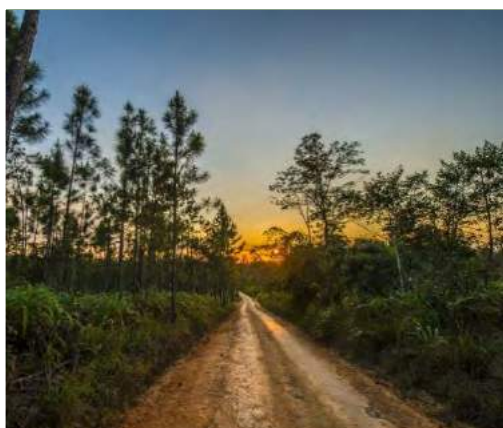


Destination Development Plan & Small Scale Investment Project Plan

*Mountain Pine Ridge Forest Reserve,
Chiquibul Forest Reserve, Chiquibul National
Park and Caracol Archaeological Reserve*

2016 - 2020



Prepared for:



**MINISTRY OF TOURISM
& CIVIL AVIATION**

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Acronyms

BDF: Belize Defence Force

BTB: Belize Tourism Board

CAR: Caracol Archaeological Reserve

CFR: Chiquibul Forest Reserve

CNP: Chiquibul National Park

FCD: Friends for Conservation and Development

IOA: Institute of Archaeology

IUCN: International Union for Conservation and Natural Resources

MMTD: Maya Mountain Tourism District

MPR: Mountain Pine Ridge Forest Reserve

NICH: National Institute for Culture and History

FOREWORD

In 2012, the Ministry of Tourism and Civil Aviation (**MTCA**) embarked on an unprecedented journey for Belize, as we began the implementation of the country's very first National Sustainable Tourism Master Plan (**NSTMP**). Since then, the Government of Belize, through its Ministry of Tourism, and its Belize Tourism Board, has pushed forward with the enhancement of its tourism sector, in areas of Marketing, Governance, Product Development, Destination Planning, Infrastructure Development, and Quality Assurance, to name a few.

One key area of intervention has been the modest recommendation by the NSTMP challenging our industry to not only continue along its trend of positive growth, but more importantly to engage in a participatory development path, and ensure that the benefits of this sector have more equitable presence throughout our nation. This paradigm shift calls for newer, and commonly marginalized communities, to be integrated within the economic opportunities inherent to tourism, while remaining respectful of their social integrity, and mindful of the environmental challenges that contest our *status quo* of development. I am glad to say, that we have fully embraced this call to action.

It is under this mark, that in 2015 the Ministry of Tourism began the roll-out of a revolutionary platform, known as Local Tourism Committees (LTCs), within four of our priority emerging destinations. As a participatory mechanism, the LTCs provide an essential opportunity for the public, private and civil sector in our destinations to collaborate in the planning, development and monitoring of tourism development in their communities. Since 2015, we have established LTCs in the districts of Corozal and Toledo, in the island community of Caye Caulker, and convened a special planning group for the four adjacent protected areas in the Mountain Pine Ridge, Caracol, and Chiquibul Complex, in the Cayo District. The introduction of the committees has been well received by the communities, industry partners and destinations, and their impact has already generated tangible results in the development of destination-specific Tourism Development Plans. These plans not only align the strategic principles and recommendations of our National Sustainable Tourism Master Plan, but also integrate and highlight the tourism development priorities and vision of our local stakeholders. Most importantly, they serve as a tool for all of us to gauge our actions and to measure our ability to meet the challenge set by our NSTMP.

As Minister responsible for Tourism, it is my privilege to present to you the Tourism Development Plan for the Chiquibul, Mountain Pine Ridge, Caracol Complex of Protected Areas, and to reaffirm our commitment to continue building Tourism in Belize, through partnership and collaboration.

