



Belize National REDD+ Strategy

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Acronyms

AAE	Asesoramiento Ambiental Estratégico
BAU	Business as Usual Scenario
BENIC	Belize National Indigenous Council
BLPA	Belize Livestock Producers Association
BNN	Belize Network of NGOs
CADS	Centre for Applied Development Studies
CPA	Country Poverty Assessment
E-NGO	Environmental Non-Governmental Organization
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FCPF	Forest Carbon Partnership Facility
FD	Forest Department
FPIC	Free, Prior and Informed Consent
FREL	Forest Reference Emissions Levels
FRL	Forest Reference Level
GA	Grant Agreement
GDP	Gross Domestic Product
GHGI	Greenhouse Gas Inventories
GOB	Government of Belize
IPP	Indigenous Peoples Plan
IPPF	Indigenous Peoples Planning Framework
MAFFESD	Ministry of Agriculture, Forestry, Fisheries, the Environment and Sustainable Development
masl	Meters above sea level
MLA	Maya Leaders Alliance
MRV	Monitoring, Reporting and Verification
MSDCCDRM	Ministry of Sustainable Development, Climate Change and Disaster Risk Management
NBSAP	National Biodiversity Strategy and Action Plan
NCCO	National Climate Change Office
NEAC	National Environmental Appraisal Committee
NFI	National Forest Inventory

NFMS	National Forest Monitoring Systems
NGC	National Garifuna Council
NPAS	National Protected Areas System
NSDI	National Spatial Data Infrastructure
OP	Operational Policy
PACT	Protected Areas Conservation Trust
PAMs	Policies and Measures
PF	Process Framework
PLRs	Policies, Laws and Regulations.
PSC	Project Steering Committee
R-PP	Readiness Preparation Proposal
R+CU	REDD+ Coordination Unit
RBP	Results-Based Payments
RPF	Resettlement Policy Framework
SEP	Stakeholder Engagement Plan
SESA	Strategic Environmental and Social Assessment
SIS	Safeguards Information System
SLMS	Satellite Land Monitoring System
SFM	Sustainable Forest Management
SWOT	Strengths, Weaknesses, Opportunities and Threats
TAA	Toledo Alcaldes Association
TEG	Technical Expert Group
UBERI	University of Belize Environmental Research Institute
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank

Key Terms

Deforestation: Deforestation is when forest land is converted to another land use (cropland, grassland, settlement, wetland, and other land). Conversion can be caused by humans or natural causes, but if the subsequent land use is anthropogenic (i.e., cropland, managed grassland, settlement, wetlands or other land), then the conversion is considered to be deforestation (Forest Department 2020, p.33).

Direct driver/proximate cause: Human activities or immediate actions that directly impact forest cover and result in loss of carbon stocks (Kissinger, Herold and De Sy 2012, p.5).

Forest: A plot of land with an area of 0.5 hectares or more, with trees 5 meters or higher, and a canopy cover of 30% or higher. This definition also includes forest plantation. In addition, it includes an ecosystem that due to biotic conditions (terrain, soil type, rainfall, et cetera), the trees cannot grow higher than 5 meters (Forest Department 2020, p.33).

Forest degradation: A forest area affected by disturbance that reduces crown cover but not below the threshold value of 30% used in the forest definition (Forest Department 2020).

PAMs (Policies and Measures): Actions or interventions taken and/or mandated by governments as means to guide and support implementation of the REDD+ activities. They may consist of the design or reform of policies or legal and regulatory frameworks, as well as actual investments (programmes and projects) (UN-REDD Programme 2016, p. 1).

Regenerating Forest: A forest that was highly disturbed by either hurricane, fire, or pests, and is left to regrow. The distinguishing characteristic is a significant loss in canopy cover without having a land-use change (Forest Department 2020, p.36).

Indirect causes/Underlying causes: The complex interactions of social, economic, political, cultural and technological processes that affect the proximate drivers to cause deforestation or forest degradation (Kissinger, Herold and De Sy 2012, p.5).

Indigenous Peoples: Includes those recognized in the Belize National Census, the Garifuna and Maya Peoples, the latter of which are comprised of Q'eqchi, Mopan and Yucatec.

1 Introduction

The Reduction of Emissions from Deforestation, Forest Degradation and the Conservation, Sustainable Management and Enhancement of Forest Carbon Stocks (REDD+) is a mechanism under the United Nations Framework Convention on Climate Change (UNFCCC) to provide incentives for countries to reduce forest related GHG emissions. Through the REDD+ framework developing countries are rewarded financially for reducing emissions or increasing removals of carbon dioxide from the atmosphere through improved land-use practices in forests. A country's REDD+ programme encapsulates its optimal effort to reduce emissions from deforestation and degradation whilst fostering conservation, sustainable forest management and enhancement of forest carbon stocks, and ensuring transparency, accountability and benefits sharing.

The development and implementation of the REDD+ programme is broken down into three phases:

(1) Readiness, which involves four elements: a national strategy; a national forest reference emission level and/or forest reference level; a robust and transparent national forest monitoring system; and a system for providing feedback on how the safeguards are being addressed and respected throughout the implementation of the REDD+ programme (2) Implementation, during which the countries will pilot, test and refine the four elements.

(3) Results-based payments, full national implementation with measurement, reporting and verification of emissions reduction.

Belize has completed the REDD+ readiness phase, during which the 4 elements of its REDD+ programme was developed and finalized. This includes the preparation of a National REDD+ Strategy or Action Plan; the creation of a National Forest Reference Level, which Belize submitted in January 2020, and the final report was accepted on May 2021 to the UNFCCC; the development of a National Forest Monitoring System; and the creation of a

Safeguards Information System. Belize is now entering the implementation phase which facilitates the implementation of the plans and measures contained in the aforementioned documents and systems. This document addresses the first element, the preparation of a National REDD+ Strategy, and was prepared through a participatory approach with the involvement of national and local level stakeholders in Belize and uses the country's national context, policies, plans and sustainable development as the basis for the strategy.

This document provides a full description of the programs engrained in the National REDD+ Strategy which aim to facilitate emission reduction and carbon sequestration from REDD+ activities.

1.1 Vision and Goals

1.1.1 Vision

The Vision of Belize REDD+ Strategy is that forest ecosystems are valued and protected, leading to a significant reduction in emissions from deforestation, forest degradation and sustainable forest management, and increase carbon sequestration from forest conservation and enhancement. A reduction in pressures and improved management of forests improve their resilience and that of forest dependent communities, including Indigenous Peoples, while enhancing economic, social, cultural, and environmental co-benefits derived from forests, ensuring a better quality of life for all Belizeans, living now and in the future.

1.1.2 Goals

General goal

The ultimate goal of REDD+ is to significantly reduce GHG emissions from forests and increase the sequestration of GHGs by forests. This means reducing emissions from deforestation, forest degradation, and sustainable forest management over the next ten years, while enabling carbon stock enhancement, forest conservation, and forest restoration.

Specific goals:

1. Transform Belize's land use planning and management by strengthening coordination at the government level with platforms for cross-sector and public and private collaboration, reducing perverse incentives and creating new green incentives, and developing clear criteria for the evaluation of development plans.
2. Generate innovative, substantial and sustainable economic and non-economic incentives and benefits to enhance maintenance and/or expansion of forest resources and improve forest livelihoods.
3. Improve economies and livelihoods of forest dependent communities by supporting and enhancing their sustainable land and forest stewardship and sustainable economies and livelihoods.
4. Sustainably manage forest resources in a way that enhances social, environmental and economic benefits while reducing GHG emissions.
5. Conserve Belize's forests in order to sustain their ecosystem services, conserve biological diversity, conserve forest carbon stocks, provide benefits for forest dependent communities and maintain a cultural heritage for generations to come.
6. Implement active and passive restoration of
7. landscapes to enhance carbon sequestration and recovery of biological diversity.

Develop and maintain a system, through continuous improvement, that produces and shares forest information allowing for better management, control and reporting.

2 National Context

2.1 Socioeconomic context

Based on mid-year estimates as of June 2020, Belize's population is 419,199 persons (reference). Belize is classified as a middle-income developing state, with Gross Domestic Product (GDP) estimated at US\$1.87 billion, and, per capita GDP estimated at USD\$ 6.82 thousand in 2019 (reference). The economy is highly dependent on tourism and trade in primary goods, mainly agriculture, fishery and forestry products. Timber and non-timber products from forests represented 1.6% of the country's GDP in 2007 and wood exports were 2.6% of total exports in 2016 (Hayman et al 2018).

Income from primary products, which is a major source of national income and livelihoods, declined as a percentage of GDP from 15% in 2000 to 10% in 2018. According to the first quarter, 2020 Central Bank of Belize report, inclement weather and agricultural pests negatively affected the productive sector outputs resulting in domestic export receipts falling by 23.9% to US\$107.3mn in this period. Table 1 below, Belize's Economic Indicators, shows related data from the previous five years. Of note however, is that Belize's GDP has been declining since 2010 when growth slowed to an annual rate of 3%. Economic activity in 2020 was further impacted by the downturn caused by the onset of the Covid-19 pandemic, which began in March 2020. This crisis further propelled GDP decline to US\$1.56 billion and GDP per capita to US\$5.70 thousand. The outlook for growth in Belize looks slow since the economy has cooled as is evident by the trends shown in Table 1.

Table 1. Belize Macro Level Economic Indicators

Indicator	2015	2016	2017	2018	2019	2020
% change in GDP	3.8	-0.5	0.8	1.9	-0.6*	-16
Inflation %	-0.9	0.7	1.1	0.3	0.2	0.8
Population (thousands)	366	376	386	398	398	417
Unemployment	10.1	7.9	8.9	9.4	10.4	25.1
Current account balance (% of GDP)	10.1	-9.2	-8.6	-8.1	-9.6	-15.3
General Government Debt (% of GDP)	82.6	91.3	104.4	101.5	105.1	134.6

Belize's economic performance is also highly vulnerable to external market shocks, adverse seasonal weather and annual climate related events (hurricanes, floods and droughts) and changes in trading arrangements. Additionally, most Belizeans live in areas along the coast and in inland areas that have been affected by drought, floods and hurricanes (Belize, Cayo and Orange Walk). Their vulnerability to weather related events impacts productivity levels and the sustainability of livelihoods. In relation to where Belizeans live, many reside in close proximity to the natural environment. Based on the population distribution, slightly more men (118,198) than women (113,752) live in rural communities where they rely on the natural resources and ecosystem services for their livelihoods and household needs. Overall, the majority of Belizeans, 231,950 [55.33%] live in rural communities. However, the Indigenous Maya and Garifuna peoples as well as other rural inhabitants are less likely to have private ownership of the land on which

they live and cultivate crops. Land tenure is even less available to women owing to cultural and traditional practices which makes it easier for men to access land as a means of production.

According to the latest study from the Statistical Institute of Belize, poverty rates increased in Belize between 2009 and 2018, from 29% to 45% of the population under poverty (SIB 2021). Corozal district is the only one with a reduction in poverty rates (from 56 to 45%). On the other hand, Toledo, the district with the highest poverty rates, was the one with the largest increase from 60 to 82% of the population under the poverty rate. In terms of ethnicity, the same report shows that the Maya population is the one with the highest poverty rate with 77% in 2018, up from 68% in 2009.

Over the past 10 years, Belize’s economy has been in transition from the production of primary goods and construction to more diversified service-based sectors namely tourism, government, financial services and trade. There has been a decline in the contribution of the primary and secondary activities to GDP from 39% in 1997 to 29% in 2017. Over that same period, the contribution of services has grown from 62% in 1997 to 71% in 2017. This has had the effect of reducing the percentage of new jobs required by the agriculture, forestry and construction sectors. In 1999, 45% of all workers were employed in the primary and secondary sectors but that has now declined to 35% with the majority of new jobs created in the tertiary sector. This change in the structure of the Belizean economy does not augur well for the employment opportunities for the lower skilled workers in the country. Table 2 illustrates that the Belize and Cayo Districts have the highest share of the population who have post-secondary and university level education.

Table 2. Level of Education of Workers by District and Category

District	Share of Total Population %	Incomplete Secondary or Less %	Complete Secondary %	Junior College %	University %
National Average	-----	59	23	12	6
Belize	32	44	31	17	8
Cayo	24	56	26	9	9
Corozal	12	67	16	12	5
Orange Walk	13	77	12	9	2
Stann Creek	11	70	19	7	4
Toledo	8	72	17	8	3

Source: Inter- American Development Bank 2020.

The economic development path over the past two decades has been gendered. Women account for 52% of the total workforce, but the male participation rate has remained mostly constant at 78%. The September 2020 National Labour Force Survey recorded a labour force of 168,630 of which 145,455 were employed. However, unemployment has hovered close to 10% and remained so up to 2018 until a spike from 10.4% in 2019 to 13.7% unemployment in September 2020 explained by the COVID-19

crisis. Employment in Belize favors males who represent 61.8% of the workforce while women are less likely to be employed and represent 38.2% of the employed. Historically, women tend to be both unemployed and underemployed when compared to men at a ratio close to 1:3.

The Belizean workforce is also characterized by a majority of individuals who have a low education, i.e., having completed primary school and some high school education. The majority - 60% - of the population with university level training are women. Consequently, women are commanding a larger share of the higher paying jobs in the service workforce at 29% as compared to 16% for men. The services sector requires skills sets of individuals with higher than secondary level education. However, with only 40% of the workforce having this qualification, there is a critical need to absorb workers with higher education in the national economy; for Belize, this workforce will most likely be women. This fact is marred by the reality that women are paid less than men at every level of employment. At the same time, the primary sector offers higher employment opportunities but with lower educational demands. Here men experience higher levels of employment than women.

Table 3. Selected District Indicators

District	Area [Square Miles]	Population	Number of Households	Unemployment % Sept 2020	Primary School Transition %	Literacy % [2010]
Belize	1,663	127,623	27,282	15.1	97.9	95.0
Cayo	2,006	102,115	16,889	13.8	82.4	86.8
Corozal	718	50,490	9,258	12.9	70.0	86.2
Orange Walk	1,860	53,373	10,452	11.1	65.7	80.4
Stann Creek	986	46,015	9,074	14.1	103.4	88.6
Toledo	1,704	39,525	6,537	12.2	84.6	84.8

Source: Inter-American Development Bank 2020.

Table 3 captures Belize’s population distribution, access to education and employment prospects, and it also provides some insights into the internal, dynamic processes that influence how livelihood options are exercised. However, the employment prospects still remain reasonable in primary production, despite the pull of the services sector.

Access to basic social services has been changing in Belize. This is evidenced by the change in primary school enrollment rate which stood at 76.8% in 2018 -2019. The transition rate for students from primary to secondary school was 85.3% in the 2019 - 2020 school year. In the same period, the secondary school enrollment rate was at 71.15% indicating that many young people do not pursue education beyond primary school as has been demonstrated by workforce qualifications previously presented. Access to education differs across ethnic groups and geographical location. For instance,

Table 4 below shows the educational attainment by ethnic groups. The Mennonites account for approximately two per cent of the national population, but they have the largest share of the population with just primary education and/or incomplete secondary education levels. They are followed by the Maya population although it must be noted that in this ethnic group there is a growing trend toward high school completion. Ethnicity and physical location are also factors determining educational opportunities. Creole, Garifuna and East Indian citizens are more likely to have better education than the other ethnic groups. This may be based on their geographic location and their proximity to schools in the central region of the country. The Belize and Cayo districts have a greater share of secondary schools, having 36 or 58% of the secondary schools in these two districts. Similarly, 2,406 or 55% of the 4,447 students in tertiary institutions are located in these two districts.

