BIODIVERSITY FINANCE INITIATIVE

BIODIVERSITY POLICY AND INSTITUTIONAL REVIEW

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MINISTRY OF AGRICULTURE
FORESTRY, FISHERIES, THE ENVIRONMENT
SUSTAINABLE DEVELOPMENT, AND IMMIGRATION

BIOFIN Belize
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This project is co-funded by the European Union
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
NORWEGIAN MINISTRY OF FOREIGN AFFAIRS
Flanders State of the Art
Bundesamt für Umwelt BAFU
Office fédéral de l'environnement OFEV
Ufficio federale dell'ambiente UFAM
Uffizi federal d'ambient UFAM
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Foreword

The global Biodiversity Finance Initiative (BIOFIN) was launched in 2012 with the purpose of addressing the global challenge of funding biodiversity management, conservation and sustainable development. Tackling these issues requires identifying shortcomings and barriers to effective financing of management activities.

The BIOFIN Initiative in Belize was launched in 2016 with a unique modality, in which the Project was directly implemented by the Ministry of Agriculture, Forestry, Fisheries, the Environment, Climate Change and Immigration of the Government of Belize, demonstrating the Government of Belize's commitment to increasing finance and investment for improved biodiversity and sustainable development in Belize.

The Policy and Institutional Review (PIR) is the first component of BIOFIN that is aimed at strengthening inter- and intra-ministerial synergies and improve collaboration through the analysis of the integration of biodiversity and ecosystem services in sectoral and development policy, planning and budgeting. The PIR provides us with a mapping of the current finance policy and institutional landscape for biodiversity finance in Belize.

BIOFIN has supporting components that are tasked with identifying the areas that are in need of biodiversity finance as well as understanding how existing financing can be repurposed and promote the use of incentives that will steer sustainable biodiversity management towards sustainable development among public and private agencies.

We recognize that Belize's economy is underpinned by its rich natural resources. Tourism and agriculture, Belize's two largest sectors that together account for approximately 36% of Belize's GDP, are based on natural resources. Other sectors such as forestry, fisheries, mining and quarrying, and manufacturing are also major industries for Belize that are underpinned by our rich natural resources. The PIR has identified that Belize's sound policy and institutional framework can help to steer it in the right direction for biodiversity management with increased cross-sector collaboration, policy implementation, and very importantly continuous monitoring and evaluation.

The PIR is an important publication that will help to guide the assessment of current finance for biodiversity, finance gaps for biodiversity, as well as developing important finance solutions in Belize. I encourage all stakeholders to make the best use of the PIR publication as we collaboratively work towards improving finance for biodiversity management and sustainable development in Belize.

Hon. Dr. Omar Figueroa
Minister of State

Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development, Climate Change and Immigration

This report is produced for the Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development and Immigration of the Government of Belize and the United Nations Development Programme's Biodiversity Finance Initiative.

Message from the Chief Executive Officer

The Biodiversity Finance (BIOFIN) Initiative provides an important guide for countries to mobilize resources towards improved biodiversity management. BIOFIN is being implemented at an opportune time for Belize as we seek to optimize and strengthen finance solutions such as the national trust for protected areas and national fund for environmental management.

The Government of Belize and its partners have done commendable work in setting up a strong policy and institutional framework to mobilize resources for biodiversity management and sustainable development – yet we realize that much more work remains to be done.

The Policy and Institutional Review of the BIOFIN Initiative in Belize is a result of collaboration and support among various entities and individuals. Towards this end, the Government of Belize is pleased to partner with the United Nations Development Programme and the Global Environmental Facility to implement the BIOFIN initiative in Belize. We extend gratitude to the funders: the European Union and the Governments of Germany, Switzerland, Norway and Flanders, and the United Nations Development Programme.

I further extend gratitude to our sister Ministry – the Ministry of Economic Development who continue to provide support in the implementation of the BIOFIN Initiative as a member of the Project Board. I also extend gratitude to UNDP's Belize Country Office, for continued partnership with the Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development and Immigration.

On behalf of the Ministry, I would like to express appreciation to all those who served as part the Technical Working Group. We thank representatives of UNDP, the Forest and Fisheries Department, the Ministry of the Attorney General, the Ministry of Finance, University of Belize's Environmental Research Institute, and the Association of Protected Areas Management Organization.

I look forward to your continued partnership and support as we develop the Biodiversity Expenditure Review, the Finance Needs Assessment, and the Biodiversity Finance Plan - ongoing components of the BIOFIN Initiative in Belize.

Dr. Percival Cho
Chief Executive Officer

Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development, Climate Change and Immigration

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Government of Belize and United Nations Development Programme (2018). Biodiversity Finance Initiative–Belize: Biodiversity Policy and Institutional Review. Final Report written by Kenrick W. Williams and Denaie Swasey. Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development and Immigration and United Nations Development Program. Belmopan, Belize. 144pp.

Table of Contents

List of Tables, Figures, Boxes

Tables

Figures

Boxes

Abbreviations and Acronyms

ADMOS	Agriculture Development Management and Operational Action
BELTRAIDE	Belize Trade and Investment Development
BER	Biodiversity Expenditure Review
BFP	Biodiversity Finance Plan
BIOFIN	Biodiversity Finance Initiative
BNCF	Belize Nature Conservation Foundation
BTB	Belize Tourism Board
CARICOM	Caribbean Communities
CBD	United Nations Convention on Biological Diversity
CFR	Chiquibul Forest Reserve
CPR	Common Pool Resources
CSR	Corporate Social Responsibility
CZMAI	Coastal Zone Management Authority and Institute
EIA	Environmental Impact Assessment
EMF	Environmental Management Fund
EPA	Environmental Protection Act
ES	Ecosystem Service
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FNA	Financial Needs Assessment
FSTV	Fort Street Tourism Village
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GIS	Geographic Information System
GSDS	Growth and Sustainable Development Strategy
GSSCMR	Gladden Spit Silk Caye Marine Reserve
ha	hectares
ICZMP	Integrated Coastal Zone Management Plan
IDEF	Improving Service Delivery of Existing Finance
LOA	Letter of Agreement
MAFFESDI	Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development, and Immigration
MAR	Mesoamerican Reef
MCCAP	Marine Conservation and Climate Adaptation Project
MFR	Mobilizing Future Resources

MMM	Maya Mountain Massif
MMMC	Maya Mountain Marine Corridor
MPR	Mountain Pine Ridge
NBSAP	National Biodiversity Strategy and Action Plan
NCCPSAP	National Climate Change Policy, Action and Action Plan
NEAP	National Environmental Action Plan
NEP	National Energy Policy
NGO	Non-Government Organization
NIWRP	National Integrated Water Resources Plan
NPAS	Belize National Protected Areas System
NPV	Net Present Value
NRV	Natural Resource Valuation
NSTMP	National Sustainable Tourism Master Plan
NTFP	Non-timber Forest Products
OAS	Organization of American States
PACT	Protected Area Conservation Trust
PFC	Preventing Future Costs
PHMR	Port Honduras Marine Reserve
PIE	Policy and Institutional Expert
PIR	Policy and Institutional Review
PPP	Public-Private Partnership
RER	Realigning Existing Resources
SIB	Statistic Institute of Belize
SME	Small and Medium Enterprise
UN	United Nations
UNESCO	United Nations Education, Scientific and Cultural Organization
WTP	Willingness to Pay

Acknowledgements

The Policy and Institutional Review is a result of collaboration and support among various entities and individuals. Gratitude is extended to all the stakeholders who attended consultation workshops, focused group discussions, and responded to the requests of the authors.

The BIOFIN and Capacity Development Team express profound thanks to the following Project Board Members who provided oversight and guidance to the development of the Policy and Institutional Review:

Dr. Percival Cho
Ministry of Forestry, Fisheries, the Environment, and Sustainable Development

Ms. Diane Wade-Moore
United Nations Development Program

Mr. Oswaldo Sabido
Belize Association of Private Protected Areas

Dr. Leandra Cho-Ricketts
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Dr. Leopold Perriott
Statistics Institute of Belize

Mr. Lincoln Blake
Ministry of Investment, Trade and Commerce

Mrs. Sharon Ramclam-Young
Ministry of Natural Resources

Mr. Carlos Pol
Ministry of Economic Development

Profound appreciation is extended to the members of the Technical Working Groups of both the BIOFIN Initiative and Capacity Development Project who served as a sounding board throughout the development of the Policy and Institutional Review:

Mrs. Nayari Diaz-Perez
Protected Areas Conservation Trust

Mr. Darrel Audinette
Protected Areas Conservation Trust

Mr. Jose Perez
Association of Protected Areas Management organization

Ms. Stacey Martinez
Attorney General Ministry

Ms. Darlene Padron
Sustainable Development Unit, MFFE

Mr. Wilber Sabido
Forest Department

Ms. Maxine Monsanto
Department of the Environment

Mrs. Ivana Cho
Environmental Research Institute, University of Belize

Ms. Felicia Cruz
Belize Fisheries Department

Ms. Kimberly Westby
Ministry of Economic Development

The Ministry is also grateful to the team at the United Nations Development Programme Belize Country Office for technical and logistical support. Special thanks to Ms. Diane-Wade Moore and Ms. Ismirla Andrade for continued support during the implementation of BIOFIN in Belize. Profound gratitude is also extended to Dr. Andrew Seidl, BIOFIN Belize's Senior Technical Advisor who provided continuous guidance and support throughout the development of the Policy and Institutional Review.

Executive Summary

Macro-economic context of Belize

Belize's Biodiversity Goals

Economic Linkages to Biodiversity in Belize

Existing Biodiversity/Natural Resources Finance Solutions in Belize

Current Biodiversity Finance Solutions

Institutional Analysis

Conclusions and Recommendations

Executive Summary

Biodiversity, the diversity of life on earth, provides a range of ecosystem services which underpins man's existence. However, humans have continued to place continued pressures on these ecosystems and impact their functions. Drivers such as population growth, technological development, and pollution continue to contribute to biodiversity loss. While these changes made to ecosystems have resulted in net gains to human well-being and economic development, the costs have been in the degradation of important ecosystems and the increased risks of non-linear changes (MEA, 2005). Intervention is required to reverse the degradation of ecosystem services and a shift towards sustainable development. To effectively achieve this mandate, efforts to raise new finance, improve efficiency of current finance, and improve service delivery will be required.

The Biodiversity Finance (BIOFIN) Initiative was launched in 2012 by the United Nations Development Programme (UNDP) with support from the European Union, and the Governments of Germany, Switzerland, Norway and Flanders to address the global challenge of funding biodiversity management, conservation, and sustainable development.

The BIOFIN Initiative, launched in Belize in September 2016 and implemented by the Government of Belize through the Ministry of Agriculture, Forest, Fisheries, the Environment and Sustainable Development, will help to identify the critical institutional and finance gaps in Belize as well as develop and implement a targeted resource mobilization strategy for biodiversity finance.

BIOFIN will guide:

1) the analysis of the integration of biodiversity and ecosystem services in sectoral and develoment policy, planning and budgeting – a Policy and Institutional Review (PIR);

2) the assessment of current spending, future finance needs and gaps for biodiversity managment and ecosystem services – a Biodiversity Expenditure Review and Finance Needs assessment; and,

3) the development of a comprehensive resource mobilization plan for Belize.

The PIR, the present work, employed a mixed methodology approach including desktop literature reviews, secondary data collection and analysis, stakeholders and focus group sessions, and participant and independent observations.

Outputs of the PIR:

I. A review and summary of Belize's national development framework;

II. Review of the National Biodiversity Strategy and Action Plan;

III. A review of prioritized biodiversity trends and fiscal policies associated with biodiversity;

IV. A rapid assessment of current biodiversity finance in the public sector;

V. A summary of existing biodiversity finance solutions; and,

VI. An institutional analysis of current actors and prioritized stakeholders for BIOFIN.

Macro-economic context of Belize

Belize's economy is natural resources based with agriculture, fisheries, forestry, and tourism, mining and quarrying estimated to account for around 50% of the country's GDP (Figure 1). These sectors remain prioritized development sectors as well as prioritized export sectors (GSDS 2016, NES 2011).

In this context, the Government of Belize has developed a sound roadmap to guide the long and medium-term development in Belize i.e. the Horizon 2030 and Growth and Sustainable Development Strategy (GSDS) 2016-2019, respectively. The Horizon 2030 and GSDS have identified environmental sustainability as the cornerstone of Belize's development.

Development strategies will seek to, among others, incorporate sustainably into development planning, promote green energy, improve protected areas management, and implement the National Biodiversity Strategy and Action Plan (NBSAP) (GSDS 2016).

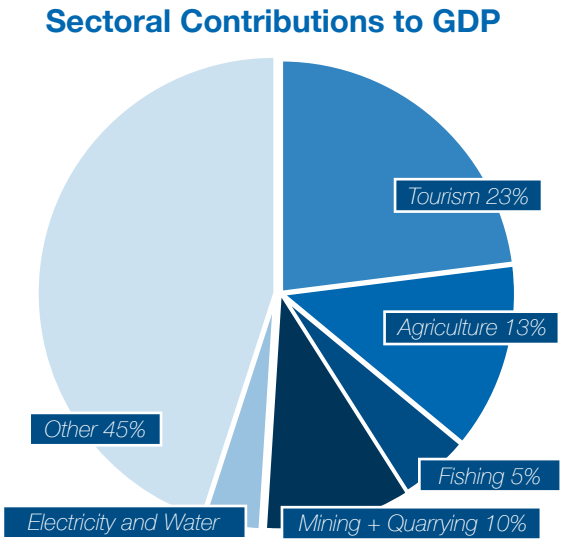

Figure 1: Sectoral Contributions to GDP

Belize's Biodiversity Goals

The NBSAP presents a set of key biodiversity and environmental goals for Belize for the years 2016 – 2020. The NBSAP provides important policy and strategic actions for biodiversity management in the medium-term aiming at mainstreaming biodiversity, reducing direct and indirect pressures on ecosystems, protecting functional ecosystems, and enabling the equitable sharing of benefits from biodiversity.

Given the financial and human resources challenges, it was determined that targets and actions in the NBSAP must be prioritized. Of the 20 targets outlined in the NBSAP, seven of these actions were determined to be of the most priority (Table 1). The seven prioritized targets then become the central focus for achieving the cross-scale and cross-level biodiversity and environmental management targets for Belize.

Table 1: Prioritized Biodiversity Actions for Belize

	NBSAP TARGET	TARGETS
1	E3	By 2020, Belize's NBSAP is being implemented effectively, monitored and evaluated, and is achieving the desired outcomes
2	D1, C1	By 2025, key ecosystem services are sustainably managed and resilient to threats
3	E2	By 2020, accurate and current data on Belize's natural resources and environmental services informs relevant national development decisions
4	B4	By 2020, Belize is restoring 30% of degraded ecosystems to maintain and improve the status of ecosystems and ecosystem services
5	B5	By 2025, there is a 20% reduction in terrestrial impacts and illegal fishing from transboundary incursions
6	C3	Between 2018 and 2030, no species will become functionally extinct in Belize
7	A2	By 2020 Belize has promoted and implemented a national harmonized system of environmental standards that foster environmental responsibility and sustainability

National Biodiversity Strategy and Action Plan (2016 -2020)

Economic Linkages to Biodiversity in Belize

The PIR identified key biodiversity trends and their economic linkages in Belize. Key economic sectors in Belize include tourism, agriculture, fisheries and aquaculture, forest, energy, and mining and quarrying (Table 2). Of these sectors, tourism, agriculture, and fisheries and aquaculture account for more than 41% of GDP and 30% of the labor force in 2015 (SIB 2016).

Some areas of concerns exist for biodiversity; including: large scale agricultural expansion, fisheries and aquaculture growth, deforestation, climate change, overharvesting, protected areas encroachment, and transboundary incursions as a result of the dependence of these sectors.

On the other hand, efforts have been implemented to conserve and protect biodiversity as the cornerstone of Belize's economic development. Efforts, for instance, to promote sustainable forest management, eco-tourism, and the implementation of a rights-based managed access program in the fisheries sector are noteworthy actions as a result of the economic linkages to biodiversity in Belize.

Table 2: Biodiversity and Economic Linkages in Belize

Sector	Contribution to GDP	Employment	Biodiversity Trends	Guiding Policies	Opportunities
Tourism	23% of GDP - $437M	17,000 persons	Development of the tourism industry has contributed to land cover change, pollution, mangrove clearing, and agricultural expansion, among others. Eco-tourism growth has contributed to maintaining integrity of biodiversity in Belize	National Tourism Policy Sustainable Tourism Master Plan	Green certification, greening of fiscal incentives, green bonds, scaling up contributions to environmental funds, green investments etc.
Agriculture	13% of GDP - $245.7M	23,000 persons	38% increase in acreage under production between '00 –'10. Move towards climate-smart agriculture and sustainable production in recent years	Agriculture Development Management and Operational Strategy (ADMOS) The National Food and Agriculture Policy	Green certification, greening of subsidies, climate smart agriculture, sustainable production, greening of fiscal incentives
Fisheries and Aquaculture	5% of GDP - $84.1M	3500 persons	Decline in fish catch (on avg. from 2.9kg per day to 2.0kg/day); Implementation of managed access fisheries program	Fisheries Act Fisheries Resources Bill (DRAFT)	Alternative and sustainable livelihoods, blue bonds, managed access Passage of the Fisheries Resource Bill
Forest	0.29% of GDP - $5. 3M	884 persons	Production increased from 0.9 to 2.0 million cubic feet between '05 – '15. Implementation of sustainable forest management, improved protected areas management	Forest Policy Forest Act	Promotion of green certification, tax easements for private protected land holdings, and development of a non-timber forest products (NTFP) sector.
Energy	7.2% of GDP - $136M	813 persons	Increase land clearing for access to drilling sites in crude oil production; Declining crude oil production	National Energy Policy	Scaling up of DFC's Green Energy Program
Mining & Quarrying	.52% of GDP - $10M	296 persons	Increase in river material extraction from approx. 0.5M to .5M cubic yards, land clearing for access;	Mines and Minerals Act	Increasing charge fees;

National Biodiversity Strategy and Action Plan (2016 -2020)

Existing Biodiversity / Natural Resources Finance Solutions in Belize

A rapid mapping of current biodiversity revenues from available public and private sources were carried out. Revenue sources include fees and royalties paid to government departments, taxes, fines, grants, and donations from non-governmental organizations as well as user-fees. The objective of this review is to provide a rapid scan of entities and programs which can be part of the biodiversity expenditure review (BER).

The mapping exercise found that approximately BZ$52.4, BZ$52.2, BZ$46.8, BZ$48.8M and $42.5M were collected from biodiversity related sources in 2013, 2014, 2015, and 2016, respectively. A substantial portion of the revenues assessed were collected by the Customs Department in the form of Environmental Tax, between BZ $25.6 and $29.2 million from 2013-2016. Of note is the significant decline in revenues of the Geology and Petroleum Department as a result of declining crude oil production.

The current landscape for biodiversity finance indicates that there is a mix of public, private, and civil society involved in biodiversity finance. The scan also reveals that a significant portion of taxes being collected as environmental or biodiversity related taxes is not purposed into biodiversity conservation and environmental management.

Current Biodiversity Finance Solutions

A rapid analysis of existing biodiversity finance solutions[1] in Belize was carried out under the PIR guided by the BIOFIN global methodology. The assessment identified, among other things, the name of the solution, the type of solution i.e. whether the solution can be categorized as an environmental trust fund, debt for nature swap, or overseas development assistance, the objective of the finance solution, a brief description of each solution, financial data, and legal and policy framework. Existing biodiversity finance solutions provide an overview of possible points of entry for strengthening or scaling-up finance for biodiversity conservation in Belize. The review can serve as an important point of departure for developing Belize's Biodiversity Finance and Resource Mobilization Plan.

The Rapid mapping of existing finance solutions revealed that an important mix of finance solutions already exists in Belize. These solutions include national environmental funds, corporate social responsibility and public private partnerships, debt-for-nature swaps, green taxes, and official development assistance. A selected number of current biodiversity finance solutions are presented in Table 4.

1 Tools or mechanisms used to raise or leverage funding

Table 3: Select Existing Biodiversity / Natural Resources Related Income in Belize

Organization/Agency	Solution	Annual Income (2013/14) BZ$	Annual Income (2014/15) BZ$	Annual Income (2014/15) BZ$	Annual Income (2016/17) $BZ
PACT	Conservation Fee	4,517,551	5,383,878	5,576,559	4,923,033
Coastal Zone Management Authority	Licence & Visitor Fee	121,006	227,186	356,997	409,668
Belize Audubon	Visitor Fee	1,350,768	1,395,480	1,206,047	1,204,670
TIDE	Visitor Fee, Grants	2,174,385	2,100,00	1,928,000	1,792,718
Customs Department	Environmental Tax	25,611,334	28,960,355	31,254,253	29,249,959
Fisheries Department	Visitor Fees	475,357	472,276	437,326	484,083
BECOL	Donation	-	25,000	25,000	25,000
Mining Unit	Mining Fee	288,642	312,645	280,513	320,461
Lands Department	Rental Fee	1,092,142	1,619,408	1,686,703	1,659,893
Geology & Petroleum Department	Royalties	15,493,994	10,732,808	4,884,039	$2,000,000
Forest Department	Royalties	964,598	564,632	721,190	578, 748
Dept. of Environment	EIA Processing and Monitoring Fees	459,213	441,740	406,130	452,783
Total		52,488,990	52,235,408	48,762,757	42,522,268

Table 4: Select Existing Finance Solutions in Belize

Name	Solution	Result	Description	Description	Responsible Party	Recipients	Financial Data (USD)
Protected Areas Conservation Trust	ETF [2]	Generate, deliver better	The PACT was established in 1996 with the aim of providing a dedicated source of financing to support protected areas management in Belize.	Tourists Fee	PACT Board of Directors	UNDP Country Office – Resident Rep.	$1.5 M
Environmental Monitoring Fund	CSR [3]	Deliver Better, Avoid future expenditures	established to provide financial support to the Department of Environment to carry out its mandate	Belize Natural Energy Ltd.	PACT Board of Directors	UNDP Country Office – Resident Rep.	$337,812
Belize Marine Fund	ETFT	Generate, deliver better	The was created through a US$ 10M endowment challenge grant from the Oak Foundation.	OAK Foundation	PACT Board of Directors	Entities promoting conservation efforts	$10. M
Belize Nature Conservation Foundation (BNCF)	ETF DNS [4]	Generate, deliver better, realign expenditures	The BNCF was the product of a Debt for Nature Swap with the United States Government and local NGOs. This agreement required the US Government, with funds from The Nature Conservancy (TNC), to retire US$ 9M in debt from the Government of Belize.	OAK Foundation	PACT Board of Directors	PA Managers	$9. M
MARFUND	ETF	Generate, deliver better, realign expenditures	MARFUND was established in 2004 to support ecoregional planning and coordination in management of the Mesoamerican Reef.	Multiple Donors including TNC, WWF, OAK, The Summit Foundation	MARFUND Board of Directors (PACT is responsible entity in Belize)	Marine PA Managers	$8.2M
German Government (GIZ and KfW)	ODA [5]	Deliver better, avoid future expenditures	The GIZ is supporting efforts of the Caribbean states, including Belize, to adapt to climate change, reduce greenhouse gas emissions, promote sustainable use of natural resources and renewable energy, promote natural resource conservation (including forest management)	Multiple Donors including TNC, WWF, OAK, The Summit Foundation	GIZ KfW	Multiple recipients	$2.8M
GEF	ODA	Deliver Better, Avoid future expenditures, Generate	The Global Environmental Facility provides funding for projects in areas of protected areas management, sustainable landscapes and seascapes, sustainable forest, and sustainable land management among others.	Multiple Donors including TNC, WWF, OAK, The Summit Foundation	UNDP Country Office – Resident Rep.	GOB, NGOs, CBO	$14.6M
OAK Foundation (non-MARFUND)	ODA	Deliver Better, Avoid future expenditures, Generate	OAK Foundation funds projects that seeks to conserve and restore the environment while enhancing people's well-being and livelihoods	Multiple Donors including TNC, WWF, OAK, The Summit Foundation	UNDP Country Office – Resident Rep.	GOB, NGOs, CBO	$2.8M
BECOL Donation	CSR	Deliver better	The Belize Electricity Company Limited provides an annual donation to the Friends for Conservation and Development to support the management of one of Belize's largest PA the Chiquibul Forest Reserve and National Park	Belize Electric Company Ltd.	UNDP Country Office – Resident Rep.	Friends for Conservation and Development	US$25,000.
Environmental Tax	Green Taxes	Generate Revenues	The Environmental Tax of 3% is charged on vehicles with 4 or more cylinders	Vehicle Owners	UNDP Country Office – Resident Rep.	Government of Belize	$30. M
New England Biolabs	ODA	Deliver better, avoid future expenditures	Fund community based conservation of landscapes and seascapes through protected areas management, ecological restoration, and improving community livelihoods	Vehicle Owners	UNDP Country Office – Resident Rep.	NGOs in Belize	$39, 500.
Coca Cola Company	CSR	Deliver better, avoid future expenditures	The Coca Cola company contributes funding for the management of the Belize River Watershed – the major source of water for the company.	Coca-Cola Company	UNDP Country Office – Resident Rep.	UB- ERI	$30,000

Institutional Analysis

The institutional analysis served to i) identify the key institutions and institutional arrangements relative to biodiversity finance in Belize; and, ii) to identify and prioritize key stakeholders, capacities and capacity gaps necessary to support biodiversity finance in Belize.

The scan of the institutional framework for biodiversity finance in Belize found that public sector institutions largely operate based on individual institutional mandates guided by specific legislations and policies. Such individual mandates pose a challenge to the implementation of actions requiring inter-ministerial coordination and collaboration in biodiversity management and sustainable development. The Ministry of Natural Resources and the Ministry of Forestry, Fisheries, the Environment and Sustainable Development, for instance, implement several policies that require collaboration. However, no institutional framework currently exists to facilitate this coordination. Furthermore, individual government departments, such as the Forest and Fisheries Departments bear multifaceted mandates of ecosystems management, sustainable resource use, monitoring and enforcement. This dualistic role of public service agencies must be addressed in order to facilitate focused and targeted approach to biodiversity conservation and environmental management.

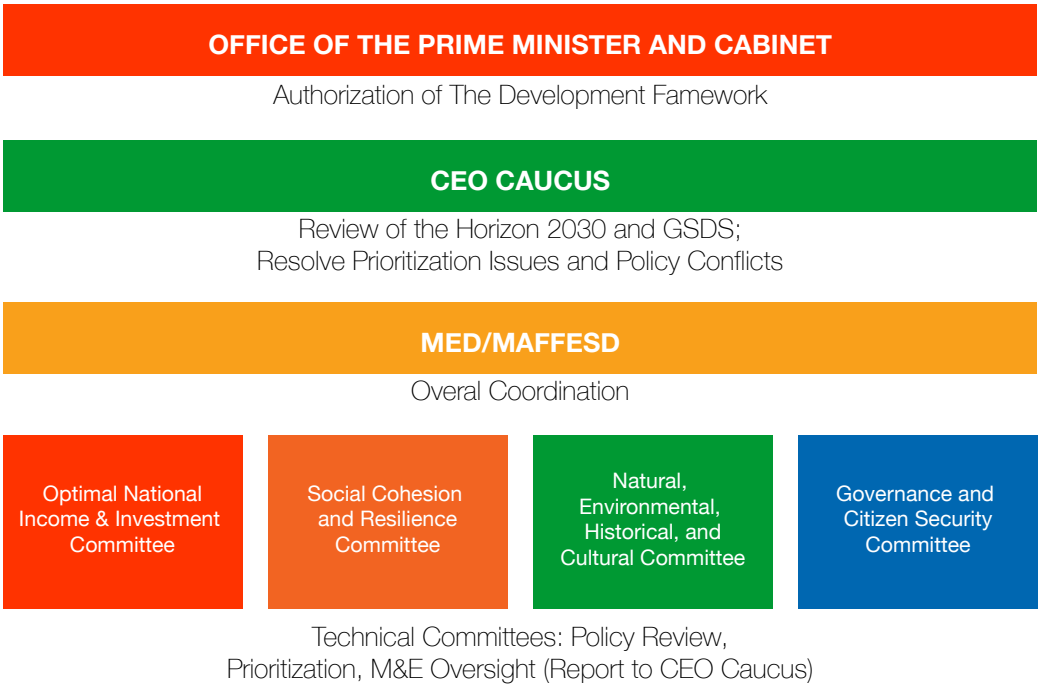

Figure 2: Coordination Framework for GSDS Implementation

2 Environment Trust Fund
3 Corporate Social Responsibility
4 Debt for Nature Swap
5 Official Development Assistance

At the national level, coordination mechanisms such as the institutional framework for the implementation of the GSDS (2016 -2020) – Belize's medium-term development framework – have aided to bridge the gaps and improve cross-scale and cross-level linkages (Figure 2).

Similarly, the establishment of a sounding board – the Technical Working Group – at project levels has aided, but not eliminated all gaps, in improving inter-ministerial participation in such efforts towards biodiversity finance. For biodiversity finance to be successful, it will require improved cross-level and cross-scale coordination between public, private, and civil society organizations.

The BIOFIN Initiative in Belize recognized the critical importance of stakeholders at the onset. The Institutional Analysis served to identify the stakeholders that are critical to the BIOFIN process during the implementation of the various subcomponents (Figure 3). In addition to identifying and prioritizing the stakeholders, the analysis also identified some capacity needs or biodiversity management in Belize. A sample of stakeholder prioritization is provided below.

BIOFIN in Belize is led by the MFFESD in collaboration with the United Nations Development Programme. The Ministry of Economic Development and Ministry of Finance have also been key partners during the implementation of BIOFIN. These partners, among others, would need to be continuously engaged, particularly the Ministry of Finance.

INTEREST →

POWER / INFLUENCE ↑

Stakeholders requiring further advocacy:	Stakeholders who should be closely engaged:
Ministry of Tourism Ministry of Finance Maya Leaders Alliance The World Bank Caribbean Development Bank Caribbean Community Climate Change Centre National Bank of Belize Ltd.	Ministry of Economic Development Association of Protected Areas Management Organization Protected Areas Conservation Trust (PACT) United Nations Development Program Belize Chamber of Commerce & Industry Belize Tourism Board
Stakeholders require further awareness	**Stakeholders requiring empowerment**
Belize Institute of Environmental Law and Policy Toledo Cacao Growers Association Belize Enterprise for Sustainable Technology Resource Recovery Recycling Limited Hydrology Department Belize Hotel Association Belize Citrus Growers Association	MARFUND Wildtracks Sarteneja Alliance for Conservation and Development Belize Association of Private Protected Areas Southern Environmental Association Corozal Sustainable Future Initiative Toledo Institute of Development and Environment

Figure 3: Power/Interest Matrix of Select Stakeholders in Biodiversity Finance

A number of institutional and capacity needs exits for biodiversity management within both the public and private sectors. This includes: among others,

- The ability for the MFFESD to mainstream biodiversity considerations within national economic and other development priorities given Belize is a natural resource based economy;
- The advocacy ability to bring the Ministry of Finance into the mainstream to lead biodiversity finance in Belize;
- Strengthening cross-scale and cross-level linkages between private sectors and public-sector agencies in moving towards biodiversity finance;
- Ability to strengthen the design, implementation, monitoring, and evaluation framework of the GSDS and the National Statistical System to guide results-based management in the public sector in Belize.

Conclusions and Recommendations

The PIR serves as the first step of the ongoing BIOFIN process in Belize that will include a biodiversity expenditure review, finance needs assessment, and the development of a biodiversity finance plan. The BIOFIN Project, and specifically the PIR, has provided an important snapshot into the current policy, institutional, and finance landscape for biodiversity finance in Belize. The introduction and implementation of the Project, in and of itself, has raised the profile of biodiversity finance in Belize.

Overall, a sound policy and institutional framework exists in Belize to support biodiversity finance. The long-term and medium-term development frameworks, Horizon 2030 and GSDS, recognizes the environment is the basis of all economic activity and that economic development must be underpinned by the principles of sustainability. The seven prioritized targets of the NBSAP will be a key point of departure towards a focused approach to biodiversity use and management in Belize.

Some key points of entry for biodiversity finance in the national development frameworks include the government's commitments to move towards programme-based budgeting and performance reporting, as well as, efforts towards tax reforms, the establishment of a public-private partnership policy, and improved donor/national coordination mechanisms. Some of the concerns for biodiversity include policy objectives that drive biodiversity loss. Efforts such as sustainable forest management, managed access fisheries program, and "green" certification provides important footing for avoiding future expenditures, delivering better services, and generating financing towards increasing the effectiveness of investments biodiversity and sustainable development in Belize.