Yours in Tourism,

Manuel Heredia

Hon. Jose Manuel Heredia Jr.
Minister of Tourism and Civil Aviation

Executive Summary

This destination plan focuses on tourism development in four adjacent protected areas in the Cayo District of Belize, Namely the Mountain Pine Ridge Forest Reserve, Chiquibul Forest Reserve, Chiquibul National Park and Caracol Archaeological Reserve. It is unique that these four protected areas fall under different classifications and are managed by three separate management agencies causing for a level of disjoint planning and management within the area.

This destination development plan analyses management dissimilarities, identifies demand and development needs for developing a collective and competitive tourism destination. There have been several attempts at planning and developing individually components within this protected area complex that have resulted in improving infrastructure to specific sites but have not taken a holistic approach to managing the area as single destination. This is essential not only to limit competition within the protected areas but to encourage visitation growth by offering diversified product and packages to the area.

The course of action taken after vast consultation and consumer research to determine the market needs and demand was to identify niche roles that each protected area could offer and focus on developing them as core elements to fulfilling the demand and enhance tourism for the area.

This includes but is not limited to improving access, visitor facilities, overnight accommodation, enhancing security, improving visitor experiences and satisfaction.



Figure 1 Belize Protected Areas Map

Introduction

Belize has long established itself among the world's top ecotourism destinations, as a young destination founded on the principles of sustainability and environmental conservation. Over 40% of Belize's landscape has been designated under some level of protection.

In recent years, under the pressure of a shrinking global economy, many protected areas managers worldwide have been forced to diversify management models to generate alternate income to sustain these protected areas.

This integration of tourism and protected area management has, in most cases, been a symbiotic partnership contributing to the increased awareness for conservation, the proper identification of tourism as a tool for sustainable development and providing authentic quality experiences for the tourism market.

The four protected areas in this plan, although varied in protection and management structure, collectively protect some of Belize's most fantastic natural and cultural assets. The area, herein referred to as the complex, was once the pulse of Belize's economy fuelling a vibrant and lucrative timber industry. However, due to a series of natural disasters, a plague of insect infestation and other challenges in the timber industry, except for a skeletal management presence the area has suffered from neglect.

Whereas recreational activity has declined within the Mountain Pine Ridge Forest Reserve, Tourism visitation to Caracol has maintained a steady demand with increasing visitation to the Archaeological Reserve; since site upgrades and road access were improved under the Tourism Development Project 2000 – 2005. Several high end resort-hotels also operate in the area providing luxury stays for visitors and various activity packages into the protected areas.

The National Sustainable Tourism Master Plan 2030 identified tourism development as one of Belize's fastest growing industries, averaging 7% growth per annum. It also identified Caracol and Chiquibul Caverns as standalone iconic destinations. This places greater demand on destinations to develop new products and improve capacity in order to support tourism growth.

Background

The National Sustainable Tourism Master Plan 2012 – 2030, developed an overarching tourism policy and strategic planning instrument that encompasses the strategic priorities of the national development plan for the country "Horizon 2030", as they relate to building a sustainable and responsible tourism product.

Priority projects areas have been identified in the tourism context and hence this supporting consultancy is geared towards the further development of a conceptual design and plans for one such project within the prescribed destinations of the Mountain Pine Ridge Forest Reserve, Caracol Archaeological Reserve, the Chiquibul Forest Reserve and the Chiquibul National Park. (The Complex)

This Destination Development Plan focuses on these four protected areas, accounting for over half a million acres of Belize's most pristine and scenic landscape with numerous natural wonders and abundant flora and fauna.

The National Sustainable Tourism Master Plan

The National Sustainable Tourism Master Plan identifies Western Belize as self-driver for tourism development with a specific focus on Nature and Culture based tourism.

Whereas the NSTMP did not directly isolate these protected areas, The Nature based asset focus on ecotourism and adventure sites such as these four protected areas. The NSTMP also suggested the development of National Nature Trail Development and National Caving Trail Systems that foster tourism development within these four protected areas as well.