Table 4. Ethnicity and Level of Education in Belize

District	Share of National Population %	Incomplete Secondary or Less %	Complete Secondary %	Junior College %	University %
National Average	-----	59	23	12	6
Mennonite	2	99	0	0	0
Maya	11	75	15	6	4
Mestizo	50	66	19	10	5
East Indian	3	55	24	18	3
Garifuna	5	47	28	17	8
Creole	29	45	33	15	7

Source: Inter- American Development Bank 2020.

The Belizean population is considerably young with 233,951 or 55.8% below the age of 29 years. Life expectancy is 74.5 years, and the under-five (5) mortality rate was 12 per 1,000 in 2015. The immunization rates for children stands at 96% for Polio and Diphtheria, Whooping Cough and Tetanus [DPT]. Similarly, high coverage can be found for Measles, Mumps and Rubella [MMR] 97% and Tuberculosis 99%. Health care is provided through a national system of three regional hospitals and one referral hospital in Belize City. Additional services are provided through a localized system of 62 Health Centers and 84 Health Posts loosely linked to the regional hospitals. The 2019 Human Resources for Health Report by the Ministry of Health, points to a stark disparity in the number of health workers and professionals in rural communities versus those in the urban areas.

The economic outlook for Belize will have significant influence on the livelihoods of many Belizeans especially those who are dependent on work in the primary sectors. At the same time, the opportunities for growth rely heavily on the availability of a skilled workforce. Efforts to reduce national poverty will require a deliberate balance between productivity and sustainable livelihoods.

2.2 Biogeographical context

Belize is located on the Caribbean coast of Central America, with a total land area of 22,960 km², of which 5% is distributed over more than 1,060 mangrove cayes (small islands). It lies between 15.75°N and 18.5°N Latitude, and 87.5°W and 89.25°W Longitude and it is bounded to the north by Mexico, to the west and south by Guatemala and to the east by the Caribbean Sea. Including Belize's large extension of territorial sea, the total territory is 46,620 km² (GOB 2011).

Topographical features divide the Belizean landscape into two main physiographic regions: (1) the northern lowlands (approximately 250 masl), with limestone hills and escarpments, which lie over the Yucatan Platform - a hard dense limestone - along with the southern coastal swampy plains, and (2) the remaining south and central Belize share the mountainous geology of eastern Guatemala (GOB 2011). The dominant feature of the latter is the Maya Mountains, a tectonically uplifted block of ancient meta-sedimentary, granite, and volcanic rocks, which rise from the coastal lowlands to heights of about 1,100 masl, with a maximum elevation of 1,124 masl - Doyle's Delight - stretching west into Guatemala's Peten district (Bateson and Hall 1976). The Maya Mountains are surrounded by low karstic limestone hills that grade into the coastal plain (GOB 2011) (see Figure 1).

Belize has a tropical climate, strongly governed by seasonal variations in rainfall rather than in temperature. Mean monthly temperatures range from 16°-28° C between November to February, to 24°-33° C between March to October. Average rainfall varies considerably, and a strong precipitation gradient exists from north to south, ranging from approximately 1,100 mm in northern and western Belize to over 4,000 mm in the extreme south (GOB 2011). Distinct wet (June – December) and dry (January – May) seasons are most pronounced in the northern and central regions, where during the dry season rainfall is below 100 millimeters per month. Also in the north, unseasonal drought conditions are becoming more frequent (MAFFESD 2016). Tropical storms and hurricanes have historically affected the country once every three years and are more likely to hit in the north than in the south (Lee et al. 1995).



Figure 1 Physical Map of Belize. Source: Freeworldmaps.net.

The coastal lowlands and the amount of rain favored the formation of an important interlocking network of waterways and water bodies: rivers, creeks, and lagoons. Belize has 16 major watersheds and numerous smaller ones. The headwaters of fourteen of these watersheds originate within the Maya Mountains, providing water security for 55% of the total landmass of Belize and over 128 communities, as well as supplying water to over 180 communities in Guatemala (Walker et al., 2008). The Belize River watershed is the largest in the country, with a total area of 9,434 km² (69% in Belize), it drains more than one-quarter of Belize, and dominates the central portion of the country, as it winds along the northern edge of the Maya Mountains, into the Caribbean Sea (see Figure 1).

Belize has a great variety of terrestrial, marine, and freshwater ecosystems. According to the National Biodiversity Strategy and Action Plan from Belize (MAFFESD 2016) it has five global ecoregions (Olsen et al., 2002) (table 5), with fourteen broad natural and two anthropogenically altered ecosystem types identified under the national ecosystem mapping (see table 6).

Table 5. Belize Ecosystem Types - Global Ecoregions

Petén-Veracruz Moist Forest	It encompasses the broadleaf tropical forests, and well represented in Belize, but considered as globally critical/endangered, a reflection of the high rate of deforestation and land-use change in the region.
Belizean Pine Forest	Globally considered as critical/endangered, it represents one of the few examples of premontane pine forest in the Neotropics.
Yucatan Moist Forest	Globally considered as vulnerable, and limited in Belize to the northeast of the country. Climate change predictions suggest that elements of the Yucatan Moist Forest will become more prevalent in forest ecosystems further south as rainfall becomes less predictable, and will be important in the maintenance of viable forest cover in the medium to long term.
Belizean Mangrove Coast	This ecoregion encompasses the various mangrove ecosystems that exist on the mainland – extensive stretches of inundated dwarf mangroves in shallow, coastal lagoons, tall basin mangroves, and fringing mangroves of the coast. These mangroves are recognized for their critical importance in coastal and caye protection, and for their role in the fisheries sector, providing nursery functionality for many commercial and sport fishing species.
Reef and Mangrove	This ecoregion encompasses the offshore mangroves, seagrass beds, and coral reefs. Seagrass habitats are the most prevalent ecosystem, followed by deepwater systems, sand- and silt-bottom habitats, and coral reefs. Despite the fact that coral reefs and their associated habitats only comprise about 6% of the coastal zone, they are disproportionately important for their high levels of biodiversity, and the tourism and fisheries economies that they support.

Source: Ministry of Agriculture, Forestry, Fisheries, the Environment and Sustainable Development (MAFFESD) 2016

Table 6. Belize Ecosystems: Broad Natural and Anthropogenically Altered

Broad Natural Ecosystems (BTFS, 2012)	<ol style="list-style-type: none"> 1. Lowland broad-leaved dry forest 2. Lowland broad-leaved forest 3. Sub-montane broad-leaved forest 4. Shrubland 5. Lowland savanna 6. Lowland pine forest 7. Sub-montane pine forest 8. Wetlands 9. Water 10. Mangrove and litoral forest 11. Seagrass 12. Coral reef 13. Sparse algae 14. Open sea
----------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Anthropogenically Altered Ecosystems	<ol style="list-style-type: none"> 1. Agricultural 2. Urban
---------------------------------------------	-------------------------------------------------------------------------------------

Source: Ministry of Agriculture, Forestry, Fisheries, the Environment and Sustainable Development (MAFFESD) 2016

In relation to forests, in 2018 Belize still retained 61,75% of its natural forest cover largely intact (CATHALAC 2020), providing habitats for keystone species such as jaguar and white-lipped peccary, absent from many forests in other Central American countries (MAFFESD 2016). Despite Belize having one of the highest percentages of forest cover in Central America and the Caribbean, the average forest cover loss between 2000-2018 was 0.7%, with conversion to grassland, settlements, and wetlands (CATHALAC 2020).

In addition, Belize has large areas of low-lying wetlands and is very rich in both surface and groundwater. The importance of Belize’s wetlands is reflected in the declaration of two Ramsar sites: (1) Crooked Tree Wildlife Sanctuary (1998), a 165 km² wetland complex connected to the Belize River via two streams in northern Belize, and more recently (2) Sarstoon Temash National Park (2005) in the south, a 35 km² wetland surrounded by tropical wet broadleaf forest ecosystems and land cover (GOB 2011; MAFFESD 2016). The wetlands of northern Belize tend to occur as expansive lagoon systems containing multiple habitat types like swamp forests, herbaceous marshes, and open water areas. They occur at or below five meters above sea level, are spring-fed and many are perennially waterlogged, with water fluctuations of about 1 m. Thus, the ecosystem service provided in terms of flood control is critical during flood events, with the Crooked Tree Wildlife Sanctuary playing a significant role in mitigating potential flooding of Belize City, the largest population center in Belize.

Lastly, the reefs of Belize form a significant component of the Mesoamerican Barrier Reef, the largest barrier in the western hemisphere – 220 km - running parallel to the shore (GOB 2011). Their unique values and importance are recognized through the designation of seven of Belize’s marine protected areas as a serial World Heritage Site – the Belize Barrier Reef Reserve System. “The coastal lagoon lying between the reef and the mainland has extensive interconnected seagrass beds and mangrove-lined cayes that provide the essential ecosystem connectivity for the maintenance of Belize’s exceptionally diverse marine life” (MAFFESD 2016, p.27).

All these diverse natural ecosystems provide habitat for a high level of biodiversity, including more than 150 species of mammals, 574 species of birds, 151 species of amphibians and reptiles, nearly 600 species of freshwater and marine fish, high numbers of invertebrates, and 3,408 species of vascular plants, including more than 600 known medicinal plants (Meerman 2005a, Jones 2003). From these, it is known that 118 are globally threatened species (9 critically endangered, 32 endangered, and 77 Vulnerable) and a further 62 near threatened / of least concern (IUCN 2016). For some of these globally threatened species, like the Central American river turtle, yellow-headed parrot, the Antillean manatee, Goliath grouper, Yucatan black howler monkey, and the white-lipped peccary, Belize is considered one of the last remaining strongholds in the region (MAFFESD 2016). Yet others, like the small tooth and large tooth sawfish, are considered ecologically extirpated from Belize in the last 30 to 40 years (Graham, in Harrison et al., 2014).

Because of its biodiversity, Belize is recognized as a world biodiversity hotspot (Conservation International 2004). This is also reflected in the identification of several Key Biodiversity Areas (KBAs). Belize’s primary Key Biodiversity Areas (KBAs) are located within large forested nodes. The first KBA lies within the Maya Mountains Massif node, the largest intact forest block in Belize and one of the largest forested areas in Central America. It is particularly important for its role in watershed protection. The secondary KBAs are located within the other two nodes – the Selva Maya forest in the west, linked to the Guatemala Selva Maya, and the Shipstern / Fireburn node in the northeast (Meerman 2007; Walker et al., 2013).

Across Central America, Belize stands out for largely meeting global protection targets for almost all ecosystems, maintaining the majority as viable, functioning systems (MAFFESD 2016).

2.3 Existing policies related to forests and REDD+

REDD+ is conceived and discussed in the context of wider national policies pertaining to natural resource management and sustainable development. As such, there are activities presently being implemented within the existing natural resource management and sustainable development policy framework of Belize; particularly in relation to forests, that represent the framework for the present strategy.

Within the existing natural resource management and sustainable development policy framework of Belize, in particular in relation to forests; there are various policies which promote the implementation of REDD+ activities. The Cancun Agreements set out the five REDD+ activities, which are considered the ‘scope’ of REDD+. These activities are further explained and illustrated by way of examples in the following table.

Table 7. REDD+ Activities and examples

REDD+ Activity	Explanation	Example
Reducing emissions from deforestation	Deforestation is the conversion from forest land to non-forested land	Reduce the rate of forest loss due to, e.g., industrial agriculture
Reducing emissions from forest degradation	Degradation is the human induced loss of carbon stocks within forest land that remains forest land	Reduce the rate and/or intensity of forest degradation due to, e.g., unsustainable logging or fire
Conservation of forest carbon stocks	Refers to any effort to conserve forests	Strengthen and/or expand the protected area network Establish long-term commitments to forest conservation by signing conditional payment agreements with stakeholders
Sustainable management of forests	Generally, refers to bringing the rate of extraction in line with the rate of natural growth or increment to ensure near zero net emissions over time	Increase area of forest land under sustainable management

Enhancement of forest carbon stocks	Refers to (1) non-forest land becoming forest land and (2) the enhancement of forest carbon stocks in remaining forest land (e.g., in the case of recovering degraded forests)	Increase area under reforestation and afforestation Allow degraded forests to regenerate Increase area of degraded forest under enrichment planting
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Source: Adapted from GOF-C-GOLD 2016

Section 3.2 below describes the direct and indirect drivers of deforestation. Many of the existing strategies, policies and measures summarized in table 8 and currently in place are directed towards addressing those drivers. Section 4 proposes a set of Policies Actions and Measures (PAMs) that respond to identified drivers and are in line or complement existing Policies as the ones described in Table 8.

Table 8. Natural Resource and Sustainable Development Policies and REDD+ Activities

Policies	Policy Goals, Statements, Strategies, Actions and Measures	Related REDD+ Activity
National Development Framework of Belize: Horizon 2030	The natural environment is valued and protected as the basis for all economic activity and therefore development planning is based on the principles of environmental sustainability.	Sustainable management of forests
	Support reforestation and sustainable local logging by communities to create jobs and reduce poverty.	Enhancement of forest carbon stocks Reducing emissions from forest degradation
	Provide incentives for reforestation.	Enhancement of forest carbon stocks
	Adopt and implement the National Protected Areas System Plan and strengthen the legal and administrative framework for protected areas.	Conservation of forest carbon stocks
National Forest Policy 2015	The national forest estate shall be protected and managed sustainably and in perpetuity.	Sustainable management of forests
	The development and management of natural forests on community-owned and managed land by indigenous people and rural communities will be promoted.	Sustainable management of forests
	Collaborative partnerships and strategic alliances with the private sector shall be developed and strengthened for the sustainable management of forests.	Sustainable management of forests

	Increased competitiveness in the forest sector through the manufacture of value-added timber products will be encouraged and fostered.	Reducing emissions from forest degradation
	The government shall encourage the sustainable use of those non timber forest products (NTFPS) with the potential for commercial exploitation while respecting their traditional and cultural use.	Reducing emissions from forest degradation
	The development and management of natural forests on private land will be promoted.	Sustainable management of forests
	The competitiveness and dynamic development of all aspects of forest management and the forest sector will be promoted through forest education and science and enhancement of professional expertise in forest related disciplines	Sustainable management of forests
	Forest biodiversity will be conserved and managed in support of social and economic well-being and international obligations.	Conservation of forest carbon stocks Sustainable management of forests
	The government shall endeavor to reduce deforestation and forest degradation.	Reducing emissions from deforestation Reducing emissions from forest degradation
	The protection, improvement and rehabilitation of watersheds will be integrated into the sustainable management of forests.	Sustainable management of forests
	The government shall have special regard for conservation of those vegetated areas not traditionally considered productive forests but which play a significant role in providing valuable ecological services and maintaining biodiversity	Sustainable management of forests Reducing emissions from deforestation (mangrove forests)
	The government shall, recognizing the importance of fires as an ecological process, encourage its proper use and management in the protection and enhancement of terrestrial ecosystems, giving special consideration to human welfare and safety	Reducing emissions from forest degradation
	The government shall create appropriate regulatory frameworks for forest financing mechanisms and the sustainable generation and equitable distribution of benefits derived from those mechanisms by <i>articulating a clear legal</i>	Conservation of forest carbon stocks