Recommendations

	Recommendations	Actions	NBSAP Targets
1	7 Prioritized NBSAP targets serve as the central strategies and actions for addressing biodiversity and environmental targets to the year 2020.	Review and validate the Biodiversity Finance Needs Assessment which entails the costing of the implementation of the NBSAP. Coordinated Implementation of the Biodiversity Finance Plan/ Resource Mobilization Strategy	E3
2	Tracking of biodiversity and environmental management investments and impact.	Review, validate, and approve current biodiversity expenditure review; Design and Implement a tool to track real time spending and impact on biodiversity related targets;	E2
3	Improve cross-sector and cross-level coordination in implementation of NBSAP	Formalize the Technical Working Group of BIOFIN as entity with oversight for implementation of 7 prioritized actions and associated activities of NBSAP.	E3
4	Separate dualistic mandate of public entities, such as the Departments of Fisheries and Forestry, responsible for ecosystems management on the one hand and sustainable resource use, monitoring, and enforcement on the other.	Legislative and institutional changes to the Forest and Fisheries Act and associated legislations to separate biodiversity and ecosystems management mandates from sustainable resource use, monitoring, and enforcement. Repurposing of personnel in a newly established entity with the mandate of biodiversity and ecosystems management including forestry and fisheries. One of the agency's specific mandates should be the implementation of the NBSAP.	B1
5	Improve local and international donor coordination and investment mechanisms	Assess the current donor investment context in Belize; Track investments against 7 prioritized NBSAP Goals and identify funding gaps; Develop a strategy to attract donor investments against funding gaps;	E1
6	Improve current financing mechanisms for biodiversity and environmental management in Belize;	Assess opportunities for the optimization of national financing mechanisms for biodiversity conservation and environmental management; Implementation of Biodiversity and Environmental Resource Mobilization Strategy to mobilize financial and material resources to implement biodiversity and environmental targets; zv Develop new finance instruments e.g. bonds, equity to accelerate achievement of biodiversity targets;	E1
7	Improved coordination and collaboration for biodiversity and conservation financing between MFFESD and Ministry of Finance	Establishment of a joint Green Finance Task Force with personnel of the Ministry of Finance and the MFFESD with a focus on environmental and conservation finance.	B1, E1

Recommendations

	Recommendations	Actions	NBSAP Targets
8	Improve coordination between the Ministry of Natural Resources and the MFFESD towards improved coordination and implementation of Forest and Fisheries Act, National Land Use Planning Framework, the National Environmental Policy and National Integrated Coastal Zone Management Plan among others.	Establishment of a Policy Unit within the MFFESD to guide policy development, implementation, and monitoring at the Ministry level as compared to Department level; Policy Unit of MFFESD and Policy Unit of the Ministry of Natural Resources develop joint Plan of Action to coordinate the implementation of inter-ministerial legislations, policies, and strategies.	B1, B3
9	Increase Incentives for biodiversity considerations in primary and secondary economic sectors in Belize	MFFESD engages Ministry of Tourism to create national green certification programs for the tourism and forestry sectors in Belize MFFESD engages Ministry for Agriculture to strengthen compliance with international green certification programs in agriculture and fisheries industry including Fairtrade and organic certification	A2, B3
10	Tax incentives/easements for private conservation of threatened/Red Listed Species in Belize;	MFFESD develops and recommends incentives (easements) to the Ministry of Finance for private entities engaged in the protection of critically endangered or threatened species in Belize. Recommendation would be to provide for reduced or waived land taxes.	A2, B3

The BIOFIN Process

1.1. The Biodiversity Finance Initiative
1.2. BIOFIN in Belize
1.3. Goal of the Policy and Institutional Review (PIR)
1.4. Objectives of the PIR
1.5. Methodology
1.6. Limitations

1. The BIOFIN Process

1.1. The Biodiversity Finance Initiative

The biophysical environment enables critical provisioning, regulating, cultural and other services including clean air and water, flood protection, soil retention, and storm surge protection that supports human well-being (MEA, 2005). As such human well-being is innately underpinned by biodiversity and ecosystems health. Humans however have placed significant pressures on ecosystems as a result of land use changes, population growth, technological adaptation and other socioeconomic and institutional drivers. State and the conservation community cannot single handedly provide the requisite resources to support biodiversity and environmental management. In response, the United Nations Development Programme (UNDP) developed a comprehensive methodology to improve resource mobilization for biodiversity and sustainable development. The Biodiversity Finance (BIOFIN) Initiative methodology provides a guide in assessing:

i. Current policy and institutional context for biodiversity Finance – Policy and Institutional Review (PIR);

ii. Assess current biodiversity expenditures – Biodiversity Expenditure Review (BER);

iii. Determine future finance needs for biodiversity and sustainable development (Finance Needs Assessment); and

iv. Development of a strategy that would guide policy reform and approaches to mobilize financing for biodiversity (Biodiversity Finance Plan).

The global BIOFIN Initiative was launched in 2012 by UNDP with support from the European Union (EU), and the Governments of Germany, Switzerland, Norway and Flanders to address the global challenge of funding biodiversity management, conservation, and sustainable development. Biodiversity finance encompasses initiatives to raise new capital, repurposing existing financing, and creating incentives for public and private sector agencies to support sustainable biodiversity management towards sustainable development.

1.2. BIOFIN in Belize

The Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development, and Immigration (MAFFESDI) is responsible for the governance and management of natural resources towards the sustainable development of Belize. This includes, among others, the collaborative efforts to implement, monitor and evaluate the strategic sustainable long and medium-term development of the country (through the implementation of the Horizon 2030 and the Growth and Sustainable Development Strategy 2016 - 2020). The Ministry is further responsible for guiding the integrated policy direction of ecosystems use and management in Belize in line with national development imperatives and meeting its international commitments under various United Nations (UN) Conventions including the United Nations Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification.

In December of 2015 the Government of Belize and UNDP signed a letter of agreement (LOA) for the implementation of the BIOFIN Project. The Project was launched officially in September 2016 by the MAFFESDI. The BIOFIN in Belize is guided by a tri-partite Board with representatives from the UNDP, MAFFESDI, and the Ministry of Economic Development (MED).

BIOFIN in Belize is a uniquely nationally implemented project. The three primary capacities supporting the BIOFIN Project i.e. the Policy and Institutional Expert, Finance Expert and Environmental Economist were converted to medium-term (two years) full-time positions as part of the Ministry's efforts to strengthen intra-ministerial synergies and improve collaboration. The Experts serve as technical advisors to the five departments and two statutory bodies under the Ministry and report directly to the Chief Executive Officer (Vice-Minister) (Figure 4).

This unique operational framework for BIOFIN in Belize was realized through the aggregation of financial resources from the BIOFIN, Capacity Development, and National Protected Areas Secretariat. Operationally, the Experts provide technical support in the strategic development of the Ministry. In addition to carrying out the requisite assessments as part of the BIOFIN Project, the Experts represent the Ministry in various technical capacities and help to improve inter-ministerial coordination and collaboration among projects and programs. The operational framework has allowed BIOFIN Belize to influence policy and institutional reforms prior to the completion of the assessments and the implementation of finance solutions.

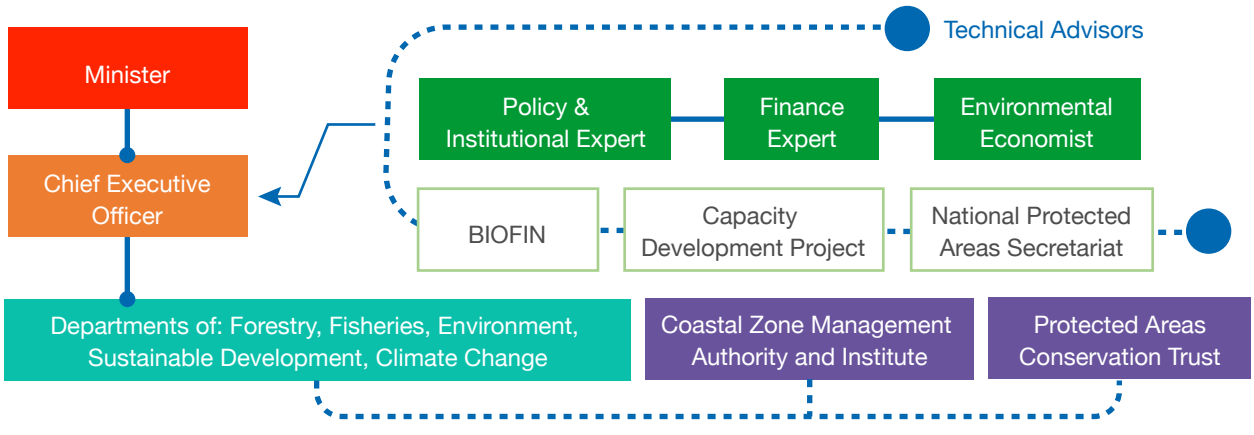

Figure 4: BIOFIN Belize Conceptual Organogram

1.3. Goal of the Policy and Institutional Review (PIR)

The Policy and Institutional Review provides "a systematic appraisal of the strengths, weaknesses and adequacy of policies and institutions within and across the sectors of the economy" (BIOFIN Workbook 2016). In Belize, the PIR will seek to analyse Belize's fiscal, economic, legal, policy, and institutional framework which may contribute to initiating, improving, and scaling effective biodiversity finance solutions.

The PIR will directly inform the following subsequent components of the BIOFIN Initiative:

- Biodiversity Expenditure Review (BER)
- Financial Needs Assessment (FNA)
- Biodiversity Finance Plan (BFP)

More specifically, BIOFIN will help to identify the critical institutional and finance gaps in Belize and develop and implement a targeted resource mobilization strategy for biodiversity finance.

BIOFIN will guide:

a) the analysis of the integration of biodiversity and sustainable development in sectoral and development policy, planning and budgeting – a Policy and Institutional Review;

b) the assessment of current spending and future finance needs and gaps for biodiversity management and ecosystem services – a Biodiversity Expenditure Review and Finance Needs Assessment; and,

c) the development of a comprehensive resource mobilization plan for Belize.

1.4. Objectives of the PIR

The objectives of the PIR are:

i. Describe how biodiversity and ecosystem services support national sustainable development goals and visions;

ii. Assess economic and fiscal drivers of biodiversity change;

iii. Catalogue existing biodiversity mechanisms and instruments (solutions), incentives, subsidies and revenues;

iv. Identify legal, policy, institutional, and operational barriers to biodiversity finance;

v. Identify capacity development needs and opportunities; and,

vi. Develop specific policy recommendations to improve and scale biodiversity finance.

1.5. Methodology

The PIR employed a coupled human-natural systems approach in consideration of the cross-scale and cross-level interactions as well as spatio-temporal distributions of biodiversity. Given the coupled systems approach of the PIR, the Review embraced several methodologies including root cause analysis, disturbance/response modelling, and scenario planning. The implementation of BIOFIN in Belize is guided by the 2016 BIOFIN Workbook. The Workbook serves as a guide in developing country specific assessments of biodiversity related institutions and finance mechanisms (Figure 5).

The PIR employed a mixed methodology approach including desktop literature reviews, secondary data collection and analysis, stakeholders and focus group sessions, and participant and independent observations. A comprehensive desktop review of peer-reviewed and grey literature was carried out including review of relevant policies, legislations, reports and other publications relating to biodiversity in Belize. Processed and unprocessed data were collected from the Statistical Institute of Belize, the Environmental Statistics Unit of the Department of Environment, and other public-sector agencies. Data were categorized and later analyzed.

Consultations were held with stakeholders from public, private, and semi-public organizations at various tiers of biodiversity use and management. As part of the larger stakeholder consultations, an initial series of one-on-one and focus group consultations were held across the country with public and private sector organizations. The consultations served to introduce BIOFIN to various stakeholders and foster close working relationships. One-on-one consultations were particularly targeted at "non-traditional stakeholders" within the environmental realm. In addition, BIOFIN hosted three regional workshops (n= ~20 stakeholders/session) – one in the north (Corozal and Orange Walk), central region (Belize and Cayo districts) and one in the south (Stann Creek and Toledo districts).

These approaches enabled BIOFIN to engage a wide cross-section of stakeholders for the PIR. Throughout the PIR, one-on-one consultations continued with key stakeholders identified in the initial institutional analysis. In addition, BIOFIN's tri-partite Board and a Technical Working Group (TWG) served as an important sounding board throughout the PIR.

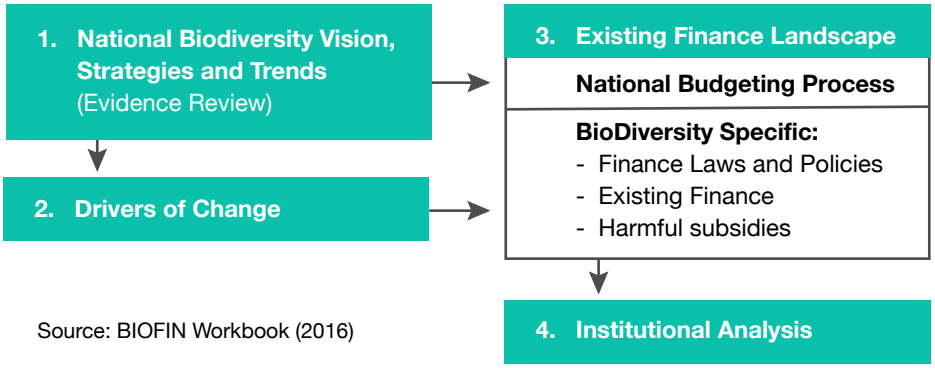

Figure 5: BIOFIN Methodology

Outputs of the PIR:

i. A review and summary of National Sustainable Development Framework (Horizon 2030 and the Growth and Sustainable Development Strategy);

ii. Review of the National Biodiversity Strategy and Action Plan (NBSAP);

iii. A review of prioritized biodiversity trends;

iv. A review of fiscal policies associated with biodiversity;

v. A review of existing economic valuation studies in Belize;

vi. A rapid assessment of current biodiversity finance in the public sector;

vii. Mapping of Belize's national budgeting process;

viii. A summary of existing biodiversity finance solutions;

ix. An institutional analysis of current actors and prioritized stakeholders for BIOFIN.

1.6. Limitations

Data collection and analysis served as one of the principal challenges in the development of the PIR. There were significant challenges in accessing data from various public-sector agencies including the Statistics Institute of Belize – the central public agency for data collection and processing. In some cases, metadata were absent on data series or there were significant data gaps – all compounded by varying data classification within sectors. In relation to the latter, for instance, the Ministry of Tourism, Belize Tourism Board, and the Statistics Institute of Belize all have unique definition for what constitutes revenue in the tourism sector. As the central public agency for data collection and analysis, data used for the development of the PIR were primarily from the Statistics Institute of Belize. In the case where data was non-existent or incomplete, unprocessed data was collected from relevant organizations.

Introduction

2.1. Introduction to Belize

2.2. Belize's Macro-Economic Environment

2. Introduction

2.1. Introduction to Belize

"Sub Umbra Floreo – Under the Shade We Flourish"

Belize, formerly British Honduras, is the only English-speaking country in Mesoamerica. It is positioned between 15° 52' and 18° 30' North Latitude and 87° 28' and 89° 13' West Longitude. Belize has a land area of 22,963 km2 (8,866 mi2), including hundreds small islands, or cayes. The country is bordered north by Mexico, south and west by Guatemala and east by the Caribbean Sea (Figure 6). Belize is a former British colony originally settled by buccaneers in the 17th century (Leslie, 1997). In 1862, Belize became an official colony and was under British colonial rule until 1981. The exportation of Belize's timber species was raison d'être for colonial settlers and remained a mainstay in the economy (Young and Horwich, 2007). In 1981, Belize peacefully transitioned into an independent nation.

Currently with a population of just over 376,000 Belize has one of the lowest population densities in Central America, 14 people per sq. km. Overall, Belize still maintains a relatively low population growth rate of about 2.6%. Belize has a stable democracy with no civil wars in its history and very peaceful transfer of powers after elections.

The country can be divided into two major physiographic regions, the northern lowlands consisting primarily of sandy soils and the southern coastal plains and Maya Mountains consisting primarily of granite, quartzite and shales (Young, 2008). Owing to its very low populatiozn, Belize has approximately 62.7% forest cover. Along the 280 kilometers of coastline lies Belize's Barrier Reef, second largest after Australia's Great Barrier Reef. Seven sites are designated as United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites. Belize's reef also hosts three of four atolls in the western hemisphere. Belize is also home to a rich diversity of flora and fauna with over 1,014 native species of vertebrates and 3,750 species of plants (Fabro and Rancharan, 2012). Around 42% of the land territory in Belize and 13% of its marine areas are under some form of protected status. There are 98 protected areas (a total of 114 with the inclusion of spawning aggregation and bird sanctuaries) that make up the Belize National Protected Areas System (NPAS) (Walker and Walker, 2013).

Figure 6: Political Map of Belize

Box 1 - Conservation in Belize: A Brief Retrospective

Conservation in Belize saw its foundations in the extractive timber industry. In 1920, the Colonial Government declared its first two protected areas, the Silk Grass Forest Reserve and the Mountain Pine Ridge Forest Reserves (Young and Horwich, 2007). The establishment of the reserves was to secure prime land to extract timber species for export. To provide oversight to this critical industry, the Government passed the Forest Ordinance establishing the Forest Department. In 1928, the Colony established its first non-extractive reserve - the Half Moon Caye- a crown reserve bird sanctuary to protect the Red-footed Booby (Sula sula). Two years later, the government declared an additional five forest reserves (Hartshorn et al., 1984). These seven forest reserves would serve as Belize's first network of protected areas in a national protected areas system. The Wildlife Protection Ordinance of 1944 and the Fisheries Ordinance of 1948 concretized the foundation for biodiversity conservation in modern Belize (Young and Horwich, 2007).

The growing interest of international scholars and conservation organizations in Belize's rich biodiversity influenced the government and the wider Belizean public to strengthen its conservation efforts. In 1964, Belize received self-government and the path to independence was clear. With that, and with continuous influence from the international conservation community, the government established the National Parks Commission in 1966 to propose key biodiversity areas for conservation in the nation. In 1969, the first local conservation non-government organization (NGO) was formed-the Belize Audubon Society (BAS) (Waight and Lumb, 1999). By 1981, more than 15 protected areas had been established covering more than 20% of the country's land territory.

In 1981, after Independence, the new Belize Government revised the Forest, Fisheries, and Wildlife Ordinances and developed comprehensive legislations including the National Protected Areas Act and Wildlife Protection Act. BAS played a key role in advocating for the establishment of key protected areas, especially bird sanctuaries on the coast of Belize. The Forest Department, the government office with mandate to oversee and manage these protected areas, found it exceedingly difficult to carry out this work as the scales of protected areas management exceed its financial, technical, and resource capacities (Hartshorn et al., 1984). In 1984, the BAS signed an agreement with the government to co-manage five of Belize's major protected areas (Young and Horwich, 2007). In 1985, Belize's first private community-based protected area was formed- the Community Baboon Sanctuary. Small landowners in central Belize devoted private land to provide a contiguous corridor for Black Howler Monkeys (Alouatta pigra) (Horwich et al., 2011).

Between 1985 and 2005, NGO's and local communities played a significant role to lobby the government in protecting areas of key biodiversity as well as endangered and threatened species. By 2005, a total of 94 protected areas were established in the national protected areas system and covering more than 23% of national territory and 42% of land territory. In 1996 the Government established the Protected Areas Conservation Trust (PACT) - a conservation finance institution to fund conservation in Belize.

2.2. Belize's Macro-Economic Environment

Belize's economy was founded on the export of its rich timber resources. Timber export remained a cornerstone of the Belizean economy up until the mid-twentieth century representing more than 85% of export earnings at the time (Richardson, 2007). With significant portions of its primary forest resource exploited, the economy transitioned to agriculture guided by policies favoring large scale production for export. By the time of independence, sugar represented some 65% of exports (ibid).

Table 5: Belize Key Indicators

	2015	2016
Population (millions)	0.366	0.376
Unemployment Rate (%)	10.1	11.1
Inflation Rate (%)	-0.9	1.2
GDP (% growth)	2.9	-1.0
GDP per capita $US	4,757.1	4,635.7
Debt/ GDP (%)	82.6	98.6
Poverty Rate	41.3%	43.7%
HDI Index	0.706	0.706

Source: SIB (2016)

Earnings, however, plummeted in later years due to falling market prices and loss of preferential markets. In the last few decades, tourism has developed a growing prominence in Belize. Today the economy is comprised of tourism, agriculture, forestry, fisheries, mining and quarrying, and manufacturing as the primary, secondary, and tertiary industries.

Between 2005 and 2015 gross domestic Product (GDP) growth, which stood at an average of 2.5%, was driven largely by the primary sectors of tourism and agriculture (Figure 7). GDP per capita stood at around US$4,600 in 2016, placing Belize's economic performance below other Caribbean countries (Trinidad, Barbados, Jamaica), but just above most Central American nations including El Salvador, Honduras, and Guatemala (Table 5).

Primary sectors in Belize which include agriculture, forest, and fisheries accounting for approximately 17% of Belize's GDP in 2016 (Figure 7). Secondary activities which include manufacturing, electricity and water supply, and construction accounted for another 19% of the country's GDP. Tertiary industries represent wholesale and retail trade, hotels and restaurants transport and communication, financial intermediation, real estate, and central government services accounting for the remaining 64% of GDP. In terms of the outlook, the Central Bank projects average growth between 2.0% and 2.5% in the 2016/2017 fiscal year - largely driven by increases in agricultural production and tourism growth (Central Bank, 2016).

According to the Central Bank (2016) Annual Report, potential growth will be constrained by existing public debt. In addition to an existing national public bond of US$526M reflecting 30% of GDP, the nationalization of Belize Telemedia Ltd. and Belize Electricity Ltd. (Belize's national telephone and electricity companies) has resulted in an increase in public debt (Central Bank, 2016). It is in that context that the IMF concludes that "a primary surplus of 4-5% of GDP would need to be maintained over the medium term to put debt on a path towards 60% of GDP by 2025" (IMF, 2017).

Belize's economy is susceptible to exogenous forces including the effects of increasing climatic variability, diseases, external markets, and migration influx as a result of unrests in neighboring countries. In 2016, for instance, Belize's primary economic sectors (tourism and agriculture) contracted by 24.9% due, in part, to pests and diseases in the agricultural sector, flooding, and hurricane Earl (Central Bank, 2016).

Government, through the Belize Trade and Investment Development (BELTRAIDE) agency intends to place greater focus on attracting investments in agriculture, agro-processing, tourism, and energy sectors – primary economic sectors in Belize. As such, the health of Belize's economy will continue to be inextricably linked to the health of Belize's biodiversity.

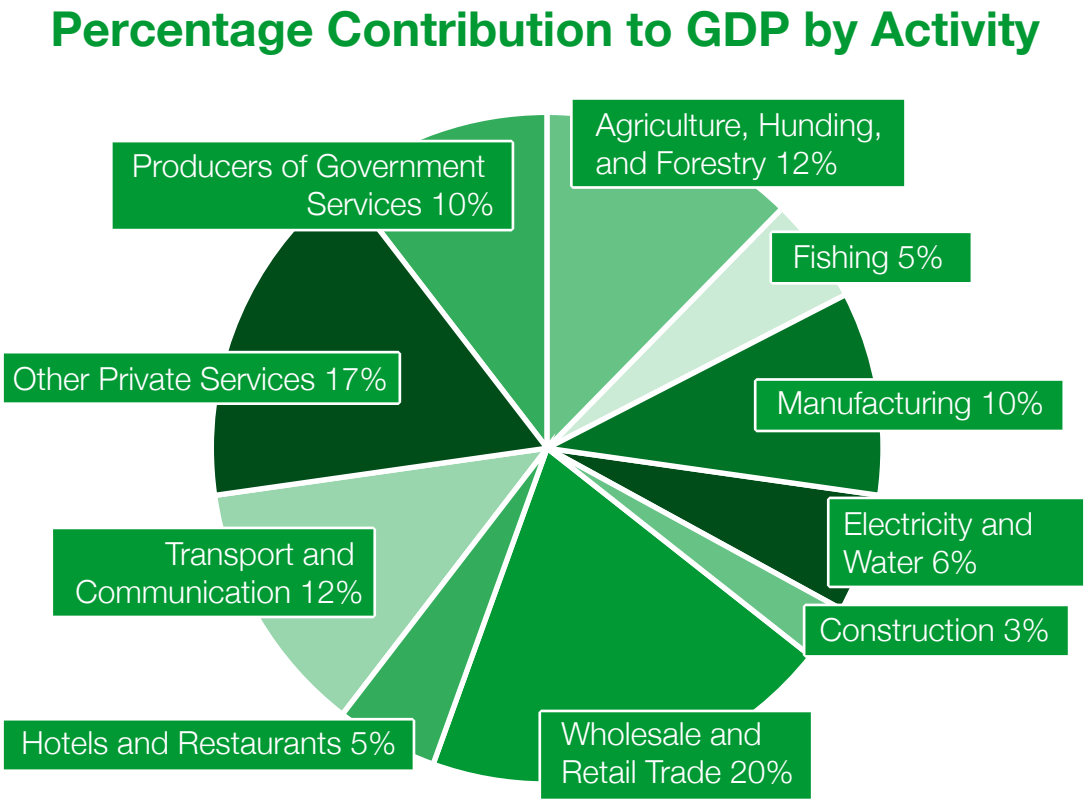

Figure 7: Percentage Contribution to GDP by Activity (Source: SIB, 2016)


WELCOME TO

National Biodiversity Vision, Strategies, and Trends

3. National Biodiversity Vision, Strategies, and Trends

Biodiversity is entrenched in the Constitution of Belize. In the preamble, the Constitution recognizes that the People of Belize "require[s] policies of the state which protect the environment".

3.1. National Biodiversity Strategy and Action Plan

Belize's biodiversity has served as the cornerstone of national development; from the establishment of a settlement to exploit its timber resources in the 17th Century to serving as a prime eco-tourism destination in the 21st Century. Belize has produced two National Biodiversity Strategy and Action Plans (NBSAP); 1998 and 2016. The NBSAP of 1998 was never formally endorsed by the Government of Belize and had very limited implementation over the subsequent years. Further review of the document indicates the absence of measurable strategies, targets, or actions thus making it difficult to monitor and evaluate success in im plementation.

Additionally, successful implementation of the NBSAP of 1998 was affected by:

- The absence of a National Biodiversity Office or national focal point within the Government of Belize to lead and coordinate its implementation;
- The absence of coordination and collaboration among stakeholders in public and private sector for implementation;
- Inadequate financial resources to support implementation;
- Limited public awareness of the NBSAP in both public and private sectors;
- Lack of a plan of action and monitoring and evaluation framework for the NBSAP.

While there were many challenges to the implementation of the NBSAP of 1998, several improvements have been made to strengthen the policy and institutional framework for biodiversity management. Since 1998, several legislations and policies have been updated including:

- National Land Use Policy;
- Fisheries Act;
- National Protected Areas Systems Act;
- Wildlife Protection Act;
- Forest Act;
- Integrated Coastal Zone Management Plan;
- Environmental Protection Act;
- Protected Areas Conservation Trust (PACT) Act;

The latter two served as key policy instruments for addressing biodiversity finance and environmental protection over the last two decades. The BIOFIN has served as an important process of strengthening and expanding the policy and institutional framework for implementation of the NBSAP of 2016.

The NBSAP 2016 - 2020 is set within Belize's medium-term development framework – the Growth and Sustainable Development Strategy of Belize serves as Belize's Roadmap for biodiversity management towards 2020 (Figure 8). This Strategy recognizes Belize's natural capital as an important asset in Belize's national development. The NBSAP (2016) was endorsed by the Cabinet of Belize in October 2017. The Ministry of Agriculture, Forestry, Fisheries, the Environment, Sustainable Development and Immigration (MFFESD) is the lead agency with the mandate for the implementation of the NBSAP.

Belize's National Biodiversity Strategy and Action Plan is a national instrument, considered a priority under the National Development Framework. This plan…documents the current status of biodiversity in Belize, identifies the threats and underlying drivers of biodiversity loss, and presents the strategies required for reducing pressures, safeguarding ecosystems, ecosystem services and spe cies, and improving benefits.

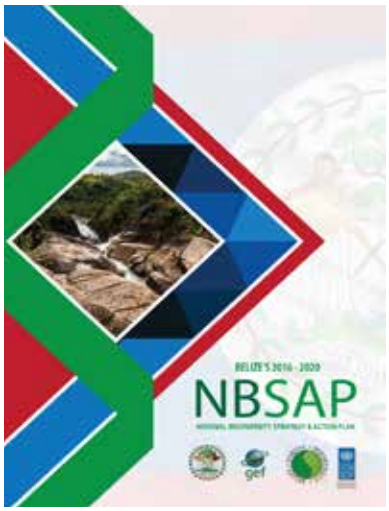

Figure 8: Goals of the NBSAP Belize

National Biodiversity Strategy and Action Plan Goals

Goal A	Mainstreaming:	Improved environmental stewardship is demonstrated across all society in Belize, as is an understanding and appreciation of marine, freshwater and terrestrial biodiversity, their benefits and values.
Goal B	Reducing Pressures:	Direct and indirect pressures on Belize's marine, freshwater and terrestrial ecosystems are reduced to sustain and enhance national biodiversity are maintained and strengthened.
Goal C	Protection:	Functional ecosystems and viable populations of Belize's biodiversity are maintained and strengthened.
Goal D	Benefits:	Strengthened provision of ecosystem services, ecosystem-based management and the equitable sharing of benefits from biodiversity.
Goal E	Implementation:	The National Biodiversity Strategy and Action Plan is implemented effectively through capacity building, informed strategic decision making and integrated public participation.

NBSAP Vision: *"Belize's natural environment is valued, enhanced and enjoyed by all, and contributes to improving the quality of life of its people"*

Belize's NBSAP 2016 - 2020 is developed in a five-year series and is well aligned with Belize's long-term development Framework- Horizon 2030, medium term development framework – the Growth and Sustainable Development Strategy (GSDS) and the CBD Strategic Plan for Biodiversity 2011 – 2020. The GSDS, for instance, recognizes the implementation of the NBSAP as a "Flagship Action" for achieving the "Critical Success Factor 3: Sustained or Improved Health of natural environmental, historical, and cultural assets".

The NBSAP outlined 20 targets and 54 actions within five major goals. The successful implementation of the current NBSAP confronts similar barriers which impeded the implementation of the NBSAP of 1998 and 2005 versions, such as limited human, infrastructure and financial resources and limited inter-ministerial coordination and collaboration. The BIOFIN Belize team has recognized these challenges at the onset and has engaged in efforts to address these challenges. The mainstream and focus of the implementation of the NBSAP, given these challenges, the BIOFIN team engaged in a prioritization of NBSAP's targets and actions. As a result of the exercise, prioritized targets and actions of the NBSAP identified include:

Figure 9: Prioritized Targets and Actions of the NBSAP

	NBSAP Target	Targets
1	E3	By 2020, Belize's NBSAP is being implemented effectively, monitored and evaluated, and is achieving the desired outcomes
2	D1, C1	By 2025, key ecosystem services are sustainably managed and resilient to threats
3	E2	By 2020, accurate and current data on Belize's natural resources and environmental services informs relevant national development decisions
4	B4	By 2020, Belize is restoring 30% of degraded ecosystems to maintain and improve the status of ecosystems and ecosystem services
5	B5	By 2025, there is a 20% reduction in terrestrial impacts and illegal fishing from transboundary incursions
6	C3	Between 2018 and 2030, no species will become functionally extinct in Belize
7	A2	By 2020 Belize has promoted and implemented a national harmonized system of environmental standards that foster environmental responsibility and sustainability

(Source: BIOFIN – Forest Department, 2017)

3.2. Horizon 2030 – Long Term Development Framework for Belize

In 2010 the Government of Belize set out to establish the development roadmap for Belize – one that set out a vision for Belize and outlined the core tenets that would guide the development objectives towards 2030. The resulting long term national development framework – HORIZON 2030 was established. Horizon 2030's central vision for the future is that "Belize is a country of peace and tranquility, where citizens live in harmony with the natural environment and enjoy a high quality of life."

Belize's vision for the future was established within four strategic priorities:

- Economic Resilience
- Democratic Governance
- Education for Development
- Healthy Environment and Healthy People

Each of these strategic priorities will influence, both directly and indirectly biodiversity conservation and sustainability of Belize's natural resources. Strategies within the strategic priority "Democratic Governance" seeks to rebuild accountability in government through expanding information which government is required to report can result in an effective monitoring and evaluation framework, including those relative to biodiversity management and conservation. Similarly, the strategic priority "Education for Development" calls for education that "emphasizes respect and appreciation for the natural environment" by integrating and strengthening environmental education programs within the school system. Belize's long-term development framework recognizes "Healthy People and Healthy Environment" as the core of Belize's sustainable development.

The Horizon 2030 outlines two major goals for environmental sustainability:

1. Incorporate environmental sustainability into development planning, and
2. Strengthen Protected Areas Management

Strategies:

- Implement a comprehensive natural resources and environmental policy and strategy including planning for climate change and its effects.
- Introduce natural resources accounting into GDP.
- Enforce environmental protection laws in a fair and just manner.
- Provide incentives for reforestation.
- Develop and implement a long-term strategy for solid waste management.
- Adopt and implement the National Protected Areas Systems Plan and strengthen the legal and administrative framework for protected areas.