The Culture based tourism component in the NSTMP is focused on Mayan Heritage and Living Culture. Mayan Heritage development focuses on upgrading Maya sites to Archaeological Reserves and providing good standards and quality infrastructure for guests. Sites such as Caracol Archaeological reserve and other outlying sited identified in this plan need this development to foster tourism growth. Living Culture although somewhat more difficult in these uninhabited areas is also shown to play a role in tourism planning as is shown in the product development segment of this plan

Objectives:

The purpose of this destination plan is to:

- Understand the current organization and management structure for each of the four protected areas in the complex.
- Identify the current tourism offering in the complex.
- Determine the Tourism Potential of the area.
- Identify market (including product and potential) in these four protected areas.
- Assess the current gaps in the tourism product
- Determine the competitive advantage.
- Suggest actions to be undertaken to encourage growth in the tourism sector of the area.

Vision

A unique destination that preserves the history, biodiversity and natural splendour of the area while providing multiple safe and quality experiences for visitors.

Scope

The scope of this destination development plan encompasses four protected areas in the south western corner of Belize’s Cayo District: The Mountain Pine Ridge Forest Reserve (MPR), the Chiquibul Forest Reserve (CFR), Chiquibul National Park (CNP) and Caracol Archaeological Reserve (CAR). These areas fall under varied types of protection and are managed by three separate agencies. Each agency holds its own distinctive mandate, regulatory framework and organizational structure. *(See Table 1)*

Protected Area	Forest Department	Friends for Conservation & Development	Institute of Archaeology
Mountain Pine Ridge Forest Reserve			
Chiquibul Forest Reserve			
Chiquibul National Park			
Caracol Archaeological Reserve			

Table 1 Management agencies responsible for protected areas.

This area, geographically referred to as the foothills of the Maya Mountains, covers over 500,000 acres from the Toledo - Cayo boundary in the South along the Belize- Guatemala border in the West, and then to just south of San Antonio Village in the North and the Stann Creek district boundary in the East.

This vast area plays a significant role to Belize’s social, economic and environmental livelihood. Aside from being a wealth of cultural history and biological diversity and the potential for carbon sequestration, the area serves as the primary watershed for the Belize River, providing water for agriculture and potable water in several towns, villages as well as the country’s only two cities. This area is also key for Belize’s energy production from hydroelectric power.

For the purpose of tourism planning and harmonized tourism development these four areas must be treated as a single unified destination or clustered into a “complex” to develop niche roles for each protected area, share responsibility for tandem development and manage the area in a cooperative manner.