	<i>framework for the incorporation of carbon rights as new registered land interest to provide a firmer basis for investment in forest conservation by way of REDD+ and other similar mechanism.</i>	
	Adaptation and mitigation to climate change will be mainstreamed into the management objectives of government's national forest program.	Sustainable management of forests
	A platform for information sharing will be provided to serve as a basis for reliable data on national forest conservation status, management and the forest products market.	Sustainable management of forests
Forest Department Strategic Action Plan 2019- 2023	Foster resilient, healthy functioning forest ecosystems.	Conservation of forest carbon stocks
	Enhance economic, social and environmental benefits of forests through sustainable utilization of forest resources by stakeholders.	Sustainable management of forests Reducing emissions from deforestation
	Maintain no net loss in forest cover in priority areas.	Reducing emissions from deforestation
	Harmonize and strengthen forest policies and legislation.	Conservation of forest carbon stocks
	Develop stable, diverse, sustainable sources of finances.	Conservation of forest carbon stocks
Belize Rural Area-Based Development Strategy (BRADS) 2012- 2030	Promote innovative and sustainable uses of agricultural and forestry resources.	Sustainable management of forests
	Improve agricultural and forestry extension services.	Sustainable management of forests
	Promote reforestation and measures for forest conservation.	Enhancement of forest carbon stocks Conservation of forest carbon stocks
	Promote restoring forestry potential and introduce preventive deforestation measures, and actions harmful to the forest.	Enhancement of forest carbon stocks
	Provide incentives for reforestation and environmental services	Enhancement of forest carbon stocks

National Protected Areas System Plan 2015	Explore low carbon development and climate change financing to approach private sector involvement.	Conservation of carbon stocks
	Forest Reserves are established to protect forests for management of timber extraction and/or the conservation of soils, watersheds and wildlife resources.	Reducing emissions from forest degradation
	Protection of littoral forest, the most threatened of Belize's ecosystems.	Sustainable management of forests.
	50% reduction in the issuance of land leases within Forest Reserves by 2018.	Reducing emissions from deforestation
	50% of forestry (LTFLs) and tourism concessions within actively managed PAs are certified operations (FSC & Green Globe) by 2019.	Sustainable management of forests
National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize 2014	Mainstream adaptation and mitigation to Climate Change will be achieved by providing 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 adaptation to Climate Change.	Sustainable management of forests
	Systematically assess the potential impacts of Climate Change on Belize's forests and the extent of the vulnerability of forests to these impacts and actions for adaptation.	Sustainable management of forests
	Develop a comprehensive monitoring system to evaluate changes in the forest cover, carbon stocks and forest biodiversity and to use this information for further planning in light of Climate Change mitigation and adaptation	Sustainable management of forests
	Maintain and restore healthy forest ecosystems by sustainable forest management, increasing afforestation and reforestation in order to increase the resilience of human communities.	Sustainable management of forests Enhancement of forest carbon stocks Reducing emissions from deforestation
Nationally Determined Contribution (NDC) under UNFCCC	Reduce GHG emissions and increase GHG removals related to land use change totalling 2,053 KtCO ₂ e11 cumulative over the period from 2021 to 2030 Enhance the capacity of the country's mangrove and seagrass ecosystems to act as a carbon sink by 2030, through increased protection of mangroves and by removing a cumulative total of 381 KtCO ₂ e between 2021 and 2030 through mangrove restoration.	Conservation of forest carbon stock Sustainable management of forests Reducing emissions from forest degradation

	Protecting and restoring mangrove forests	Enhancement of forest carbon stocks
National Environmental Policy and Strategy 2014 to 2024	Achieve the greening of Belize's economy by maintaining healthy forest cover and terrestrial ecosystems at 61%.	Reducing emissions from deforestation
	Increase by 50% the forest revenue generated by instituting a framework for the payment for environmental services.	Conservation of forest carbon stocks.
	Increase revenue for timber and non-timber forest products from value added activities by 100%.	Reducing emissions from forest degradation.
	Reduce the clearance of fringing mangroves, seagrass beds and littoral forests by at least 30%.	Reducing emissions from deforestation
	Create appropriate regulatory frameworks for the creation of payments for environmental services schemes	Reducing emissions from deforestation and Enhancement of forest carbon stock
	The promotion of reforestation programs to balance out the forestlands undergoing conversion to agriculture land should be addressed.	Enhancement of forest carbon stock
National Land Use Policy for Land Resource Development 2011	Forests are capable of providing a sustainable supply of timber and non-timber resources, and forests that lie outside of forest reserves and protected areas, i.e. on National Land, must be placed under management regimes that recognize their value and potential contribution to the rural economy.	Sustainable management of forests
	Mangroves, which extend along the majority of the length of the Belizean coast, are recognized as mitigating the impacts of hurricanes and tropical storms on Belize's coastline, as well as serving as nurseries for many economically important marine species. As such a national mangrove management strategy with updated legislation will need to be developed to oversee their use and/or protection and guide the operation of the mangrove licensing system by the Forest Department.	Sustainable management of forests
	The integrity of protected areas that fall under the National Protected Areas System, marine reserves under the Fisheries Act and forest reserves that fall under the Forests Act must be guaranteed by ensuring a high level of administration, with comprehensive management plans being developed for each of them. Moreover, their scope of inclusion of important marine, terrestrial, historical and cultural sites is to be assessed to guarantee they cover a cross section of these different types.	Sustainable management of forests

	<p>Together with the strategy above, a programme will be undertaken to ascertain the status of current protected areas, including forest reserves. In several areas lands have been alienated from these areas without formal process, and unregulated incursions have taken place. This programme will bring all concerned parties together and will result in a system that ensures that any de-reservation areas will be based on identified national need, particularly as expressed in the National Level Zoning Strategy.</p>	<p>Sustainable management of forests</p>
	<p>Biological corridors are being proposed as a set of ecosystems intended to ensure the connectivity of protected areas across the country. Necessarily, they include tracts of National Land and private land which have no formal form of protection of the natural habitat. This proposal will be finalized to determine its feasibility in relation to other potential land uses, and the Lands and Surveys Department and private landowners will be approached to participate in the scheme.</p>	<p>Sustainable management of forests</p>
	<p>The fact that natural forests may be damaged by natural disasters such as the passing of a hurricane, wildfires etc., will not automatically be a reason to issue a license under the forest act allowing the land owner to clear cut the land and convert it to other land uses.</p>	<p>Reducing emissions from deforestation</p>
	<p>All gathering grounds and recharge areas shall either be retained as forest reserves or national parks, as the case may be, in accordance with the provisions of the Forests Act and the National Parks System Act; or be declared to be controlled areas under section 56 of the Integrated National Water Resources Act 2010, by the Minister having responsibility for forests, after consultation with any relevant entity likely to be affected.</p>	<p>Sustainable management of forests</p>
	<p>Take appropriate action under existing legislation (National Lands Act, Forests Act, National Parks System Act, Land Utilization Act) to prevent or regulate the threat to the gathering ground whether it is private property, National Land, forest reserve or a protected area, as the case may be.</p>	<p>Sustainable management of forests</p>
	<p>Incorporate climate change analysis into national agricultural strategies in coordination with other sectoral policies for reducing deforestation, protecting biodiversity and managing water resources.</p>	<p>Reducing emissions from deforestation</p>
	<p>Hillsides and other areas that are susceptible to landslides and the generation of accelerated rain run-off will be reforested in liaison with the Forest Department.</p>	<p>Enhancement of forest carbon stocks</p>
	<p>Enhance and expand forest management systems to enable effective schemes for controlling deforestation and forest fires, and undertaking reforestation, afforestation in appropriate areas.</p>	<p>Enhancement of forest carbon stocks</p>

<i>National Agriculture and Food Policy of Belize 2015-2030</i>	Support development of carbon sequestration and other agro-ecological services through good agricultural practices	Sustainable management of forests
	Support identification of opportunities and options for the Belizean strategy for [carbon] sequestration.	Conservation of forest carbon stocks
	Promote reduced deforestation through intensification and increased productivity in areas under cultivation;	Reducing emissions from deforestation
	Support identification of appropriate mechanisms for development of an agro-ecological services business program via a portfolio of incentives for implementing environmental protection technologies and optimal use of natural resources for sustainable production.	Conservation of forest carbon stocks
	Support Carbon-neutral certification by providing a robust framework and credit certification that aims to reduce its net carbon dioxide emissions to zero.	Conservation of forest carbon stocks.
	Support policy and strategic development initiatives that facilitate stakeholder's participation and advocacy such as: NPESAP, Horizon 2030, GPRS/GSDS, BRADS, Energy, Forestry, and Fisheries' Policies.	Sustainable management of forests
<i>Belize National Agroforestry Policy 2020</i>	Develop AF as a way of reducing the pressure on existing forests, reducing deforestation and degradation, thereby complementing the REDD+ target of increasing forest/tree cover for ecological stability and environmental services especially in the vulnerable regions.	Reducing emissions from deforestation Reducing emissions from forest degradation
	Increase forest cover, conservation of flora and fauna species, and protect the biodiversity and water resources at the national level, affecting 50,000 acres in 10 years.	Enhancement of forest carbon stocks
<i>National Sustainable Tourism Master Plan for Belize 2030</i>	Misuse and unsustainable exploitation of natural and cultural resources poses a threat to the sustainable development of tourism growth, such as the lack of public awareness programmes, leading to inappropriate usage of natural resources, such as the reef, national parks and rainforests.	Reducing emissions from forest degradation
<i>Growth and sustainable development strategy 2016-2019</i>	Continue efforts to strengthen sustainable forest management and land use planning.	Sustainable management of forests
	Increase percentage of forest cover under SFM from 26% to 29%.	Reducing emissions from deforestation.
	Reduce forest cover decline from 6.4% to 2% by 2018.	

	Restore 30% of degraded ecosystems by 2020	Enhancement of forest carbon stocks
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2.4 REDD+ road so far in Belize

2.4.1 Stakeholder Engagement Process

The REDD+ Readiness Preparation Project Grant Agreement was signed in March of 2017. Stakeholder engagement began in August 2018 and is ongoing, with the most recent interactions occurring in January and February of 2021. The REDD+ Coordination Unit (R+CU) was tasked to provide guidance on how to best engage the stakeholders. The advent of COVID-19 in March 2020 and the attendant public health restrictions created major challenges for subsequent stakeholder consultations processes.

A mix of various formats and platforms have since been used to engage national stakeholders. The R+CU has used workshops, focus groups, student gatherings and presentations at special events such as the REDD+ launch, World Wetlands Day, International Day of Forests and World Environment Day. The R+CU produced promotional items for dissemination during the various events that the R+CU participated in, including the launch, school fairs and workshops. Between August 2018 and September 2019, a total of 22 engagement sessions were conducted during which 634 participants were engaged; 219 females and 415 males (GOB 2019b)

Engagement sessions were used to:

- Sensitize the participants on REDD+ and its related processes;
- Provide information on Carbon Financing and the various financing mechanisms and options;
- Inform of the Grievance Redress Mechanism;
- Directly engage with Indigenous Peoples;
- Discuss Strategic Environmental and Social Assessment (SESA) preparation process; and
- Outreach to youth in the Toledo and Cayo districts.

The REDD+ Readiness Midterm Evaluation was conducted between June and August 2019. The evaluation found that engagement and participation evolved and/or transitioned over time. This report established that the adaptive management to stakeholder engagement had allowed for the creation of the Indigenous Technical Team (ITT) and the Indigenous Peoples Desk (IP Desk - previously Maya Desk) within the R+CU. This desk was created in response to the need that developed to more meaningfully engage and coordinate Indigenous People in the REDD+ process, based on the results of the initial stages of the consultation process. It was used to institute procedures to improve channels of communication with the IP communities. No such mechanism to facilitate engagement and communication between the Government of Belize and Belize's IPs existed before the creation of the IP Desk.

A major part of the consultative process was the conducting of a Strategic Environmental and Social Assessment (SESA) launch workshop in June, 2019.¹ It was the first in a series of consultations that are designed to develop safeguards involving the forest and agriculture sectors, and communities that depend on forest resources. The workshop provided information on the REDD+ Programme, its current plan of activities and the purpose of undertaking a SESA as part of the REDD+ Readiness process. Topics discussed included: Drivers of Deforestation and Forest Degradation, REDD+ safeguards, SESA scoping and the prioritization of Environmental and Social Activities for REDD+ in Belize.

A Stakeholder Mapping and Analysis was done in September 2019. It was primarily a desktop analysis of available information, that focused on identifying the key stakeholders of the REDD+ process and how to best engage them. The analysis looked at three key factors, namely; the institutional capacity of the group or organization to engage REDD+, the stake that each group or organization had in forest resources, and the influence that the group or organization had over the forest resources. The analysis found that the stakeholders who were identified during the Readiness Preparation Proposal (R-PP) were still the same ones that should be involved in the REDD+ process. It also found that there were varying levels of capacity, influence and stake, with communities having the larger stake while government and large operators had the greater influence. Few groups or organizations were found to have the capacity to engage REDD+.

The R+CU developed a Stakeholder Engagement Protocol (NCCO 2019) (Annex 5) for consultation and stakeholder engagement. It provides the guiding principles by which the engagement process is bound, and the acceptable mechanisms that will be used to consult with stakeholders. The Protocol also provides for a Feedback and Grievance Redress Mechanism. It is a dynamic document that will be updated and revised as the need arises.

In February 2021 two virtual stakeholder consultations were held to review the identified drivers of deforestation and forest degradation. The first workshop included primarily government ministries, departments, agencies and key experts. The second workshop was held one week later and included community leaders, Indigenous Peoples, industry stakeholders, protected areas managers and conservation NGOs. The workshops focused on presenting the known drivers of deforestation in Belize and requested input from participants. There were a total 59 participants and presenters in the two workshops, 33 in the first and 26 in the second. There was almost equal participation of female and male participants.

The R+CU was eventually transformed into the MRV unit which is key for ensuring the REDD+ MRV functions are fully operational, manage and coordinated in Belize. The MRV unit continues to engage stakeholders by following the guiding principles of the stakeholder consultation protocol. In this regard, multi-sectoral consultations continue

¹ Participants included: Indigenous Peoples, Community Based Conservation Organizations, Conservation NGOs, Department of Rural Development, Long-Term Forest Licensees, Community-Based Forest Groups, Private landowners, Forestry Department, Sugar Industry, Agriculture Sector, and Protected Areas Co-managers.

with state and non-state actors to facilitate the implementation of Belize's REDD+ strategy and associated plans.

2.4.2 National Forest Management Capacities

The Forest Department, which is part of the Ministry of Sustainable Development, Climate Change and Disaster Risk Management (MSDCCDRM) (similar to the National Climate Change Office), is responsible for the administration, regulation and management of forests in Belize. This includes the elaboration of management plans of forest within protected areas; granting of licenses and intervention authorizations, and the collection of the royalties derived from the forest use and monitoring.