Successful or even partial implementation of these strategies will significantly and positively influence biodiversity in Belize. Some specific strategies that help to strengthen the institutional architecture, as outlined in the Horizon 2030, include strengthening the governance framework to improve accountability and management of public resources, implementing multi-year programme budgeting, and performance management in the public service.

Similarly, efforts to improve education – particularly environmental education, which seeks to affect the requisite behavioral changes to reduce impacts on the natural environment, will aid in improving Belize's sustainability. Efforts to increase public investment in sustainable agricultural practices and tourism, as part of improving economic resilience in Belize within the context of generating resources for development, are critical for maintaining Belize's natural resources to which its economy is underpinned.

More importantly, strategies of Belize's twenty-year development framework that seek to foster sustainable use of Belize's natural resource in recognition of its underpinning nature will significantly contribute to biodiversity conservation and sustainable development. Specific strategies such as those that seek to incorporate environmental sustainability into development planning, promote green energy, and strengthen protected areas management will directly contribute to the integration of environment into decision making.

On the contrary, the successful or partial implementation of some strategies of the Horizon 2030 can adversely affect biodiversity conservation and therefore Belize's long term sustainable development. Strategies such as those that provide subsidies on pesticides and herbicides or tax breaks for agricultural production can serve as perverse incentives which can significantly increase biodiversity loss.

3.3. Growth and Sustainable Development Strategy (GSDS) of Belize

The GSDS 2016-2019 serves as Belize's medium-term development strategy. The framework is envisaged as the framework through which the Horizon 2030 will be operationalized in the short to medium term. The GSDS outlines specific priority and actions that will aid in realizing the implementation of Horizon 2030 and other sectoral strategies. The GSDS envisions "A better quality of life for all Belizeans living now and in the future".

- Actions to achieve Belize's medium-term vision are outlined in four critical success factors:
- Optimal National Income and Investment
- Enhanced Social Cohesion and Resilience
- Sustained or Improved Health of Natural, Environmental, Historical and Cultural Assets
- Enhanced Governance and Citizen Security

The GSDS identifies prioritized economic sectors that will foster GDP growth including agriculture, fisheries and aquaculture, tourism, energy and infrastructure. The GSDS recognizes that "tourism and agriculture, acknowledged to be the bedrock of the Belizean economy, are completely dependent for their sustainability on care of the environment and the integrity of Belize's ecosystems" (p. 61). It is envisaged that along with these sectors, wealth creation will be achieved through targeting non-traditional exports including sawn wood, minerals, fuels and lube and chemical products.

In the energy sector, a targeted growth to 45% (from 34%) in 2020 of renewables in the energy mix. As part of its investments in infrastructural development, the government plans to increase its network of paved roads.

In terms of environmental management, the Government plans to reduce CO2 emissions by 24m tonnes by 2033. With Belize's protected area coverage exceeding CBD targets as well as national territory having forest cover of over 60%, efforts will seek to "optimize sustainability considerations of global targets outside of protected areas and seek to reduce forest cover decline from 6.4% to 2% by 2018.

Efforts will also seek to increase the percentage of forest cover under sustainable forest management regime from 26% to 29%, restore 30% of degraded ecosystems by 2020. There are also strategies which will seek to integrate biodiversity and ecosystem values into national development plans – specific targets are to have at least 10% of protected areas demonstrate their economic value and contributions to local livelihoods.

The GSDS identifies key actions required for the improved health of Belize's natural and environmental assets.

Key actions towards environmental sustainability – as outlined in the GSDS include:

1) Completion and implementation of the National Land Use Policy and Integrated Planning Framework;

2) Completion of a Water Master Plan, a National Ground Water and Surface Water Assessment and a Water Vulnerability Profile;

3) Implementation of sustainable forest management, including protected areas management as a tool to ensure watershed protection for water and food security;

4) Continued implementation of the solid waste management initiative;

5) Continued mainstreaming of climate change considerations into national development planning;

6) Implementation of the Integrated Coastal Zone Management Plan (ICZMP), including the development of a marine spatial plan;

7) Establishment of the National Protected Areas System and its related Policies and Plans of Action;

8) Implementation of the National Environmental Policy and Strategy 2014-2024; and the National Biodiversity Strategy and Action Plan;

9) Development of a legal framework for the disposal of chemical, electronic, medical and other hazardous waste.

The achievement of these actions will positively affect biodiversity by helping to both improve service delivery of existing financial resources and to avoid future expenditures. The implementation of the National Land Use Policy, for instance, will aid the systematic management of land resources in line with Belize's sustainable development goals. Similarly, the implementation of the NBSAP is critical to foster the mainstreaming of biodiversity considerations into development planning.

The GSDS has also identified some key actions towards financial resources mobilization; four of which serve as critical entry points for biodiversity finance:

1) Review and reform the tax regime;
2) Prepare a policy on Public-Private Partnership (PPP) and expand their use;
3) Review and develop new finance instruments;
4) Establish a donor coordination mechanism;

Collaboration between the MAFFESDI, the Ministry of Economic Development, and the Ministry of Finance will be critical in mainstreaming the biodiversity finance agenda into considerations of fiscal reform and resource mobilization.

Economic and Policy Drivers of Biodiversity Change

4. Economic and Policy Drivers of Biodiversity Change

4.1. Prioritized Biodiversity Trends in Belize

Belize, as a country, is blessed with rich natural resources. Its ecosystems are part of important biological hotspots that protect species of global importance. The country's economy and future development is inextricably linked to the state and health of its natural resources. As identified in the NBSAP (2016), biodiversity loss in Belize is driven by land use change, climate change, unsustainable exploitation of natural resources, unsustainable tourism practices, transboundary

Figure 10: Pressures and Threats to Biodiversity in Belize (NBSAP 2016)

CAUSES OF BIODIVERSITY LOSS

Pressures and Threats to Biodiversity and Ecosystems

Land use change (including deforestation, forest fragmentation, clearance of mangroves, filling of wetlands)
Climate change
Unsustainable expoitation of natural resources (fishing, hunting, logging / non-timber forest products, illegal wildlife trade)
Pollution (agrochemicals, industrial / urban effluent, solid waste, sewage, sedimentation)
Anthropogenic fires
Invasive species
Unsustainable tourism practices (exceeding guide/visitor ratios, exceeding limits of acceptable change, poor boating practices, illegal wildlife interations, negative impacts from large scale cruise ship tourism)
Transboundary incursions (both terrestrial and marine; Guatemala, Honduras and Mexico)
Natural disasters (hurricanes, earthquakes)

Direct Drivers	Indirect Drivers
Market demand	National policies for economic growth
Conflicting government sector-specific policies	National poverty alleviation strategies
Government Incentives	National and international market demand
Livelihood diversification	Delay in implementation of national frameworks
Culture / tradition	Inadequate national investment in natural resource management
Limited capacity for effective enforcement	Porous border
Household needs (food, water, shelter, income)	Culture / tradition
	Poverty

incursions, and natural disasters among others (Figure 10). The NBSAP (2016) highlights that direct drivers of biodiversity loss include market demand, limited capacity for enforcement, and conflicting government-sector specific policies; some indirect drivers include poverty, national policies for economic growth and national and international market demand. What follows is a brief discussion of some core drivers and pressures and threats to biodiversity and ecosystems in Belize including recent trends.

4.1.1. Agricultural Expansion

Between the 1980s and 2000s the agricultural sector in Belize was one of the cornerstones of economic growth contributing to increase in acreage under production – primarily in the big three - sugarcane, citrus, and bananas. This growth was driven largely by high market prices and preferential market access in the E.U. and U.S. markets (NFAP, 2002). During the period 2000 to 2010 a growth of 34% of acreage under production was seen. As of 2010, over 222,000 acres (90,000 hectares) of land is under horticulture production representing some 5% of Belize's national territory. Another 4.7% of national territory under livestock production (NES 2011, Cherrington et al., 2010). Primary crops under production include sugarcane, red kidney beans, corn and oranges, cumulatively representing 67% of total acreage under horticulture production (LIC, 2012). Sugar is concentrated in the northern districts of Orange Walk and Corozal, citrus (grapefruit and oranges) and bananas are concentrated in the south, whilst corn and red kidney beans are concentrated in the central regions. In Southern Belize, milpa production (swidden agriculture) is practiced.

Agricultural development in Belize serves as one of the largest contributors to deforestation. It is in this context that Young (2008) argues "large scale agriculture (citrus, banana, and sugarcane) …have escalated at the expense of the forests". Direct drivers of agricultural expansion in Belize include both large scale and small scale agricultural expansion. It is expected that this upward trend in agricultural expansion will continue given the current policy framework - the Agriculture Development Management and Operation Action (ADMOS, 2003) and NFAP 2002 – 2020 (2003) as the expansion in both small scale and mechanized agriculture has been recognized as strategic priorities for the sector.

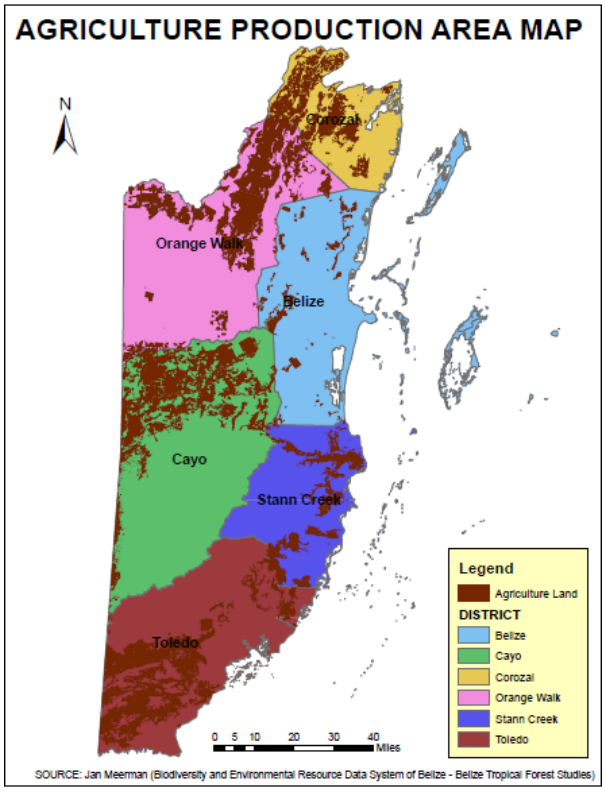

Figure 11: Belize Agriculture Production Area Map
(Source: Ministry of Agriculture, 2017)

4.1.2. Fisheries and Aquaculture Production

Belize's Barrier Reef System and its associated habitats form an important part of Belizeans' national identity. Belize is home to the longest barrier reef system in the Western Hemisphere with coverage of 1,400 km2 – just about twice the size of the Caribbean Island of Dominica (McField and Bood, 2007). In 1996, the Belize Barrier Reef Reserve System was designated as a UNESCO World Heritage Site, inclusive of the Blue Hole Natural Monument along with six other protected areas. The fisheries sector serves as an economic cornerstone for many communities in Belize – particularly coastal communities. Some 20 communities directly depend on fishing as their primary source of income (NBSAP, 2016). Dominant species harvested include spiny lobster (Panulirus argus), queen conch (Strombos gigas) and various finfish species. These species serve primarily as indicators for the health of Belize's marine ecosystem. While these fishery products are sold locally, the majority of production is for export markets (NES, 2011).

Lobster production between 2005 and 2015 has generally increased with general fluctuations. In that timeframe the lowest production year was 2006, production totaled 457,698 lbs., whereas peak production was seen in 2011 at 675,347 lbs. (Belize Fisheries Department, 2015; Belize Fisheries Department, 2017) (Figure 12). Conch and finfish production, on the other hand, saw a general upward trend in production between 2005 and 2012 after which declines were seen – sharp declines in the case of finfish from above 554,000 in 2013 to less than 200,000 in 2015 The production and export of shrimp has fluctuated greatly from 2005-2015 (Figure 13). Trends have shown a general decrease in kg caught per fishing day from 2.7 in 1990 to just less than 2.0 kg in 2009 (Belize Fisheries Department, 2015; Belize Fisheries Department, 2017).

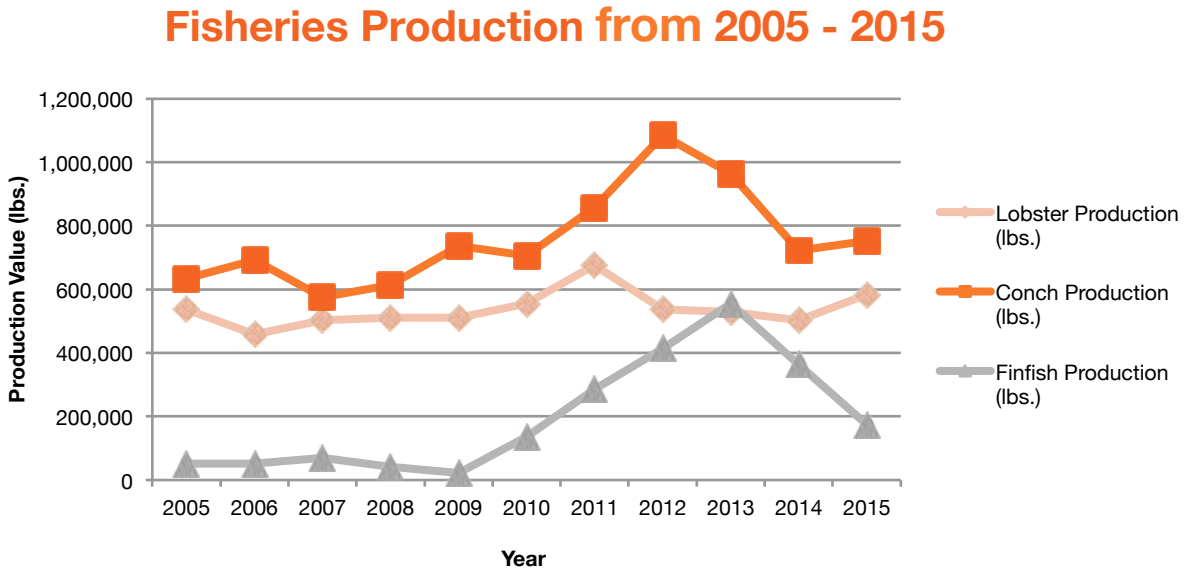

Figure 12 : Fisheries Production 2005 - 2015
(Source: Belize Fisheries Department, 2015; Belize Fisheries Department, 2017)

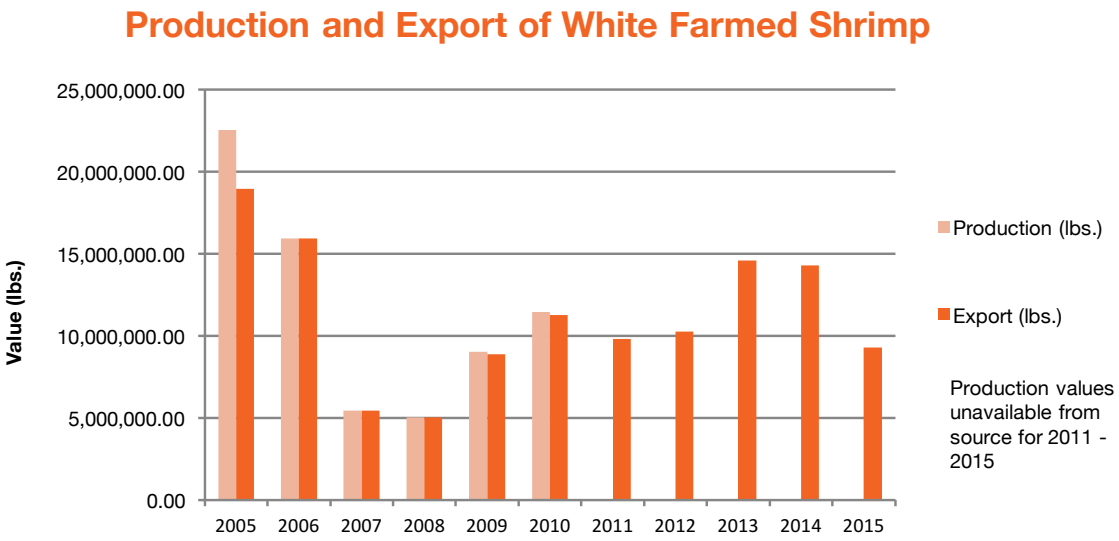

Figure 13: Production and Export of White Farmed Shrimp 2005 - 2015
(Source: Central Bank of Belize, 2017)

Over the years, key species including herbivores (parrotfish, angelfish and tangs) and commercial priority species (snappers and groupers) have been overfished. Before herbivorous fishes were protected species in 2009, overfishing had resulted in a population decline and thus a decrease in the health of associated coral reefs. Post protection parrotfish biomass continues to increase (McField et al., 2018). On the same note, populations of threatened species such as the Goliath grouper (Epinephelus itajara) and great hammerhead shark (Sphyrna lewini) have also declined due to unsustainable fishing practices (Wildtracks, 2016). The use of gill nets has also resulted in the indiscriminate removal of key species including sharks and turtles.

Prior to 2011, Belize's fisheries resources operated as an open access regime allowing any Belizean to be eligible for a fishing permit. The vast expanse and largely open access regime of this critical common pool resource (CPR) made it vulnerable to transboundary incursions. To address the challenge of unsustainable fishing, the Fisheries Department within the MFFESD piloted a Managed Access Program in the Port Honduras Marine Reserve (PHMR) and Glovers Reef Marine Reserves in 2011. This CPR governance regime provides permits to traditional users of these customary fished areas. Through its pilot program the Department found there were significant decreases in both national and transboundary incursions in traditional fishing areas and as a result expanded the Managed Access Program to the entire coastal zone of Belize. Another milestone for marine conservation was achieved in 2010, through collaboration with the international NGO Oceana, the Government of Belize successfully banned bottom trawling in Belize's territorial waters. In 2017, the Government placed a moratorium on offshore oil drilling in Belizean waters.

4.1.3. Land Cover Change

Belize remains one of the countries with highest forest cover as compared to its Central American neighbors (NES, 2011). Approximately 62.7% of Belize is forested; this represents a decline of 17.4% between 1980 and 2010 (from 75.9%) (Cherrington et al., 2010B[6]) (Figure 14). In terms of annual decline, this represents a forest cover loss of 24,835 acres (10,050 ha) or 0.6% per annum. The western administrative district of Cayo saw the greatest forest cover loss in comparison to other districts over the 30-year period, with a decline of almost 190,000 acres (76,890 ha) or about the size of the countries of Barbados and Grenada combined. Losses in the northern sugarcane farming district of Orange Walk were second to Cayo representing some 178,793 acres (72,357.96 ha), followed by the southern district of Toledo with losses of 148, 492 (60,092.58 ha) acres over the 30-year period. In terms of annual rate of deforestation Corozal saw the highest annual forest cover decline of 0.9% per annum. Of special note is

6 Cherrington et al. (2010)'s study represents, to date, the most comprehensive and updated assessment of Belize's forest cover change and deforestation.

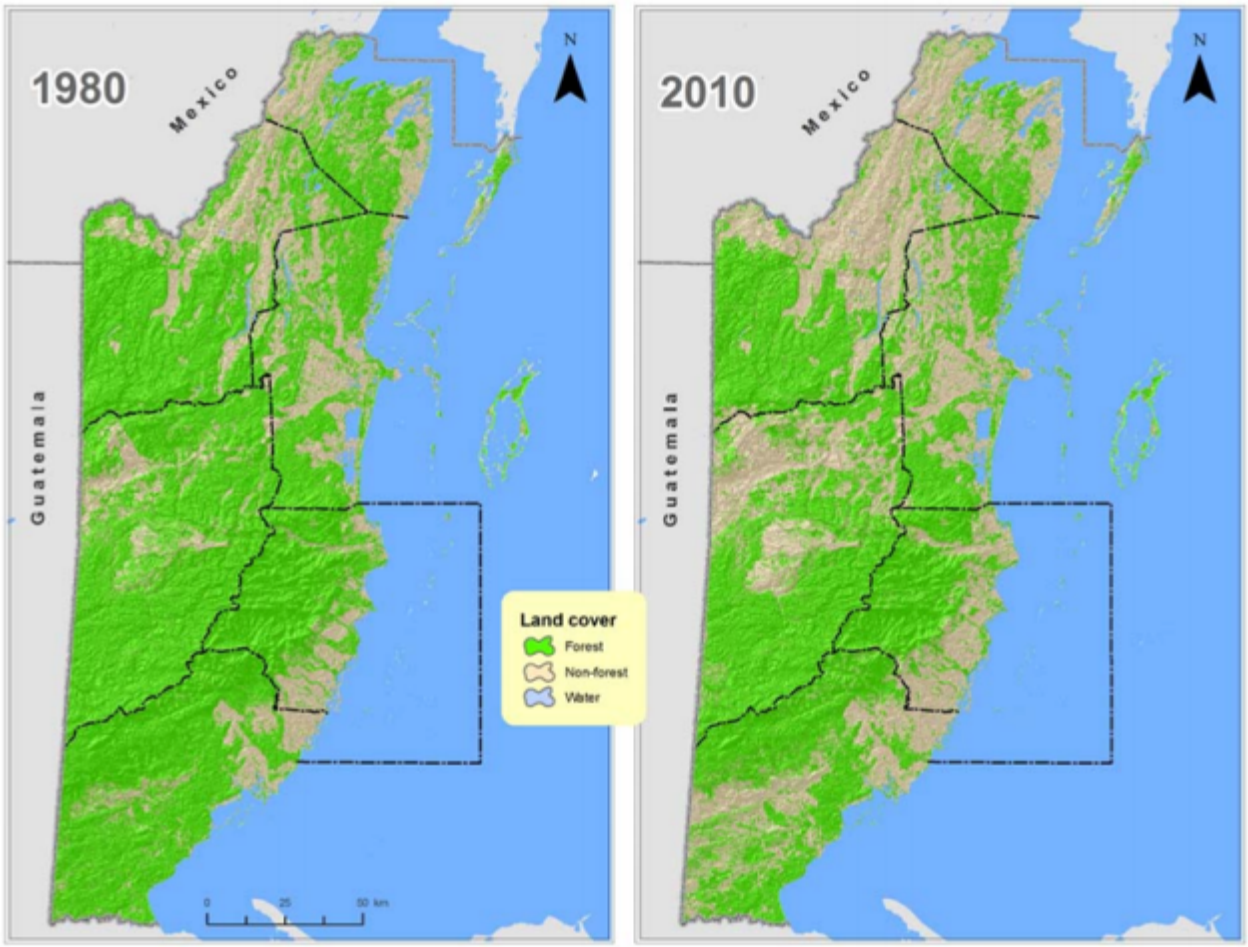

Figure 14: Forest Cover Change 1980 - 2010
(Source: Cherrington et al., 2010)

the forest cover loss experienced off the mainland. Offshore islands - which represent about 2% of Belize total forest cover – saw a decline of 11.1% (185 acres or 0.4% annually) from its 1980 levels (Ibid).

Cherrington et al. (2010) also found that rates of deforestation were higher outside of protected areas (25.2%) as compared to inside protected areas (6.4%) thus making the case that Belize's national protected areas system plays a critical role in maintaining the integrity of Belize's forest cover and associated biodiversity.

In terms of mangrove cover Cherrington (2006) found that 3.3% of Belize's total area had mangrove coverage with average annual losses of 135 acres between 1980 and 2010 or 2% loss during the period (Cho-Ricketts and Cherrington 2011). Canto (2011), in a study of mangrove deforestation from the Haulover Creek to the Sibun River watersheds (Central to Southern Belize with an area just under 10,000 acres), found that 26% of mangroves were deforested between 1989 and 2010 with the highest rate of deforestation occurring between the period 2000 and 2010. An interesting caveat to Canto's (2006) findings is that short red mangrove (Rhizophora mangle) increased by 5% during the period of study.

Decrease in forest cover, both coastal and inland, has been attributed to urban development, agricultural expansion, logging for charcoal and tourism development – particularly in coastal regions and offshore islands (NES, 2011; Canto, 2011; CZMAI, 2016).

4.1.4. Transboundary Incursions

Transboundary incursions occur mostly along the Belize-Guatemala border and in Belize's marine areas. Land incursions are mostly within the Maya Mountain Massif, specifically within the Chiquibul Forest (Chiquibul National Park, Chiquibul Forest Reserve). Illegal activities threatening the area include logging, extraction of forest products, hunting and poaching. Farmers from neighboring countries also establish unsustainable farming operations on the Belize side of the border in the western portion of the country (Forest Policy, 2015). In 2016, FCD noted a shift in the threats to the area. Farming and gold panning conducted illegally replaced illegal logging and extraction as the major threat to biodiversity within the Chiquibul National Park (FCD, 2016). Logging, illegal extraction of forest products, and the accompanying poaching are seasonal activities that have been reduced through management efforts in the area.

Illegal incursions also threaten the marine resources of the country. Poachers illegally extract target commercial species in the southern territorial waters of Belize. These illegal fishers often tend to fish within protected areas and no-take zones or use prohibited fishing gear. Transboundary incursions, both marine and terrestrial, reduce the effectiveness of conservation and management efforts by Belize, while also threatening ecological balance.

4.1.5. Other Biodiversity Trends: Protected Areas Management

Belize has been a leader in the region not only in terms of total area under designation but also in its largely decentralized collaborative approach to protected areas management. As it relates to the former, Belize currently has about 36% of its terrestrial area and 13% of its marine under some form of protected status or sustainable use management. These protected areas fall within one of eight management categories including national parks, natural monuments, wildlife sanctuaries, marine reserves, spawning aggregation sites, and private protected areas.

In a 2011 assessment of the status of biodiversity in terrestrial protected areas, Wildtracks found the viability of biodiversity to be good. They concluded "[i]f taken in the context of the status ten to fifteen years ago, prior to the current Guatemalan incursions and expansion of the human footprint, this represents a significant decline across the system, with the rating slipping from VERY GOOD" Wildtracks (2011 p. 8). Furthermore, they found that both species of international (E.g. Central American River Turtle [Dermatemys mawii]) and national concern (e.g. Scarlet Macaw [Ara Macao]) can be considered in good standing thus concluding that the protected areas are "reasonably effective for the conservation of these threatened indicator species". The National Protected Areas System is managed under the Forest Act, Fisheries Resources Bill (DRAFT) and the National Protected Areas System Act.

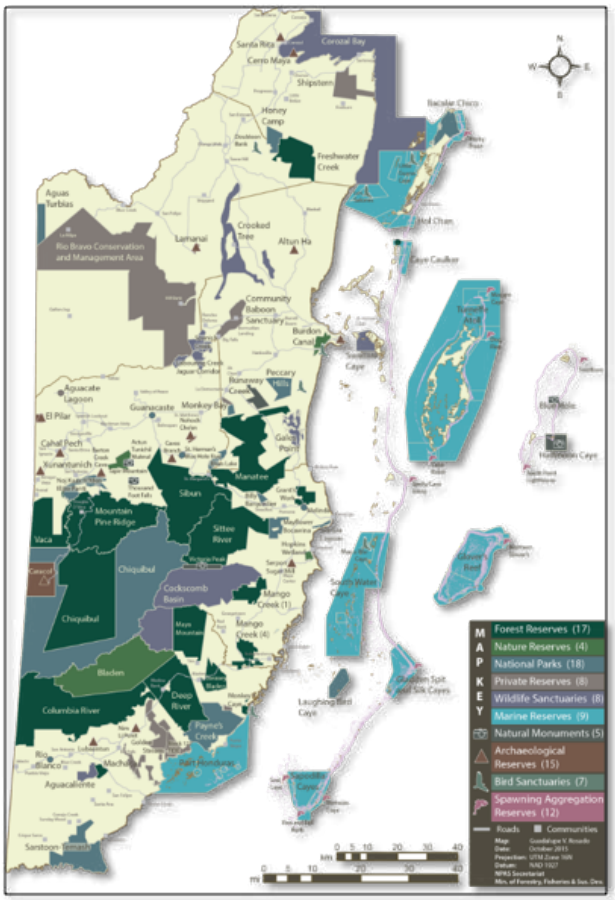

Figure 15: Protected Areas Map of Belize

Box 2: Private Investments in Belize's Protected Areas

In an effort to reduce fishing pressures on Belize's marine resources and diversify economic opportunities for local communities, a multi-agency effort led to the development and implementation of seaweed (Euchuema isiforme and Gracilaria spp) production initiatives in the Gladden Spit and Silk Caye Marine Reserve (GSSCMR) and the Turneffe Atoll, respectively.

A "Special Development Area" was established within the GSSCMR through an agreement between the Fisheries Department of the Ministry of Forest, Fisheries, and Sustainable Development, the Placencia Producers Cooperative Society Limited, and the Southern Environmental Association enabling the establishment of a commercial seaweed farming initiative. The Special Development Area within the protected area serves as a farm for seaweed only and remains a no-take zone for other species.

This effort was replicated with similar success in the Turneffe Atoll with the support from the Fisheries Department, Turneffe Atoll Sustainability Association, and The Nature Conservancy. In 2015 a group of fishers registered the Turneffe Seaweed Growers (TSG) to initiate seaweed production in the Atoll. The group applied to the Fisheries Department for a research permit to explore the potential for seaweed production in an area of about seven acres. The TSG estimates a production potential of 28,000 pounds of seaweed per year which can be sold at an estimated market price of $15 per pound (TSG 2016).

Opportunities exist to scale up seaweed production for supply to both the local and international food industry. The cosmetics and pharmaceutical industries have been identified as potential markets. As a result of the Initiative, training manuals were developed for scaling up of seaweed farming nationally. Furthermore, potential for other mariculture activities such as crab, oyster, and grouper farming also exists.

Replicated from Williams (2017)

4.2. Key Economic Sectors that Interact with Biodiversity in Belize

4.2.1. Tourism

"Improved economic conditions in the main source markets translated into a 9.3% increase in stay-over tourist arrivals and a 42.9% surge in cruise ship disembarkations as 116 more ships visited Belize. The positive spillover from this buoyed activity in the "Wholesale and Retail Trade" and "Hotels and Restaurants" sub-sectors." *Prime Minister of Belize (2015 Budget Speech).*

In the early 2000s, the tourism industry took over the agricultural sector as the largest industry in Belize. Tourism continues to be one of the fastest growing economic sectors in the country. Before the start of the new millennium, the industry was traditionally small-scale, nature-based tourism. In the year 2000, the sector expanded to large-scale or "mass-tourism" with the opening to the cruise tourism industry. Beginning in 2002, cruise tourism arrivals surpassed that of over-night visitors (CESD, 2006) (Figure 16).

In 2015, total tourist arrivals stood at just under 1.3M visitors – or 3.5 times the population of Belize. In terms of share, overnight arrivals make up about 26% of total arrivals with cruise making up 74% in 2015 (Figure 16). The total tourist arrivals in 2015 reflect growth of 20% between 2005 and 2015, and a 35% growth between 2008 and 2015. During the ten year period (2005 – 2015), lowest arrivals were seen in 2007 and 2008. It is hypothesized that this reduction in visitors is attributable to the U.S. financial crises, as on average more than 40% of Belize's overnight and 90% of cruise visits come from the U.S. market.

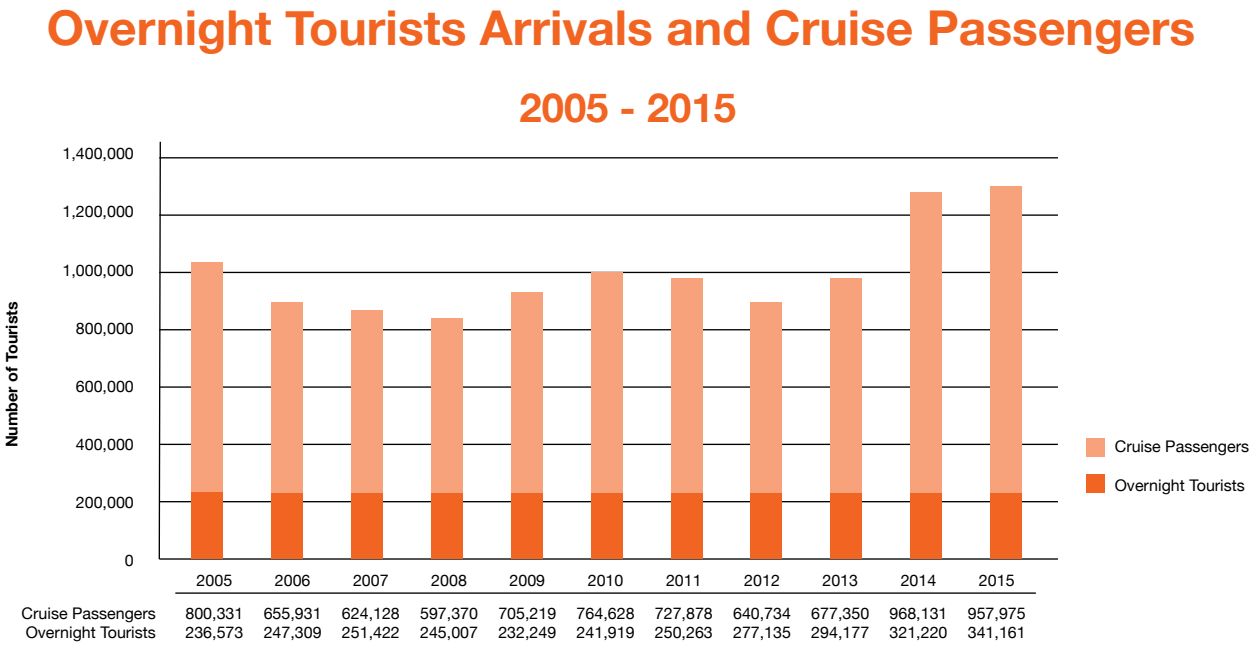

Figure 16: Overnight Tourist and Cruise Arrivals 2005 - 2015
(Source: BTB, 2015)

The tourism industry has been identified as an important mechanism to bolster the economic sector through improving foreign direct investments leading to increased employment, infrastructural development, boosting the wholesale and retail market, and increasing exports. According to the GSDS (2016 p. 33) "[t]ourism, agriculture, and agro-processing….are to be prioritized more highly. They will be considered as foundations of the economy, and extra effort will be applied to enhance their performance and long term sustainability."