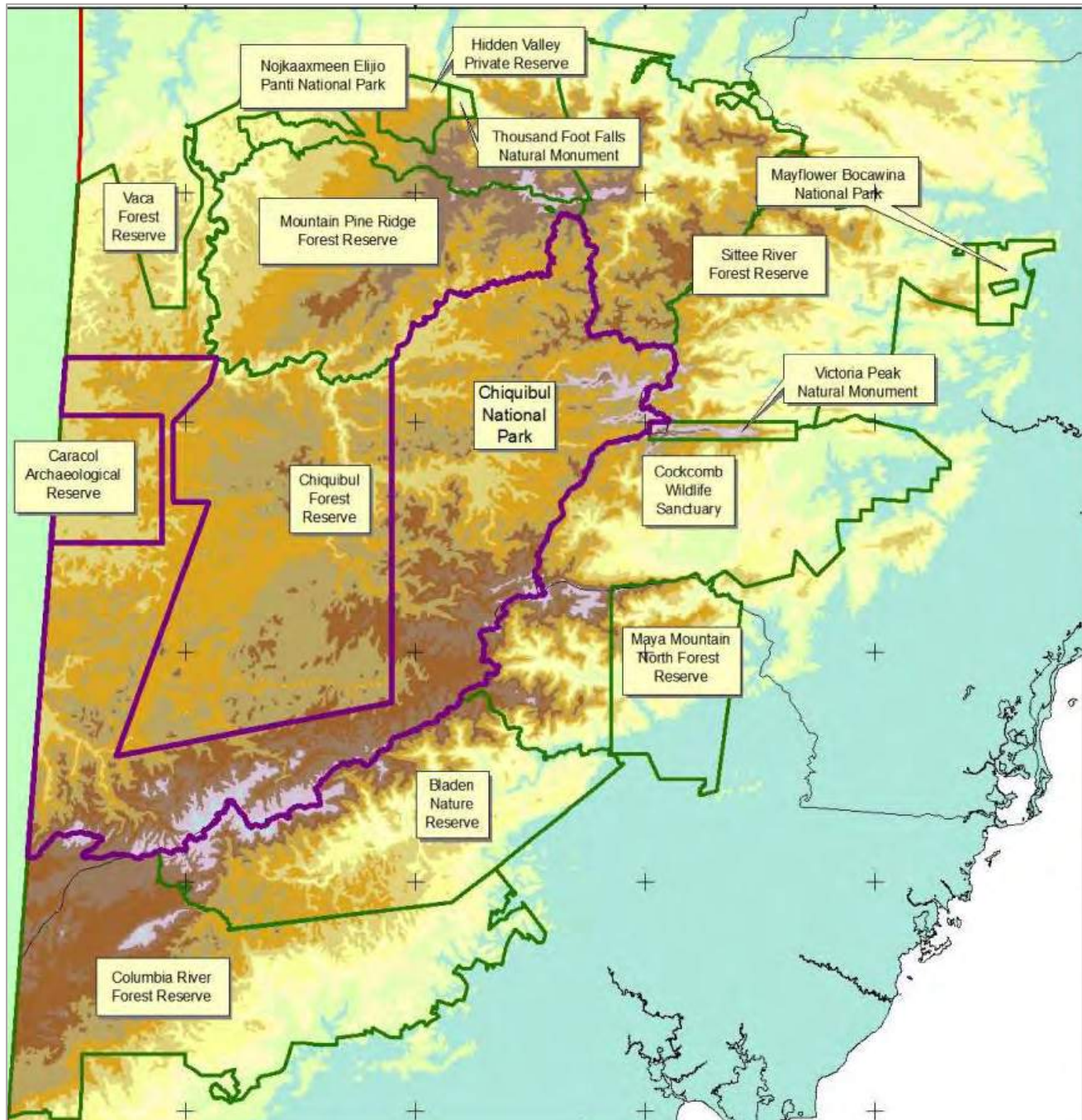


Figure 2 Map of the Complex

The Mountain Pine Ridge Forest Reserve:

The Mountain Pine Ridge Forest Reserve (MPR) is a 106,838 acre granite massif, located in western Cayo and surrounded by national protected areas. The MPR is covered in about 60% pine forest and 37% broadleaf forest with grasslands making up the balance.

It was initially established in 1944 for the preservation and management of Belize's pine forests due to rapidly increasing forestry activity. In 1949, most of the MPR was almost entirely destroyed by fire which devastated the local economy.



Figure 3 Entrance to Mountain Pine Ridge Forest Reserve

This event spawned greater government interest and attention to be placed on forest management and by 1952 several new roads, a landing strip and the Augustine Forest Station (*now Douglas D'Silva*) were constructed to accommodate just under 300 workers who lived there.

During this time, several attractions within the reserve were identified such as: Rio Frio Cave and Rio On Pools that were frequented by local Augustine residents.

The decline of the timber industry in Belize, coupled with the impacts of Hurricane Hattie in 1961 and the outbreak of the Southern Pine Bark Beetle 1999 -2004, witnessed the abandonment of Douglas D' Silva.

Today the Forest Department continues to maintain a faint management presence in the area along with the Belize Defence Force, who manages military escorts for tourists transiting the MPR to and from Caracol.