According to the Government national budget of Belize approved in 2017 (Government of Belize 2017), the total allocated for the "Forestry Resource Management" program of the Forest Division was \$3,127,122 (revised budget for period 2016/2017). The budget breakdown is as follows: 74% is used for personnel costs, 7% for operating cost (mainly fuel) and approximately 5% for travel and subsistence (mainly allowances). The capital expenditure allocated to the national and forest reserve management represents less than 3% (\$87,563) of the overall Forestry Resource Management program budget.

The Forest Department has a staff complement of 98 persons, 47 technical and 51 administrative and support staff. The technical staff cover a range of skills and expertise including areas such as Natural Resource Management, Business Administration, Tropical Forest Management and Conservation, Protected Area Management and Project Management (Communication from Forest Officer Florencia Guerra May 12, 2021). Staff also received training in Wildlife Management which helps to strengthen the overall competencies and capabilities in the Department. The Management technique of the Forest Department (FD) has resulted in every regional unit having a complement of staff with the educational capacities to manage and carry out the functions of the FD at the regional level. All ranges comprise of a Forest Officer, Forester, Forest Rangers and/or Forest Guards and staff from the clerical and technical pool. This decentralized management style facilitates on the ground activities such as monitoring and enforcement and allows the Forest Department to have better collaboration and coordination with its partners at the community level.

Forest Department Staff have enhanced their capacity to monitor forests using OpenForis/Collect Earth. This method has been the basis for the REDD+ FRL presented to the UNFCCC in 2020. Capacities to monitor illegal activities can still be improved through the incorporation of new technologies and further capacity building within the Forest Department. Section 4 provides more information related to forest monitoring.

2.4.3 Readiness phase Institutional REDD+ Context

The Belize REDD+ Readiness Project is a Government of Belize (GoB) led project spearheaded by the Ministry of Sustainable Development, Climate Change and Disaster Risk Management (MSDCCDRM). MSDCCDRM is the implementing agency for REDD+ activities in Belize. It makes such decisions as requesting funds for further REDD+ activities and deciding where in Belize those activities should be targeted. The

MSDCCDRM also oversees the activities of the FD which has the legal mandate for sustainably managing Belize's forest resources.

The FD was established in 1923 as an entity directly under the control of the central government. It operates throughout the country from its six (6) Forest Offices to implement the activities of its Wildlife, Forest Resource Planning & Management, Monitoring, Reporting and Verification, Law Enforcement and Landscape Restoration Programs. The FD is currently staffed by 54 Technical staff distributed throughout the country specifically in Orange Walk, San Ignacio, Douglas D'Silva, Savannah, Machaca and Belmopan which is the FD Headquarters. There is a total one hundred and eleven (111) staff country-wide.

The MSDCCDRM has the important task of sustainable development planning as a result of Belize's commitment to the 2030 Agenda for Sustainable Development with its 17 global goals. The Sustainable Development Agenda commits Belize and each country to mitigate and adapt to climate change. As REDD+ activities contribute directly to the achievement of Sustainable Development Goals 13 and 15 which address climate change, reducing deforestation and the sustainable use of ecosystems; these activities are best conducted within the climate change mitigation and adaptation framework.

Consequently, the MSDCCDRM and the FD are technically supporting the National Climate Change Office (NCCO) which is responsible for the coordination of Belize's national, regional and international response to Climate Change. This body works closely with other sister agencies such as the FD, Department of the Environment (DOE), Agriculture Department and the Lands and Surveys Departments. As an example, the FD provides the technical inputs related to the collection of Activity Data and emissions and removals associated, to the FRL report and to the MRV system. The NCCO spearheads the REDD+ Project on behalf of the Ministry, a responsibility previously executed by the FD.

The establishment of REDD+ activities within the NCCO follows the accurate advice that, "[i]n creating institutional arrangements to carry out the [REDD+] long-term vision[s] and strategic plan[s], countries should build upon existing arrangements, such as those developed for greenhouse gas inventories (GHGI) that underpin National Communications. Building on and strengthening existing institutional arrangements in establishing a NMFS for REDD+ will reduce duplication of effort and costs, facilitate use of official data sources, avoid institutional conflicts and help maximize co-benefits and consistency in reporting" (GFOI 2016).

During the implementation of the project, the NCCO was supported administratively by a Project Steering Committee (PSC) and technically by a Technical Expert Group (TEG). The PSC was comprised of representatives of government ministries and departments which provide fiscal and administrative oversight of the Project. It included the Ministries of Environment, Agriculture, Finance, Economic Development, Rural Development, Natural Resources and the Protected Areas Conservation Trust (PACT). The TEG was comprised of government and non-government representatives within the forest sector who provide advice and recommendations to help guide the technical aspects of the Project. They reviewed technical documents and led on technical issues such as the production of the forest reference emissions levels (FREL), the REDD+ strategy and the monitoring, reporting and verification system (MRV). Membership of

the TEG included the NCCO, FD, Ministry of Natural Resources, University of Belize Environmental Research Institute (UBERI), the Belize National Indigenous Council (BENIC), the Belize Livestock Producers Association (BLPA), and the Belize Network of NGOs (BNN).

An important achievement of the R+CU was the establishment of the Indigenous Peoples Desk in February 2019, which served as the catalyst for facilitating feedback from various IP groups on activities related to REDD+. The IP Desk also functioned as a focal point for dissemination of information and to aid in enabling planning engagement with communities.

Figure 2 Original Institutional framework for REDD+ activities in Belize.

The institutions mandated to manage Belize’s natural resources and guide its sustainable development, particularly in relation to forests, and REDD+ are listed in the following table.

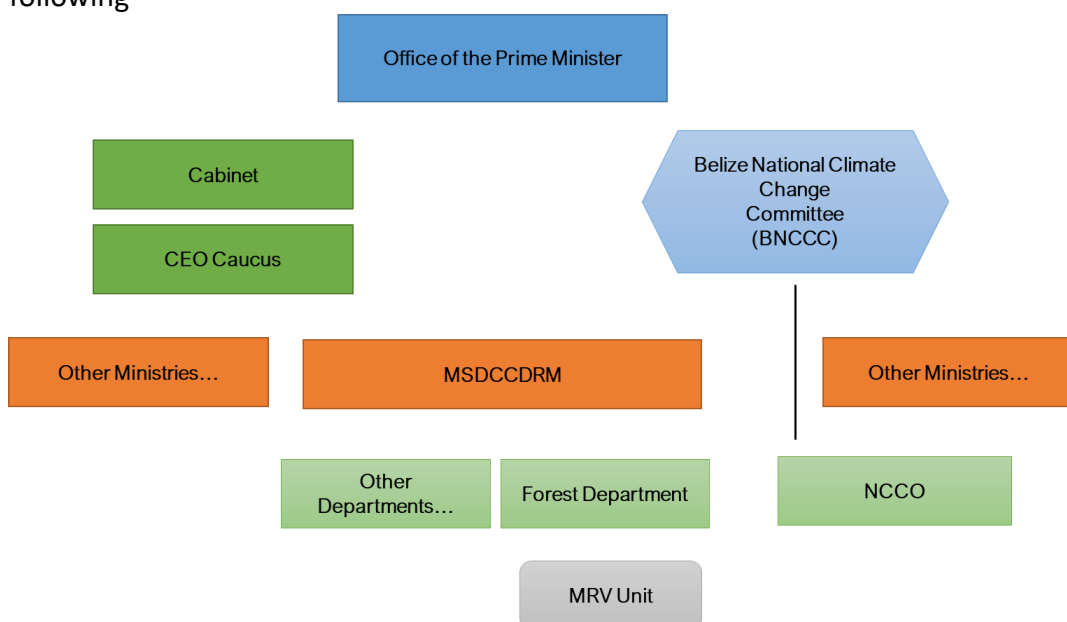


Table 9. Forests, REDD+ and FCPF Related Institutions

Institutions	Legal/Administrative Mandates	Roles in Forests, REDD+, FCPF Implementation
Ministry of Sustainable Development, Climate Change and Disaster Risk Management	Oversees sustainable development, climate change and disaster risk management portfolios.	Land use planning, coordination of Climate Change including REDD+, sustainable development planning.
Forest Department	Oversees the sustainable management of Belize’s forest resources.	Lead agency in development of REDD+ R-PP, forest planning and monitoring, forest carbon assessment, and participation in International REDD + initiatives. These activities are now

		under the specific responsibility of the MRV Unit.
MRV Unit	Originally: Planning and executing REDD+ activities.	Promoting the mainstreaming of REDD+ initiatives, activities and products into various sectors of the economy; development of proposals for national REDD+ pilot initiatives; planning and oversight of relevant research and studies as part of readiness activities and promoting collaboration and partnerships with local and national institutions towards achieving the objectives of the REDD+ Strategy.
National Climate Change Office	Relays information to the public and private sectors, local communities and schools on all aspects of Climate Change; guides the initiative of having both the public and private sectors work in conjunction with each other to build Belize's resilience to Climate Change; ensures that Climate Change ideologies enter and remain in Belizean colloquialism, action and decision making.	Works closely with the MRV Unit in planning and executing REDD+ activities.
Protected Areas Conservation Trust (PACT)	To contribute to the sustainable management and development of Belize's natural and cultural assets for the benefit of Belizeans and the global community, both now and for future generations.	Fiduciary agent of the REDD+ Readiness Preparation Grant.
Department of the Environment	Prevents and controls environmental pollution, prohibits dumping, requires and regulates environmental impact assessments, interpret issues regarding nutrients, environmental investigations and applying general penalties.	Conduct environmental monitoring, enforcement and require and regulate the conduct of environmental impact assessments (EIAs).
Lands and Survey Department	Management and allocation of national lands, registration of land tenure, authentication of plans for all legal surveys, subdivision of lands, valuation of lands, land use planning, land information management.	Implementation of National Land Use Policy in particular in relation to land tenure and the rights of indigenous peoples.
Agriculture Department	Provides an environment that is conducive to increase production and productivity, promoting investment, and	Development of a climate resilient agriculture sector in Belize through the fulfillment of climate change adaptation and mitigation activities

	encouraging private sector involvement in agribusiness enterprises in a manner that ensures competitiveness, quality production, trade and sustainability.	using sustainable practices and the promotion of climate smart agricultural technologies.
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Source: Adapted from GOB 2015a), p. 76.

2.4.4 Lessons learned and recommended institutional REDD+ framework

As described in the previous section, the readiness phase institutional framework has been evolving, new actors have been integrated and new mechanisms have been operationalized. REDD+ is intended to be a comprehensive mechanism, which requires the inclusion of a variety of actors and these adjustments are expected and positive. Throughout this period there have been lessons learned that, in addition to the different requirements of the implementation phases, need to be taken into account for the design of the new institutional framework.

In the view of the MSDCCDRM the present institutional structure for the REDD+ project in Belize is sound and serves its current purpose adequately. Early challenges which the project experienced, including the relocation of the project from within the FD to the NCCO, changes in staff, and the onset of the Coronavirus Pandemic in 2020 which led to a year's extension goes beyond the current institutional structure. For the most part, countries implementing REDD+ are expected to do so through an iterative process as there are no prescriptions for a standard approach. The development of Belize's National REDD+ Strategy, SESA, ESMF and SIS will advance the implementation of REDD+. In the meantime, it is generally believed that the NCCO is effectively managing the project and the existing institutional structure is adequate for the implementation phase of the project.

For the implementation phase it is of key importance to have an optimal involvement of the FD in project activities since the Department has a fundamental role as manager of forests. Below is a generic institutional structure, about which the Government of Belize will later make a final decision.

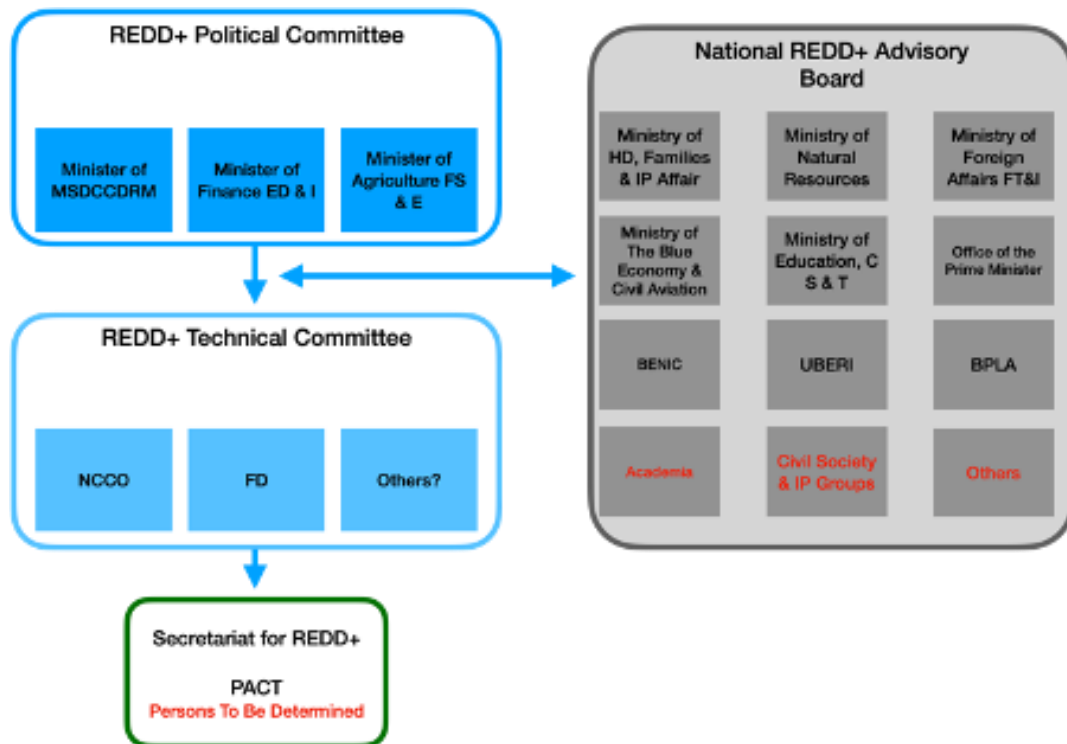


Figure 3 Suggested Generic Institutional Structure for REDD+ implementation. Source: Own Elaboration

2.4.5 Results Obtained

Throughout the implementation of REDD+ several management actions were conducted that lead to the following results in the 2016-2018 period. “For 2016, emissions were 81,794 tCO₂e less than the expected trend, for 2017 emissions were 940,385 tCO₂e less than the expected trend and for 2018 emissions were 4,580,384 Ha less than the expected trend. This resulted in a total of 5,602,563 tCO₂e emissions less than projected” (GOB 2021: 34) (see figure 3).

