 Conclusions

The experiences from the sustainable management of protected areas in the Caribbean and other destinations have provided some valuable lessons for Trinidad and Tobago in its quest to develop a sustainable financing model for PAs. These include:

- ***Sustainable financing is not an ad hoc revenue generating and collecting initiative.*** For many of the countries, sustainable financing is part of a national effort to conserve biodiversity, but also a strong recognition of the linkages between biodiversity conservation and sustainable use of their natural and cultural assets. In that regard, the financing mechanism pursued was anchored in legislative and regulatory instruments.

- In all instances, ***the management of a particular PA was the responsibility of a single, dedicated entity***. Entities responsible for PA management included non-governmental organizations, a statutory authority like the country's national trust, or a protected areas authority.

- ***There are multiple revenue streams for protected area management in each country.*** To derive the ideal mix, a detailed analysis of the financing needs of PA management should be undertaken. Careful analysis of benefits and cost of mechanisms should be considered. For example, benefits of instituting taxes include that funds are available locally and targeted at foreign visitors, however additional taxes may decrease competitive ability in the international arena.

The Bonaire National Marine Park which surrounds the islands of Bonaire and Klein Bonaire is self-financed through diver admission fees. The Park receives annually approximately 26,000 to 28,000 divers and an unknown number of snorkelers, sport fishermen, windsurfers and local people. An annual fee costing USD 10 is sold to each diver using the Marine Park. The Marine Park also collects fees from 41 public yacht moorings with a charge of USD 10 for a boat under 60 feet and USD 15 for a boat over 60 feet. Specific projects are funded by outside agencies or donations[30].

- ***Government provides core funding which is complimented by other sources.*** The reason for continued dependency has much to do with the nature of the resources being managed and protected. Not all PAs are capable of generating revenues, given the limitations of assigning a value to the services they provide. However, it is recognised that these national assets provide a host of direct and indirect benefits to the country as a whole.

  PAs provide a wide range of benefits, which are to a large extent non-excludable. However, free market mechanism may not result in any substantial amount of revenue being generated in every PA. It is well noted in economics that governments provide public goods regardless of their cost, simply because they provide large-scale public and private benefits. The free market mechanism would result in an underprovision of public goods, and a loss to public welfare. Hence, the reason governments engage in taxation and public expenditure. It is a mechanism to correct market failure and reallocate resources to ensure that essential goods (public), and services are made equally accessible to society while maximising public welfare.

For Caribbean countries, the cost of protecting and managing PAs could be very expensive given the vast amount of areas (land and marine) falling under the jurisdiction of small, economically challenged, states. Despite the vast amount of biodiversity contained and dispersed through these islands, the management and financial sustainability have only recently been approached in any coherent manner. Much of that is primarily due to regional and international obligations emanating from the various multilateral conventions under which resources are conserved, managed and protected. In that regard, the issue of sustainable financing is also a relatively new phenomenon and the quest for innovative instruments, likewise, a relatively recent objective.

Therefore, this approach to the development of sustainable financing must be seen not simply as an exercise in raising desired revenue, but also satisfying sustainable development principles of equity and social ethics. It must also ensure there is a balance in how financing is raised and more importantly, the purposes to which it is used. Given the extent to which PAs contribute to human well-being and the fact that the livelihood of many small communities is closely linked to the sustainable use of those resources, there is an obligation to ensure that financial resources to manage PAs are evenly distributed across all socio-economic sectors.

[30] https://www.ramsar.org/sites/default/files/documents/library/iucn_handbook5_financing_protected_areas.pd

5.0 Recommended approaches for sustainable financing of a system of PAs in T&T

While it is challenging at this time to estimate with any degree of accuracy the funding gap for PA management in Trinidad and Tobago, given the paucity of data and the overall constraints with respect to data capture, it is possible, however, to propose a strategy for the sustainable financing of PAs.

The Government is responsible for providing the legal framework for PA management and for compliance. The most important role here is to ensure the integrity of the boundaries of the PA and monitor and enforce all regulations related to the governance of the PA; this includes the monitoring of possible co-management arrangements. For large protected areas, the Government may manage the PA through dedicated government agencies such as the Forestry Division. Smaller protected areas should be managed in partnership with private or not-for-profit organizations of civil society. The Government has to create the legal framework to facilitate these partnerships.