The tourism industry accounted for 23% of GDP or BZ $437M in 2015[7] (SIB, 2016). In the same year, the industry directly employed over 17,000 individuals or some 12% of the labor force. Between 2005 and 2015 tourism expenditure doubled from BZ$349. M to just over BZ$770M (Figure 17). Given the integrated nature of the tourism sector, such that it overlaps with other sectors, it is estimated aggregate direct and indirect contribution of the tourism industry in Belize stands around 39.2% of total GDP (WTTC, 2015).

This growth brings about myriad impacts on the environment including the aforementioned agricultural expansion, mangrove and forest cover depletion, pollution, dredging and unsustainable fishing among others.

Figure 17: Tourism Expenditure 2005 - 2015
(Source: BTB, 2015)

7 Figure calculated at 2000 constant prices

Link to Biodiversity

Belize's tourism sector is largely based on ecotourism. As such, biodiversity stands as the cornerstone of tourism product in Belize. Despite its direct dependence on biodiversity, the growth of the tourism sector has placed pressure on the natural environment and species within. The construction of large scale hotels and development of tourist destinations has contributed to biodiversity loss, increase in environmental pollution and species displacement. On the other hand, the ecological nature of Belize's tourism product has directly and indirectly contributed to the maintenance and preservation of key biodiversity areas and species in Belize.

Detrimental effects to ecosystems and biodiversity can be avoided via the strengthening of conservation and management measures in place as well as the incorporation of mechanisms to conserve biodiversity. The protection of invaluable biological systems, such as those utilized by the tourism sector, will ensure the long term viability of the sector and the natural resources on which it depends. The continued growth of the sector including the increase in tourist arrivals, without consideration of biodiversity conservation and management measures, however, would further degrade the natural ecosystems and result in the loss of habitat for key species; thus hindering Belize's ecotourism status.

Policy and Institutional Context of Tourism Sector in Belize

The tourism industry in Belize is primarily guided by three principal policies and legislations:

i. The National Sustainable Tourism Master Plan (2012 – 2030)

ii. The National Tourism Policy (2005)

iii. The Belize Tourism Board Act

The National Sustainable Tourism Master Plan 2012 – 2030 provides the general framework for the development of the tourism industry in Belize. The last National Tourism Policy was launched in 2005. For the most part, the existing document does not support policy and practice in the industry as it is largely outdated. The Belize Tourism Board Act established the Belize Tourism Board as its statutory body, which is responsible for the enhancement and promotion of the tourism product in Belize.

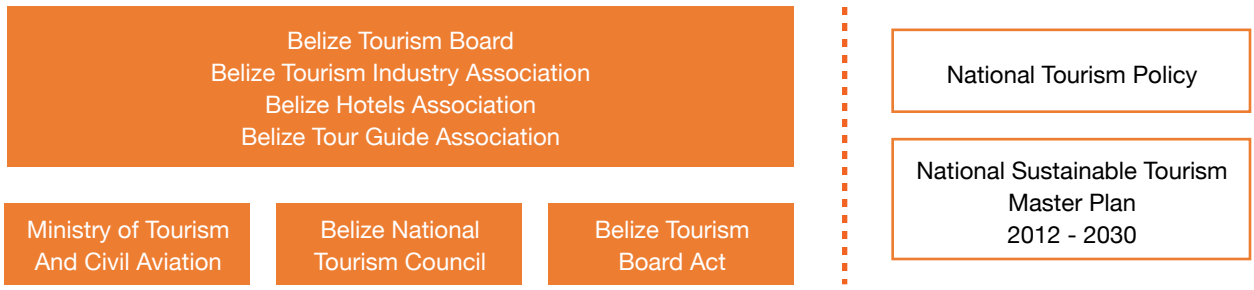

Figure 18: Policies in the Tourism Sector

National Sustainable Tourism Master Plan

In 2011 the Ministry of Tourism and Civil Aviation developed the National Sustainable Tourism Master Plan (2012 – 2030). The Sustainable Tourism Master Plan (STMP) serves as the strategic framework guiding the development of the tourism product in Belize to the year 2030. The Plan is being operationalized under seven macro-programs: (1) Business and Product Development; (2) Infrastructure and Accessibility; (3) Safety and Security Assurance; (4) Sustainability; (5) Capacity Building; (6) Governance, and (7) Marketing and Awareness.

As part of its sustainability focus, the Plan calls for a focus on environmental conservation with specific focus on "mechanisms to address resource management and appropriate land use allocation while maintaining social and environmental safeguards…" (NSTMP, 2011).

The Ministry of Tourism and Civil Aviation is the primary agency leading the implementation, monitoring, and evaluation of the STMP in Belize. This work is supported by implementation partners who include the Belize Tourism Board, the National Institute of Culture & History, National Emergency Management Organization, and the Ministries of Education, Finance, Economic Development, Environment, and Public Safety. The participation of the MAFFESDI in the implementation of the Tourism Master Plan ensures that biodiversity and environmental management targets are merged in decision making processes for the industry's development. In practice, the MAFFESDI has often been a key stakeholder in many aspects of the development in the tourism industry.

The National Tourism Policy

The National Tourism Policy is currently being updated. In preliminary work to update the existing policy, the Ministry of Tourism have indented Climate Change and Environmental Management as well as Physically Planning and Development Control as key policy areas within the updated Policy. Key points of interest, as it relates to biodiversity and environmental management are:

Climate Change and Environmental Management

- Recognizing climate change as a fundamental challenge for tourism;
- Reflecting commitments to climate change mitigation and adaptation in tourism policy;
- Gathering and disseminating evidence on progressive climate change impacts on destinations;
- Raising levels of environmental management in destinations ;
- Strengthening environmental management within individual tourism businesses.

Physical Planning and Development Control

- Preventing development that would damage the assets upon which tourism depends;
- Strengthen environmental assessment of development projects and adherence to results.

The MFFESD is an integral stakeholder in the updating of the 2005 National Tourism Policy and as such remain key to ensuring biodiversity concerns are mainstreamed into the updated policy.

4.2.2. Agriculture

The agriculture sector has been one of the primary industries in the Belizean economy since before its independence, providing a significant base for export earnings and employment. Agriculture, for the purposes of this analysis, refers to horticulture, i.e. the growing of fruit and vegetable crops and ornamental plants, and livestock production – breeding of animals including cattle, pigs, and poultry to provide meat, dairy products and their derivatives.

The agriculture sector has been a cornerstone of the Belizean economy and will continue to do so in the medium and long term (ADMOS, 2003). The sector has been prioritized as an important area for attracting foreign direct investment (GSDS, 2016) and a critical area for increasing export earnings (National Export Strategy, 2015). Since the 1950's the agriculture sector served as the primary income earner and only acceded to tourism in the last few years. In 2015 agriculture contributed some BZ $245.7M to GDP representing 13% contribution to GDP. During the period 2005 – 2015, contributions to GDP for this sector remained relatively constant with minor yearly fluctuations. For instance, the sector contributed BZ $223.1M, BZ$200M, BZ$241.4M to GDP in 2005, 2009, and 2013, respectively (Figure 20).

In line with being a significant contributor to GDP in Belize, the agriculture sector is also an important source of employment for the Belizean labor force. According to the Labor Force Survey (2015) agriculture provided just fewer than 23,700 jobs representing an estimated 17% of total labor force (SIB, 2015).

The primary agricultural crops under production include: Banana, Corn, Grapefruit, Oranges, Red Kidney Beans, Rice and Sugar Cane (Table 6). All areas, except for citrus (oranges and grapefruit) saw an increase in total production between 2000 and 2010. It is noteworthy that the reduction of citrus production has been attributed to the Citrus Greening Disease. This, however, may see a reversal in production declines as the Belize Social Security Board recently allocated a BZ$10M loan facility for the citrus sector.

Table 6: Production of Main Crops in Belize

Agricultural Crop	2000	2005	2006	2007	2008	2009	2010
Banana ('000 40 lb. box)	3,626	4,037	3,839	3,417	3,751	3,752	4,288
Corn ('000 lbs.)	69,933	104,144	81,471	100,360	81,684	126,401	127,975
Grapefruit ('000 80 lb. box)	1,391	2,197	1,686	1,505	1,440	1,124	1,390
Oranges ('000 90 lb. box)	5,590	6,574	4,931	5,221	5,661	5,520	3,851
Red Kidney Beans ('000 lbs.)	10,908	7,622	5,681	6,255	5,533	5,874	14,573
Rice ('000 lbs.)	21,710	39,153	26,136	39,187	25,971	45,449	45,246
Sugar Cane ('000 lbs.)	1,089	929	1,174	1,200	980	918	1,123

(Source: Ministry of Agriculture, 2010)

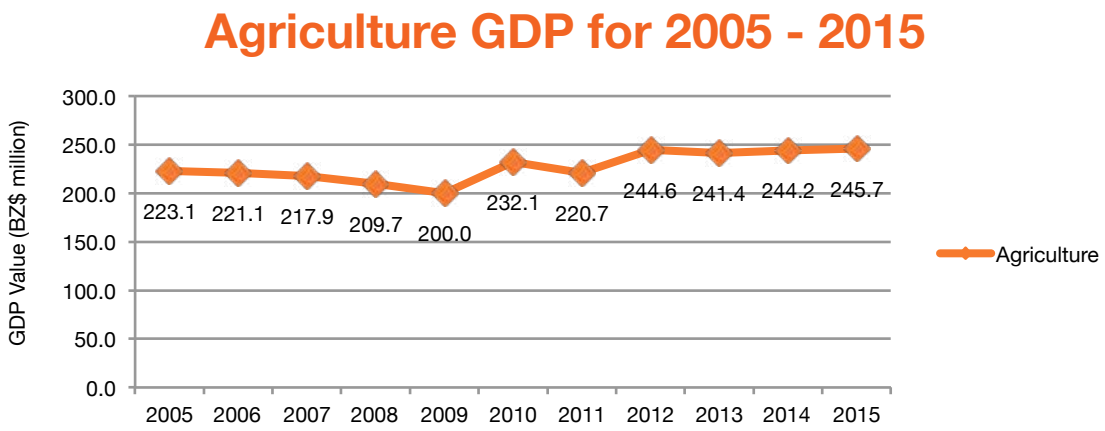

Figure 19: Agriculture GDP
(Source: SIB, 2017)

Agriculture output value shows continued aggregate increase between 2005 and 2015. Earnings in the agriculture sector were highest in 2015, with BZ$643M being generated, representing an upward trend from 2005 which stood at approximately BZ $413M (Figure 20). Fruits, vegetables, grains and legumes production ranks the highest income earner for the timeframe. Between the years 2005 and 2015, values for livestock followed similarly upward trend with earnings in fruits, vegetables, grains and legumes. It can be reasonably concluded that this increase is directly attributed to development in the livestock industry through the Belize National Sanitary Cattle Plan Project to improve Belizean livestock for export to Mexico with formal exportation commencing in 2013.

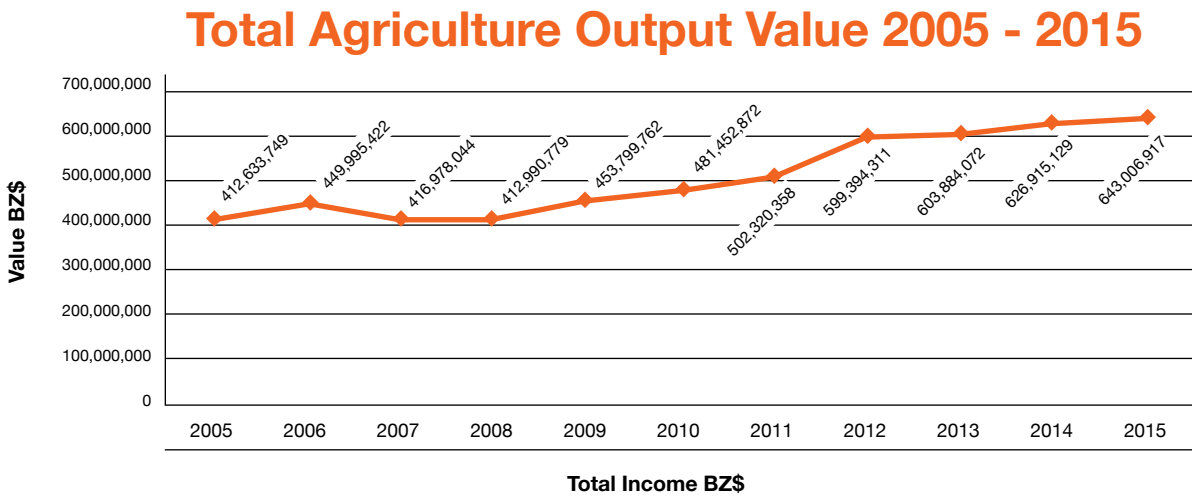

Figure 20: Total Agricultural Output Value 2005 - 2015
(Source: Ministry of Agriculture, 2017)

Link to Biodiversity

The sector relies on various provisioning, regulating and supporting services from its surrounding environment. The regulation of the local climate and air quality as well as the provision of inputs such as water and nutrients is necessary for the sustainability of the sector. The health of biodiversity is integral to the production of fruits, vegetables and seeds. Bees are used for the production of honey, apart from occupying the critical niche of pollinators. The production of crops requires the use of pesticides, herbicides, and fertilizers which has increased in previous years with the growth of the sector (Table 7: Pesticide Import from 2006 - 2015 (Source: Pesticide Control Board, 2017). As part of value addition, processing activities can generate substantial quantity of industrial effluent and solid waste. If agricultural expansion continues without biodiversity conservation, large expanses of forested areas will be converted to farm land, resulting in the loss of key ecosystem services (ES) and biodiversity. The increased use of chemicals can affect organisms such as insects and alter water quality. The continued clearcutting of land for agricultural expansion will increase erosion and also result in the loss of critical natural habitat.

Efforts to build climate change consideration into agricultural development, biosafety, sustainability, and general resilience into the sector can individually and aggregately contribute positively to biodiversity. These efforts can be promoted and fostered through efforts such as fair trade certification, organic production and branding, climate smart agriculture production, and conservation easements among others. Additionally, in an effort to "do things better", strategies to remove perverse incentives such as a tax on undeveloped land and the removal of taxes for land clearing can contribute to meeting biodiversity targets.

Table 7: Pesticide Import from 2006 - 2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fungicide (Kg of A.I)	190,560	200,987	212,176	163,053	201,753	173,075	139,551	184,228	217,535	184,093
Herbicide (Kg of A.I)	190,036	221,683	260,763	299,414	210,783	349,287	369,441	405,674	351,984	388,537
Insecticide (Kg of A.I)	27,034	24,828	27,399	21,201	56,641	77,510	79,424	44,949	58,000	46,271

(Source: Pesticide Control Board, 2017)

Policy and Institutional Context of the Agriculture Sector in Belize

Figure 21: Policies in the Agricultural Sector

The policy and institutional framework for biodiversity and sustainable development in the agriculture sector is rather comprehensive. Agricultural policies take into keen consideration the importance of maintaining the health and integrity of Belize's biodiversity for the sustainability of the industry. Institutionally, the Ministry of Agriculture have highlighted within its policy framework the importance of close collaboration with the Departments of Environment and MFFESD. For instance, the Ministry of Natural Resources, and the MFFESD are members of the National Biosafety Council. Operationally, however, there still remain several gaps in the collaboration among these departments. Cross-scale and cross-level collaboration remain a key area of weakness in meeting biodiversity targets.

Policy and practices, in the agriculture industry are guided by four primary policies:

1) The National Food and Agriculture Policy 2002 -2020,
2) The Agricultural Development Management and Operational Strategy (2003), and
3) The National Biosafety Policy (2009),
4) A National Strategy to Address Climate Change in the Agriculture Sector in Belize (2015)

National Food and Agriculture Policy (NFAP)

In 2002, the Ministry of Agriculture and Fisheries developed a comprehensive agriculture policy, the National Food and Agriculture Policy (NFAP) 2002 – 2020. The NFAP encompassed a vision of an agriculture sector that would become "a fully transformed modern sector that is fully competitive, diversified, and sustainable" (NFAP, 2002). The plan highlights specific policies that would lead the three dimensions of the sector: horticulture and livestock, fisheries, and cooperatives. Five priority areas of the policy are: (i) Trade; (ii) Price; (iii) Diversification of the production base and food security; (iv) sustainable development of rural areas; and, (v) Natural and environmental resource management. Efforts towards biodiversity management were considered as part of priority area (v). These sub-priority areas seek to promote a sustainable approach to agricultural production, improve water resources management in the sector, improve fisheries and forestry management, and address land tenure issues to promote sustainable productive landscapes. The current policy is in the process of being updated. This can serve as an important point of entry for influencing approaches to mainstream biodiversity conservation; particularly these prioritized areas identified in the 2002 version of the Policy.

The Agricultural Development Management and Operational Strategy (ADMOS)

The Agricultural Development Management and Operation Strategy (ADMOS) provides the operational framework for the development of the agriculture sector in Belize as guided by the NFAP. The principal objectives in this framework are to increase value and competitiveness of agriculture commodities with the aims of addressing food insecurity and poverty and promoting rural agricultural development. The Ministry of Agriculture, in the ADMOS, recognizes the opportunities for diversification, niche markets, organic markets, and tourism to position the industry in order to generate income and reduce poverty through sustainable agriculture. Among the seven strategic objectives of the ADMOS, objective 3 aims to "improve and conserve the natural and productive resource base to ensure long-term sustainable productivity and viability".

The ADMOS identifies two pervasive challenges that characterize the agriculture sector in Belize: (1) inadequate policy commitments, and (2) weak institutional coordination and partnerships. While approaches have been made to improve inter and intra ministerial cooperation as well as collaboration and coordination with private sector and civil society organizations, some critical gaps exist. The Strategy calls for the creation of incentives including the reduction of taxes and import duties to stimulate the sector. The Fiscal Incentives Program is identified as one medium through which such incentives can be operationalized. This program therefore is a key point of entry towards greening subsidies.

National Biosafety Policy

The National Biosafety Policy was developed to provide a framework to guide the implementation of adequate measures relative to food safety and human health in Belize with key focus on the application of GMOs and its derivatives. Among the specific objectives of the National Biosafety Policy, objective one concerns biodiversity and notes that efforts will focus around the "implementation of biosafety measures in order to ensure that there will be no adverse effects of modern biotechnology on human health, the environment, food security, biodiversity or existing agricultural activities and markets". The Ministry of Agriculture serves as the lead agency for the implementation of the National Biosafety Policy. Support for implementation will be provided by the National Biosafety Council comprised of the Ministry of Natural Resources, Environment, and civil society organizations.

A National Adaptation Strategy to Address Climate Change in the Agriculture Sector in Belize

The National Agriculture Sector Adaptation Strategy was commissioned by the Ministry of Agriculture and the Caribbean Community Climate Change Centre (CCCCC) to build resilience to climate change in the agriculture sector in Belize. The Strategy includes an assessment of the sector's vulnerability to climate change and climatic variability as well as specific adaptation measures to reduce the impacts of these disturbances in the agriculture sector. The Strategy, in and of itself, is an important step towards recognizing the impacts of climate change and climatic variability on Belize's priority economic sectors and represents one of the first coordinated multi-stakeholder, multi-disciplinary efforts towards adaptation.

A key adaptation of the strategy addresses issues such as watershed management to maintain the country's water resources in the long term. To address pests and diseases, strategies developed will include improved biodiversity for the agro-ecological balance needed for economic sustainability of agriculture production systems. Adaptation measures in aquaculture entail efforts to reduce energy cost including the use of renewable and alternative sources of energy inclusive of solar and wind.

4.2.3. Fisheries and Aquaculture

The fisheries sector is one of the big five contributors to GDP in Belize. Fisheries accounted for 5% of total GDP in 2015 or about BZ $84.1M (SIB, 2017). Capture fisheries are dominated by three main marine products; spiny lobster (Panulirus argus), queen conch (Strombos gigas) and various species of fin fish. Lobster generated an average annual income of BZ$15.13M (US$7.5M) from export; conch, on the other hand, generated average annual income of around BZ$8.32M from export between 2005 and 2015 (Belize Fisheries Department, 2015; Belize Fisheries Department, 2017) (Figure 22). It was estimated that close to BZ$266,000 were generated from finfish representing a catch of 109,190 pounds (Belize Fisheries Department, 2015; Belize Fisheries Department, 2017)[8].

The fisheries sector directly benefits approximately 13,000 Belizeans. The Fisheries Department recorded 2,459 license fishers in 2014 representing a general upward trend from 2005 which stood at 2,026 individuals (Belize Fisheries Department, 2015; Belize Fisheries Department, 2017). It is also estimated that close to 1,000 people are directly employed in the fisheries subsectors including processing, sales and marketing of fish products.

Aquaculture contributes significantly to the fishing industry (shrimp and fish farming). In 2010, aquaculture contributed 63.8% of the total export value of the fishing industry. Farmed shrimp generated BZ $232.7M in export/revenue, while tilapia generated BZ $17.02M. In 2011, the industry suffered a severe blow as a result of a viral infection resulting in significant losses including over 600 jobs in the sector.

8 Complete data for the period 2005 – 2015 for fin fish is not available either from the Statistics Institute of Belize or the Fisheries Department.

In spite of a relatively short coastline, of about 386 km, Belize borders a marine environment of great significance in terms of living resources and biodiversity .

(FAO 2016)

Lobster and Conch Export Earnings from 2005 - 2015

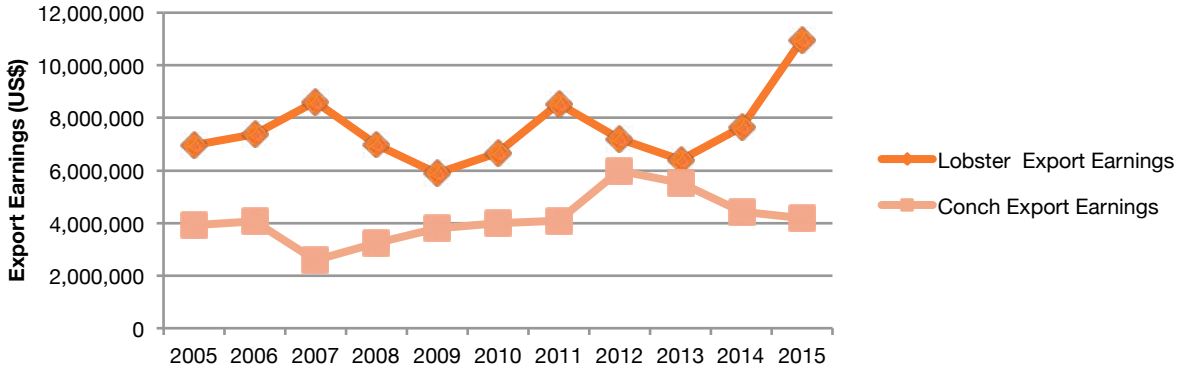

Figure 22: Lobster and Conch Export Earnings 2005 - 2015
(Source: Belize Fisheries Department, 2015; Belize Fisheries Department, 2017)

Link to Biodiversity

As the capture fisheries sector is largely dependent on the natural production of fish stocks, the maintenance of biodiversity in the Caribbean Sea is necessary for its continuation. The myriad of marine ecosystems (coral reefs, mangroves, seagrass and estuaries) along with their natural vegetation contribute to the development of fish species. Species also play a key role in the maintenance of the ecosystems which they occupy. Herbivores for instance, remove algae from the coral reefs and thus maintain reef health. From 2006 -2009 there was a reduction in the population of herbivorous fishes, due to fishing pressures (Healthy Reefs Initiative, 2012). Fishing also resulted in the removal of largest individuals of predatory fish (mega spawners) and shark species, consequently affecting ecological functioning. The 2018 Mesoamerican Reef Report Card noted "the first indication of a slight decline in fleshy macroalgae biomass" for Belize, which has been linked to increase in the biomass of parrotfish following their protected species status in 2009 (McField et al., 2018). In the event that overfishing of a particular species or the use destructive fishing methods continue, key marine species and ecosystems will be threatened.

Efforts to improve governance regime through managed assess, a moratorium on offshore drilling in Belizean waters, and banning of bottom trawling and gillnets are positive efforts that will contribute to improve marine diversity.

Policy and Institutional Context of the Agriculture Sector in Belize

The Fisheries Act governs the management of the fisheries sector in Belize and is overseen by the Fisheries Department within the MFFESD. The Act makes specific provisions for, among other things:

- Boats, fisherfolk, and export licenses;
- Scientific research;
- Fishing operations and equipment. For instance, regulations relating to the size of mesh, form and dimensions of nets. Inspection and seizure of fishing nets.
- Declaration of marine reserves as well as permitted activities within a marine reserve.

The Fisheries Department endeavors to improve the framework for sustainable fisheries management in Belize through the strengthening of the Fisheries Act – the Fisheries Resources Bill (Draft). The revisions to the Act particularly seek to strengthen fisheries management planning, clearly defining the role of cooperatives, improved management of marine and inland water reserves, improved governance framework (at the regional, national, and local levels) for fisheries management, and strengthen provisions for monitoring and enforcement.

Figure 23: Policy and Institutional Framework of the Fisheries Sector

4.2.4. Forestry

As indicated earlier, the forest sector served as a primary income earner from the settlement of the colony up until the 1950s. While the prominence of the sector has diminished, it remains an important contributor to and has direct impact on GDP. The forest sector contributed BZ $5.3M in 2015, down from BZ $5.7M in 2014 and $12.3M in 2005. There are about 884 people employed by the forest sector (SIB, 2015). Timber production has increased by more than 1M cubic feet over the period 2005 – 2015 (Figure 24). The Forest Department, however, estimates that contribution to GDP is more than triple those estimated by the Statistics Institute of Belize.

Timber production has fluctuated throughout the timeframe mostly due to the issuance of licenses. Peak production occurred in 2010 when a total of 2,783,306 cu.ft. of timber was produced (Figure 24). Mahogany (Swietenia macrophylla), Pine (Pinus caribaea) and Santa Maria (Calophyllum brasilliense var rekoi) have the highest production for the 2005 – 2015 timeframe. Subsequent to 2014, most of the mahogany produced was exported to the United States (Forest Department, 2017). In 2015, Bullet Tree production increased by 90.6% with 212,645 cu. ft. being produced. Similarly, cedar production increased in 2015 by 96.5% from a production value of 1,156 cu.ft. in 2014. Zericote production, per ton, has remained relatively constant from 2011 – 2015. (Figure 25)

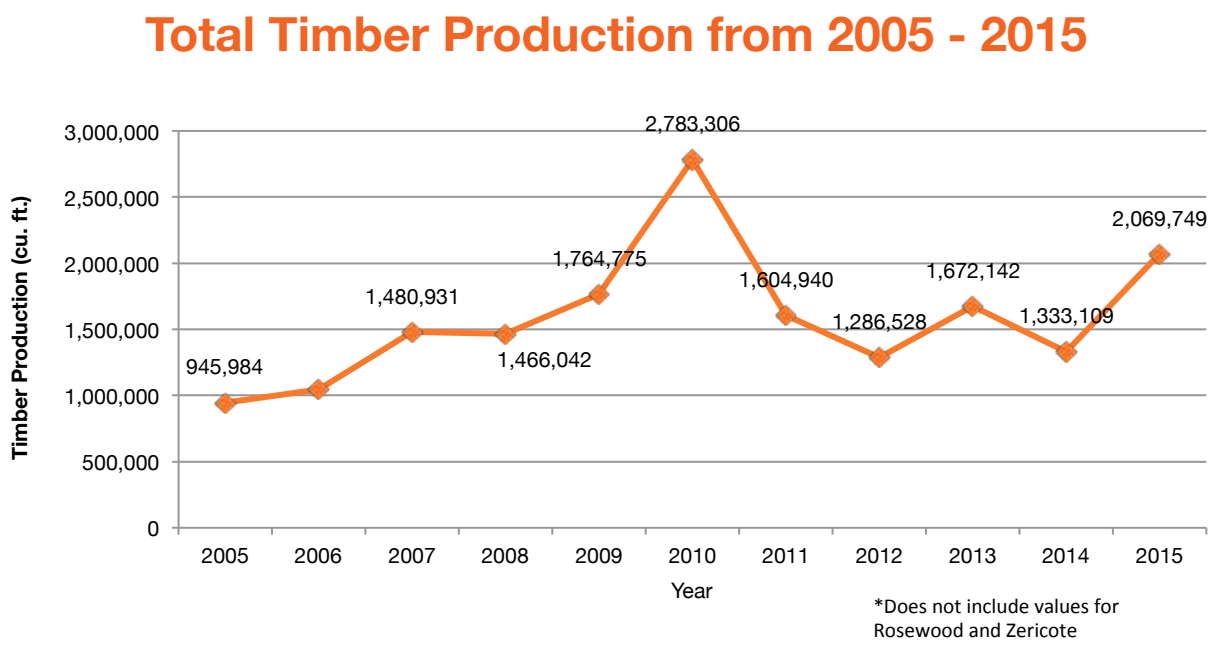

Figure 24: Total Timber Production 2005 – 2015
(Source: LIC, 2012; Forest Department, 2017)

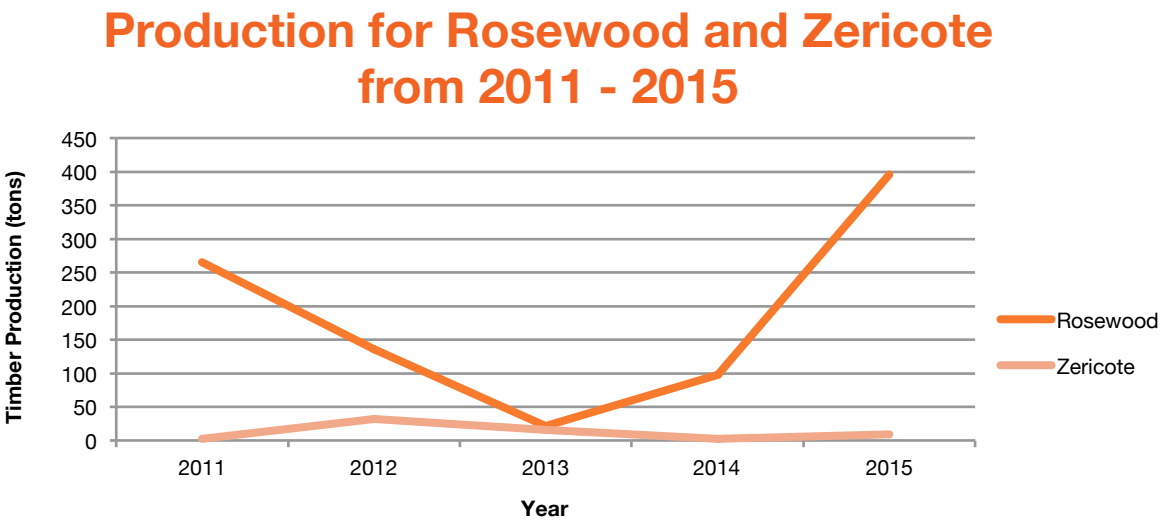

Figure 25: Production of Rosewood and Zericote 2011 - 2015
(Source: Forest Department, 2017)

Total royalties for 2015 were estimated at just over BZ$441,000 representing just over 30% of the Forest Department's annual recurrent expenses (Figure 26). Increase royalties collected, for example as seen in the period 2008 to 2010, is in line with increased timber production.