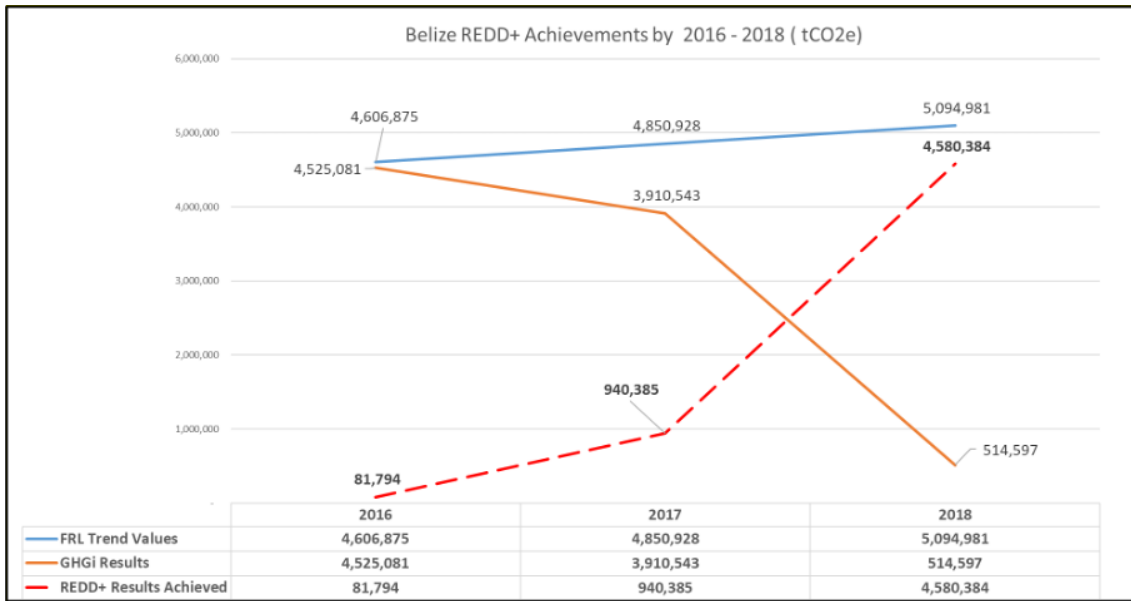


Figure 4 REDD+ Results from 2016-2018. Source: GOB 2021

These management actions can be summarized as follows:

1. Maintenance of the integrity of the protected areas system through patrols, community outreach, and law enforcement for example, the Key Biodiversity Areas project (5 million US over 6 years) during the period 2013 to 2018 invested heavily in protected areas management including law enforcement and community engagement.
2. Fire prevention and firefighting related actions taken through the Key Biodiversity Areas project to better equip and train community fire fighters, government agencies, and local NGOs proved to be successful in lowering the incidence of major forest fires throughout the pine uplands and lowlands.
3. Protection and maintenance of natural regeneration processes in degraded areas as well as agroforestry practices and better regulation of agricultural development and improved land use practices helped convert former croplands into early-stage secondary forest.
4. Legal declaration of biological corridors prevented the continued deforestation of the forests in the northeastern part of the country despite high deforestation rate in the surrounding areas.
5. Implementation of improved forest management based on post-harvest assessment and grading system for logging companies working inside forest reserves has led to an improvement in the performance of logging companies with respect to road construction and harvesting operations.

6. The passage of the new mangrove regulations in 2018 has led to a reduction in the area of mangrove forest cleared and strengthened the robustness of the application process for permits to clear mangroves.

3 Forest State and Trends

3.1 Brief description of national forests

The national definition of forest in Belize is “plot of land with an area of 0.5 hectares or more, with trees 5 meters or higher, and a canopy cover of 30% or higher” (Forest Department 2020, 33). As of 2018, Belize had approximately 61.7% of its total land area under one form of forest cover (Forest Department 2020). They can be broadly grouped into five categories: mature broad-leaf forest, secondary broad-leaf forest, pine forest, mangrove forest and forest plantations (see Table 10).

Forest types are mainly defined by tree community composition and disturbance reflected in crown cover. According to Collect Earth (CE) used as a base to prepare the FREL, the forest land cover is as follows:

- Mature Broadleaf Forest 1,179,418ha;
- Secondary Broadleaf Forest 81,530ha;
- Mangroves 71,276ha;
- Pine Forest 20,910ha;
- Forest Plantation less than 1,500 ha;
- Regenerating Forest 10,355ha.

Table 10. Forest classification and % of total area cover in Belize

Forest Subcategory	Specific Class	Area (ha)	Percentage in relation to total country area
Broad-Leaf Mature Forest	Riparian Forest	1,179,418	53.35%
	Swamp Forest		
	Other Forest		
Broad-Leaf Secondary Forest	Riparian Forest	81,530	3.69%
	Swamp Forest		
	Other Forest		
Pine Forest		20,910	0.95%
Mangroves	Dwarf Mangroves	71,276	3.22%
	Littoral Forests		

Plantations	Teak	1,307	0.06%
	Other plantations		
Regenerating forest		10,355	0.47%
TOTAL		1,364,795	61.74%

Source: Adapted from Forest Department 2020.

Broadleaf Mature Forests (MBL) in Belize, correspond to the tropical and subtropical moist broadleaf forest biome. Forest composition is dominated by semi-deciduous/semi-evergreen tree species, with all classes of mixed-species broadleaf trees – including intermittent palms – with heights of 5 meter or higher, and closed canopy cover² of 30% or higher (Forest Department 2020). The forest canopy - which generally accounts for highest biodiversity levels - can be divided into five layers: overstory canopy with emergent crowns, a medium layer of canopy, lower canopy, shrub level, and finally understory.

In Belize, Broadleaf Mature Forests can be found on all types of soil at all elevations, and are classified in three classes, the Broadleaf Mature Riparian Forest (MBLR), found within 20m from a water source, thus they are usually located on alluvial plains along watercourses or in gullies in mountainous areas. The Mature Swamp Forest (MSWAMP), characterized by being inundated seasonally or permanently and any other which is not Riparian or Swamp is classified as Other Mature Broadleaf Forest (MBLO) (Forest Department 2020).

Included under this category is the ecoregion of Petén-Veracruz moist forests, which is broadly represented in Belize yet considered as globally critical/endangered, and Yucatan moist forests, limited to the north east of the country and considered vulnerable globally (Olson et al., 2002).

The Secondary Broad-Leaf Forest (SBF) instead of a closed canopy have a semi-open canopy³ cover of 30% or higher. According to the FREL Report, these “are forests regenerating largely through natural processes after significant human and/or natural disturbance (with more than 70% mortality) of the original forest vegetation” (Forest Department 2020, p. 34). The forest structure and/or canopy species composition is strikingly different to a nearby mature forest on similar sites.

These forests can also be found on all types of soils at all elevations and can be classified in the same three classes as the MBL: Secondary Riparian Broad-Leaf Forest, Secondary Swamp Broad-Leaf Forest and Others.

The third subcategory of forests corresponds to Belizean Pine forests, which are part of Tropical and subtropical coniferous forest biome. Forest composition is dominated by pine evergreen mature trees with a height of 5 meters or higher, yet they intersect with other broadleaf tree species. “The defining characteristic is an open canopy that is dominated by pine trees with some intermittent small gaps of low broadleaf tree species, grass, or shrubs” (Forest Department 2020, p. 36)

² 95% to 100%.

³ 65% to 95%.

The Belizean Pine Forest, despite occupying a small area (less than 1% of total territory), is of great importance as it is considered globally critical/endangered. It represents one of the few examples of lowland and premontane pine forests in the Neotropics (MAFFESD 2016). The premontane area (about 700 m above sea level), is found in the center of the country (western strip of Mountain Pine in the Maya Mountains), with closed or semi-closed pine forests, and numerous more irregular and smaller fragments that correspond to pine savanna, which occupy coastal areas and contain varying degrees of forest cover (Harcourt & Sayer 1996).

The fourth forest category corresponds to Mangroves. They can be found along the coastline and on cayes in brackish to saline conditions. They are classified in Littoral and Dwarf Mangrove Forest. Dwarf Mangrove Forest (DMF), which are the most widely spread, are composed of species lower than 5m tall and includes mixed-species forests also lower than 5 meters, contrary to Littoral Mangrove Forest (LMF) which include trees taller than 5 m.

As a subset of tropical forests, mangrove ecosystems provide crucial coastal and caye protection services and support fisheries, providing nursery functionality for many commercial and sport fishing species (Cherrington et al. 2020).

The last category corresponds to Forest monoculture Plantations, which represent a very limited amount of Belizean territory (calculations range from 0.01% to 0.06%). The most common species planted is teak, also finding Mahogany, Cedar, Melina and Acacia (Forest Department 2020). Plantations have a somewhat open canopy⁴, and are easily recognized as trees planted in rows.

When any of these forest categories suffers a significant loss in canopy cover without having a land-use change, i.e., due to hurricane, fires or pests and are left to regrow, they are classified as regenerating forests. According to Collect Earth data, they currently cover 2.14% of Belizean territory (Forest Department 2019).

From the total forest cover, about 40% is under some scheme of protected area and the other 60% is privately owned or situated on public lands that are not directly managed for forestry purposes. Of the publicly owned and managed forests, 65% are set aside for timber production (forest reserves in the PA system), and the remaining areas are managed for non-extractive purposes under sustainable schemes.

Regarding forest management practices, in 2005 the Forest Department shifted from solely granting short term logging licenses to also granting long term (20 and 40 years) licenses which are designed to practice sustainable forest management (SFM), enabling logging companies to plan the harvest following SFM criteria. Forest logging is focused in about twenty tree species, including some valuable ones such as Mahogany (*Swietenia macrophylla*), Yemery (*Vochysia hondurensis*), Santa Maria (*Calophyllum brasiliense*) and Rose Wood (*Dalbergia stevensonii*) that was recently related with increasing demand and exports to China (Wainwright and Zempel 2017). Short-term licenses are still being granted, particularly in private land being developed or converted to another land use.

⁴ 65% to 90%

Despite Belize having one of the highest percentages of forest cover in Central America and the Caribbean, in the past decades it has been decreasing at steady rates, with an average loss of 0.7% between 2000-2018 (CATHALAC 2020). Data obtained by the Open Foris Collect Earth tool indicates that for the period 2001-2018 the average annual deforestation was 9,735 ha/year with a maximum average in the subperiod 2010-2015 with an annual average around 13,119 ha/year. (See Table 11 for average loss per Forest subcategory).

Table 11. Forest loss trends by type of forest in Belize

Forest Subcategory	Hectares Lost in Period 2000-2018
Broad Leaf Mature	5429ha
Broad Leaf Secondary Forest	3669ha
Pine Forest	581ha
Mangroves	45 ha

Source: OPEN FORIS Collect Earth LULC 2022

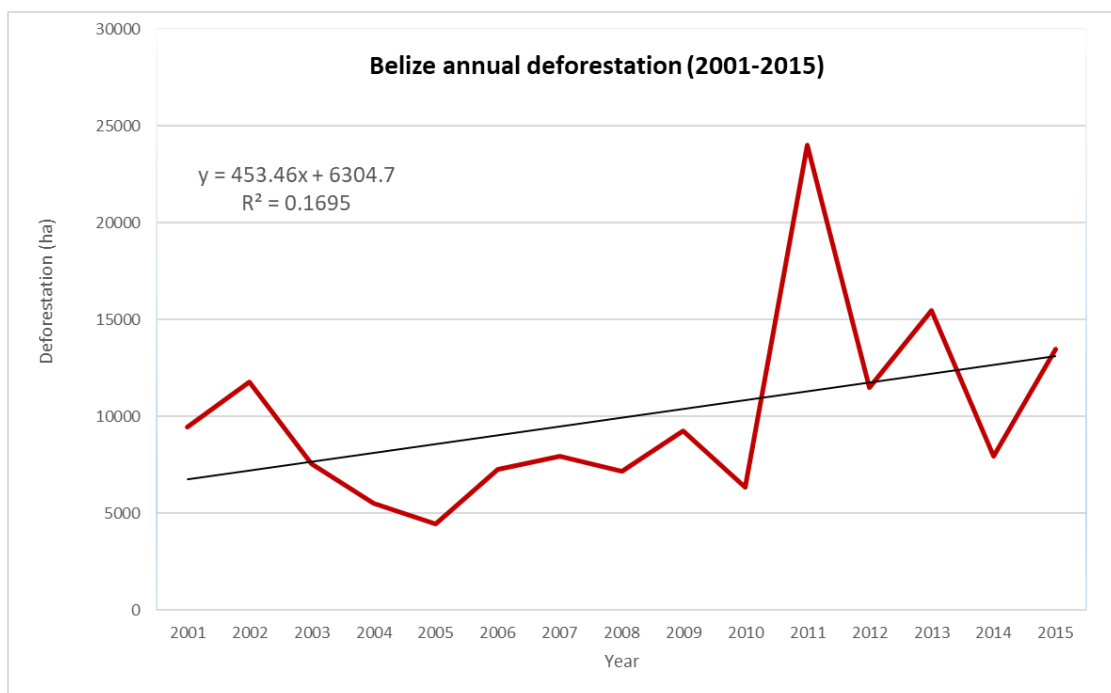


Figure 5 Deforestation rate and trend 2000-2015.

3.2 Drivers of Deforestation, Degradation, and barriers to plus (+) activities

A clear understanding of the drivers and barriers is important for the development of policies and measures designed to combat them. The UNFCCC COP encourages developing countries to identify drivers of deforestation and forest degradation in order to address them in their national strategies or action plans (Decision 4/CP.15) These policies and measures are a central part of any REDD+ Strategy and in the case of this strategy are described in Section 4 below.

Drivers can be classified as direct and underlying or indirect drivers. Direct drivers are human activities or actions that impact forest cover directly, therefore leading to forest carbon loss. Underlying drivers operate more diffusely, often by altering one or more of the direct drivers. They are formed by a complex set of social, political, economic, demographic, technological, cultural and biophysical variables. Barriers refer to obstacles that can hinder the “plus” activities of REDD+: forest conservation, enhancement of forest carbon stocks and sustainable management of forests. Barriers are strongly linked to drivers and tend to be most related to underlying drivers, comprising institutional, legal, and socioeconomic variables.

Figure 6 is the causal map of deforestation and forest degradation in Belize. It shows the main direct and underlying drivers of deforestation and forest degradation in Belize, which also contain the main barriers to the plus activities in REDD+. This causal map and the drivers and barriers described in this section are the result of a rapid analysis conducted between January and February 2021 that concluded in the Analysis of Causes of Deforestation and Forest Degradation and Barriers to + Activities in REDD+ in Belize (AAE-CADS 2021). Direct drivers are those whose arrows point directly to the deforestation and/or forest degradation fields in the causal map. This report is based on secondary information and on workshops and interviews conducted to enhance the analysis of secondary literature.