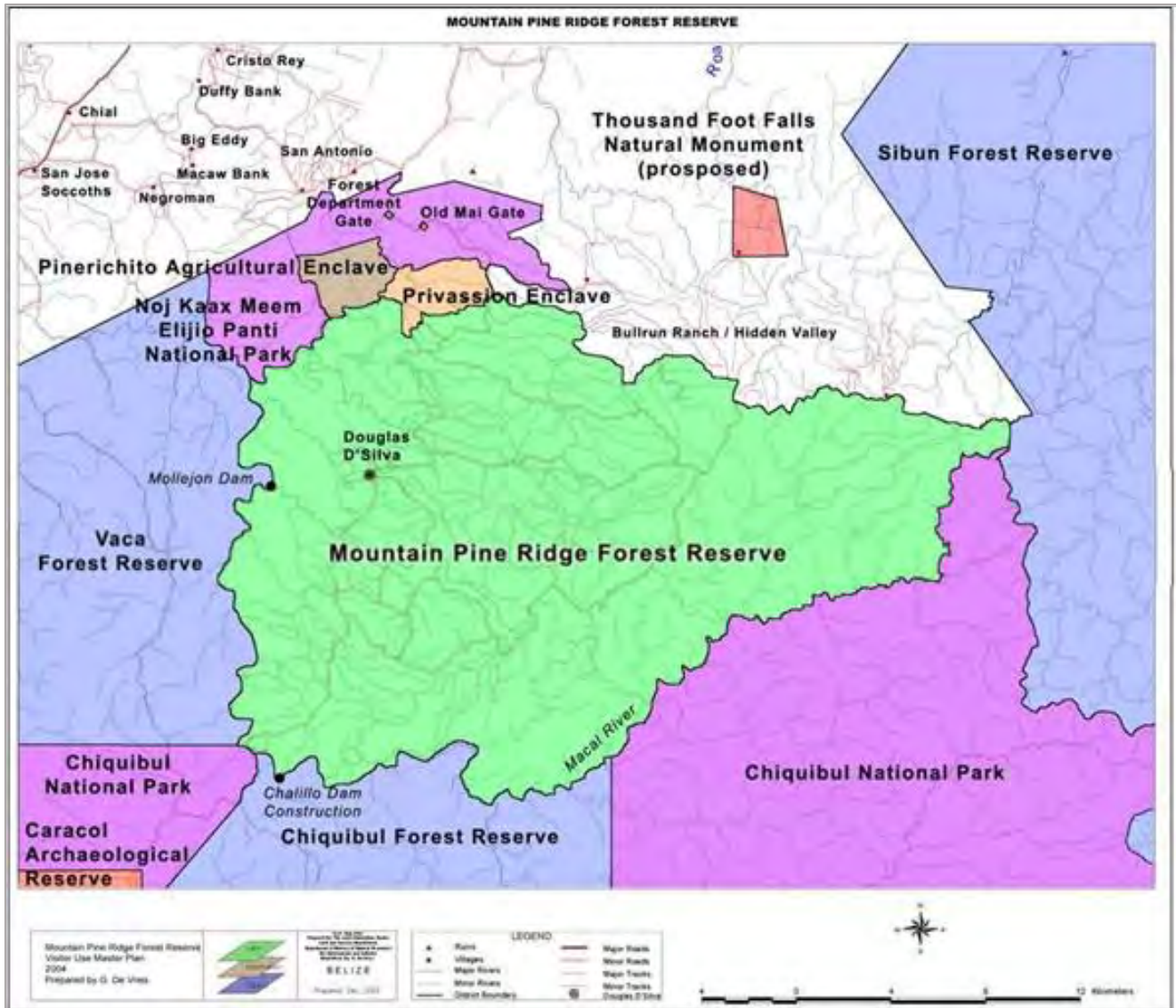


Figure 4 Map of Mountain Pine Ridge Forest Reserve

Chiquibul Forest Reserve:

The Chiquibul Forest Reserve (CFR) is located south of the Mountain Pine Ridge Forest Reserve in South Western Cayo, running along the Belize – Guatemala border to the District line with Toledo. The Chiquibul Forest Reserve was initially declared in 1956 with a total area of 436,826 acres. The reserve was established to monitor and manage timber harvesting. Unlike the MPR, the CFR is a dense hardwood rainforest and in the height of the timber era a railway was built at Vaca Falls to extract mahogany from the Chiquibul and transport to Benque Viejo Town. This was one of only three railways in the country.