Rosewood (Dalbergia stevensonii) production, on the other hand, has fluctuated greatly. There was decline in production from 2011 to 2013 during which a moratorium was placed on Rosewood to halt the harvesting. Most of the Rosewood produced is exported to EU Countries. Following the moratorium an assessment of the Rosewood population was conducted to determine if the species could be harvested sustainably. In 2013, the GoB partially lifted the moratorium. This allowed for sustainable extraction of Rosewood under long term forest licenses, with monitoring by the Forest Department via inventory and sustainability assessments. Most of the Rosewood extracted is sourced from the Toledo District, southern Stann Creek District, and most of Cayo District, specifically the Chiquibul Forest Reserve. Bull Ridge Ltd has a sustainable forest management plan in place for its extraction in the Chiquibul Forest Reserve. Some small scale forest groups, for instance, Boom Creek Village, Conejo Creek, and Santa Theresa, also have a sustainable forest management plans in place. It is important to note that Rosewood, Mahogany and Cedar are protected species under the Convention on the International Trade in Endangered Species (CITES).

9 Funds are paid into the Consolidated Funds of the Ministry of Finance after which it is reallocated through budget submissions.

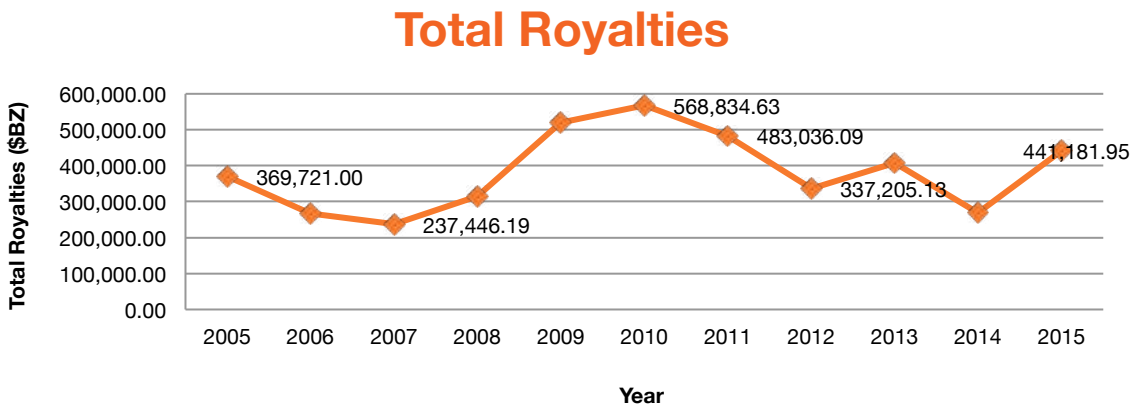

Figure 26: Royalties Collected for Timber 2005 - 2015
(Source: Forest Department, 2017)

Total royalties for 2015 were estimated at just over BZ$441,000 representing just over 30% of the Forest Department's annual recurrent expenses[9] (Figure 26). Increase royalties collected, for example as seen in the period 2008 to 2010, is in line with increased timber production.

Linkages to Biodiversity

The forests of Belize are rich in biodiversity with over 3,000 species of flora and 804 species of fauna (Belize Forest Department, 2015). The area provides habitat to endemic and threatened species. Forests play a vital role in the regulation of local climate by influencing rainfall and water availability, providing habitat to keystone species, and raw materials such as timber and traditional medicines. As the Forestry sector is centered on the provision of raw materials in the form of timber the loss of regulating, provisioning and supporting services would be detrimental to the economy and ecosystems of Belize. Illegal logging, looting, hunting and poaching as a result of illegal incursions are also a threat to forested areas. Additionally, the slow conversion of private forest lands to agricultural land or for urban expansion also diminishes the functionality of the forest ecosystem (Fabro & Rancharan, 2011).

Strategies such as the move towards sustainable forest management in large and small scale timber harvesting, the implementation of REDD+ programs, green certification, and tax easements for private forests conservation, and plantations can serve as important strategies to do business better in the forest sectors.

Policy and Institutional Context of the Forest Sector in Belize

The forest sector is governed by policies and regulations outlined largely within the Forest Act and subsidiary Acts and the Forest Policy. The Sector is governed by the Forest Department which falls under the jurisdiction of the MFFESD.

There have been consistent efforts within the last few years to strengthen the legislative framework in the governance of the sector. For Instance, the Forest Act has recently been amended towards increased fines for illegal logging activities. The Forest Policy, on the other hand, recognizes the importance of full gender participation in forest management and the need for reform of forest governance and forest institutions. The current institutional framework for the forest department, like the Fisheries and Environment departments provides some challenges in meeting biodiversity targets. These departments as tasked with the multiplicity of functions including ecosystems management (including PA management), administration, policy development and implementation, and general monitoring, and enforcement of the sector. Given its limited resources, this multifaceted mandate of the Forest Department will require some mainstreaming in its operations and separation of mandates where the MFFESD can absorb and mainstream some tasks including policy development and implementation, administration, revenue collection[10] among others.

10 Revenue collection, while not a current function of the Forest Department, have been indented as a critical source of leakage of income given the current discount between the Department and the Treasure Department, the revenue collecting arm of the Government of Belize.

Figure 27: Policies and Legislations of the Forest Sector

Forest Act

The Forest Act provides the legal mandate to the Forest Department, within the MFFESD for the management and oversight of the forest sector in Belize. The Act outlines specific powers of the Department, legal penalties for contravention of the Act, legal procedures and regulations associated with establishing forest roads, and the rates of royalty for forest produce. The Forest Act, subsidiary law, outlines regulations in the establishment of Forest Reserves, regulations relating to the protection of mangroves, forest licenses, and the conservation of private forest lands. In February of 2017, amendments were made to the Forest Act to increase penalties for contravention of the Act. For instance, fines related to suspicion of committing forest offences were increased from a maximum of US$100 to US$1000. Fines in relation to breach of the Act, were increased from US$500 to US$12,500. Penalties for individuals found with unpermitted forest produce were also increased from a maximum of US$500 to a fine of three times the amount of valued produce.

Forest Policy

In 2015, the Belize Forest Department, the agency with the mandate of managing Belize's forest resources developed the Belize National Forest Policy which was endorsed. The vision of the Belize National Forest Policy is to "achieve a thriving and integrated forest sector, where the forests of Belize are valued for their significant economic, socio-cultural and environmental benefits, and are sustainably managed for the lasting benefit of the nation". Specific objectives of the Policy are to:

i. enhance the quality and productivity of Belize's forests thereby ensuring environmental integrity and a sustained flow of goods and services to meet the development needs of the people;

ii. encourage the participation of all stakeholders in the planning and decision-making process for effective protection, security, management and development of the forest resources;

iii. ensure equitable access to and use of forest resources by all people within the confines of any over-riding public interest, acknowledging the equal and inalienable rights of all Belizeans;

iv. raise awareness and maintain a high level of consciousness among the public and government agencies on the functionality of forests and benefits to be derived from appropriate forest resource conservation and sustainable forest management;

v. enhance applied research and investigation into all aspects of the forest's flora and fauna, including the influence of forest cover on the maintenance of water and soil resources, and the contribution of forest goods and services to the national economy, so as to provide for evidence-based management decisions; and

vi. provide guidance for actions to be taken with regards to the direct and indirect threats posed by global climate change on forests and forest dependent people in order to reduce their vulnerability, increase their resilience and adapt to climate change.

The Policy highlights some key factors for the decline of forests resource base including population growth, Belize's current economic situation, transboundary incursions, and the lack of education and enforcement. Furthermore, some key issues have been identified for protecting and sustaining forest resources. Some underpinning objectives within the sector being addressed by the Policy encompass the need to ensure full gender participation (in particular, the insecurity of land tenure and its influence on how women use natural resource and adopt sustainable forest management practices [SFM]), public education on SFM practices, reform of forest governance and institutions, and approaches to improve the management of forest resources on private and customary lands.

4.2.5. Energy

With an annual population growth and expanding transport sector, Belize's energy demand continues to trend upwards. In 2015, Belize's energy profile included fossil fuels, biomass, hydroelectricity, imported electricity, and solar and wind as sources (Figure 28). Although Belize has local fossil fuel capacity, a significant portion of the energy supply was imported. In terms of final use, a significant portion of energy is consumed in the transport sector (57%); other major sectors include industrial/commercial sector at 22%, and residential sector accounting for 20% (NEP, 2012). Around 750 individuals[11] are estimated to be employed in the energy sector (SIB, 2016B).

Belize Electricity Limited (BEL) is the primary electricity distributor in Belize, with annual energy sales of approximately 535 gigawatt hours (GWh) in 2015 (BEL, 2016). BEL is owned by three primary stakeholders, with the Government of Belize (GOB) owning 36.9%, the Social Security Board 26.9% (for a public ownership of 66.8%), and Fortis Cayman Inc. owning around 33.3% (BEL, 2016). Electricity demand is met by a mix of sources inclusive of hydroelectricity, biomass, diesel, and importation from Mexico's Federal Electricity Commission (Comisón Federal de Electricidad).

11 This sum includes both electricity and water sectors as delineated by the Statistical Institute of Belize's Labour Force Survey (2015)

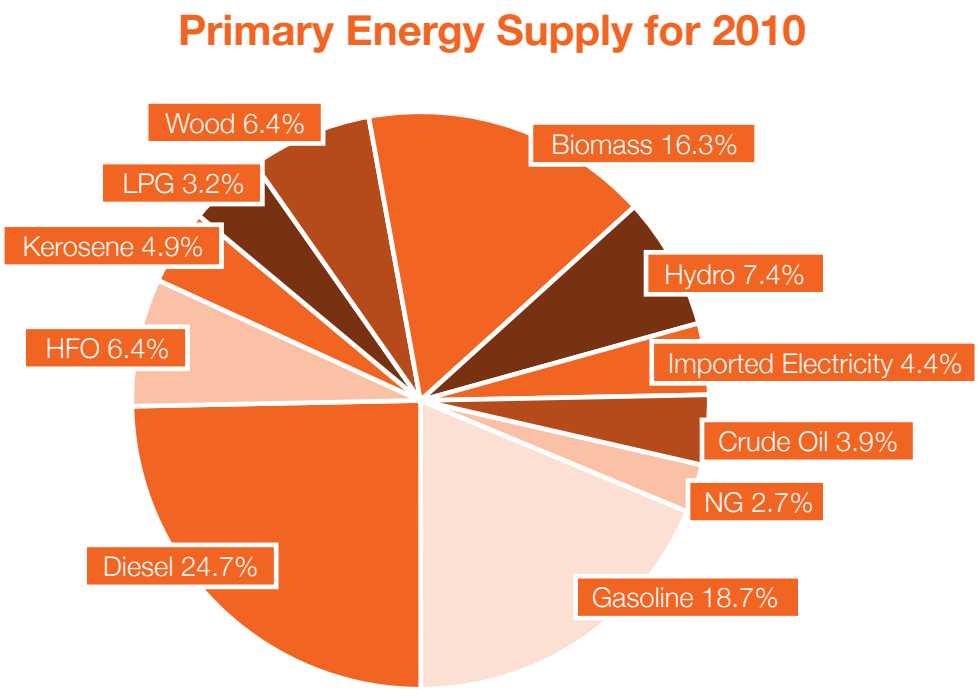

Figure 28: Primary Energy Supply for 2010
(Source: National Energy Policy, 2012)

Three dams, the Challilo, Vaca, and Mollejon dams, in Western Belize and the Hyrdo Maya dam in southern Belize supplied a total of 54 megawatts (MW) in 2015 (BEL, 2016). Belize's electricity consumption and generation is directly correlated to its population growth (OAS, 2011). The Organization of American States (OAS) Department of Sustainable Development in an assessment of Belize's future energy demands estimates that given the population trends (2.6% growth per annum) electricity demand would increase about 4% per annum over the next 20 years (OAS, 2011). Figure 29

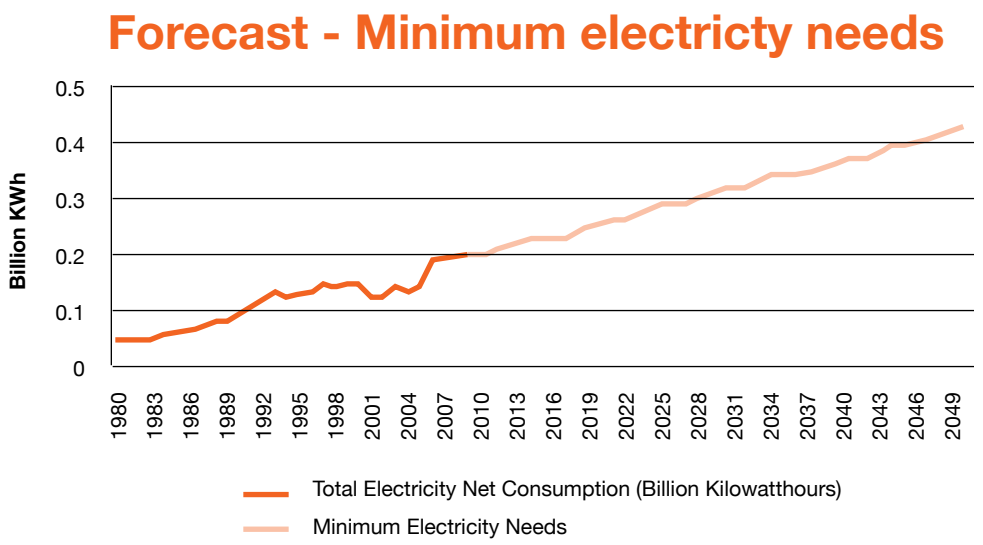

Figure 29: Forecasted Energy need for Belize
(Source: OAS, 2011)

Link to Biodiversity

The generation of hydroelectricity is highly dependent on provisioning ecosystem services, such as maintenance of the hydrological cycle, for the continued supply of water. Most of the hydroelectric facilities are located within the Belize River watershed, the largest watershed in country contained mostly within the Maya Mountain Massif. Currently, the Mollejon diversion scheme, Vaca Hydroelectric facility and the Chalillo dam and power station facilities occur along the Macal River within the Belize River watershed. In the southern portion of the country, the Hydro Maya Limited hydroelectric plant was built in the Rio Grande (Belize Electricity Limited, 2007). For the effective hydroelectricity production, water storage reservoirs are located in the upstream portion of the rivers (Belize Electric Company Ltd., 2006). This equates to reservoirs being located in the most remote zones along rivers in biodiverse areas. The formation of dams for the production of energy has resulted in the change of natural landscape, habitat loss, species displacement and alteration of abiotic factors including river flow. The latter changes have affected local biodiversity and species composition in the surrounding environment. In the absence of biodiversity considerations for the development of new hydroelectric facilities, natural habitat can be permanently altered and key species such as the tapir, scarlet macaw and jaguar, among others, can be lost.

Another source of renewable energy is the production of steam using bagasse from sugar production. BELCOGEN produced biomass energy at the Tower Hill Sugar Factor via the combustion of bagasse. The combustion of bagasse produces steam, which is used to generate electricity. The generation of energy in this form requires the production of sugar cane crops (see link to agriculture above). The burning of fossil fuels for the production of electricity and for transportation alters air quality and increases the quantity of greenhouse gases, thereby intensifying the effects of climate change and reducing functionality of ecosystems and species.

Policy and Institutional Context of the Energy Sector in Belize

National Energy Policy

The Belize National Energy Policy (NEP) was endorsed in 2011 under the Ministry of Energy, Science, and Technology. In 2011, Ministry of Energy, Science, and Technology was disbanded and as a result the Energy Unit was housed under the Ministry of Public Service, Energy, and Public Utilities.

The NEP has as its goals:

- Consistently upgrading Belize's competitiveness in regional and global energy markets
- Monitoring cost of energy
- Mitigating the impacts of uncontrollable events such as external market price and supply shocks, and natural disasters, on the cost of energy and reliability of supply
- Creating an energy efficiency and conservation culture
- Fostering the sustainable production, distribution and use of energy as a critical factor necessary to achieving overarching national goals of economic growth and long-term prosperity, energy security, poverty reduction and social equity.

Of major concern for biodiversity is that the Policy has identified hydroelectricity, solar, and wind power generation as targeted mechanisms for meeting growing electricity demands and reducing the cost of power in Belize. Hydropower development can affect important watersheds in the country as have been evident in the Macal and Belize River Watersheds. A critical stock-take on Belize's watersheds, economic contributions, importance for connectivity, and the long-term impacts on biodiversity by hydropower development is required before such development proceeds.

Figure 30: Policies of the Energy Sector

4.2.6. Mining and Quarry

The mining and quarry sector includes harvesting of dolomite, sand and gravel, limestone aggregates, clay, limesand and silt, and sand for the construction and agriculture sectors. A very small amount of gold and other precious minerals are harvested but in non-commercial quantities (NES, 2011). Of the sectors prioritized, the mining and quarrying sector has the lowest GDP for the time period, below BZ $13M. GDP for 2005 was BZ $8.7M and peaked at BZ $13.0M in 2012. The total contribution of the mining sector for 2015 was BZ $10.0M. The National Labor Force Survey estimates that about 296 individuals were employed in the sector in 2015.

Peak volumes of extraction occurred in 2006 and 2007 with 1,119,079 and 1,642,901 cubic yards of material produced respectively. (Figure 31) The 2008-2010 timeframe saw a decrease in volume of extracted materials. Experts within the Mining Unit of the Ministry of Natural Resources attribute the decrease to the reduction in infrastructure development in the real estate and tourism industries as a result of financial changes in North American markets. The Unit also attributes high production years (2006 and 2007) to the dredging of an access channel for the Norwegian Cruise Line in Southern Belize.

Extracted Mineral Volumes from 2005 - 2015

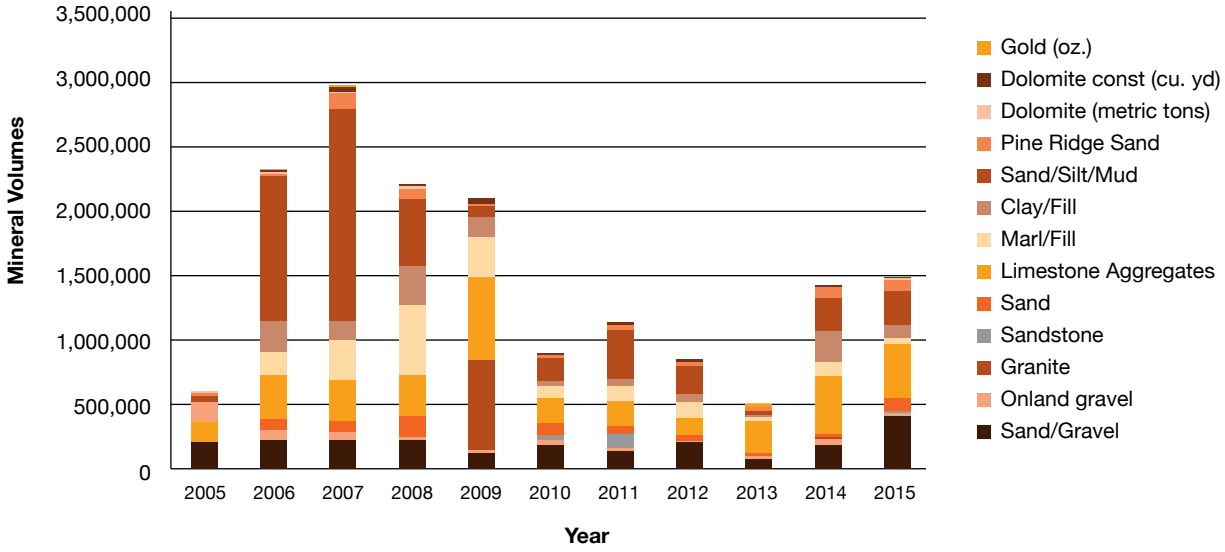

Figure 31: Extracted Mineral Volumes 2005 - 2015
(Source: Mining Unit, 2017)

Link to Biodiversity

The operation of the mining sector requires the extraction of naturally occurring materials mainly for the construction industry in the form of sand/gravel, dolomite, granite, etc. as well as minerals. Dredging for instance, within the marine environment can result in the increase of sediments in the water column, which decrease visibility and penetration of sunlight while also smothering coral reefs and sponges. The action also disturbs the ocean floor, thereby affecting epifauna and infauna. Along rivers, the same effects are noted. The operation of this sector often requires the clearing of land and trees for the construction of roads and base of operations such as river bars. Other operations require the use of explosives, for blasting, to access materials.

Illegal mining operations both on the mainland and in the coastal zone result in the unwarranted removal of materials and in some cases impose serious effects, such as the illegal panning of gold in streams of the Maya Mountains. Currently, prospecting licenses can be granted within protected areas including national parks and wildlife sanctuaries (with approval from the Forest Department and Department of the Environment), which may contribute to the reduction or loss of ecosystem integrity in key biodiversity areas. Some operations, including exploration licenses, require environmental clearance from the Department of Environment, which should ensure that safeguards are in place to mitigate environmental impacts. There are also requirements for mangrove alteration, seawall and pier permits for dredging operations.

Policy and Institutional Context of the Mining Sector in Belize

Mine and Minerals Act

The Mines and Minerals Act is administered by the Mining Unit of the Ministry of Natural Resources. The Act makes provisions for reconnaissance, prospecting and mining operations. This includes:

- Licenses for areas not exceeding 50 square kilometers as well as accompanying requirements and conditions. When authorized license holders can drill, excavate or employ other subsurface techniques.
- Provision for the issuance of prospecting licenses for areas not exceeding 25 square kilometers.
- Provisions for the issuance of mining licenses for areas not exceeding 10 square kilometers;
- Provisions for the issuance of quarry permit for the removal of construction materials including requirements and conditions.

Figure 32: Legislations of the Mining Sector

The Act also outlines a schedule of fees for operations and fines for contravention of the Act. Of particular note are royalties for mining licenses which are scheduled at a fixed rate within the license, or at 10% ad valorem for industrial minerals and 15% ad valorem for all other minerals. In terms of biodiversity protection, the Act outlines specific conditions for the protection of the environment including pollution prevention, treatment and rehabilitation of areas damaged by prospecting or mining, in addition to minimizing the effects of mining on surface water and ground water and on adjoining or neighboring lands. Of concern to biodiversity is that the Act provides for entities involved in prospecting and mining operations to clear land and erect temporary structures, camps, and other installations on land or associated waters forming part of the land. The Act stipulates a fine not exceeding $10,000 for an individual and $25,000 for a corporate body that contravenes the provisions of environmental protection as outlined above.

4.3. Other Cross-Cutting Policies

4.3.1. National Environmental Action Plan 2015 – 2020

The NEAP was endorsed in 2014 and is being implemented by the Department of the Environment under the MAFFESDI. The 5-year policy framework has a vision for Belize "to be leaders in environmental stewardship and sustainable development both nationally and regionally". The NEAP identifies five key cross-cutting environmental issues that need to be addressed in the next ten years:

1) **Degradation of Terrestrial Resources;** This includes the development of a new and robust forest towards SFM, maintaining healthy forest cover at current standing, optimizing socio-economic benefits from ecosystem goods and services through revenue generation for payment of ecosystem services (PES) programs and value added in timber and non-timber forest products.

2) **Degradation of Marine Resources;** In terms of marine ecosystems, the Policy calls for the "promo[tion] the protection and rational use of marine-coastal ecosystems and strengthening of trans-boundary coordination and national actions with a focus on fisheries, tourism and marine areas". Strategies to realize this result will include reducing clearing of fringe mangroves, seagrass beds and littoral forests, improved fisheries management and strengthening of trans-boundary collaboration and cooperation.

3) **Sustainable Land Management;** This includes the effective implementation of the 2012 Belize National Land Use Policy as well as land use plans, mandates and responsibilities in order to address planning issues related to urban expansion and agricultural practices,

4) **Integrated Water Resources Management;** In response to water management issues the Plan calls for the development of a National Integrated Water Resource Plan (NIWRMP), strengthening of the national integrated water resource authority and the protection/ prioritization of water for domestic use.

5) **Challenges in transitioning into Green Economy;** The achievement of a green economy will require enhancing investments in key economic sectors, measuring progress towards the achievement of the goal, increasing stakeholder engagement, promoting environmental standards towards sustainable development, enhancing educational awareness and capacity building, adopting a green growth generator along with undertaking a quantitative analysis of green policies.

4.3.2. National Climate Change Policy, Strategy and Action Plan

The National Climate Change Policy, Strategy and Action Plan (NCCPSAP) was developed and endorsed in 2016 by the National Climate Change Centre under the jurisdiction of the MAFFESDI. The Plan recognizes that "climate change is already having a negative effect on the social, economic and productive sectors such as the coastal zone and human settlement, fisheries and aquaculture, agriculture, forestry, tourism, water, energy and health. This is to be achieved within a vision of "Demonstrating leadership and commitment to ensure that the challenges of Climate Change and sea level rise are fully addressed and harnessing the necessary resources in support of the development of special programmes that are effective, resilient and sustainable." As such, the NCCPSAP outlines comprehensive cross-sectoral approaches for adapting and mitigating the impacts of climate change in Belize. Key objectives of the NCCPSAP include: among other things, "integrate climate change adaptation and mitigation into key national developmental plans, strategies and budgets and build climate change resilience to prevent, reduce or adapt to the negative impacts of climate change on key sectors, economic activity, society and the environment through policies and strategic processes". Climate change serves as an important threat to biodiversity and economic livelihoods in Belize as well as a key area to develop important finance for biodiversity in Belize. The Policy as well as the National Climate Change Centre will serve as integral policy and national support in the process.

4.3.3. National Land Use Policy and Integrated Framework for Land Resource Development (Draft)

The National Land Use Policy was developed and endorsed in 2011 by the Ministry of Natural Resources to provide a comprehensive framework for management of Belize's land resources. The fifteen strategies outlined in the Policy seek to adopt land use planning approaches that aim to safeguard the ecological integrity of Belize's natural resource, support traditional economic activities, protect cultural and historical sites, and provide land for development areas. The Land Use Policy recognizes the importance of: (i) the "management and protection of the integrity of natural resources and the natural environment in general is essential for the long-term, sustainable utilization of land"; (ii) the "development of land should be undertaken on the basis of sustainability"; (iii) "there are certain lands where the best use is conservation due to a variety of factors ranging from watershed protection, to landscape values, to ecosystem importance." (iv) conservation of biodiversity and natural resources as well as the associated retention of a variety of environmental services required is harmed by fragmentation and thus requires large blocks of land; and (v) climate change adaptation and mitigation issues must be considered and mainstreamed into land use planning. The lack of implementation of the Policy has been identified by stakeholders as an ongoing challenge for biodiversity conservation. The non-implementation creates a policy, institutional, and operational gap in inter-ministerial coordination for land use planning and development.

4.4. Fiscal Legislations Associated with Biodiversity in Belize

The current financial climate of Belize makes implementing new tax regimes, tax, or reduction of taxes less easy to implement. In this section, some of the current fiscal policies governing existing taxes, incentive programs, and subsidies are reviewed.

4.4.1. Finance and Audit Act

The Finance and Audit Act governs the general revenue generation and expenditures of the Government of Belize. Specific provisions of the Act, as it relates to biodiversity finance, include:

- Provisions for the payment of revenue into the Consolidated Revenue Fund as well as the use of the fund. Use includes provisions for money issued before the passing of an Appropriations Act or Special Warrants.
- Provisions for advances including requirements for advances, recovery timeframe and categories which qualify for advances.
- Provisions for loans including a 12-month timeframe for repayment, repayment from the Consolidated Revenue Fund.
- Provision for deposits not raised or received for the purpose of the GoB. Such moneys will be kept in a special account or accounts, be invested or used to finance temporary advances. Interest on dividends can be credited to the Consolidated Revenue Fund. Unclaimed deposits will also be credited to the Fund.
- Provisions for Special Funds, separate from the Consolidated Revenue Fund. The fund is governed by the law or trust instruments creating it.
- Special funds include: Currency Fund, Elemental Disaster Fund, Official Charities Fund, Savings Bank, Teachers' Provident Fund, Police Welfare Fund, Prison Officers' Reward Fund, Fire Brigade Reward Fund, Sugar Labor Welfare Fund, Sugar Price Stabilization Fund, Sugar Rehabilitation Fund.
- Provisions for formation and use of the Development Fund separate from the Consolidated Revenue Fund.
- Provisions for Accountant General to submit financials of the Consolidated Revenue Fund at the close of the financial year as well as the requirements of the financials.

The Finance and Audit Act is a parent Act governing collection, allocation, and disbursement of public revenues. As such, this Act is critical to biodiversity finance whether the objective is to repurpose existing allocations (such as the fuel subsidies in the sugar industry or general support allocation to farmers), formalize collection of visitor fees by protected areas co-managers, improve public spending through results based budgeting or build public-private partnership in biodiversity management. All finance solutions that include public revenues will require some interfacing with the Finance and Audit Act.

4.4.2. Fiscal Incentive Act

The Fiscal Incentive Act provides fiscal incentives for Belizean majority owned entities to receive tax easements, holidays, or exemptions in executing their business operations, which as deemed by the Act contributes to the development of Belize.

Special provisions under the Fiscal Incentives Act:

- Enterprises that produce products destined for domestic and Caribbean Community (CARICOM) markets do not qualify for the program.
- These incentives can include tax holidays, not exceeding five years, commencing from the date of production.
- Annual percentage rates at which profits and gains shall be exempt from the payment of income tax under the Income and Business Tax Act are also provided for.
- Provisions for the extension of tax holiday periods, for a further term not exceeding ten years.
- Companies which are engaged in agriculture, agro-industry, food-processing, mariculture or manufacturing and whose operation are highly labor intensive and whose production is strictly for export, can get an extension for 25 years.
- Provisions for import of materials free of customs and stamp duty, such as: all building materials, plant, machinery, equipment, tools including specialist hand tools (but not including other hand tools), utility and transport vehicles, fixtures and fittings, office equipment, and appliances, raw materials as well as spare parts on plant and plant related machinery and agriculture machinery.
- Regulations for enterprise including requirements such as the maintenance of records, marking of imported items, examination of records, use and disposal of imported items, submission of annual reports.
- Provisions for the revocation of enterprise status under the Act due to contravention of any legal provision.
- Provisions for small and medium enterprise.
- Duty exemption periods must not exceed 2 years but may be extended to a maximum of five years. Rate for the exemption may be full or partial.

The Fiscal Incentive Act is the only formal Act through which economic incentives are provided to economic sectors to promote their development. Opportunities exists to “do things better” by greening the categories of items (Box 3) that are exempted from import duties. Such actions would require some legislative reform of this Act.

Box 3: Belize Fiscal Incentives Program

The Fiscal Incentives Program provides duty exemptions across various categories to existing and potential investors in Belize. Individuals and Entities can qualify under the "Small and Medium Enterprise (SME)" or the "Regular" Program. Under the SME Program, the entity must be majority owned by Belizeans and employ fewer than 15 people with annual operating expenses not exceeding one half million Belize dollars. The Program covers economic activities in the following sectors:

- Tourism related activities
- Agriculture
- Aquaculture, Fisheries
- Forestry
- Arts, Crafts, Culture
- Health Care
- Computer, Information Technology
- Manufacturing
- Handicraft Woodcarving
- Jewelry Production
- Auto Rental
- Agro-processing

Eligible items for customs duty exemption include:

- Building materials and supplies
- Plant, machinery and equipment
- Office equipment and appliances
- Agriculture machinery and supplies
- Marine crafts
- Spare parts for qualified sectors
- Specialized tools
- Fixtures and fittings
- Utility and transport vehicles
- Raw material and packaging material
- Aircrafts and spare engines

As is evident, the program covers a myriad of economic sectors and subsectors, including those prioritized as part of the PIR. As part of the application process, entities must highlight their "community interventions" and CSR related activities.

4.5. Sector Specific Legislations Associated wit Biodiversity in Belize

4.5.1. Cruise Ship Tax Act

The 2015, Cruise Ship Tax Act allows for a cruise ship passenger tax to be levied upon each manifested cruise ship passenger on cruise ships entering and leaving Belize, which tenders its passenger to the Fort Street Tourism Village. The cruise ship passenger tax is collected by the Belize Tourism Board and is shared between the Fort Street Tourism Village Limited (FSTV) and the Government of Belize at the ratio:

- The Cruise Ship Passenger Tax is BZD $14.00. The Belize City Council receives BZ $1.32 (9%), PACT BZ $2.10 (15%), Belize Tourism Board BZ $2.58 (18%), FSTV BZ $8.00 (57%).

Of the BZ $14 tax levied on departing visitors, 15% goes to the PACT. This important piece of legislation, like the PACT Act, provides for taxes to be levied and by-pass the Government of Belize's Consolidated Revenue Fund and instead be collected and disbursed by private and semi-government entities including the PACT for biodiversity conservation.