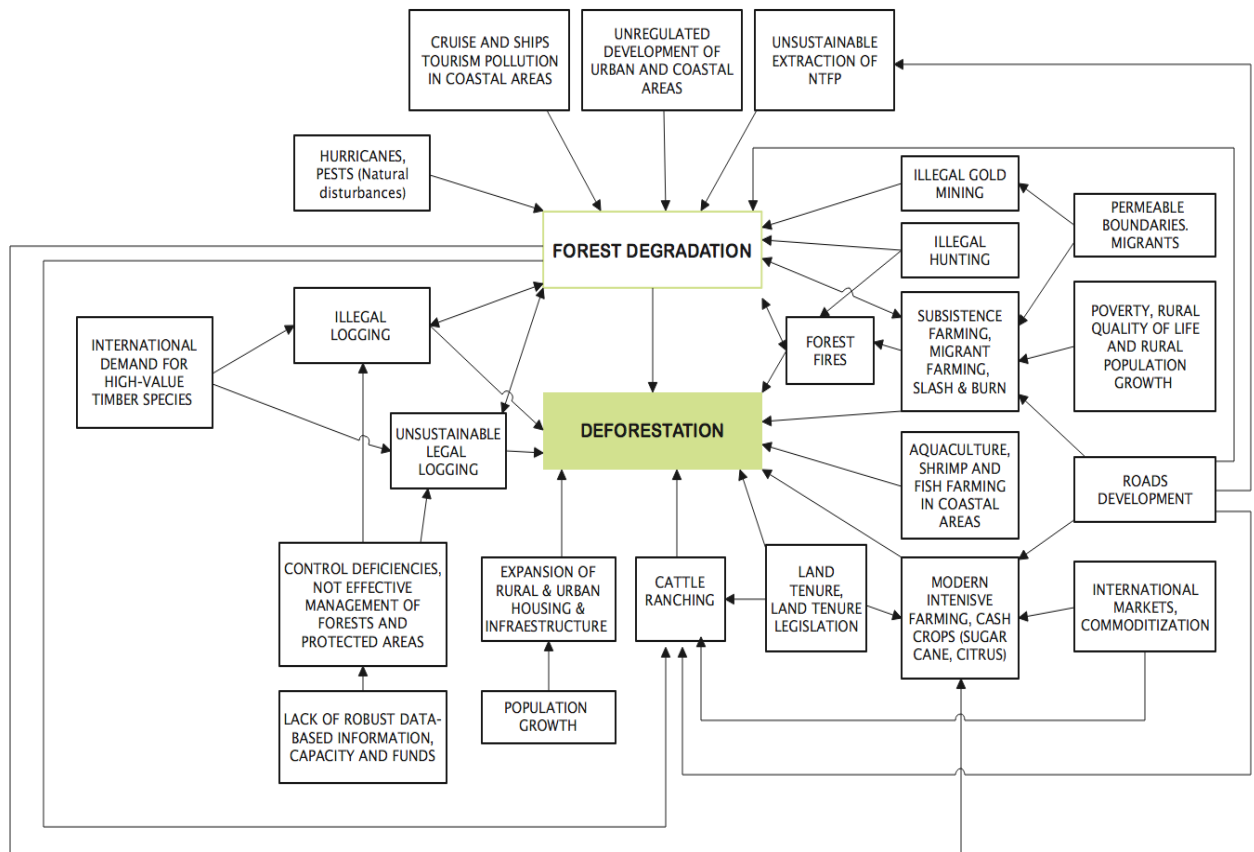


Figure 6 Causal Map of Deforestation and Forest Degradation. Source: Own elaboration

3.2.1 Direct drivers of deforestation and forest degradation

- The Drivers of Deforestation, Forest Degradation and Barriers to + in REDD+ study in Belize identified the following direct causes of deforestation and forest degradation in the country:
- Conversion to grassland and cattle ranching
- Conversion to cropland, modern, intensive farming
- Expansion of urban and rural housing and infrastructure
- Illegal logging
- Unsustainable legal logging
- Subsistence, slash and burn agriculture
- Unregulated development of urban and coastal areas
- Unsustainable extraction of non-timber forest products
- Illegal hunting/poaching
- Tourism pollution in coastal areas
- Illegal gold mining

- Land tenure legislation, regulation

Conversion of forest to grassland (livestock pastures) and cropland (food crops) have been, in the last two decades in Belize, the two major direct causes of deforestation and forest degradation.

Illegal and/or unsustainable logging of high-value timber has been linked to the rapid expansion of agriculture (in turn driven by population increase) on forest lands of the Sapote-Mahogany habitat in Northern Belize (Folkard-Tapp 2020).

Forest fires are another factor with some distinct particularities. While they are in almost all cases the result of human activities, they are mostly used in Belize as a tool for another specific purpose identified with a cause (like poaching, or slash and burn agriculture), or are an associated and/or unintended consequence of it. There are also naturally occurring forest fires such as those in the Pine savannahs.

Regarding conversion to agriculture, both crop cultivation and cattle ranching, Mennonite communities and Mennonite farming are major actors in Belize. They include groups with both religious and entrepreneurial differences, with important communities introducing technical innovations at different levels and implementing modern practices of commercial agriculture and agribusiness under the influence of global processes of modernization (Roessingh 2007, 2012; Roessingh and Boersma 2011).

Land tenure legislation, which requires that leased lands that are forested must be 'developed' by the owners or their leases would be revoked, may work as a direct driver when the immediate objective of the owner is only clearing the land for tenure and tax purposes, and for economic or other reasons further development is postponed.

3.2.2 Underlying drivers

The main underlying drivers identified for Belize are land tenure legislation; control and coordination deficiencies; international demand for high value timber species; international markets; commoditization; road development; population growth; and permeable boundaries and migrants.

Land tenure legislation, which requires that leased lands that are forested must be 'developed' by the owners or their leases are revoked, is identified in several documents as one of the main factors driving deforestation in the country. It provides an incentive for landowners to clear the land in an effort to meet the requirement of 'development'.

Control deficiencies affect the control of illegal activities and the administration and supervision of approved operations, resulting in unsustainable and damaging extractions (Forest Department 2020; Chicas 2017). Control deficiencies come both from lack of personnel, capacity and financial resources and ineffective institutions and legal frameworks that inhibit enforcement of environmental regulations (Young 2008).

International demand for high value timber species has been linked to illegal selective extraction. Unsustainable levels of selective logging pose a threat to protected areas as well.

International markets promote the large-scale production of highly standardized goods, or 'commodities', which facilitates their commercialization in diverse markets and with multiple economic instruments. The economy of Belize has been based mainly on exports of traditional commodities with access to preferential markets in the sugar, citrus, and banana sector (GOB 2015b). To this end, production models which require large inputs of natural resources, including land, are applied. In these processes' other productive alternatives and land uses may find it difficult to compete economically. Commoditization processes have an important influence as underlying drivers of deforestation.

Road development facilitates resource extraction and may lead to higher levels of deforestation. This is recognized in the RPP (GOB 2015a) and in studies conducted in several areas of the country like the Mountain Pine Ridge Forest Reserve in south central Belize and in Cayo District, in the west (Folkard-Tapp 2020).

Population growth, and the subsequent need for expansion of rural and urban housing as well as the need for expansion of farmland, places pressure on forest lands.

Permeable boundaries and illegal transboundary incursions by immigrants into Belizean forests and protected areas for farming, hunting and harvesting non-timber forest products results in increased deforestation and degradation.

3.2.3 Barriers to "plus" activities

Addressing barriers to the 'plus' activities, namely, the conservation of forest carbon stocks, enhancement of forest carbon stocks and sustainable management of forests is important, as Belize has included all five REDD+ activities in the Strategy.

Barriers are most frequently associated with those basic, underlying forces that support more proximate, immediate circumstances. They tend to be mostly related to underlying drivers, comprising institutional, legal, and socioeconomic variables.

From the analysis of drivers, it can be inferred that in the conservation of forest carbon stocks several factors may act as barriers, including control deficiencies and weak law enforcement, land tenure legislation and taxation, land use pressures induced by international markets and commoditization, and some harmful side-effects of the international demand for high value timber species.

These same obstacles would hinder the enhancement of carbon stocks, where the uncontrolled use of fire to clear grassland or degraded forest land for agriculture will also have to be considered. Forest fires are a direct, proximate cause closely related to others in the same category, such as slash and burn agriculture, poaching, and to forest degradation related to hurricanes and pests. As a result of prolonged exposure to storms and hurricanes, the Belizean forests have frequently been damaged or degraded, creating a high fuel hazard (FAO 2006).

The mentioned barriers might also affect the sustainable management of forests as a plus activity.

3.3 REDD+ activities included in this strategy

Belize will implement and assess its efficiency on the five REDD+ activities: reducing emissions from deforestation, reducing emissions from forest degradation, conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks. This is in accordance with national circumstances, in agreement with the Decision 1/CP.16 of the UNFCCC, paragraph 71, and as a standard and benchmark for contributing to mitigation actions on the forest sector referred to in paragraph 70 of the same decision.

This approach considered the importance of the five activities in terms of emissions and removal of GHG. The relation of these activities to various drivers of deforestation and forest degradation, with the consequent capacity to implement the activities through more efficient and cost-effective PAMs was also taken into account to determine the five activities.

3.4 Possible future deforestation trend based on historical trends

Historical deforestation was described at the end of section 3.1. Based on the observed national deforestation rates for the period used in the FRL (2001-2015) and under a Business-as-Usual Scenario (BAU) we present the possible deforestation trends for the following 10 years. This is based on a linear projection of emissions presented in the FRL, using as reference the period 2001-2015 and extrapolating the possible emissions into the future using this trend. Using the same logic but over the annual deforestation rate, the timeline trend indicates that the possible deforestation for a given year could be calculated using the corresponding line equation:

$$\text{expected deforestation (ha/year)} = 4916 + 468 * (\text{years since 2001})$$

The annual deforestation trend is strongly associated with the 2012 peak in deforestation that followed a hurricane impact. Using a linear trend projection is consistent with the logic used in the FRL, and also the reason for using the 2001-2015 period to adjust the linear trend. It allows us to estimate possible annual deforestation for the next decade (which includes the 2016-2020 period as projected) (table 13). Based on this extrapolation the possible annual average deforestation for the next decade could be around 14,000 ha/year.

Table 12. Possible annual deforestation for Belize for period 2016-2025

Years from 2015	Expected annual deforestation (ha/year)
1	11900
2	12400
3	12800
4	13300

5	13800
6	14200
7	14700
8	15200
9	15600
10	16100

Source: based in extrapolation of linear trend based in data of annual deforestation period 2001-2015

4 REDD+ Policies and Measures (PAMs)

The Policies and Measures (PAMs) for the REDD+ strategy were designed following the vision and goals for REDD+ presented in section 1. These PAMs reflect the concerns, expectations, and needs of different stakeholders as well as the identified direct and underlying drivers of deforestation and forest degradation. In addition, these PAMs were developed considering existing country policies, laws and instruments, and their implementation. The PAMs are a means to reach the targets set in the recent NDC (GOB 2021). Particularly the targets of reducing “GHG emissions and increase GHG removals related to land use change totaling 2,053 KtCO_{2e} cumulative over the period from 2021 to 2030”; and to “enhance the capacity of the country’s mangrove and seagrass ecosystems to act as a carbon sink by 2030, through increased protection of mangroves and by removing a cumulative total of 381 KtCO_{2e} between 2021 and 2030 through mangrove restoration.”

The PAMs in this National REDD+ Strategy are organized under 4 Pillars, each of which has several subordinated Strategic Lines. The description and justification of each one of the Pillars below includes references to existing policies and relevant drivers. Pillars and Strategic Lines have interconnected functions and each of them is expected to impact positively on direct and underlying drivers in different ways. The entire strategy has to be considered as a whole in its implementation due to the direct and indirect links of the proposed PAMs with the identified drivers.

The strategy collectively addresses both the direct drivers and their related underlying drivers, as the latter have a chief influence on the direct (sometimes more visible) causes of deforestation and forest degradation. Underlying drivers operate diffusely and are generally linked in complex and different ways to other factors, of social, economic, political, demographic, technological, cultural and/or biophysical order, bringing about or modifying one or more direct causes. Their attention, and the planning and execution of the policies and measures for their mitigation, regularly demand most of the effort in the implementation of a REDD+ strategy.

In addition, addressing barriers to the ‘plus’ activities (1) conservation of forest carbon stocks, (2) enhancement of forest carbon stocks and (3) sustainable management of forests is part of this Strategy and has also been included in the country’s FRL. Barriers tend to be most related to underlying drivers, comprising institutional, legal, and socioeconomic variables, and may significantly overlap with them (UN-REDD 2016).

As in other countries of the region, underlying factors are the most critical drivers on the forest resource in Belize, and within them socioeconomic, institutional, legal and political factors, with the special presence in Belize of the powerful influence of natural disasters and phenomena, mainly hurricanes and pests, on the whole scenario.

The implementation of the strategic lines should be made following certain guiding principles that are aligned with the vision and should be understood as cross-cutting throughout the strategy. When specific actions are defined, these guiding principles will ensure coherence. The Guiding Principles are based on numerous stakeholder consultations (see Annex 2: Summary of consultation process) and also reflect the country's compromise with the UNFCCC decisions regarding social and environmental safeguards.

The principles are:

- Ensure cultural inclusiveness
- Ensure gender equality
- Guarantee respect for the rights of all stakeholders
- Ensure full and effective participation of all relevant stakeholders
- Safeguard forest-dependent livelihoods
- Ensure equitable distribution of benefits
- Guarantee transparency and accountability
- Build capacity within government institutions and non-government stakeholders
- Recognize and value ecosystem services
- Embrace/Improve sustainable forest management
- Abide by national and international obligations, and local culture and values.
- Strengthen intra and inter institutional coordination, including Indigenous governance

4.1 Pillar 1: Strengthen Institutional Coordination, Legal and Policy Framework and Enforcement

This Pillar is aimed at strengthening coordination between different government offices and addressing the institutional capacity weaknesses identified in existing policy documents (e.g., FD SAP) and in the drivers of deforestation study. It includes Strategic Lines necessary to overcome those weaknesses and to change current inconsistencies and difficulties created by the existing legal framework such as tax and land tenure, which act as drivers of deforestation and forest degradation.

Relationship to national priorities and identified drivers

Some of the key weaknesses and threats identified in the FD SAP are important to consider for the implementation of REDD+ and should be addressed in this Pillar. The most relevant, in relation to strengthening of institutional capacity, are inadequate

resources, inability to conduct monitoring and enforcement and insufficient or outdated standardized guidelines, procedures and operational manuals.

In relation to the legal framework, there are conflicting public policies and a need to improve government implementation. According to the R-PP (GOB 2015a) document and Massai (2019), there is a lack of comprehensive coordination and coherence of government policies, which jointly act as a driver of deforestation and degradation, for example by assigning higher land taxes on undeveloped private lands and therefore discouraging the maintenance of permanent forest cover.

Strategic policies from several government bodies address the issue of deforestation and degradation. The *Growth and Sustainable Development Strategy (GSDS), 2016-2019* from the Ministry of Economic Development points out the need to sustain efforts to strengthen SFM and land use planning by increasing the amount of land under SFM regime and by reducing forest cover decline outside protected areas. The National Biodiversity Strategy and Action Plan and the Belize National Protected Areas System Plan both point out the limited or slow enforcement capabilities (eg. resources, personnel, training, authority) to control degradation and deforestation also inside Protected Areas (Walker 2020).

The drivers of deforestation analysis also identified deficiencies in the control of both illegal and legal activities as important underlying drivers of deforestation along with the enforcement of the existing legal framework. In addition, as mentioned above, the literature and consultations identify land tenure legislation as an underlying driver, as it provides an incentive to clear land in an effort to meet the requirement of "development". This relates to the *National Lands (National Land Rules)*, rule 9, which requires a lease of national lands, within five (5) years from the date of the lease, to *inter alia*, develop and cultivate the lands demised by the planting of permanent crops which shall be taken to mean and include the planting of coconuts, cacao, coffee, mangoes, citrus and other fruit trees and rotational crops according to a programme approved by the Chief Agricultural Officer; and clear not less than one fifth of the total area demised and plant with permanent crops not less than one half of such cleared area each year.