This legal framework for co-management arrangements should limit the Government's engagement to manage facilities and facilitate the establishment of viable non-governmental entities to manage PAs and amenities through rental or lease arrangements. The Government should not be engaged in operational aspects of ecotourism activities and should leave that to not-for-profit organizations or private entities. All government attempts to collect user fees have failed or were never implemented. If user fees are implemented, under the current management arrangement of the Government, it is likely that the collection of user fees will lead to higher operational costs which may even surpass forecasted revenue if other management arrangements are modified as prescribed here.

In keeping with this, ecotourism facilities should be Government owned but privately managed. Government agencies can support ecotourism enterprises by building facilities for visitors but lease or rent them to private sector operators to manage them. For example, a visitor center with a food outlet can be leased to a private operator with the Government obligation being to provide security services and to maintain the surroundings of the facility. The design of favorable lease/rental agreements is an effective mechanism to channel government support to PA management. The lease/rental agreement will have to specify the rights and obligations of the lease holder.

Additional information gathered in the "Improving Forest in Protected Area Management in Trinidad and Tobago" project

Livelihood Assessments in six PAs

A study on the use of protected areas for livelihoods by people from communities surrounding these sites was conducted for six pilot protected areas (2017-2018). The study also captured the views of these residents and the potential for development of other livelihoods that can support sustainable use and management of these protected areas. Several site-specific recommendations were provided, and findings of these reports were incorporated in the drafting of management plans for the sites.

Resource User Survey in 2 PAs

Resource user surveys were piloted in the Caroni Swamp and the Main Ridge Forest Reserve in 2018. These surveys were undertaken in order to gain a better understanding on who uses the resources; how the resources are used; and recommendations for improving the management of the site in order to aid in developing a comprehensive management plan for the PPA. Findings of the survey indicated that most

visitors found out about the sites mainly from peers and then through Government advertisement. Most respondents were happy with their visit but gave recommendations on how the site can be improved, including improvements in infrastructure and maintenance.

Resources presently in place to manage 6 PAs

Management plans have been developed for six pilot protected areas. Each plan includes a chapter related to financing of the recommended management actions, for a ten-year period, inclusive of basic operational costs and priority areas for funding. Sources of funding are also proposed and these include: incorporation of programmes in the workplans of site-specific stakeholder organizations, the Public Sector Investment Programme (PSIP), grants and donations, and user fees.

Other key recommendations are:

Clearly defining management actions to be financed at the system level and the site level.

At the system level, key actions to contribute to the viability of the ecosystems should be funded. These include:

- *Sustained capacity development of management personnel* which responds to changes in the management context;
- *Long term research and monitoring* which is critical to inform planning and management activities;
- *Sustainable livelihood development* which includes the socioeconomic development of people living in around the PAs and includes agreements for plant amenities and activities to be managed by non-government entities;
- *Mitigation and restoration actions* that focus on limiting deleterious impacts on sites in the system and channel resources to restore damaged areas and contribute to increasing redundancy in the system; and
- *Establishment of infrastructure* that adds value to the site and preserves the ecosystem.

Actions to be financed at the site level may include:

- *Upgrading and maintenance of infrastructure*
- *Management of visitors*

Identify and capitalize a fund for PA management

The policy framework of T&T proposes a number of mechanisms for financing PA management.

- In the absence of the legal framework to establish a separate fund for PA management, the Environmental Trust Fund (ETF) under the Environmental Management Act (2000) can finance PA management. Funds can be directly channeled to support PA management.
- Capitalization of the fund for PA management should be pursued from diverse revenue streams.

Redesign of the Green Fund to align to national conservation targets

It is recommended that the Minister with responsibility for recommending activities for funding by the Green Fund issue a policy directive so that the Green Fund dedicates an annual amount or a percentage of the fund to financing PA management. This will allow entities eligible to apply to the Green Fund resources to implement actions at the system or site level which contribute to PA management.

Undertake a financial needs assessment for a National PA Management System

A financial needs assessment should provide an estimate for core government funding which is required to fulfill the regulatory function. Concentrating on core government function is likely to reduce current government funding by disengaging the government from activities which can be performed more efficiently by the private sector or civil society organizations.

6.0 Next Steps

The following are proposed as next steps:

- Establish a monitoring and evaluation system for PA management that allows for:
  a) accounting of public funding toward PA management and conservation of biodiversity; and
  b) deducing the conservation benefits.
- Dedicate a cadre of selected staff within the FD to PA management and conservation of biodiversity.
- Develop a legal framework for co-management arrangements.
- Make use of traditional land lease arrangements to facilitate co-management arrangements until a specific legal framework has been established.

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