4.5.2. Forest Act

The Forest Act serves as the principal legislation for the Forest Department. Provisions include:

- Ad valorem duty assessed for the export of wild animals, products of wild animals, plant (other than cultivated plants), spices or seeds.
- Price based on the open market.
- Wild animals 25%, products of wild animals 10%, spices 5%, seeds 5%, plants (other than cultivated plants and bromeliads) $0.50 per plant, Bromeliads $0.15 per plant, forest tree or plant 5%.

The Forest Act provides for fees, fines and royalties to be collected with respect to timber and non-timber forest products. The Act has recently been revised to increase fines for illegal harvesting of forest products or doing so without proper permits. The Act also governs public private partnerships in areas of forest management. Opportunities exist to legislate sustainable forest management practices through strengthening of the Forest Act.

4.5.3. Coastal Zone Management Act

The Coastal Zone Management Authority and Institute (CZMAI) was established in part through support in the early 1990s from the UNDP/ Global Environmental Facility (GEF) Programme. CZMAI's objectives are to guide the "sustainable use and planned development of Belize's coastal resources.

The CZMAI is supported from funds derived from fees as a result of the issuance of a sports fishing license for people conducting sports fishing within the territorial waters of Belize.

Provisions under the Act include:

- Prescribed fees levied for the use of the natural resources within the coastal zone.
- The funds and resources of the Authority include: sums that may be provided by the National Assembly, sums collected in the form of fees or charges, contributions allocated to it from external funding agencies, sum or property which may become payable to the Board, sums collected under the authority of the Coastal Zone Management Act or under any other law, or any other money or property lawfully contributed, donated or bequeathed to the Authority from any source
- Revenue of the Authority should be used for the function, powers and responsibilities of the Authority as well as for the repairs, current expenses, maintenance of buildings and equipment and other expenditure approved by the Board.
- Establishment of a Barrier Reef Foundation, which can receive gifts and donations as well as raise funds to promote the conservation and management of the coastal resources of Belize.
- The Authority is exempt from paying income tax and property tax.
- All instruments executed by or on behalf of the Authority or Institute are exempt from stamp duty.
- Sport fishing fee schedule: BZ$20.00 for one day, $50.00 for one week, $100.00 for a one year fishing period.

4.5.4. Protected Areas Conservation Act

The PACT Fund was established in 1996 with the passage of the PACT Act of 1995. Since 1997, PACT has contributed more than BZ $34m to projects and activities related to protected areas conservation and protection of natural resources in and around protected areas. PACT funds, are estimated to be around BZ $3M per annum, and are dedicated to the conservation, management and the sustainable use of the cultural and natural resources of Belize.

Revenue of the trust fund consists of:

- Conservation Fee of BZ $7.50[12], (paid by people departing Belize by air, land or sea border). This represents some 50% of PACT's revenue stream;
- Cruise Ship Conservation Commission of BZ$2.10 per passenger;
- Twenty per centum (20%) of all concession fees, recreation-related license fees, cruise ship passenger fees, and permit fees collected in conjunction with public protected areas of Belize[13];
- All income derived from the investment of PACT funds, including from its Endowment Funds;
- Any other money lawfully contributed, donated, or bequeathed to the Trust or received by the Trust from any other source.

PACT serves as the National Implementing Agency for the Climate Adaptation Fund and also has some fiduciary management responsibilities of the following funds in Belize:

- World Bank
- GEF Funds
- Mesoamerican Reef (MAR) Fund
- Belize Nature Conservation Foundation (BNCF)

The PACT Act provides for the collection of departure fees to be collected and distributed through grants to protected areas management organizations and other entities in conservation and sustainable development. PACT represents an important finance mechanism for biodiversity in Belize. Future efforts that would seek to scale up financing opportunities (such as accessing of Green Climate Fund, REDD+ funds, or other finance mechanisms) may require legislative reforms. PACT can be used as a central finance vehicle as the Fund has built the institutional structure and best-practices in conservation finance.

12 In May 2017, a development fee of BZ$32.50, in addition to the Conservation Fee, was levied on all departing visitors. This fee, while collected by PACT, is paid directly into the Consolidated Revenue Fund.

13 In practice, PACT does not collect these fees from protected areas. All revenues collected by the Protected Areas that is not required to be paid into the Consolidated Revenue Fund is held by the Protected Areas Co-managers.

4.5.5. Environmental Tax Act

In 2001, the Government implemented the Environmental Tax Act that would charge an ad valorem tax on all goods imported into Belize. The tax is collected in addition to the Customs and Duties charged on imported goods and is levied and collected by the Customs and Excise Department.

The tax schedule is as follows:

- 5% ad valorem on vehicles over V4 cylinders
- Fuel products as outlined in the Act:
  - Aviation Spirit - $0.18 per imperial gallon
  - Premium Gasoline - $0.18 per imperial gallon
  - Regular Gasoline - $0.18 per imperial gallon
  - Kerosene (Jet Fuel) - $0.18 per imperial gallon
  - Illuminating Kerosene - $0.18 per imperial gallon
  - Diesel Oil - $0.18 per imperial gallon
  - Gas Oil (other than Diesel Oil) - $0.18 per imperial gallon
- All other items not falling within these categories pay a three[14] percent ad valorem tax.

The Environmental Tax is collected by the Customs and Excise Department and paid directly into the Government of Belize's Consolidated Revenue Fund.

14 There was an initial levy of a one percent ad valorem, which was later amended to two percent in 2009. In April of 2017, the Environmental Tax was increased to its current rate of three percent.

4.5.6. Environmental Protection Act

The Environmental Protection Act (EPA) sets out the critical schedules for the establishment of the Department of the Environment, prevention and control of pollutants, solid waste management, the Environmental Impact Assessment (EIA) process, the Environmental Management Fund (EMF), and the broader context of environmental management in Belize. The EPA was amended in 2009 to, among other things, introduce to law environmental management schedules relative to the then burgeoning petroleum industry and establish the Environmental Management Fund.

Environmental Management Fund:

The Fund was established to provide financial support to the DoE to carry out its mandate relative to environmental protection, management, monitoring, enforcement, education and awareness, and necessary responses. The Fund is administered by a Board consisting of members of public entities including the Ministries of Finance, Environment, and Economic Development and a representative of a non-government entity.

Funds for the EMF are derived from:

- Sums received from one tenth of one percent (1/10 of 1%) of gross revenue from all petroleum production in Belize;
- Sums as may be received for the purposes of the Fund by way of voluntary contributions of donations;
- Sums as are paid for fees, licenses, penalties or approvals under the Act or any Regulations made;

- Twenty percent of all revenue derived from the implementation of section 3 and 7(f) of the Environmental Tax Act.
- Sum received for the sale of Department's publication, or library fees etc.;
- Sums received from littering violation tickets issued outside city or town limits, and from any similar ticketing system;
- Twenty percent of all revenue derived from the implementation of section 21 (a) and (b) and section 33 of the PACT Act.
- Sums appropriated by Parliament for the purpose of the Fund;
- Any other money lawfully contributed, donated or paid into the Fund from any other source.

The EMF is a critical biodiversity finance mechanism for environmental management. The Environmental Protection Act, like the PACT Act, provides for public revenues to be directly allocated to biodiversity and environmental protection.

4.5.7. Land Tax Act

The Land Tax is collected by the Ministry of Natural Resources – Department of Lands and Survey and is paid into the Consolidated Revenue Fund. A land tax of one percent (1%) is levied on the unimproved value of all agricultural land, suburban and beach land as provided in this Act. Any finance solution that seeks to repurpose the allocation of the income from land tax (such as conservation easement for protected private lands) would require legislative reform of the Land Tax Act.

4.5.8. National Protected Areas Systems Act

The National Protected Areas Systems Act sets out the provisions for the management of the eight categories of protected areas in Belize. Of keen note, visitor fees collected in such protected areas (National Park, Wildlife Sanctuary, Natural Monument, Marine Reserve) are held by co-managing agencies. There are no provisions under either the Finance and Audit Act nor the National Protected Areas Systems Act (or associated regulations) that legally recognize this process – as such the practice is done rather informally. As Salas (2008) argues, the current appropriation of park fees and charges by the co-managers contravene the Finance and Audit Act which requires all public funds to be paid into the Consolidated Revenue Fund. Opportunities exist for concessions beyond harvesting of timber and non-timber forest products.

4.6. Prospect for Biodiversity Finance related policies in Belize

The policy and institutional review has highlighted a sound policy framework for biodiversity and ecosystem management in Belize. The importance of natural capital is deeply rooted in the constitution, laws and policies, and Belize's long-term and medium-term development frameworks. Such sound policy and legislative framework, it can be argued, has contributed to Belize's success in maintaining the health and integrity of its natural resources. As population increases, tourism product develops, and as the country seeks to improve economic growth prospects, there are important considerations and actions necessary to address key gaps in Belize's policy and legislative framework so as to ensure the sustainability of its natural capital.

As the country moves towards strengthening biodiversity finance, public policy will have to foster maximum synergistic effects among policies for biodiversity finance and environmental management. To this end, a number of cross-cutting issues will be addressed; including:

Poor harmonization of sectoral policies and plans

One of the challenges with policy and institutional framework in Belize is that several policies overlap and duplicate each other in coverage, authority, institutional responsibility and operation. Consider, for instance, the issue of land management where jurisdiction is covered by the Land Utilization Act, National Lands Act, Mines and Minerals Act, Forest Act, National Protected Areas Systems Act, Land Tax Act, and the Petroleum Act, among others. These policies are complemented by associated regulations and policies. Such overlap and duplication of policies and legislation has facilitated poor harmonization, poor collaboration within and among government ministries and civil society. Poor harmonization has also facilitated gaps in the harmonization of legislations, policies and plans.

Outdated legislation

Several of the policies and legislations are outdated and do no account for contemporary approaches to biodiversity use and management. Such policies and legislations can serve as a disincentive to moving towards improved biodiversity management. In some cases, fines, fees, and royalties are outdated and do not reflect current market value or combined market and non-market values. The Land Tax Act for instance stipulates a charge of 1% tax on the unimproved value of all agricultural, beach and suburban land. Such policies serve as an incentive to clear cut land and is not in line with other policies that seek to reduce clear cutting and integrate "green coverage" in urban planning. Furthermore, contemporary resource extraction and management has moved beyond the original scope of legislations such as the Forest and Fisheries Act, which were focused primarily on resource extraction. Today, these sectors have broadened focus to sustainable use and management of natural assets and maintaining key functional ecosystem services. As such, these legislations should be updated to remove disincentives and expand coverage for sustainable use and management of resources.

Poor integrated planning

Whereas the policy and institutional framework for biodiversity management has been disjointed, duplicate and overlapping, this seems to have facilitated an equally disjointed and silo operational framework for biodiversity and ecosystem management in Belize. Biodiversity management has been characterized by poor integrated planning in policy development, and implementation facilitated by weak cross-scale and cross-level structures across and within departments.

Inadequate monitoring and evaluation

Several policies and strategies, often through which ministerial and departmental mandates are achieved, lack adequate monitoring and evaluation systems. Those policies and strategies that do have M&E plans lack adequate follow-up or technical capacity within department and ministries to adequately monitor and evaluate effectiveness. The limited staff and their technical capacities constrain the government's abilities to evaluate policy outcomes towards improved practices.

Disjoint between environmental finance policies and objective

Currently several biodiversity revenue related policies exist in Belize; however, while the original intent may have been to secure necessary finance for biodiversity and environmental management, these monies are directed to general revenues of the government. The Environmental Tax, Petroleum, Forest, and Land Tax Acts, for instance, all stipulate for biodiversity and environment related taxes and fees to be collected, however, all funds are directed to the consolidated revenue fund. Provisions such as earmarking of funds for the redirecting of stipulated portions of this revenue to ministries and departments with responsibility for biodiversity and environmental management should be put in place.

4.7. Review of Natural Resources Valuation Studies for Belize

A total of 21 valuation studies were analyzed as a component of BIOFIN's Policy and Institutional Review (PIR). As a resource dependent country, terrestrial and marine ecosystems contribute significantly to the economy of Belize. Hence the valuation of Belize's natural resources holds great importance for ensuring the long-term viability of natural ecosystems and the services they provide. Figure 33 maps the area and services valued by some of the NRV studies. These 21 NRV studies shed light on the significance of biodiversity to Belize's ecosystems and economy.

The 21 valuation studies examined assessed both terrestrial and marine ecosystems, with majority (11 studies) focusing solely on the resources and ecosystems services (ES) provided by the coastal/marine environment. Seven studies valued terrestrial ecosystems with a large portion focusing on the resources of the Maya Mountain Massif (MMM). More than half of the marine and terrestrial studies utilized the market based approach. These types of analysis rely heavily on available data for execution. Four studies employed the contingent valuation method to assess user's willingness to pay (WTP) for a particular resource, mainly for marine reserves.

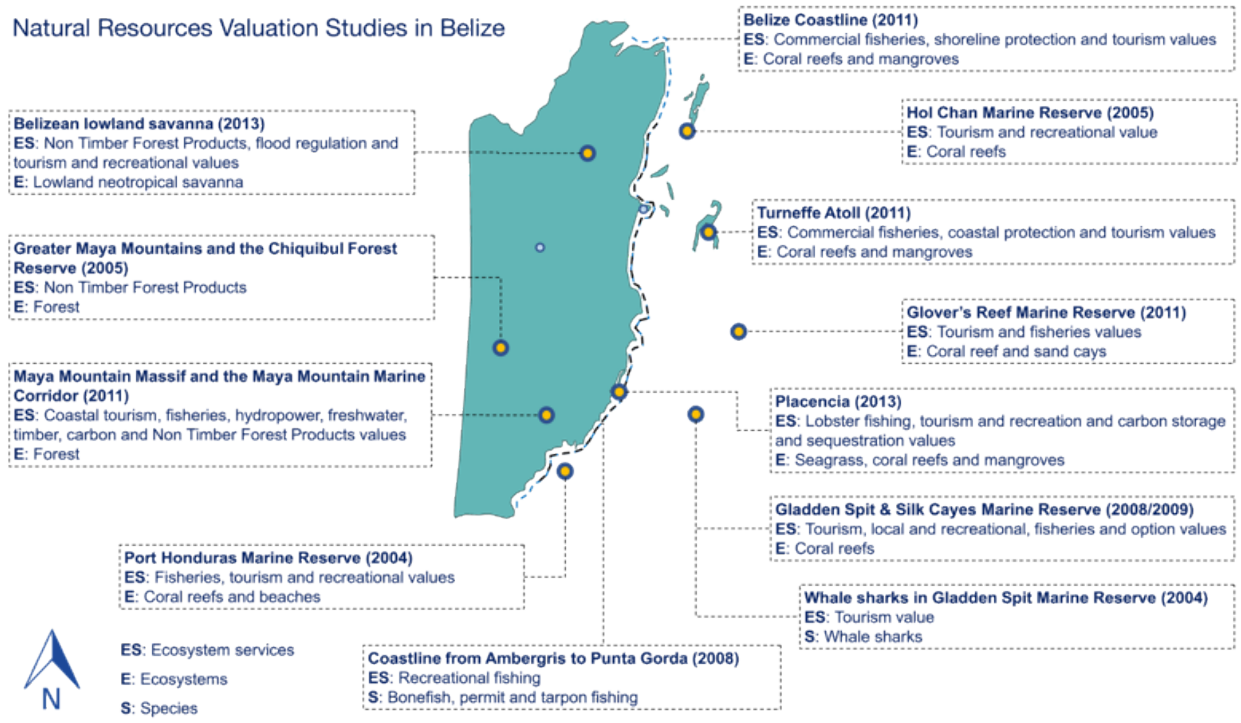

Figure 33: Map Showing NRV Studies in Belize (Source: Wolf's Company, 2017)

Seemingly, NRV studies have gained importance in the environmental field, in Belize 90% of those reviewed were conducted between 2003 and 2015. In contrast three studies were conducted in the late nineties; the earliest valued medicinal resources of the rainforest in 1992 via the market based approach. Eight of the 21 studies influenced national policy-making including, inter alia, the formulation and development of an integrated coastal zone management plan and a national sustainable tourism master plan. Additionally, others have been used as justification for the protection of spawning aggregations and the increase in visitor fees for marine protected areas. The subsequent sections detail the methodology and values of the 21 NRV studies reviewed.

Using the benefits transfer method and market based approach Hammond et al. (2011) derived total natural capital valuations of the MMM and the Maya Mountain Marine Corridor (MMMC) to be between US $183.2 - US $762.7 million for 2010. (Figure 34 delineates study area). The estimate encompassed values for coastal tourism and fisheries, terrestrial tourism and recreation, hydrological services, forest products - timber, and non-timber forest products (Figure 35).

Using the market price method, the 2010 assessment of past timber inventory and sampling plots estimated the net present value (NPV) of timber from the MMM/MMMC to be US $22.4 - $251 million over a 30-year period (Hammond et al., 2011), making it a major product of the forest sector (Figure 35). The large range in values is primarily due to the minimum and maximum yields estimated for timber, the price per unit volume as well as the discount rate applied. Commercial timber volume for the assessment was limited to forest reserves in the area.

In contrast, Kay et al. (2015) estimated the annual gross potential value of timber within two study areas (Chiquibul-Mountain Pine Ridge (MPR) Complex and Toledo) to be US $16.8 million for 2015 (Figure 36). A substantial portion of the Chiquibul-MPR Complex and Toledo area of Kay's study falls within the confines of the MMM/MMMC of Hammond et al. (2011). Both valuations incorporated values for elite, pine, prime and selected species from forest reserves within the area, except for those in the Stann Creek District which were outside of Kay et al. (2015) study area (Figure 37 contains list of species). Variations in the area assessed and price allocated to timber species can account for difference in values of the two studies. The economic contribution of timber from the MMM is threatened by illegal logging and agricultural expansion. Illegal logging in the area threatens biodiversity and ecosystem integrity. Target species for the illicit activity includes Mahogany (Swietenia macrophylla King) and Cedar (Cedrela odorata L). An illegal logging study conducted by Arevalo and Chan (2015) determined that a total of 8,725,833 board feet of lumber from 45,567 hectares (ha) within the Chiquibul Forest was illegally extracted from 2012 to 2015. Using the market price approach illegally logged lumber was valued approximately US $18.8 million using current national prices.

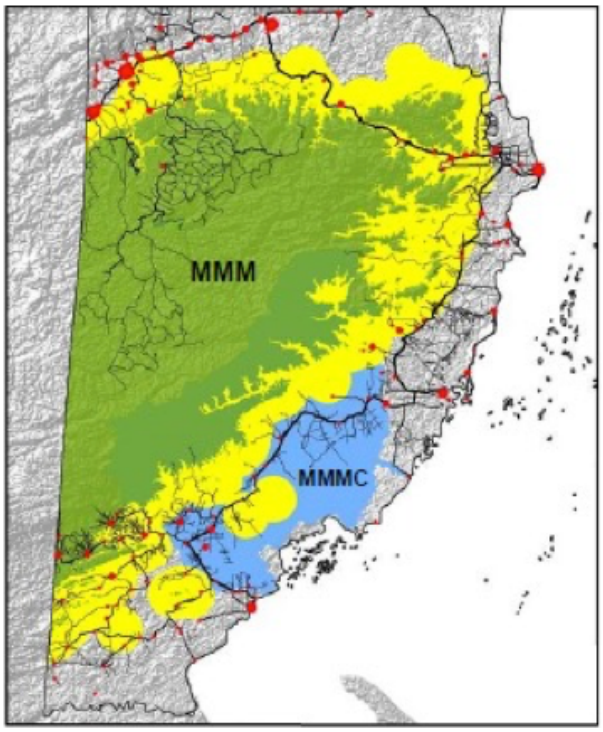

Figure 34: Valuation Study Area and its Components (Source: Hammond et al., 2011)

Figure 35: Estimate Value of EGS in the MMM/MMMC

	Value Estimates			
Category	**Low**	**High**	**Basis**	**Impact of LUC [a]**
Coastal Tourism and Fisheries	**$ 24.4**	**$ 39.8**	PV	potentially major
Tourism and Recreation	**$ 13.7**	**$ 30.3**	PV	potentially major
Lodging	$ 4.9	$ 8.0		
Activities and Other	$ 7.4	$ 19.1		
Taxes	$ 1.4	$ 3.2		
Hydrologic Services	**$ 54.5**	**$ 84.8**	NPV	
Hydropower - Current Facilities [b]	$ -	$ -		minor
Hydropower - Future Development				unknown
Potable Water	$ 54.5	$ 84.8		major [c]
Forests [d]	**$ 31.0**	**$ 416.0**	NPV	
Timber	$ 22.4	$ 250.9		major
Carbon	$ 8.6	$ 165.1		major
Non Timber Forest Products	**$ 29.6**	**$ 31.8**	NPV	
Xate [e]	$ 25.7	$ 83.7		major
Bayleaf/Botan Palm [f]	$ 3.9	$ 8.1		major
Ecosystem Goods and Services	**$ 153.2**	**$ 662.7**		
Wind Resources	$ -	[g]		none
Minerals [h]	$ 30.0	$ 100.0	NSR	none
Total Natural Capital	**$ 183.2**	**$ 762.7**		

(Source: Hammond et al., 2011)

Similar to timber, non-timber forest products (NTFP) are also illegally and unsustainably extracted from the MMM. Using the market based approach, the value of NTFP were assessed in the following NRVs. Bridgewater et al., (2006) estimated that approximately 7.6 million xaté leaves, worth US $58,500, had been illegally harvested annually over from 2000-2005 in the Chiquibul Forest Reserve (CFR) based on observations of average cut leaves. Using minimum and maximum yields for annual production, the total market value of NTFP in the broader MMM, such as xaté, was US $25.7 - $83.7 million, while bayleaf was valued at US $3.9 - $8.1 million for a 30 year period from 2010 to 2040 (Hammond et al., 2011). In 2015 a subsequent assessment of xaté stocks in the Chiquibul Forest valued the productive capacity of available stocks to be US $577,503 for C. ernesti-augustii and US $210,657 for C. oblongata (Arevalo. 2015). The 2015 assessment also concluded that 11.4 million leaves had been illegally extracted, valued US $488,802 (Arevalo, 2015). The above studies have highlighted the possible significant contribution of xaté to the Belizean economy, while also depicting the

Figure 36: Ecosystem Services with Corresponding Values

Area	General Ecosystem Services	Annual Value of Ecosystem Services (million USD)	
Corozal	Fisheries Water Quality Control Water Provisioning (game species) Non-timber Production (species - harvested for construction)	5.5 - 9.0 11.9 - 13.9 0.9 - 6.0 0.1 - 0.4 9.1 - 55.5 0.4 - 0.6	Shoreline Protection Tourism Carbon Sequestration Timber Supply Total Available Water Supply Water Supply for Domestic Purposes
Caye Caulker	Coastal Protection (mangroves and reefs) Fisheries Tourism	0.5 - 0.8 76.4 - 89.2	Shoreline Protection Tourism
Chiquibul- MPR Complex	Timber Production Food Provisioning Services (game meat) Mineral Resources (granite, coal, gravel) Soil Formation	14.2 - 16.5 3.0 - 19.6 7.9 - 8.7 89.3 - 546.1 3.6 - 6.3	Tourism Carbon Sequestration Timber Supply Total Available Water Supply Water Supply for Domestic Purposes
Toledo	Water Quality Control Coastal Protection (mangroves and reefs) Timber Production Food Provisioning Services (game meat) Fisheries Carbon Sequestration Soil Formation	10.3 - 14.8 13.5 - 15.7 4.6 - 30.0 9.0 - 11.3 740.1 - 4,526.4 29.9 - 38.3	Shoreline Protection Tourism Carbon Sequestration Timber Supply Total Available Water Supply Water Supply for Domestic Purposes

(Source: Kay et al., 2015)

pitfalls of the industry, including the lack of infrastructure in Belize for the profitable extraction of the plant.

Above and below ground biomass was used by both Hammond et al. (2011) and Kay et al. (2015) to assess carbon stocks of the greater MMM. The net present value of carbon estimated by Hammond et al. (2011) was US $8.6 - $165 million over a 30-year period from 2010-2040 (see Figure 38 for study area). Hammond et al. applied discount rates and carbon emissions avoidance bands for the calculation of carbon net present value. Focusing on the Chiquibul-MPR Complex/Toledo area, Kay et. al. (2015) estimated total annual carbon to be 4.8 million tonnes with an annual average value of US $23.19 million (Figure 39 delineates study area). The difference in values could be attributed to the delineation of area being assessed and variation in the biomass estimation for habitat types. The above valuation studies relied heavily on spatial data layers for the construction of maps used to value resources such as carbon stocks and timber. The use of spatial data layers in the latter studies, reiterated the findings of Eade and Moran (1996), which illustrated the importance of using Geographical Information Systems (GIS) to adopt a spatial approach to economic valuation. Through the use of data layers Eade and Moran (1996) successfully valued the Rio Bravo Conservation area via the application of the benefits transfer method using GIS. The results valued natural capital in the area (medicine, NTFP, carbon storage etc.) at US $686 per cell.

One study valued traditional medicines from the tropical rainforest. The study by Balick and Mendelsohn (1992) was the earliest NRV study

Figure 37: List of Some Timber Species by Group

Prime	Elite	Select
Mahogany (Swietenia macrophylla)	Barbajolote (Cojoba arborea)	Bullet Tree (Terminalia buceras)
Cedar (Cedrela mexicana)	Bastard Rosewood (Swartzia cubensis)	Hormiga (Platymiscium dimorphandrum)
	Beefwood (Hieronyma alchorneoides)	Nargusta (Terminalia amazonia)
	Billywebb (Sweetia panamensis)	Redwood (Erythroxylum areolatum)
	Black Cabbage Bark (Lonchocarpus Castilloi)	Santa Maria (Calophyllum brasiliense)
	Black Poisonwood (Metopium brownei)	Sapodilla (Manilkara zapota)
	Chicle Macho (Manilkara chicle)	Red Sillion (Pouteria amygdalina)
	Grandillo (Platymiscium yucatanum)	Timbersweet (Licaria peckii)
	Hobillo (Astronium graveolens)	Tzalam (Lysiloma latisiliguum)
	Mayflower (Tabebuia rosea)	Yemeri (Vochysia hondurensis)
	Prickly Yellow (Xanthoxylum sp.)	
	Red Myladay (Aspidosperma desmanthum)	
	Rosewood (Dalbergia stevensonii)	

(Source: Kay et al., 2015)

reviewed for this process. Through the sampling of two plots it was estimated that the 0.28 ha plot would yield US $726/ha on a 30 year rotation and the 0.25 ha plot would yield US $3,327/ha using its 50 year rotation (Balick & Mendelsohn, 1992). Additional plant materials in the plots further increased their total value.

Although great emphasis has been placed on the valuation of the lush rainforest of the country, Wells (2013) sought to examine the importance and economic value of lowland neotropical savannas via the market based, travel cost and benefit transfer methodologies. At conclusion, the study demonstrated the savanna's substantial contribution to the lives of the associated rural community of Crooked Tree via medicinal plants, game species, recreational activities, timber and NTFP, climate regulation as well as cattle habitat for the subsistence farmers (Figure 40). This study emphasized the direct dependence of nearby communities on associated ecosystems in addition to the goods and services they provide. Wells cited overestimation of values as a possible source of error in his study.

The coastal zone of Belize contributes significantly to the country's economy via ecotourism and commercial fishing. Coastal and marine ecotourism is centered on the beauty and pristine state of the coastal environment and marine reserves. Most authors utilized the market based approach for the valuation of tourism and fishing. A coastal valuation study estimated reef-

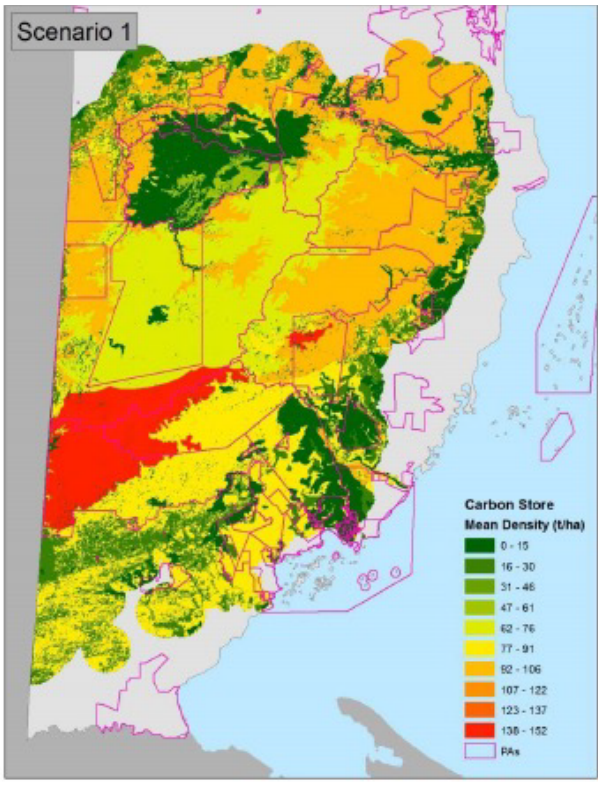

Figure 38: Distribution of Estimated Carbon Storage in Study Area
(Source: Hammond et el., 2011)

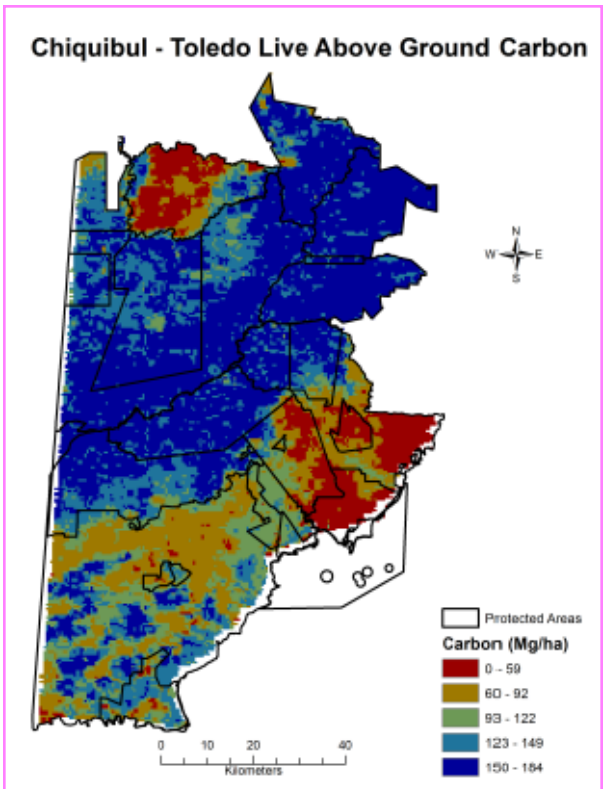

Figure 39: Above Ground Carbon for the Chiquibul-MPR Complex
(Source: Kay et al., 2015)

and mangrove-related tourism to be US $150 - $196 million per year for the entire coast of Belize in 2007 (Cooper et. al., 2009). Fedler (2011) valued tourism from one major tourist destination, the Turneffe Atoll, at US $36.9 million in 2010 based on direct and value-added costs for tourist (Figure 41). Similarly, the tour guide industry of the Port Honduras Marine Reserve (PHMR) is estimated to generate annual revenue of BZ $1.1 million based on data gathered from 17 tour guides in 2003 (Robinson et al., 2004). General visits to the Gladden Spit Silk Caye Marine Reserve (GSSCMR) produced US $601,954 in revenue for 2007 (Hargreaves-Allen, 2008). Whale shark tourism alone within the reserve generated US $467,822 from March to June of 2007. The latter value is considerably low in comparison to the US $2.5 million estimated by Graham (2003) for whale shark tours in 2002 for the GSSCMR. The difference in revenue could be linked to an increase of boats in the area, causing a disruption to spawning aggregations on which the sharks feed (Graham, 2003; Graham, 2004). Both studies by Graham also cited the need for scientifically sound management and policy guidelines to promote the conservation of whale shark in the area.

Unlike the preceding coastal tourism valuation studies which focused on specific marine reserves, the valuation of the sports fishing sector targeted the entire coast of Belize. Based on the assessment sports fishing alone generated approximately BZ $56.4 million, with BZ $25.1 million in direct expenditures, for 2007 (Fedler & Hayes, 2008). This is a significant contributor to the economy.