This rule however, does not apply to lands that are unsuitable for cultivation, as certified by the Chief Agricultural Officer (sec. 10). In effect, a lease is not required to clear lands to meet the requirements of development, unless such land is certified to be suitable for agricultural purposes by the Chief Agricultural Officer; in other words, such land is agricultural land. While the *National Lands Act* does not define "agricultural lands", it excludes as national lands which may be available for agriculture, lands in forest reserves. As such, the *National Lands Act* provides an implicit prohibition on the clearing of lands for development purposes within Forest Reserves. From a logical and legal perspective, it can be concluded that the *National Lands Act* also prohibits the clearing of lands for development purposes within other protected areas.

Strategic Lines

SL 1.1. Adjust the relevant legislation (Land tax Act and relevant legislation) to incentivize forest conservation on small and large tracts of private forested lands where land owners can register for tax waiver/reduction through a conservation easement agreement.

Perverse incentives in national legislation have been already identified as a driver of deforestation (Massai 2020). During consultation for the identification of drivers of deforestation, the requirement for leaseholders to "develop" their land was highlighted several times as a driver. As pointed out above, it is "agricultural lands" and "lands not situated in forest reserves" that are subject to this legal requirement, making a clear delimitation of land types necessary as pointed out in SL 1.2.

Section 19 (1) of the *Land Utilization Act* provides the possibility to demarcate, through the development of regulations, agricultural lands across the country. Regulations should also be made to demarcate other areas, water catchment areas or watersheds and prohibiting the clearing of any vegetation within those areas; to provide for such other measures as may be required to prevent soil erosion; and for prohibiting the clearing of any forest or the felling of any trees, among other conservation measures.

With regards to taxes resulting in incentives to deforestation, Section 21 of the *Land Tax Act* levies a Land Tax, collected and paid annually, on the unimproved value of all agricultural land, suburban and beach land. Section 23:01 (1) levies an additional Speculation Tax annually on all pieces or parcels of agricultural land, suburban or beach land exceeding 300 acres. The rate of the Speculation Tax is five percent (5%) of the unimproved value of such land or such other rate as the Minister may from time to time by Order published in the *Gazette*, prescribe (sec. 23:01 (2)).

While the *Land Tax Act* does exclude, *inter alia*, any land being used for eco-tourism purposes where the Commissioner is satisfied that the unimproved land forms an integral part of the improved land; and all leaseholding of national lands as provided for under the *National Lands Act*; all other freehold land holdings of agricultural, suburban and beach land over 300 acres are subject to this requirement. As such, in order to discourage the practice of land speculation, land holders of over 300 acres of agricultural, suburban or beach land are incentivized to develop their lands for agricultural, residential or tourism related purposes in order to avoid the Speculation Tax.

The problem arises however, where the Land Tax Act broadly defines "agricultural lands" in geographical terms as "land outside the limits of suburban lands, beach lands or towns" and not in terms related to its use. Such a broad geographic definition suggests that agricultural lands may conceivably be located within protected areas and may be cleared for agricultural purposes. While the operation of the National Lands Act, particularly the National Land Rules, would avoid this occurrence in relation to lands not suitable for agricultural purposes and lands located within Forest Reserves; large landholders of over 300 acres which fall outside these parameters, may find this incentive irresistible.

The remedy is already provided for in section 23:01 (4) of the Land Tax Act, however, which empowers the Minister to exempt any category of land from the payment of tax

by Order published in the Gazette. It is therefore incumbent on the technical expertise within the Ministry of Sustainable Development, Climate Change and Disaster Risk Management to develop the necessary criteria that would clearly define the various categories of exempt land, inclusive of agricultural and conservation related lands, and have those definitions inserted into the applicable land related statutes in Belize; particularly the National Lands Act and regulations and the Land Tax Act.

In addition to facilitating the implementation of section 23.01 (4) of the Land Tax Act to reverse the incentive to clear land solely for tax reduction purposes, positive incentives to reforest, restore and conserve standing forests should be considered. The criteria included to allocate and to access these positive incentives should be related with provisions taken in relation to SL 1.1, as well as aligned with criteria to be included in the BSM, which is currently under development.

SL 1.2. Develop clear criteria and procedures for the review of development plans connected to land allocation approvals and EIAs in which forest lands are involved. More specifically, amend environmental/agricultural development laws (EIA Regulations) for newly deforested areas 300 acres or larger to:

- i. Keep stream zones forested to a certain width (streams and other water bodies on slopes less than 5° should have a 20m buffer, streams adjacent to slopes from 5-25° should have a 50m buffer, and streams adjacent to slopes greater than 25° should have a buffer of 100m,
- ii. Prohibit clearing on any land with slopes greater than 25° and
- iii. Maintain at least 10% of land areas larger than 300 acres under permanent forest cover.

The Forest Department is the regulatory agency for timber resources, with the Forest Act and the Wildlife Protection Act as its main legal instruments. But a significant portion of the regular activities of forest management and supervision are delegated to a range of government and non-governmental partner agencies. In relation to land clearance or development (a central forestry issue) the procedures and regulations fall under legal instruments under the mandate of the Lands and Surveys Department and the Department of Environment. Thus, for example, the FD's forest licenses prohibit the removal of trees within a distance of 66 feet from both edges of rivers, streams and lagoons, but this refers to the National Land condition of that riparian area, as stated in the National Lands Act upon which the Lands and Survey Department has jurisdiction. This requirement is not explicitly stated in the Forest Act, and therefore no penalty is applied by the FD for non-compliances. At the same time, this general rule seems to reflect an objective of ratifying State dominion on that strip of land (a legitimate Land Department concern) without necessarily establishing or adding a requirement based on environmental or forest management considerations, which might change according to terrain, forest or stream characteristics (a forestry perspective). The need for greater coordination and increasing capacities in regulatory agencies has been expressed in old and more recent analysis and has been particularly emphasized in the National Biodiversity Strategy and Action Plan (GOB 2016; Young 2008).

Thus, different agencies are present in the management and supervision of forest lands in Belize, but not necessarily work jointly and coordinately on the same issues. Therefore, the resulting system ultimately does not achieve the positive redundancy

that would contribute to policy robustness. Redundancy means the presence of different institutions and/or organizations in charge of managing, and deciding on, the same policy issue. The concept is taken from ecosystem theory; functional redundancy is hypothesized to promote ecological resilience and stability. An expected outcome would be that any errors and failures of organizational units can be corrected, or at least compensated for, by the existence of one or more of the other organizational units (Capano and Woo 2018; Stern and Baird 2015).

To widen the role and support and strengthen the work of the National Environmental Appraisal Committee (NEAC), clear criteria need to be established to make possible a transparent, clear and efficient appraisal of development projects, local land use plans, and forest clearance requests. For developments that do not require convening of the NEAC, clear criteria must also be established. Among other things these criteria should establish clear specifications related to forest protection and limitations to land use in relation to water bodies, buffer zones, ecosystem services, biodiversity corridors, slopes, soil types, etc. With these specifications and limitations defined, EIA instruments can focus on more complex or project related aspects.

The process to develop procedures should include consultation in order to ensure that the defined procedures guarantee respect for Indigenous land rights. Indigenous rights to FPIC and protocols for FPIC need to be established (see pillar 2, strategic line 4.2.2).

A clear delimitation of land types as a result of the comprehensive land use policy mentioned in the previous strategic lines that establishes limits of “agricultural lands”, “forest reserves” and other land types would provide more certainty to plan future development, define leases as well as to guide EIA processes. This point could be explicitly concretized in law, through the development of regulations, as provided for in section 19 (1) of the *Land Utilization Act*, to demarcate agricultural lands across the country (see 4.1.4).

SL 1.3. Amend property/tourism tax laws for commercial and residential properties to receive a percentage tax waiver for keeping a percentage of natural mangrove cover.

The objective of this strategic line is to amend relevant property and tourism tax laws to incentivize the preservation of mangrove ecosystems. This will be achieved through a tax waiver program for commercial and residential properties that retain a specified percentage of natural mangrove cover relative to the size of the proposed development area. Changes will be made to the existing tax code and new provisions will be incorporated that offer tax benefits to property owners who prioritize the preservation of mangroves. To ensure the intended outcomes are achieved, the Government will create a system for enforcing and implementing the tax benefits, including new forms and procedures for property owners/developers to apply for the tax waiver. Existing inspection and verification processes will be improved to consider this new system and ensure properties/development areas are meeting the requirements for retaining the specified percentage of natural mangrove cover.

SL 1.4. Build and enhance public awareness among tourism developers, architectural firms, town and city planners, the central building authority and major building contractors on ways to integrate existing mangroves into landscaping plans for resorts and large residential development.

This strategic line aims to integrate mangroves into landscaping plans for resorts and large-scale residential developments to preserve these ecosystems and promote sustainable development. To achieve this, the Government will build on existing strategies such as the NLRS to enhance public awareness among key stakeholders, including tourism developers, architectural firms, town and city planners, the central building authority, and major building contractors. Key to this is the development of a marketing and outreach campaign, partnering with relevant organizations/stakeholders including local communities.

The marketing and outreach campaign's main aim is to increase awareness and highlight the benefits of integrating mangroves into landscaping plans. Informational materials, such as brochures and posters, will be created and distributed, and combined with presentations and workshops to provide hands-on training and interactive learning opportunities to the target audience. Partnerships between the Government and relevant organizations, including environmental groups and local communities are important to provide resources and support in raising awareness about mangrove integration. Lastly, incentives, such as tax credits, grants, and subsidies, will be considered to encourage tourism developers, architectural firms, and building contractors to integrate mangroves into their landscaping plans.

4.2 Pillar 2: Sustainable Forest Management and Conservation

This Pillar aims to promote the sustainable management and conservation of forests to increase their environmental, economic and sociocultural benefits through enhancing ecosystems resiliency and functions, ensuring their sustainable utilization by forest users and stakeholders, planning and implementing strategies and actions with realistic, positive impacts and measurable results, and maintaining and/or increasing forest cover in conservation and priority areas.

Relationship to national priorities and identified drivers

This strategy line is consistent with the development and implementation of a plan of action according with the Forest Policy vision of working towards achieving 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 (GOB 2015c).

Actions within this strategy line are related to the following situations concerning national priorities and identified drivers: Deficiencies in the control of illegal activities, but also in the administration and supervision of approved operations, have been identified and described in the analysis of drivers as an important cause of deforestation and forest degradation in Belize. Illegal logging continues to be a major threat to maintenance of forest cover. In some cases, it is poverty driven, but in most cases the critical factor is the inability of the regulatory agency and law enforcement partners to monitor and enforce the laws (Ibid., GOB 2015a).

Forest fires are a major cause of deforestation and forest degradation in Belize. They are connected to several other drivers, although the majority of the fires are caused by agricultural practices. They have a strong synergy with forest degradation, reciprocally incrementing their impacts. This is particularly significant with forest degradation caused by forest pests, most notably bark beetles (*Dendroctonus frontalis*) (Billings and Schmidtke 2002). The Mountain Pine Ridge Forest Reserve lost 3,720 ha in 2001 and 3,016 ha in 2002, mainly due to a heavy bark beetle infestation which led to the death of pine forest. Trees that died were prime fuel material which caught fire in 2002. Areas that were once pine forest have not recovered and remain as grassland (GOB 2020a). The control or mitigation of these drivers is an important objective in the REDD+ strategy, enlarged with the inclusion of the *plus* activities in the Program, and is consistent with forest policies and with policies on land degradation in Belize (GOB 2020b, 2019b, 2015c).

Strategic Lines

S.L.2.1 Institute a quota on the number of short-term licenses issued in a year, to reduce the long-term average by 25%.

Conventional logging degrades from high tree cover to medium tree cover (around 50%). On average a license can be issued from 200 - 500 acres per year per license with a 75 license per year average which would be around 645 tons CO₂e per ha in a forest. Ministerial directive is to implement quota reduction which would in turn reduce the amount of areas that is subject to conventional logging and thereby reducing the emissions from this form of degradation of forests.

S.L.2.2 Prevent logging in instances to conserve carbon stock and decrease forest degradation.

Policy decision to prevent logging in forested areas or even within logging concessions can deter forest degradation and ensure conservation of carbon stocks especially as it pertains to (a) High Conservation Value Forests such as areas with steep slopes, highly erodible soil or (b) Restricting logging in buffer zones within existing logging concessions with modifications to guidelines in the Reduced Impact Logging Code. Identification of these areas and improvement of guidelines as it pertains to issuance of logging concessions is key.

S.L. 2.3 Convert unprotected lands into protected lands and/or designation of special management areas, biological corridors, or other priority areas.

Conversion of unprotected lands into protected lands and/or designation of special management areas, biological corridors, or other priority areas can increase areas for conservation of carbon stocks. This can be done through the NPAS Act. Priority areas are identified based on different factors such as, connectivity, biodiversity value among others.

S.L.2.4 Sensitize military and supervise (at military's cost) military training to scrutinize for fire-hazardous activities.

Belize has prepared a Wildland Fire Management Strategy (GOB 2015c) including a sensitization program to raise awareness among the Belizean people of the important ecological benefits of fire in forest management, the enhancement of inter-agency coordination and multi-stakeholder involvement as a cost-effective measure that addresses fire management for ecosystem sustainability, the promotion of development and implementation of fire management plans and programs based on reliable and credible data, and the establishment of a group of trained personnel comprising of state and non-state actors to support the development and implementation of a fire program. Fires are a major actor as it pertains to forest degradation especially as it pertains to the pine forests in Belize, so limiting the incidences of escaped fires is crucial to ensuring the lessening degradation of this forest category. Military training grounds has been within pine forests that are prone to fires. Military training is a fire-hazard activity and such improved coordination of this training is essential to lessen the incidences of fire.

S.L.2.5 Strategic small scale prescribed burns to reduce fire hazard.

On pine uplands, tending practices ensure an adequate silvicultural system in place for pine forest management, by applying management plans and interventions directed to build forest resistance and resilience to bark beetle outbreaks (GOB 2015a). Fire management practices should be applied in specific and controlled cases. Specific actions will include joint work at the regional level, a major monitoring program, and local work with stakeholders to ensure small prescribed burns are conducted strategically to reduce degradation as a result of wildfires.

S.L.2.6 Reduce felling, road, and barquedier damage by 20% through the implementation of standards with regards to Post Harvest Audits (incentives and/or penalties based on results) revitalized trainings in Reduced Impact Logging, felling methods, and increased scrutiny to attain reductions in felling damage per hectare for broadleaf forests.

The objective of a post-harvest audit is to primarily assess average damage caused by logging operations within sustainably managed broad leaf forested areas. Samples are taken across the logging compartments to assess damage caused by felling, skidding, hauling and in barquediers. The Forest Department conducts the assessment yearly, and although there is feedback provided to licensees conducting sustainable forest management, there is no incentive for good performance or penalty based on performance. As a result, there is no incentive to improve performance over time.

S.L.2.7 Collect baseline damage values for pine forests for damage caused by logging operations to develop and implement acceptable parameters, harvesting controls and PHA monitoring method for pine forests.

S.L.2.7 is related to S.L.2.6, given that there exists a post-harvest methodology and tool to assess damage caused by logging operations within sustainably managed broad leaf forest areas, there is no comparable assessment for sustainably managed pine forested areas. The hope is that full implementation of SFM with REDD+ subsidies can slow or

stop this process of degradation for forests that without these controls, would undergo intense logging and damage.

4.3 Pillar 3: Reforestation and Forest Restoration for the Enhancement of Carbon Stocks

The aim of this pillar is to promote reforestation and forest restoration efforts across the country with the primary objective of enhancing national carbon stocks. This is crucial for mitigating the effects of climate change through enhancing the forest's natural ability to capture and store carbon as well as benefiting the conservation of biodiversity, controlled water management, and soil preservation.

Relationship to national priorities and identified drivers.

This pillar is consistent with the National Landscape Restoration Strategy (NLRS) of Belize, which prioritizes 130,000 hectares to be restored between 2020 and 2030. The selected target areas were identified using a variety of methods including the Restoration Opportunities Assessment Methodology (ROAM), research conducted by both the International Union for the Conservation of Nature (IUCN) and the Belize Forest Department. The 130,000-hectare goal encompasses 50,000 hectares for forest restoration, including 44,000 hectares in forests both inside and outside protected areas, as well as the regeneration of 6,000 hectares of degraded and deforested riverbank forests, and 80,000 hectares for agro-landscape restoration.

Strategic Lines

S.L.1. Reforestation of degraded or deforested mangrove areas.

The reforestation of mangrove forests is crucial for increasing the country's carbon stocks as these ecosystems serve as highly effective carbon sinks, storing carbon in their roots, stems, leaves, and soil. There are several approaches to restoring these ecosystems including replanting of mangroves and community-based management. The Forest Department's Landscape Restoration Desk is currently promoting both approaches as part of its overall mandate and is in line with the goals of the NLRS.

The goal of replanting mangroves is to restore areas where mangroves have been removed or damaged by planting propagules and improving soil stability while increasing carbon capture. This has been an ongoing collaborative effort by the Government and non-government organizations, focusing on both mainland coastal areas and islands. To ensure the success of this effort, partnerships with local communities will be established to promote community-based management, engaging local communities in the reforestation process, and equipping them with the necessary training and incentives to maintain and monitor the mangroves. In addition to these efforts, the Government, through interdepartmental collaboration has been working to scale up the protection and conservation of existing mangrove forests. Collectively, these efforts aim to reforest degraded mangrove areas, boost carbon stocks, and maintain essential ecosystem services while supporting local livelihoods through a holistic approach.

S.L.2. Restore degraded agricultural areas inside protected areas.

This strategic line focuses on safeguarding protected areas that have been impacted by the negative effects of degraded agricultural lands. These degraded areas are a result of several factors, such as illegal incursions within protected areas and poor management practices. Revitalizing these areas is crucial for enhancing ecological well-being, boosting biodiversity, and elevating carbon capture. To address this challenge, a multi-faceted approach will be taken, encompassing key stakeholders such as co-managers to effectively implement reforestation efforts, enforce laws and regulations, and ensure subsequent monitoring and evaluation.

Reforestation is a crucial component of revitalizing these degraded areas. By restoring lost forest canopy, water preservation and soil structure can be improved, leading to a more robust and resilient ecosystem. Regular monitoring and evaluation of the revitalization efforts will be essential to assess their effectiveness and make necessary adjustments. This will also help to identify any challenges and obstacles that may arise and take steps to address them. In addition, strengthening the enforcement of existing laws and regulations will help to prevent illegal incursions and other activities that contribute to the degradation of protected areas.

S.L.3. Enhanced pine and broadleaf regeneration through active reforestation.

Replanting seedlings can be method to assist natural regeneration as promoted by sustainable forest management and is essential for maintaining forest health and improving resilience to disturbances. Stakeholders such as long-term logging licensees have a responsibility to ensure that the forests they manage are being used in a sustainable manner, and replanting seedlings can be an important way to fulfill this responsibility. Under current regulations, all long-term license holders are required to complete and submit an annual plan of operation (APO) to the Forest Department for approval. One strategy is to incorporate as part of the APO artificial regeneration with the replanting of seedlings after a logging operation has been completed, to complement natural regeneration as a result of sustainable forest management.

A targeted approach to replanting seedlings is an effective approach to reforesting. As such, particular emphasis will be placed on areas where regeneration is lacking. This will help to ensure that the forest recovers quickly and effectively following a disturbance, such as logging or a natural event like a hurricane. In these areas, licensees will be encouraged to replant at least three seedlings per tree felled to promote and enhance the resilience of the forest ecosystem.

S.L.4. Enhancing forest recovery and tree diversity in hurricane impacted forests.

Enhancing forest recovery and promoting tree diversity after a hurricane impact is critical for maintaining the ecological integrity and resilience of these ecosystems. Over the years, hurricanes have caused significant damage to Belize's forests leading to the loss of mature trees, reducing the overall diversity of tree species, resulting in increased greenhouse gas emissions. This has further impacted the forest's ability to provide important ecosystem services, such as carbon sequestration, water regulation, and habitat for wildlife.

Enhancing forest recovery and promoting tree diversity in these areas will be achieved through improved collaboration with key stakeholders such as co-managers and long-term logging licensees. These stakeholders possess valuable insights into the forest’s current state and the extent of damage caused by hurricane disturbances. The collective efforts will focus on reforestation, protection of existing trees, and monitoring and evaluation of the areas impacted.

5 Progress in other Readiness Phase activities

Decision 1/CP.16 adopted in Cancun requests countries to, in accordance with their national circumstances and respective capabilities, develop the following four elements:

- A national strategy or action plan;
- A national Forest Reference Emission Level (FREL);
- A National Forest Monitoring System (NFMS);
- Provide information on how the safeguards are addressed and respected.

5.1 National Forest Monitoring System

The NFMS of Belize is based on two components, a National Forest Inventory based on a series of plots, the first of which were established in the 1990s; a Collection of Activity Data and Quality Assurance using high resolution imagery for visual interpretation classification in Collect Earth. In addition, as shown in figure 7, the Generation of wall-to-wall land cover/land use maps using open source satellite imagery, as a Quality Assurance Activity for Activity Data is being developed.

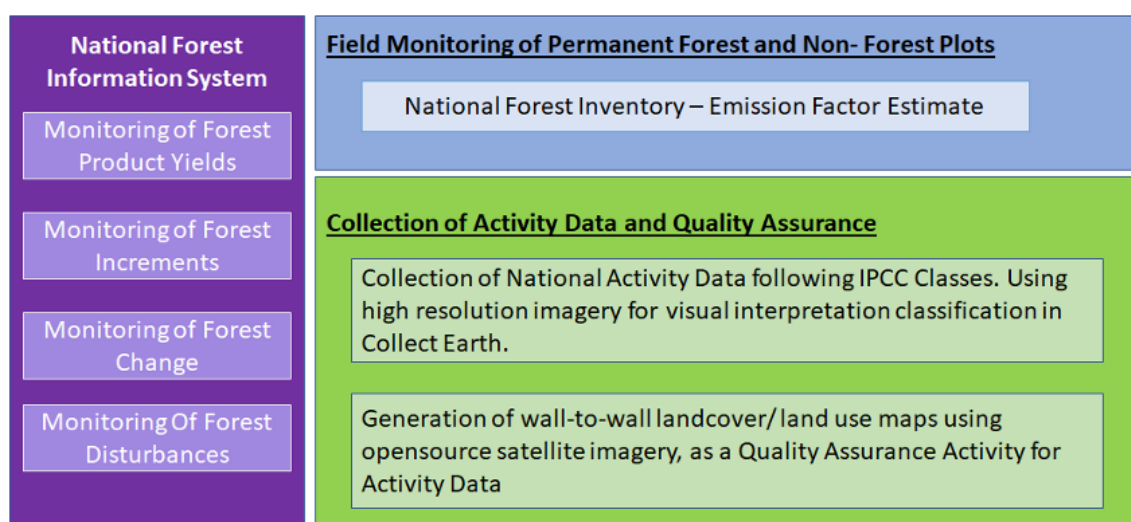


Figure 7. Implementation Arrangement for NFMS. Taken from the Technical Annex. Source: GOB 2021

In 2018, the Forest Department with support from the Food and Agriculture Organization (FAO), built capacities to process satellite imagery and other digital

technology and to combine these with the use of GIS. The Forest Department has been using the Collect Earth/Open Foris tool as a central feature of its NFMS since 2019. This tool is adequate for Belize's national circumstances and complies with REDD+ requirements in relation to FREL and MRV (Forest Department 2019).

The protocol for Belize's Collect Earth/Open Foris Land Use and Land Use Change Assessment is divided into three distinct phases or sections, the preparatory, implementation and validation phases (Forest Department 2019).

The preparatory phase, which took approximately 7 months, involved a process of capacity building in the Forest Department to determine the Forest Reference Level (FRL) and to use the Open Foris software as the monitoring tool of the department. Collect Earth and Open Foris use high resolution satellite images to observe different land uses and changes over time. The preparatory phase also included the design of grids and survey systems which would be used to observe the land and its use over time. In this same phase, the definitions for various related terms such as forest, grassland, cropland, wetlands and settlements were also standardized and the timeframe for the FRL was decided (2000 to 2018).

The implementation phase took almost 2 months, involving 14 operators in charge of classification to assess land use change and disturbances for all selected sample points.

The validation phase to assess the accuracy of the tool was conducted over a period of one year in 2018. The department used experts on site to ensure quality assurances and controls for the data collected and to provide technical support to the test team. All data are documented and stored as per archiving and documentation procedures, with the main custodian being the Forest Department. The archives database contains; (a) all inputs datasets and datasheets; (b) country-specific excel calculation tool, including Forest related-GHG emission and removals estimates from 2000-2017, (c) manuals and protocols, (f) literature reviewed, (g) completed QA/QC templates and protocols, and (h) all reports and documentation.

5.2 National Forest Inventory

Belize does not yet have a National Forest Inventory (NFI). The lack of a NFI means that Belize is following a stepwise approach in the development of its FRL and MRV. For this reason, during the preparation of the FRL the decision was to use a combination of country-specific information and default values of the IPCC. Country specific information comes mainly from the FORMNET-B, which is an extensive permanent forest plot network designed to study the long-term dynamic of disturbed and degraded tropical forest and regular measurements and analysis (Cho 2013) (Forest Department 2020). The emission factors used in the FRL are based on country specific data and are continuously improved and complemented with new information. For example, as described in the FRL document, "the country is in the process of setting new permanent sampling plots, following the same methodology including strata that were not included in this research (such as dry forests)" (Forest Department 2020, p.57).

5.3 National Forest Reference Level (FRL)

The national FRL is one of the necessary elements agreed under COP 16 for developing countries implementing REDD+ activities. Belize submitted its FRL to UNFCCC in 2020 and received the Report on the technical assessment of the proposed forest reference level in May 2021. As stated in the report:

“The FRL proposed by Belize covers the activities reducing emissions from deforestation, reducing emissions from forest degradation, conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks, which are the five activities included in decision 1/CP.16, paragraph 70. For its submission, Belize developed a national FRL. The FRL presented in the submission, for the reference period 2016–2020, corresponds to 4,606,875, 4,850,928, 5,094,981, 5,339,034 and 5,583,087 tonnes of carbon dioxide equivalent for 2016, 2017, 2018, 2019 and 2020, respectively.” (GOB 2021: 1)

Activity data (area of land use transition) was obtained by a sampling procedure using a 1km grid applying the well accepted protocols of Open Foris/Collect Earth. Methods and quality evaluation of land use change data obtained by Collect Earth is described in detail in the Belize Mapathon Report (Sanchez paus-Diaz 2019). In relation to forest disturbance, area estimates were differentiated by disturbance types, including shifting cultivation; fires, grazing, logging and infrastructure expansion.

Emission factors include aboveground and belowground biomass. The above ground biomass was estimated from the forest structure survey in the forest plot and the below ground biomass is estimated using ratios from the IPCC. Forest carbon pools, which were obtained from the compilation of forest plots and surveys implemented for research projects and regional efforts covering different situations of the Belizean forest. When particular data for the forest or land use of Belize were not available, the IPCC factors were applied (see section 4.1.2 above).

5.4 Safeguards Information System

All countries interested in accessing REDD+ results-based payments under the UNFCCC must have a Safeguards Information System (SIS) established. A SIS is defined as “A system for providing information on how the safeguards ...are being addressed and respected throughout the implementation of ...[REDD+] activities” (UNFCCC 2011, FCCC/CP/2010/7/Add.1, paragraph 71 d). Many countries decide to develop their SIS as an online platform to allow interested stakeholders to review available information on the extent to which the Cancun Safeguards are “addressed and respected”. Such stakeholders can include all national REDD+ stakeholders but may also include agencies providing funding for REDD+ implementation and results-based payments, such as the GCF.

The information that is included in a national SIS usually covers two different types:

- 1) Information on existing Policies, Laws and Regulation and the extent to which they are able to avoid that any of the relevant safeguards might get triggered through REDD+ implementation (referring to the extent to which safeguards are “addressed”); and

- 2) Information that demonstrates effective implementation of existing PLRs, on impacts of REDD+ implementation on people and the environment, observable social or environmental changes, or the implementation of certain procedures (engagement, FPIC, etc.) that may reveal to what extent safeguards are being “respected”.

Belize’s Safeguards Information System was developed in the course of 2021 in parallel to the strategy. It is based on the National REDD+ Strategy but also informed by the country’s Strategic Environmental and Social Assessment (SESA) and the resulting Environmental and Social Management Framework (ESMF).

The major steps of the SIS development include:

- 6 National interpretation of the Cancun Safeguards: this step is needed to understand how the different REDD+ stakeholders define the Cancun Safeguards and what topics are of particular interest or concern. The final interpretation presents the Cancun Safeguards in the national context of Belize and provides the basis for identification of relevant information for the SIS.
- 7 Determination of SIS goals and scope: this step refers to some basic decisions about the country’s ambition regarding what the SIS should achieve (now and later) and what its focus is.
- 8 Identification of suitable information and indicators for inclusion in the SIS: this step will be based on the national interpretation of the Cancun Safeguards and closely linked to step 4.
- 9 Identification and assessment of existing sources of information: In order not to overburden the countries with additional requirements for monitoring, it is recommended to design the SIS on the basis of existing information systems, to the extent possible. The step also includes extracting relevant information from an analysis of existing Policies, Laws and Regulations and the extent to which they cover safeguards aspects.
- 10 Design of the SIS online portal: this step includes the design of the front end as well as the incorporation of the agreed information. User friendliness and simplicity will be of great importance in this design, so that the final portal is equally accessible to international as well as local REDD+ stakeholders.

The potential synergies between the SESA, ESMF and SIS are being captured: Since the SESA and ESMF are conducted in alignment with World Bank Standards, while the SIS needs to follow the structure of the Cancun Safeguards, an equivalence analysis of the two safeguards standards was conducted at the beginning of the SESA and the linkages between the two systems were made throughout the analyses and outputs to allow for the SIS to be informed directly by the SESA and ESMF.

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7. Annexes

Annex 1: Analysis of causes of deforestation and forest degradation in Belize

Annex 2: Summary of consultations process

Annex 3: BENIC Consultation - Proposed FPIC framework

Annex 4: CCJ Delimitation Principles and Methodology

Annex 5: Stakeholder Engagement Protocol