The contingent valuation method was used to assess another component of tourism (visitors WTP for use of marine reserves). At the

Figure 40: Rapid Estimate Valuation of ES Benefits from Project Area to Crooked Tree

Final Ecosystem Service	Ecosystem Goods	Rapid Estimate of Value of ES Input to Crooked Tree, BZD/yr	Rapid Estimate of Value of ES Input to Direct Beneficiaries, BZD/yr	Value as Percentage of Poverty Line Household Income
Medicinal herb and fruit provisioning	Medicinal herbs and fruits	1,276	1 household BZD 1,276/household	7%
Game species provisioning	White tailed deer	38,516	3 households BZD 12,839/household	69%
Palmetto provisioning	Palmetto timber	780	3 households BZD 260/household	1%
Unenclosed cattle habitat provision	Stock feed (natural grasses) and shelter	5,279	10 households BZD 528/household	3%
Environmental setting for recreation	Recreational Camping. In dry season.	11,786	87 adults BZD 87/adult	n/a

(Source: Wells, 2013)

GSSCMR, tourists surveyed in 2002 were willing to pay a mean daily visitation fee of US $8.70 for management of the reserve and its fauna (Graham, 2003). In 2008, Hargreaves-Allen reassessment of WTP at GSSCMR yielded a value of US$24 for reserve entry, US $39 for whale shark interaction and US $70 for donations for the management of the park. On the same note, recreationalists at the PHMR are willing to spend an estimated BZ $547,000 per year to enjoy the reserve through activities such as swimming, snorkeling and sport fishing (Robinson et. al, 2004). Utilizing the same method, Trejo (2005) ascertained the average WTP for access to any marine park in Belize was US $10.76. Trejo's value was comparable to the proposed US $10.00 entrance fee recommendation by the CZMAI for all marine park entry, which was later implemented.

Commercial fishery is an equally important income earner for the Belizean economy. Conch, lobster and finfish are target commercial species. For 2009, lobster and conch fishery at Turneffe Atoll was valued US $518,479 using fisheries cooperatives' data, while finfish contribution was US $200,000 (Fedler, 2011). Target species catches from the GSSCMR were estimated to value BZ $737,760 whole and BZ $1.1 million fillet for 2007 (Hargreaves- Allen, 2008). Based on 2003 fisher surveys, annual fishery at the PHMR was valued BZ $889,906 with lobster accounting for 57% of the total fishery value (Robinson et al., 2004). It is important to note that the health of fishing stocks is dependent on the replenishing factor of no-take zones within the marine reserves. In a study on biomass of target species, it was noted that 23% of the fished species showed greater abundance, size and biomass within unfished or lightly fished areas in Belize's marine reserves (Polunin &

Figure 41: Total Economic Contribution of Turneffe Atoll to Belize (USD)

Tourism	Total Belize Trip Expenditures	Turneffe Expenditures
Turneffe activity expenditures	$9,816,211	$9,816,211
Non-Turneffe activity expenditures	$3,825,675	$0
Accommodations	$7,097,944	$3,977,957
Other expenditures	$4,409,678	$2,053,325
Taxes and service charges	$5,157,595	$3,430,578
Totral Direct Impact	$30,307,103	$19,278,071
Value Added Impact	$6,667,563	$4,241,176
Tourism Value	**$36,974,666**	**$23,519,247**
Fisheries		
Cooperative Lobster	$377,337	$377,337
Cooperative Conch	$80,515	$80,515
Lobster and conch sold outside of Cooperatives	$60,627	$60,627
Fisheries Value	**$518,479**	**$518,479**
Shoreline Protection		
Annual value of protection from coral reefs	$22,057,024	$22,057,024
Annual value of protection from mangroves	$16,283,380	$16,283,380
Potentially avoided damages	$38,340,404	$38,340,404
Annual Value of Turneffe Benefits	**$75,833,549**	**$62,378,130**

(Source: Fedler, 2011)

Roberts, 1993); proving that no-take/replenishment zones play a critical in the maintenance of commercial fisheries.

Using the avoidance cost approach, Cooper et al., (2009) calculated shoreline protection of Belize's coral reefs and coastal mangroves to be US$120–$180 million and US$111–$167 million for 2007, respectively. Through the benefits transfer method, values from Cooper et al. (2009) were modified to value shoreline protected at the Turneffe Atoll, US $38.3 million for 2007 (Fedler, 2011). Similarly, Kay et al. (2015) determined the economic contribution of mangroves to shoreline protection at US $16.3 - $23.6 million for 2015 for three of its coastal study areas.

The high valuation of Belize's coastal resources signifies the need for proper coastal management. In 2013 an Integrated Coastal Zone Management Plan for Belize was developed to encourage sustainable use of the country's coastal resources (Clarke, Canto & Rosado, 2013). Emphasis was placed on the country's valuable and vulnerable habitats and relevant sectors. The InVEST model aided the configuration of the national zoning scheme for the plan through the development of scenarios that limited impacts to habitat and ecosystem services (Rosenthal et. al., 2014). Likewise, scenarios were also created for the ecosystem valuation and cost benefit analysis of climate adaptation options conducted by Rosenthal (2013) in Placencia. The study determined

that an Integrated Adaptation Approach would provide the best overall return under both high and lower emission climate scenarios. This study influenced the development of the ICZMP in addition to initiation of the ecosystem based marine conservation and climate adaptation (MCCAP) measures.

The cost benefit analysis was also utilized by Williams and Liang (2012) to assess the development and implementation of a "pay as you throw program" for waste management in San Ignacio Town, Cayo. Results indicated that the policy would generate an estimated US $1.27 million in present value of benefits over a 20 year period. (Figure 42) Residents of the town were also willing to pay a mean US $0.68 per bag of waste, an increase from the then estimated cost of US $0.42 per bag.

These NRV studies assessed key ecosystem goods and services to ascertain the economic value and contribution of ecosystems. However, values cited may be underestimated as no study comprehensively valued an ecosystem or all its corresponding services. The lack of readily available data, in some cases, also hindered the successful valuation of some provisional services. There are also a limited number of studies focusing on terrestrial ecosystems outside of the MMM for Belize. Similarly, outside of the marine reserves assessed, there are no studies on the available fishery resources. For biodiversity conservation a comprehensive study of terrestrial and marine ecosystems are necessary for the formulation of scientifically sound conservation and management solutions.

Figure 42: Non-market Valuation of Cost and Benefits - 2010 US$

Economic Component	Estimated Benefits
Economic	$806,000
Health & Medical	$437,000
Environmental	$27,000
Total Benefits	$1,270,000

(Source: Williams & Laing, 2012)

Existing Finance Solutions in Belize

5. Existing Finance Solutions in Belize

5.1. Belize's National Budgeting Process

The National Budgeting Process is led by the Ministry of Finance. The process is generally guided by the Finance and Audit (Reform) Act, Financial Orders, and Store orders. The Finance and Audit Act sets the legislative framework for the national budget including expenditures and revenue generation. Financial Orders and Store Orders provide more granular details on expending funds as outlined in the budget and for the management of public assets.

The Government of 'Belize's Fiscal Year spans the period April 1st – March 31st of the previous year. In October of each fiscal year, the Ministry of Finance sends out a "Budget Call" to all Chief Executive Officers, Heads of Departments, and other relevant Public Officers in the preparation of their budget proposals (Figure 43). The Budget Call – sent out by the Financial Secretary - outlines 1) provisional budget ceilings and budget estimates for the upcoming fiscal year; 2) requirements for the submission of Ministries' budgets and 3) the macro-economic context within which the budget is being prepared 4) requirements for alignment of budget proposals with the Growth and Sustainable Development Strategy. The Ministry of Economic Development provides support and training to the line ministries in aligning their budgets with the GSDS.

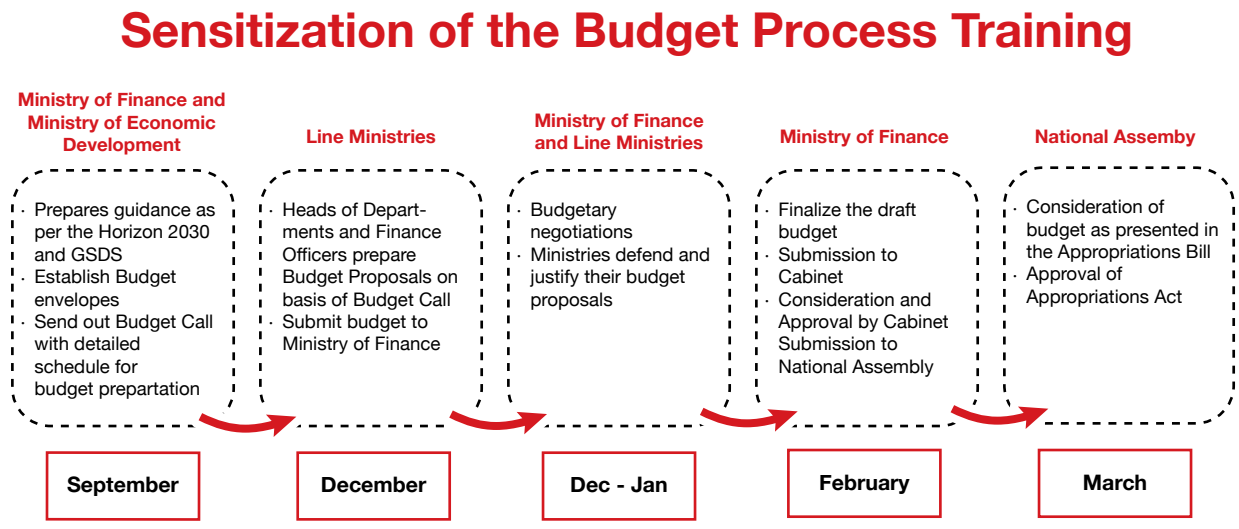

Figure 43: National Budgeting Process in Belize
(Source: Modified from Barnett, 2013)

Budget proposals cover Recurrent and Capital (1 & 2)[15] Expenditures and are submitted to the Ministry of Finance around the first week of December each year. The Ministry of Finance aggregates all budgets and reviews to ensure they are in line with the fiscal requirements and the policies – such as budget ceilings - outlined in the Budget Call. Once aggregated, a brief process of budget negotiations occurs, at this time Ministries defend their budget – mostly to avoid cuts. A Draft Budget is thereafter submitted to the Cabinet for revision and approval. The Budget then proceeds to the National Assembly and Senate as an Appropriation Bill for debate and passing to become the Appropriations Act.

15 Capital 1 expenditures covers capital expenditures from local sources, whereas Capital II expenditures cover those from international sources.

5.2. Current Finance for Biodiversity

A mapping of current biodiversity revenue for available public and private sources was carried out. Table 8 below details revenue sources for biodiversity from this assessment[16]. Currently revenue sources include fees and royalties paid to government departments, fees and donations from non-governmental organizations as well as fees collected by quasi-government institutions for both marine and terrestrial based activities. The mapping exercise found that around BZ $40.7M is collected from biodiversity related sources. The mapping exercise found that approximately BZ$50.4, BZ$50.1, BZ$46.8, and BZ$40.7M were collected from biodiversity related sources in 2013, 2014, 2015, and 2016, respectively. A substantial portion of the revenues assessed were collected by the Customs Department in the form of Environmental Tax, between BZ $25.6 and $29.2 million yearly from 2013-2016. Of note is the significant decline in revenues at the Geology and Petroleum Department. This is reflective of the significant decline in oil production and thus reduction in tax collected. In the 2013-2014 fiscal year, revenue from the Geology and Petroleum Department totaled BZ $15,493,994. Five of the revenue sources below are sourced from tourism-based activities including entrance fees to national parks and marine reserves, in addition to license fees collected for activities such as sport fishing. The majority of the revenue generated by these sources are placed into a Consolidated Revenue Fund of the Government of Belize.

16 The assessment did not include a full mapping of all agencies collecting visitor fees. Total funds collected also did not include funds from ODAs or external grants to organization but rather only indigenous sources of income.

Table 8: Select Existing Biodiversity/Natural Resources Related Income in Belize

Organization/Agency	Solution	Solution Type	Description	Annual Income (2013/14) BZ$	Annual Income (2014/15) BZ$	Annual Income (2015-16) $BZ	Annual Income (2016/17) $BZ
PACT	Conservation Fee	Taxes on tourism/ entry Fee on international travel (air/cruise)	Conservation fees, concession fees, recreation-related license fees, cruise ship passenger fees, and permit fees collected for tourism related activities in the country	4,517,551	5,383,878	5,576,559	4,923,033
CZMAI	Sports Fishing license Fee	License Fee	Prescribed fees levied for the use of the Natural Resources within the coastal zone (non-extractive sport fishing). One Day (BZ $20), one week (BZ $50), one year (BZ $100)			110,757[17]	142,170
	Visitor Fee	Reserve Entrance Fee	Prescribed fees levied for the entrance to Goff's Caye. Fees range from BZ $2 – 5 for kids and BZ $5 – 10 for adults.	121,006	227,186	246,240	267,498
Belize Audubon Society	Visitor Fees	Protected Area Entrance Fee	BAS collects fees ranging from BZ $1 - $60 for entrance to protected areas managed by BAS.	1.350,768	1,395,480	1,206,047	1,204,670
Toledo Institute for Development and Environment (TIDE)	Visitor Fees	Park and Marine Reserve Entrance Fee	Prescribed fees levied for the entrance to protected areas managed by TIDE specifically the Port Honduras Marine Reserve. Entrance fee is BZ $10 for foreigners and free for Belizeans	2,174,385	2,100,00	1,928,000	1,792,718
Customs and Excise Department	Environmental Tax	Taxes on financial transactions - Imports	Tax collected from Duties charged on imported goods. 5% ad valorem on vehicles over 4 cylinders. Fuel Products: Aviation Spirit Premium Gasoline, etc. All other items not falling within these categories pay a 3% ad valorem tax	25,611,334	28,960,355	31,254,253	29,249,959
Fisheries Department	Visitor Fees	Marine Reserve Entrance Fee	The Fisheries Department collects fees for entrance to marine reserves managed by the department. Fees range from BZ $10 -$20 per entry. There is $50 weekly rate for all reserves except the Hol Chan Marine Reserve.	475,357	472,276	437,326	484,083

17 Sports fishing license fee for the year 2015 does not include fees from January to March. Values for 2013 and 2014 are unavailable.

Table 8: Select Existing Biodiversity/Natural Resources Related Income in Belize

Organization/Agency	Solution	Solution Type	Description	Annual Income (2013/14) BZ$	Annual Income (2014/15) BZ$	Annual Income (2015-16) $BZ	Annual Income (2016/17) $BZ
BECOL	Donation	Corporate Social Responsibility	BECOL makes a yearly donation to Friends of Conservation and Development (FCD).		25,000[18]	25,000	25,000
Mining Unit /MNR	Mining Fee	Taxes on natural resources	The Government of Belize collects royalties on the ex-mined value of minerals extracted by volume (cubic yard and metric tons). Ex mined values are not equivalent to market price.	288,642	312,645	280,513	320,461
Land Department/ MNR	Rents on national lands	Taxes on natural resources	Land tax paid for the lease of national lands, occupation fees (by area)	1,092,142	1,619,408	1,686,703	1,659,893
Geology and Petroleum Department/ MNR	Royalties of Petroleum Production	Concession Fee	Royalty is paid upon the value or volume of crude oil or natural gas produced. Currently on one company produces oil in the country, Belize Natural Energy	15,493,994	10,732,808	4,884,039	$2,000,000
Forest Department	Royalties on Forest Product	Concession Fee	The Government of Belize collects royalties on forest produce falling within four classes as set out by the Forest Act and its subsidiary laws. Timber species include Mahogany, Cedar, Rosewood, and Zericote.	964,598	564,632	721,190	578, 748
Department of the Environment	EIA Processing Fee		A general fee of BZ $5,000 is charged for the GOB and NEAC to carry out activities linked to the processing of EIAs. Including paper work, site inspections, transportation, and public consultations).	178,790	112,167	89,375	114,971
	Environmental Monitoring Fees		After completion of the EIA process, a compliance plan is created. The GOB collects fees based on location and activities that are required by the compliance plan in order for the government to accurately monitor site activities.	280,423	329,573	316,755	337,812

18 BECOL makes an annual donation of US $12,500 to FCD for Scarlet Monitoring Conservation Project. BECOL was unable to verify contribution for 2013.

5.3. Government subsidies and Incentives

Incentives are often used by government to influence social economic, environmental or other outcomes or behavior. Incentives can include subsidies, tax credits, regulatory advantages, or non-application or partial application of public policies and regulations. Some incentives can serve as perverse incentives that facilitate biodiversity loss.

Fiscal Incentive Program

Businesses which qualify under the Fiscal Incentives Program are given duty exemption for the importation of various categories of materials and equipment as outlined in Box 3 above. The total value of the duty exemption given under the Program is unknown.

Fuel Subsidy to Agricultural Sector

The Government provides subsidized fuel to the Sugar industry. The subsidy is estimated at around BZ $4.5M dollars annually.

Financial Assistance to Agricultural Producers

The Government created a programmatic line item within the Ministry of Agriculture's budget in the 2016 – 2017 fiscal year to provide financial assistance to agricultural producers of BZ $1.75M. The objective of the program is to (i) strengthen the partnership and support mechanisms that contribute to the mission of the Ministry of Agriculture particularly in the areas of food security, foreign exchange earnings, poverty alleviation, income generation and conservation of natural resources; (ii) increase in the distribution of farm products in the northern and southern districts, and (iii) facilitate domestic and foreign marketing of targeted agricultural products.

Land Tax for Undeveloped Land

A land tax of one percent is levied on the unimproved value of all agricultural land, suburban and beach land as provided for by the Lands Act. This has in the past served as a perverse incentive for developers to clear land. Furthermore, private land owners who have held land in conservation have sold off major tracks of land to agricultural developers given the taxes they must pay.

Tax exemptions on Agricultural Services

Farmers are exempted from General Sales Tax of 12.5% on land clearing/preparation, crop dusting and harvesting services. The absence of costs to developing agricultural land has facilitated land conversion and has provided limited incentives to improve existing lands under production.

Export Processing Zone (EPZ) Program

Tax breaks and incentives are provided to investors who hold EPZ status in services, manufactured goods, and non-traditional agricultural products. Benefits of EPZ status includes:

- Import duty exemption on materials and equipment;
- Duty and tax exemption on diesel and industrial fuel used for in-house energy generation;
- Exemptions from capital gains tax, property tax, land tax, and taxes on trade turnover, GST on imports, excise and consumption tax on inputs.

5.4. Current Biodiversity Finance Solutions in Belize

A rapid analysis of existing biodiversity finance solutions[19] in Belize was carried out under the PIR guided by the BIOFIN global methodology. The assessment identified, among other things, the name of the solution, the type of solution i.e. whether the solution can be categorized as an environmental trust fund, debt for nature swap, or overseas development assistance, the objective of the finance solution, a brief description of each solution, financial data, and legal and policy framework. Existing biodiversity finance solutions provides an overview of possible points of entry for strengthening or scaling-up finance for biodiversity conservation in Belize. The review can serve as an important point of departure for developing Belize's Biodiversity Finance and Resource Mobilization Plan.

The Rapid mapping of existing finance solutions revealed that an important mix of finance solutions already exists in Belize. These solutions include national environmental funds, corporate social responsibility and public private partnerships, debt-for-nature swaps, green taxes, and official development assistance. A selected number of current biodiversity finance solutions are presented in Table 9.

19 Tools or mechanisms used to raise or leverage funding

Table 9: Biodiversity Finance Solution in Belize

Name	Solution	Result	Description	Source	Responsible Party	Recipients	Financial Data (USD)
Protected Areas Conservation Trust	ETF[20]	Generate, deliver better	The PACT was established in 1996 with the aim of providing a dedicated source of financing to support protected areas management in Belize.	Tourists Fee	PACT Board of Directors	Protected Areas Managers	$1.5 M
Environmental Monitoring Fund	CSR[21]	Deliver Better, Avoid future expenditures	established to provide financial support to the Department of Environment to carry out its mandate	Belize Natural Energy Ltd.	Department of the Environment	Department of Environment	$337,812
Belize Marine Fund	ETF	Generate, deliver better	The was created through a US$ 10M endowment challenge grant from the Oak Foundation.	OAK Foundation	Belize Marine Fund Board of Directors	Entities promoting conservation efforts	$10. M
Belize Nature Conservation Foundation (BNCF)	ETF DNS[22]	Generate, deliver better, realign expenditures	The BNCF was the product of a Debt for Nature Swap with the United States Government and local NGOs. This agreement required the US Government, with funds from The Nature Conservancy (TNC), to retire US$ 9M in debt from the Government of Belize.	US Government/ TNC	PACT Board of Directors	PA Managers	$9. M
MARFUND	ETF	Generate, deliver better, realign expenditures	MARFUND was established in 2004 to support ecoregional planning and coordination in management of the Mesoamerican Reef.	Multiple Donors including TNC, WWF, OAK, The Summit Foundation	MARFUND Board of Directors (PACT is responsible entity in Belize)	Marine PA Managers	$8.2M
German Government (GIZ and KfW)	ODA[23]	Deliver better, avoid future expenditures	The GIZ is supporting efforts of the Caribbean states, including Belize, to adapt to climate change, reduce greenhouse gas emissions, promote sustainable use of natural resources and renewable energy, promote natural resource conservation (including forest management)	German Government	GIZ KfW	Multiple recipients	$2.8M

20 Environment Trust Fund
21 Corporate Social Responsibility
22 Debt for Nature Swap
23 Official Development Assistance

Table 9: Biodiversity Finance Solution in Belize

Name	Solution	Result	Description	Source	Responsible Party	Recipients	Financial Data (USD)
GEF	ODA	Deliver Better, Avoid future expenditures, Generate	The Global Environmental Facility provides funding for projects in areas of protected areas management, sustainable landscapes and seascapes, sustainable forest, and sustainable land management among others.	UNDP – Belize Country Office	UNDP Country Office – Resident Rep.	GOB, NGOs, CBO	$14.6M
OAK Foundation (non-MARFUND)	ODA	Deliver Better, Avoid future expenditures, Generate	OAK Foundation funds projects that seeks to conserve and restore the environment while enhancing people's well-being and livelihoods	UNDP – Belize Country Office	OAK Foundation	GOB, NGOs, CBO	$2.8M
BECOL Donation	CSR	Deliver better	The Belize Electricity Company Limited provides an annual donation to the Friends for Conservation and Development to support the management of one of Belize's largest PA the Chiquibul Forest Reserve and National Park	Belize Electric Company Ltd.	Friends for Conservation and Development	Friends for Conservation and Development	US$25,000.
Environmental Tax	Green Taxes	Generate Revenues	The Environmental Tax of 3% is charged on vehicles with 4 or more cylinders	Vehicle Owners	Department of the Environment	Government of Belize	$30. M
New England Biolabs	ODA	Deliver better, avoid future expenditures	Fund community based conservation of landscapes and seascapes through protected areas management, ecological restoration, and improving community livelihoods	Multiple Donors	N.E. Biolabs	NGOs in Belize	$39, 500.
Coca Cola Company	CSR	Deliver better, avoid future expenditures	The Coca Cola company contributes funding for the management of the Belize River Watershed – the major source of water for the company.	Coca-Cola Company	World Wildlife Fund	UB- ERI	$30,000

Institutional Analysis

6. Institutional Analysis

The institutional analysis served to i) identify the key institutions and institutional arrangements relative to biodiversity finance in Belize; and, ii) to identify and prioritize key stakeholders, capacities and capacity gaps necessary to support biodiversity finance in Belize. Public sector institutions largely operate on individual institutional mandates guided by specific legislations and policies. Such individual mandates pose a challenge to the implementation of actions requiring inter-ministerial coordination and collaboration in biodiversity management and sustainable development.

At the national level, coordination mechanisms such as the institutional framework for the implementation of the GSDS (2016 -2020) – Belize's medium-term development framework – have aided to bridge the gaps and improve cross-scale and cross-level linkages (Figure 2). Similarly, the establishment of a sounding board – the Technical Working Group – at the project level has aided, but not eliminated all gaps, in improving inter-ministerial participation in such efforts towards biodiversity finance.

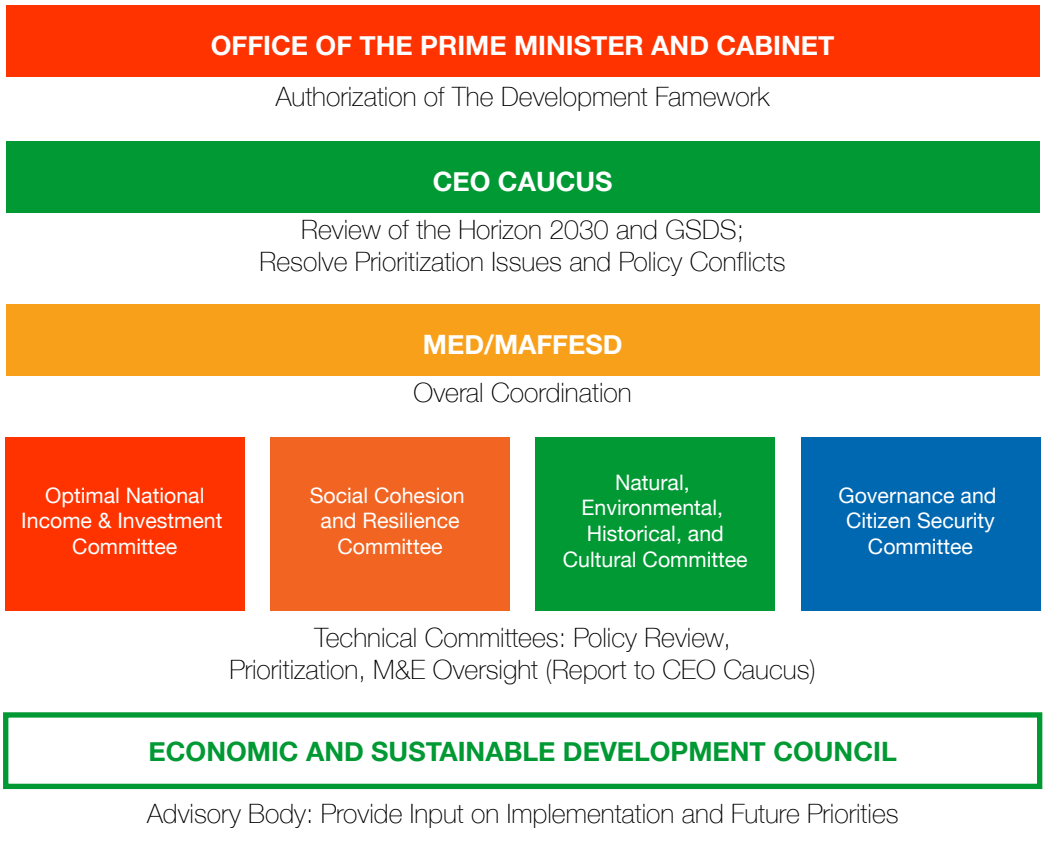

Figure 44: Coordination Framework for GSDS Implementation

The BIOFIN Belize recognized the critical importance of stakeholders at the onset. BIOFIN in Belize is led by the MFFESD in collaboration with the United Nations Development Programme. The Ministry of Economic Development and Ministry of Finance have also been key partners during the implementation of BIOFIN. The Institutional Analysis served to identify the stakeholders that are critical to the BIOFIN process during the implementation of the various subcomponents. In addition to identifying and prioritizing the stakeholders, the analysis also identified some capacity needs or biodiversity management in Belize.

6.1. Stakeholder Prioritization

At the onset of the implementation of BIOFIN in Belize, the team began to engage both traditional and non-traditional stakeholders[24] to i) inform stakeholders about the BIOFIN Initiative and ii) map stakeholders interaction with biodiversity. Through this process, an initial set of stakeholders were visited (Table 10).

24 By stakeholder, we refer to those individuals or organizations that play varying degree of roles, to support the outcomes or impact the BIOFIN Project, directly or indirectly.

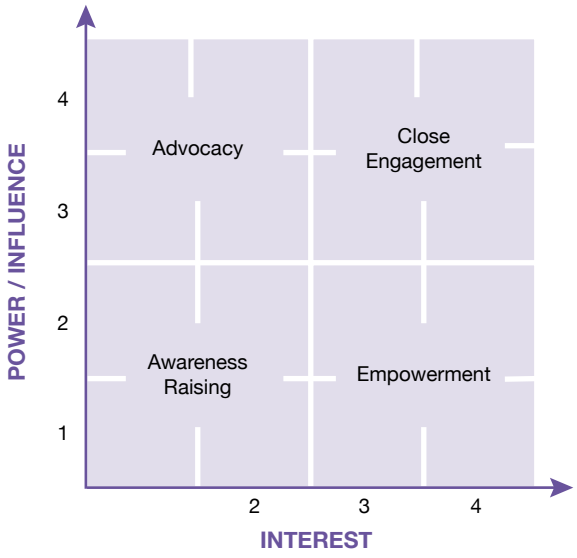

Figure 45: Power vs Interest Grid
(Source: As cited by UNDP, 2016)

In the subsequent assessments of BIOFIN, it will be required that our Environmental Economist and Finance Expert engage key stakeholders in the Biodiversity Expenditure Review and Biodiversity Finance Plan, respectively. To identify those stakeholders who were key players would require close engagement for successful implementation of BIOFIN; others who were critical to engage but would need further lobbying to leveraging their support, and those who were necessary to keep informed and engaged throughout the BIOFIN process. The Belize PIR embraced the Power-Interest Grid as suggested by the BIOFIN Workbook (Figure 45).

Power versus interest grids typically help determine which players' interests and power bases must be taken into account in order to address the problem or issue at hand. They also help highlight coalitions to be encouraged or discouraged, what behavior should be fostered, and who's "buy in" should be sought or who should be "co-opted." (Byrson, 2004) Stakeholders are ranked on a scale of 1 – 4, with 1 being the lowest and 4 being the highest based on their current interest in the BIOFIN Project and their power of influence to effect policy and practice. Those stakeholders with high interest and high power (>2.0) should be closely engaged as they are deemed critical to the outcomes of the BIOFIN Project.

Table 10: List of Stakeholders Engaged in the Policy & Institutional Review

Stakeholder Category	Stakeholders	Type of Finance Solution[25]	Code
Private Company International	American Sugar Refinery	MFR, PFC	PC1
	Santander	MFR, PRC	PC2
Private Company National	Belize Natural Energy Trust	MFR, RER, PFC	PCN1
	Bowen and Bowen Limited	MFR, PFC	PCN2
	Citrus Products Belize Limited	MFR, PRC	PCN3
	Resource Recovery Recycling Limited	MFR, PFC	PCN4
	Belize Electricity Company Limited (BECOL)	MFR, PFC, RER	PCN5
Government	Forest Department	MFR, PFC, RERM, IDEF	GOV1
	Fisheries Department	MFR, PFC, RERM, IDEF	GOV2
	National Climate Change Office	MFR, PFC, RERM, IDEF	GOV3
Government	Forest Department	MFR, PFC, RERM, IDEF	GOV1
	Fisheries Department	MFR, PFC, RERM, IDEF	GOV2
	National Climate Change Office	MFR, PFC, RERM, IDEF	GOV3
	Department of Agriculture	MFR, PFC, RERM, IDEF	GOV4
	National Protected Areas Secretariat	MFR, PFC, RERM, IDEF	GOV5
	Lands Department/MNRE	MFR, PFC, RERM, IDEF	GOV6
	Geology Department	MFR, PFC, RERM, IDEF	GOV7
	Hydrology Department	MFR, PFC, RERM, IDEF	GOV8
	Solid Waste Management	MFR, PFC, RERM, IDEF	GOV9
	Ministry of Tourism	MFR, PFC, RERM, IDEF	GOV10
	Ministry of Economic Development	MFR, PFC, RERM, IDEF	GOV11
	Ministry of Finance	MFR, PFC, RERM, IDEF	GOV12
Quasi-Government	Belize Tourism Board	MFR, RER, IDEF	QG1
	Protected Areas Conservation Trust (PACT)	MFR, RER, IDEF	QG2
	Belize Trade and Investment	MFR, RER, IDEF	QG3
	Coastal Zone Management and Authority	MFR, PFC, RERM IDEF	QG4
	Belize Agricultural Health Authority	MFR, PFC, RERM IDEF	QG5
	Pesticide Control Board	MFR, PFC, RERM IDEF	QG6
National NGO	Belize Hotel Association	PFC, IDEF	NNGO1
	Belize Nature Conservation Foundation	MFR, PFC, RERM IDEF	NNGO2
	Belize Sugar Cane Farmer's Association	RER, PFC	NNGO3
	Sarteneja Alliance for Conservation and Development	PFC, IDEF	NNGO4

25 The four categories of finance solutions: mobilizing future resources (MFR), Realigning Existing Resources (RER), Preventing Future Costs (PFC), and Improving Service Delivery of Existing Finance (IDEF).

Table 10: List of Stakeholders Engaged in the Policy & Institutional Review

Stakeholder Category	Stakeholders	Type of Finance Solution[25]	Code
	Sarstoon Temash Institute for Indigenous Management	PFC, IDEF	NNGO5
	Association of Protected Areas Management Organization	MFR, PFC, IDEF	NNGO6
	Belize Association of Private Protected Areas	MFR, PFC, IDEF	NNGO7
	Belize Tourism Industry Association	PFC, IDEF	NNGO8
	Belize Citrus Growers Association	PFC, IDEF	NNGO9
	Belize Institute of Environmental Law and Policy	PFC, IDEF	NNGO10
	Southern Environmental Association	PFC, IDEF	NNGO11
	Corozal Sustainable Future Initiative	PFC, IDEF	NNGO12
	Friends for Conservation and Development	PFC, IDEF	NNGO13
	Toledo Cacao Growers Association	PFC, IDEF	NNGO14
	Toledo Institute of Development and Environment	PFC, IDEF	NNGO15
	Wildtracks	PFC, IDEF	NNGO16
	Ya'axche Conservation Trust	PFC, IDEF	NNGO17
	Belize Chamber of Commerce and Industry	MFR, PFC, IDEF	NNGO18
	Belize Audubon Society	PFC, IDEF	NNGO19
	Turneffe Atoll Sustainability Association	PFC, IDEF	NNGO20
	Programme For Belize	PFC, IDEF	NNGO21
	Maya Leaders Alliance	PFC, IDEF	NNGO22
	Sports Fishing Association	PFC, IDEF	NNG23
International NGO	OAK Foundation	MFR, IDEF, RER	INGO1
	MARFUND	MFR, IDEF, RER	INGO2
	World Wildlife Fund	MFR, IDEF, RER	INGO3
	The Nature Conservancy	MFR, IDEF, RER	INGO4
	Wildlife Conservation Society	MFR, IDEF, RER	INGO5
	Healthy Reefs for Healthy People	MFR, IDEF, RER	INGO6
	Caribbean Community Climate Change Centre	MFR, IDEF, RER, PRC	INGO7
National Financial Institutions	Development Finance Corporation	MFR, IDEF, RER	NFI1
	Belize Enterprise for Sustainable Technology	MFR, IDEF, RER	NFI2
	Reconstruction & Development Corporation	MFR, IDEF, RER	NFI3
	National Bank of Belize Ltd.	MFR, IDEF, RER	NFI4
International Financial Institutions	The World Bank	MFR, IDEF, RER	IFI1
	Caribbean Development Bank	MFR, IDEF, RER	IF2
Multilateral Donor	United Nations Development Programme	MFR, IDEF, RER	MD1
Academic/Research Institution	Sugar Industry Research and Development Institute	IDEF, MFR	AR1
	University of Belize - Environmental Research Institute	IDEF, MFR	AR2
	Galen University	IDEF, MFR	AR3

Based on the prioritization exercise, the following were determined.

A. Stakeholders who should be closely engaged:

- Ministry of Economic Development (GOV 10)
- Association of Protected Areas Management Organization (NNGO6)
- Protected Areas Conservation Trust (PACT)
- United Nations Development Program
- Belize Chamber of Commerce & Industry
- Belize Tourism Board
- OAK Foundation
- World Wildlife Fund
- The Nature Conservancy
- Wildlife Conservation Society
- Belize Tourism Industry Association
- Friends for Conservation & Development
- Forest Department
- Fisheries Department
- National Climate Change Office

B. Stakeholders requiring further lobby and advocacy:

- Ministry of Tourism
- Ministry of Finance
- Maya Leaders Alliance
- The World Bank
- Caribbean Development Bank
- Caribbean Community Climate Change Centre
- National Bank of Belize Ltd.
- Department of Agriculture
- Solid Waste Management Authority
- Lands Department/MNRE
- Belize Electricity Company Limited (BECOL)
- Belize Trade and Investment
- Coastal Zone Management and Authority
- Sugar Industry Research and Development Institute
- University of Belize - Environmental Research Institute
- Belize Nature Conservation Foundation
- Belize Sugar Cane Farmer's Association
- Sarstoon Temash Institute for Indigenous Management
- Healthy Reefs for Healthy People
- American Sugar Refinery
- Santander
- Belize Natural Energy
- Bowen and Bowen Limited
- Citrus Products Belize Limited
- Development Finance Corporation
- Geology Department

C. Stakeholders requiring empowerment to support the BIOFIN Process:

- MARFUND
- Wildtracks
- Sarteneja Alliance for Conservation and Development
- Belize Association of Private Protected Areas
- Southern Environmental Association
- Corozal Sustainable Future Initiative
- Toledo Institute of Development and Environment
- Belize Audubon Society
- Turneffe Atoll Sustainability Association
- Programme For Belize

D. Stakeholders require further awareness raising:

- Belize Institute of Environmental Law and Policy
- Toledo Cacao Growers Association
- Belize Enterprise for Sustainable Technology
- Resource Recovery Recycling Limited
- Hydrology Department
- Belize Hotel Association
- Belize Citrus Growers Association
- Ya'axche Conservation Trust
- Sports Fishing Association of Belize
- Belize Agricultural Health Authority
- Pesticide Control Board
- Reconstruction & Development Corporation
- Sugar Industry Research and Development Institute

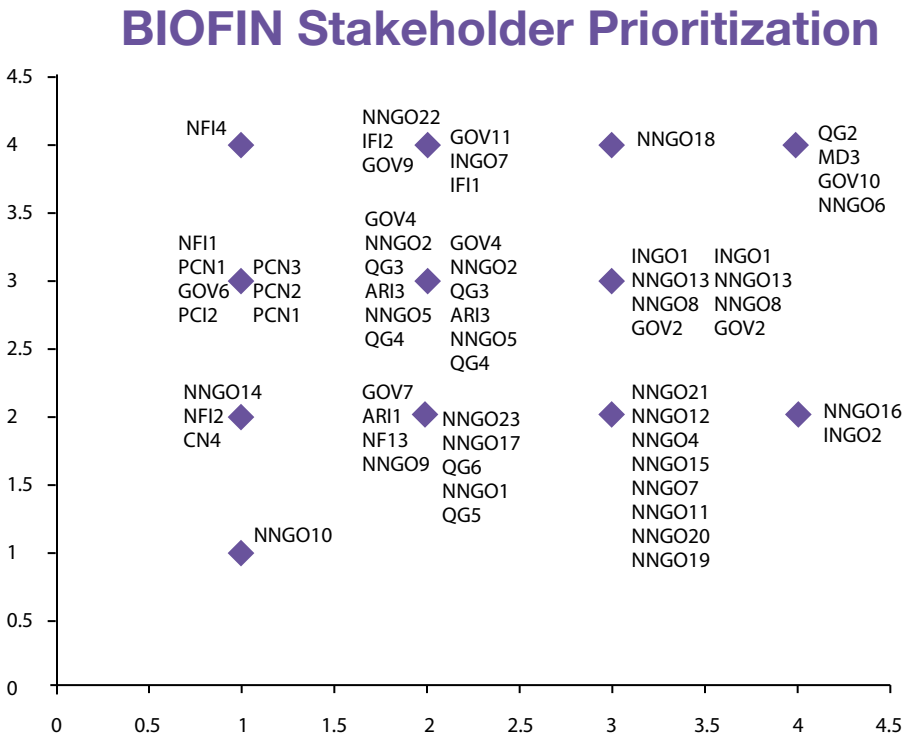

Figure 46: BIOFIN Stakeholder Prioritization

6.2. Prospects for Institutional Strengthening for improved biodiversity management in Belize

As is the case with its policy framework, Belize has a generally modest institutional framework to support and sustain biodiversity and ecosystem management. Moving forward however, it will be important to maximize efficiency and efficacy of Belize's institutional framework so as to "deliver better, avoid future costs, realign expenditures, and generate funding". In Belize, many public sector institutions largely operate on individual institutional mandates guided by specific legislations and policies. In the cases where there are some collaboration, institutional arrangements tend to be ad hoc and informal. Such individualism and ad hoc institutional arrangements pose a challenge to the implementation of actions requiring inter-ministerial coordination and collaboration.

Furthermore, the reality of the institutional framework for biodiversity management in Belize is that reducing budgetary allocations means there must be a move to streamline operational framework of public sector agencies. A number of institutional and capacity needs exist for biodiversity management within both the public and private sectors. In moving towards improved framework for biodiversity and ecosystem management it will be important to realign institutional framework to adequately achieve prioritized biodiversity targets, track biodiversity impacts and investments, improve cross-scale and cross-level coordination, and develop and adopt innovative finance options.

As a point of departure, the MFFESD, the Ministry with primary mandate for biodiversity and

sustainable development of Belize can make interim steps to address its institutional inefficiencies towards an improved operational structure for biodiversity management. An improved, streamlined operational framework of the MFFESD will aid in meeting key objectives of the BIOFIN Initiative: doing business better, avoiding future expenditures, generate income and deliver better. More specifically, such revised operational framework will seek to focus the ministries, departments, and units and address some of the inherent cross-scale and cross level institutional challenges such as duplication of physical resources and staff, lack of coordination within and among ministries and departments, and remove some dualistic mandates and functions of departments.

A more streamlined Ministry and associated departments can move towards meeting prioritized biodiversity targets, improved tracking of investments and impact, strengthen donor coordination mechanisms, foster inter- and intra-ministerial coordination, and improve ecosystems management, monitoring, and enforcement. Such a streamlined approach is in line with the proposed shift by the Government of Belize and specifically MFFESD towards results-based programming and budgeting. A repurposed Ministry will allow for the repurposing of staff towards key programmatic areas of focus and therefore allow for the streamlining of human and material resource to meet those targets.

It is with this backdrop that a proposed institutional framework for MFFESD is advanced (Figure 47). The intent is to spur further thought and discussion on how to streamline key areas within the Ministry for improved efficiency and effectiveness in meeting Belize's biodiversity and environmental targets.

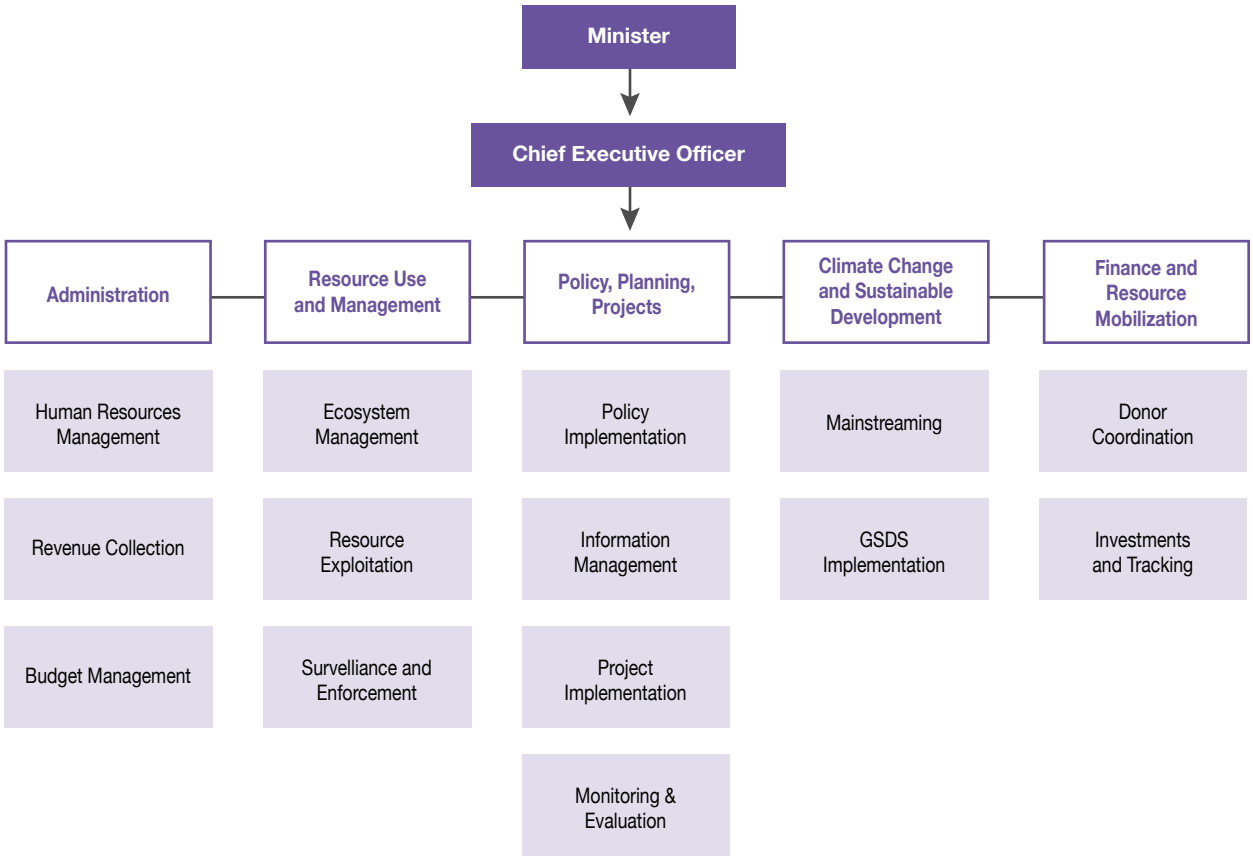

Figure 47: Proposed Institutional Framework of MFFESD

The proposed framework seeks to streamline programs of the ministry into more clearly defined focus areas. In this context, the recommendation is for the MFFESD to be separated into five key functions: administration, resource use and management, policy, planning and projects, a climate change and sustainable development department, and finance and resource mobilization.

Administration

It is envisioned that the Administration department will encompass existing functions of human resource management (Registry) and finance and budget administration. An added function to this department will be "revenue collection" so as to streamline all revenue collection of the Ministry. This revised framework can assist in the tracking of investments in biodiversity and environmental management in the implementation of the biodiversity tracking tool.

Resource Use and Management

The recommendation is to streamline key programmatic areas of resource use and management – ecosystems management, extraction, and monitoring and enforcement. Currently departments such as the department of forest, fisheries, and environment have multiple functions wherein some of these functions overlap. The recommendation herein separates and streamlines focus of the existing departments of the MFFESD into key programmatic areas such as ecosystems management (to include protected areas management, wildlife management, research and monitoring), sustainable resource use (to include stock assessments in line with resource harvesting, extraction, permitting, licensing) and surveillance and enforcement.

Policy, Planning, and Projects

One of the pervasive challenges identified in realizing policy objectives is the inter and intra-ministerial gaps in policy coordination. As such, it is recommended that a department focusing on policy development and implementation, strategic and administrative planning, project development and implementation, and monitoring and evaluation. The intent is to strengthen policy coordination within the ministry and across ministries. For instance, a Policy and Planning Department of MFFESD can collaborate with existing policy departments/units of the Ministry of Natural Resources, Ministry of Economic Development, Ministry of Agriculture, and Ministry of Tourism. The Planning team of the Department can lead strategic and administrative planning and help to streamline focus of the MFFESD in meeting its biodiversity and environmental targets. The department can also help to build synergies among projects within MFFESD and across other collaborating ministries. Monitoring and evaluation should also be a key function of the department to ensure that strategic and administrative planning, resource use and management, and other key functions of MFFESD are informed using relevant data. A further recommendation is to have the Environmental Statistics Unit positioned under this department.

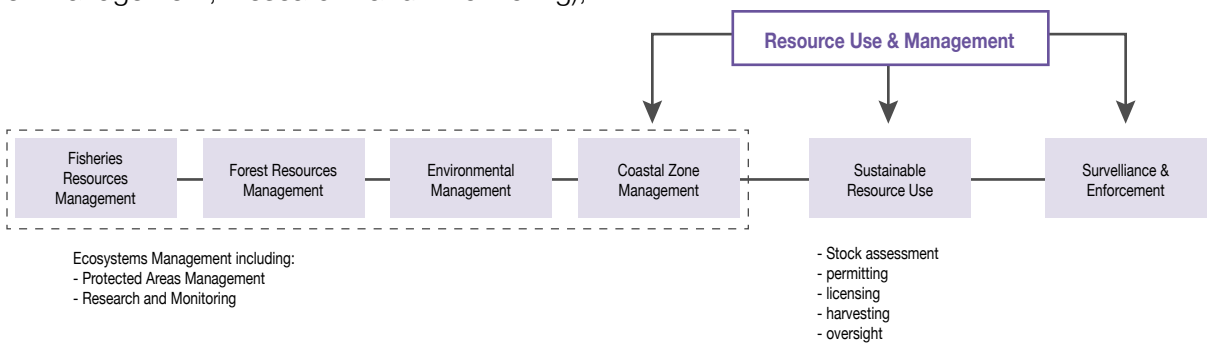

Figure 48: Proposed Programmatic Focus for Resource Use and Management -MFFESD

Sustainable Development and Climate Change

Sustainable Development and Climate Change remain two central issues critical to the development of Belize. The recommendation is for an amalgamation of the two existing departments. The intent of the department is again to reduce duplication and overlap, focus on mainstreaming these key challenges into development objectives, and lead the implementation of the Growth and Sustainable Development Strategy.

Finance and Resource Mobilization

Biodiversity and conservation stakeholders have recognized the need to strengthen existing finance mechanisms and develop new and innovative finance solutions for biodiversity and environmental management in Belize. Naturally, the recommendation is that the government take the lead. The recommendation is that a finance and resource mobilization department is created to lead the development of finance options for Belize (payment for ecosystem services, conservation tax easements, green and blue bonds, green certification, carbon markets etc.). The department will also aid in improving existing finance options such as strengthening donor coordination mechanisms, develop public-private partnerships frameworks, and establish systems for the tracking of investments and the impact on national targets.

The proposed framework is certainly not hard and fast and is intended to serve as a point of departure for efforts to mainstream and focus the MFFESD. This will allow the Ministry to operate more effectively and efficiently to meet its biodiversity and environmental targets. Given the resources constraints of the Government of Belize, a repurposing of existing human resources would be required in meeting the proposed operational framework. For instance, existing members of various departments with responsibility for policy oversight can be repurposed under the Policy, Planning, and Projects Department.

Conclusion and Recommendations

7. Conclusion and Recommendations

The BIOFIN Project, and specifically the PIR, has provided an important snapshot into the current policy and institutional landscape for biodiversity finance in Belize. The introduction and implementation of the Project, in and of itself, have helped to raise the profile on the importance of improving finance for biodiversity conservation and sustainable development in Belize. From the development of the Forest Ordinance in the 1920s to the establishment of its 104th protected area with a total coverage of more than 23% of national territory, biodiversity conservation has been integral to pre- and post-independence Belize.

Overall, Belize has a sound policy and institutional framework to guide biodiversity finance in Belize. The long-term and medium-term development frameworks, Horizon 2030 and GSDS, recognize that the environment is the basis of all economic activity and that development must be underpinned by the principles of sustainability. Some key points of entry for biodiversity finance in the national development frameworks include the government's commitments to move towards program based budgeting and performance reporting, as well as, efforts towards tax reforms, the establishment of a public-private partnership policy, and improved donor coordination mechanisms. Some of the concerns for biodiversity include GOB policies to increase agricultural production and tourism development – two of the largest drivers of deforestation. With these development frameworks some direct conflicts across strategies to promote environmental sustainability and those to promote economic growth.

There remain some challenges to mainstreaming biodiversity concerns in agricultural development. Policies such as those that will seek to create incentives for large scale agricultural development, subsidies for farmers, and credit schemes will exacerbate land-use changes and the impacts on sensitive ecosystems and biodiversity hotspots in Belize. Some important points of entry for biodiversity finance in the agriculture sector include the development of an organic market, development of local green certification, strengthening compliance with international green certification, greening of fuel subsidy to the citrus industry, and repurposing "special support to farmers".

In the tourism sector, concerns for biodiversity include strategies that seek to increase tourism development in coastal areas, the expansion of mass tourism to southern Belize, business development within protected areas, the paving of the Caracol Road and other tourism related infrastructural development. These present concerns increase land cover change, reduce resilience to climate change, and increase impact from increasing storm events. Some important entry points for biodiversity finance include increasing public-private partnerships between the MFFESD and the private sector, particularly in protected areas management. Opportunities exist to scale up existing finance mechanisms such as the PACT whose revenue comes from a tourism exit tax.

The strategies for expansion in agriculture and aquaculture sector as well as tourism have long-term effects on Belize's marine ecosystem. Some important achievements of the sector include legislations enacted by the Government to place a moratorium on offshore drilling, the implementation of managed access fisheries, the complete ban on trawling, full protection of cornerstone species (such as herbivores), as well as enforced seasonal closures and harvesting limitations on important economic species such as lobster, conch, and Nassau grouper. Opportunities for biodiversity finance within the sectors include scaling up finance options such as the Belize Marine Fund and the MAR Fund.

Like the agriculture sector, the forest sector has been targeted as a prioritized economic sector

in Belize. Strategies will seek to increase the export of forest and non-timber forest products. This will potentially increase the acreage of land in Belize under forest production. While there are efforts to promote sustainable forest management by the Government of Belize, the lack of resources by the Forest Department to effectively monitor and enforce SLM is of concern. Beyond the formal forest production sector, concerns also include the increasing demand for forest resources from both local and international sources, increasing trans boundary incursions. The recent increase of penalties provides a good point of departure to address some of the challenges in the sector. It is recommended that some of the increased income from penalties be diverted or earmarked to the Forest Department to increase monitoring and enforcement capacities of the Department.

Energy demand in Belize has been on the rise. Belize's energy is provided by a mix of fossil fuels, biomass, hydroelectricity, imported electricity, and minimal amounts of solar and wind. This sector presents serious implications for biodiversity through increase land cover change to set power generation plants, displacement of biodiversity, loss of important riparian ecosystems, and possible change along the reaches of watersheds. As Belize tries to increase indigenous energy supply, options such as hydro, solar, wind, and biomass power generation has been prioritized. The National Energy Policy has identified the importance creating an energy efficiency and conservation culture as well as fostering sustainable energy production as key tenets. A critical stock-take on Belize's watersheds, economic contributions, importance for connectivity, and the long-term impacts on biodiversity by hydropower development is required before such development proceeds.

The mining sector is on the lower end in terms of contributions to GDP and share of labor force. The sector however provides several concerns for biodiversity. Increase in infrastructure development, particularly the construction of roads in the country has significantly increased the demand for sand, clay fill, limestone aggregates, sand and gravel and other minerals. The increase in mining production has resulted in increased collection of royalties by the Government of Belize. It is recommended that increasing allocations be provided to the Mining Unit to increase monitoring oversight and enforcement of the mining regulations to ensure minimal impact on ecosystems.

The NBSAP is one of the key tools through which biodiversity protection will be realized. The 1998 version of the document remained dormant largely because there were no champions for the process. It is necessary to ensure that the NBSAP is effectively integrated and supports the Horizon 2030 goals and objectives. As such it is recommended that the Chief Executive Officer in the MAFFESD and National Coordinators of the Capacity Development and Key Biodiversity Areas Project to support the establishment of a Biodiversity Officer to lead and coordinate NBSAP's implementation.

The National Land Use Policy, though developed and endorsed by stakeholders has never been fully implemented. The Policy is currently being revised to reflect recent institutional changes within the public administrative systems. The absence of the National Land Use Policy has presented a significant gap in the framework for land use and management in Belize. The Policy is of particular importance to BIOFIN in Belize, as potential finance solutions will be influenced by the land use and management framework in Belize. It is therefore recommended that the MFFESD lobbies for the revision and implementation of the Policy so as to effectively guide land use in Belize. The Fisheries Resource Bill, like the National Land Use Policy, has been developed since 2011 and has not been implemented. The Bill provides the legal framework to guide managed access fisheries in Belize and improve sustainability of commercial fishing and strengthen ecosystem-based management of Belize's marine resources. It is recommended therefore that efforts are prioritized to advocate for the signing of the Bill into law. Similarly, efforts of the MFFESD should focus on the implementation of the National Integrated Coastal Zone

Management Plan, National Protected Areas Policy and Systems Plan, the National Environmental Action Plan, National Program of Action for the Control of Land Based Sources of Pollution in Belize (NPA LBS) and the Belize Climate Change Adaptation Policy.

Increased cross-scale and cross-level governance structures will be required to effectively support biodiversity conservation and move towards green finance in Belize. Many of the policy and frameworks that guide the management of biodiversity in Belize require an effective inter-ministerial coordinating mechanism. The GSDS, National Land Use Policy, National Climate Change Policy, and National Environmental Action Plan, for instance, require constant coordination and collaboration between the MFFESD, Ministry of Natural Resources, and Ministry of Economic Development and Petroleum.

Moving towards finance for nature in Belize will require continuous capacity development across many areas. Recommendations are made to carry out a capacity gap assessment and a prioritization exercise to build capacities in areas that will strengthen efforts towards biodiversity finance in Belize.

The current institutional framework of the MFFESD provides an important coordinating mechanism to allow for an integrated approach to addressing biodiversity and sustainable development in Belize. The BIOFIN model in Belize provides an important point of departure for this approach. For instance, BIOFIN in Belize is a nationally implemented project. In converse to operating as a "project" being implemented by the MFFESD, the BIOFIN team was integrated into the Ministry as a result of pooling of funds and collaboration with other projects. BIOFIN Experts and Staff provide technical support in the strategic development of the Ministry. In addition to carrying out the requisite assessments as part of the BIOFIN Initiative, the Experts represent the Ministry in various technical capacities and help to improve inter-ministerial coordination and collaboration among projects. The operational framework has allowed BIOFIN Belize to influence policy and institutional reforms prior to the completion of the assessments.

The move towards biodiversity finance will require continued advocacy and sensitization. During the BIOFIN implementation and the PIR process, a series of one-on-one sessions were held across the country to inform public and private sector stakeholders of the BIOFIN Initiative – commencing even before and during the entire BIOFIN process. Specific efforts were made to target "non-traditional" stakeholders such as those within the agriculture sector: sugar, banana, cacao and shrimp associations; utility companies, national, Chinese, and Mennonite business communities. It is recommended that throughout the BIOFIN process i.e. the BER, FNA, and the development of the BFP that these stakeholders are continuously engaged.

A list of recommendations and proposed actions to move forward with biodiversity finance options for Belize is outlined below. These recommendations are intended to guide the operationalization of a robust policy and institutional framework for biodiversity finance and environmental management. It also outlines some actions that can be taken in the immediate future, in consideration of the weak policy and institutional context, to improve existing practice and opportunities for biodiversity finance in Belize.

Table 11: Recommendations and Actions

Recommendations		Actions	NBSAP Targets
1.	7 Prioritized NBSAP targets serve as the central strategies and actions for addressing biodiversity and environmental targets to the year 2020.	Review and validate the Biodiversity Finance Needs Assessment which entails the costing of the implementation of the NBSAP. Coordinated Implementation of the Biodiversity Finance Plan/Resource Mobilization Strategy	E3
2	Tracking of biodiversity and environmental management investments and impact.	Review, validate, and approve current biodiversity expenditure review; Design and Implement a tool to track real time spending and impact on biodiversity related targets;	E2
3	Improve cross-sector and cross-level coordination in implementation of NBSAP	Formalize the Technical Working Group of BIOFIN as entity with oversight for implementation of 7 prioritized actions and associated activities of NBSAP.	E3
4	Separate dualistic mandate of public entities, such as the Departments of Fisheries and Forestry, responsible for ecosystems management on the one hand and sustainable resource use, monitoring, and enforcement on the other.	Legislative and institutional changes to the Forest and Fisheries Act and associated legislations to separate biodiversity and ecosystems management mandate from sustainable resource use, monitoring, and enforcement. Repurposing of personnel in a newly established entity with the mandate of biodiversity and ecosystems management including forestry and fisheries. One of the agency's specific mandate should be the implementation of the NBSAP.	B1
5	Improve local and international donor coordination and investment mechanisms	Assess the current donor investment context in Belize; Track investments against 7 prioritized NBSAP Goals and identify funding gaps; Develop a strategy to attract donor investments against funding gaps;	E1
6	Improve current financing mechanisms for biodiversity and environmental management in Belize;	Assess opportunities for the optimization of national financing mechanisms for biodiversity conservation and environmental management; Implementation of Biodiversity and Environmental Resource Mobilization Strategy to mobilize financial and material resources to implement biodiversity and environmental targets; Develop new finance instruments e.g. bonds, equity to accelerate achievement of biodiversity targets;	E1
7	Improved coordination and collaboration for biodiversity and conservation financing between MFFESD and Ministry of Finance	Establishment of a joint Green Finance Task Force with personnel of the Ministry of Finance and the MFFESD with a focus on environmental and conservation finance.	B1, E1

Table 11: Recommendations and Actions

	Recommendations	Actions	NBSAP Targets
8	Improve coordination between the Ministry of Natural Resources and the MFFESD towards improved coordination and implementation of Forest and Fisheries Act, National Land Use Planning Framework, the National Environmental Policy and National Integrated Coastal Zone Management Plan among others.	Establishment of a Policy Unit within the MFFESD to guide policy development, implementation, and monitoring at the Ministry level as compared to Department level; Policy Unit of MFFESD and Policy Unit of the Ministry of Natural Resources develop joint Plan of Action to coordinate the implementation of inter-ministerial legislations, policies, and strategies.	B1, B3
9	Increase Incentives for biodiversity considerations in primary and secondary economic sectors in Belize	MFFESD engages Ministry of Tourism to create national green certification programs the tourism and forestry sectors in Belize MFFESD engages Ministry of Agriculture to strengthen compliance with international green certification programs in agriculture and fisheries industry including Fairtrade and organic certification	A2, B3
10	Tax incentives/easements for private conservation of threatened/Red Listed Species in Belize;	MFFESD develops and recommends incentives (easements) to the Ministry of Finance for private	A2, B3

Workbook and the PIR Process

The 2016 BIOFIN workbook was a useful tool to guide the development of the policy and institutional assessment for Belize. The PIR for Belize started using the previous workbook and later engaged the 2016 workbook. For our analysis, while the 2016 version of the workbook provided a better context for the nesting of BIOFIN and PIR within a broader context, the earlier version provided a clearer step-wise process to realize the outputs for the PIR particularly since this level of policy and institutional analysis has not been carried out in Belize.

Recommendations for the subsequent workbook include:

1) Further case-studies and examples of components and results from the PIR in other jurisdictions;

2) Further stepwise processes on sub-components of the PIR.

3) Outside of the workbook, it would be useful for countries implementing BIOFIN to see examples of final PIRs developed in other jurisdictions through the BIOFIN process.

Glossary of Terms

Biodiversity: Biological diversity or diversity of life. Biodiversity is reflected in the diverse array of living organisms (flora and fauns) within particular habitat or ecosystems.

Biodiversity Finance: The practice of raising and managing capital and using financial incentives to support sustainable biodiversity management.

Forestry sector: All economic activities related to forest or forest products – both timber and non-timber products as counted in the national accounts. Small scale activities such as the production and distribution herbal medicines, charcoal, roof thatching are not included.

Fisheries sector: All economic activities related to commercial fisheries production. This includes all value added production. Key fishery species include lobster, conch and a variety of finfish species.

Agriculture sector: All economic activities relating to horticulture and livestock production. Crops for horticulture include sugarcane, citrus, bananas, red kidney beans, rice, corn, cacao and a wide array of vegetables. Livestock production is limited to cattle, sheep, poultry, and pigs.

Aquaculture sector: All economic activities related primarily to shrimp and fish farming activities. Mariculture is also a component. Due to limitations data were only available for shrimp and not for tilapia and cobia production.

Mining and Quarrying sector: All economic activities related to the extraction and distribution of materials and minerals. Inclusive of sand, gravel, gold and granite, among others.

Tourism sector: All economic activities as identified in the national accounts as "Hotels and Restaurants" in addition to 37.7% of total "Exports of Goods and Services[26]".

Energy sector: All economic activities related to the production and distribution of energy including, distribution and use of petroleum and LPG.

Manufacturing sector: All economic activities related to the production of food and beverage products, textiles clothing and footwear, construction and petroleum. Under the PIR only petroleum was comprehensively assessed.

Cross Cutting Sectors: In addition to the individual sectors listed above, cross cutting policies and legislations of other key sectors were reviewed under the PIR in order to ensure a comprehensive analysis.

26 Value indicated by the Belize Tourism Board as the aggregate proxy for the Tourism Industry

PACT: The PACT is Belize's national conservation trust for protected areas management. PACT has invested BZ $33.9M since 1997. The PACT has also supports over 480 projects and 100 protected areas that for the NPAS in Belize. PACT has also been accredited as a national implementing entity for the Adaptation Fund and has been granted the fiduciary role for the World Bank. MAR Fund, GEF and BNCF.

Consolidated Revenue Fund: The general revenue stream of the Government of Belize. All taxes, fees and royalties collected on behalf of the Government of Belize are placed into the Consolidated Revenue Fund.

License Fees and Royalties: Royalties are collected by the GOB within three of the sectors assessed by the PIR including, Forest Sector, Mining and Quarry Sector, and the Manufacturing Sector (Petroleum). All license fees and royalties are paid into the Consolidated Revenue Fund of the Government f Belize. Collected funds are not directly re-allocated to the source ministry or department.

Environmental Tax: The Government of Belize currently levies and environmental tax on most merchandise upon import. Taxes collected are paid into the Consolidated Revenue Fund of the Government of Belize.

Subsidy: There are three existing subsidies in the country a subsidized fuel program for the Sugar industry, a fiscal incentive program (established under the Fiscal Incentives Act) and an export processing zone program.

Non-Governmental Organizations: There are several environmental NGOs operating within the country. Most NGOs spearhead the management of key protected areas in the NPAS via co-management agreements with the Government of Belize. Most seek international funding and grants to finance the protected areas.

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