The size of the Chiquibul Forest Reserve was significantly reduced in 1995 when two new protected areas were formed: the Chiquibul National Park and Caracol Archaeological Reserve. Today the Chiquibul Forest Reserve is 147,823 acres, a fraction of its original size.



Figure 5 Railway to extract timber from Chiquibul Forest Reserve

The Chiquibul National Park:

The Chiquibul National Park was designated in 1995, in accordance with the IUCN (IUCN, n.d.).¹ Protected Areas Category II; “to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.”² Chiquibul national Park is currently the largest protected area in Belize (264,003 acres).

In 2007 the Forest Department signed a co-management agreement with Friends for Conservation and Development (FCD), a local Non-governmental Organization, to manage and

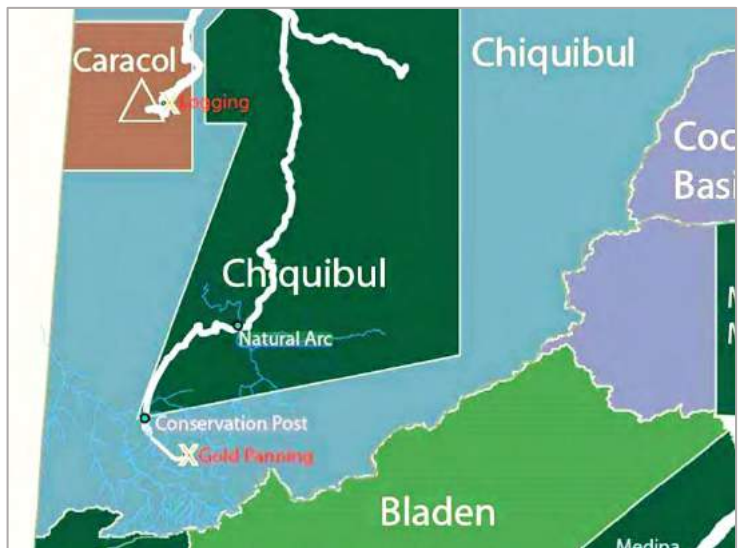


Figure 6 Map of Chiquibul National Park

¹ International Union for Conservation and Natural Resources

²

protect the parks natural and cultural bio-diversity, for research, education, monitoring and the promotion of conservation.

Caracol Archaeological Reserve:

The Caracol Archaeological Reserve is a 25,000 acre reserve located within the North Western corner of the Chiquibul Forest Reserve, protecting the Ancient Maya City believed to be named Oxwitz³ (Three Hill Water) (650BC – 950 AD).

The reserve was established in 1995 and is the largest archaeological protected area in Belize. Caracol's historic significance is rich in history, rivalry and conquest as the city once expanded over 200 km sq. and was known for its bloody rivalry with other major cities such as Tikal and Naranjo (Guatemala).

Today, Caracol competes only for the rival tourism market with these other ancient sites and under the management of the Institute of Archaeology continues to grow as a tourism destination.



Figure 7 Ca'ana main temple at Caracol

³ Wikipedia 2015 : <https://en.wikipedia.org/wiki/Caracol>

Methodology:

The methodology undertaken for this development of this plan included:

- A comprehensive analysis of the National Sustainable Tourism Master Plan and all tourism strategies and development plans that impact Western Belize.
- Review of existing legislation governing all four protected areas
- Consultation with the management agencies for each protected area. (NICH, Forest Department & Friends for Conservation and Nature)
- An online review of tourism marketing for the area
- Conduct a tourism product audit
- Review of the pre-commissioned studies by the Forest Department and Institute of Archaeology
- Review Pre-commissioned studies by the Ministry of Tourism (i.e. VEMS study, Ecosystem mapping, Market Study & Analysis)
- Individual consultations with the tourism stakeholders
- Online competitive market review
- Develop Destination Diagnosis
- Validation workshop

Tourism Context

Situational Analysis:

Tourism is a vital part of the economy of the Cayo District. It accounts for 22.5% of industry employment and supports 122 registered hotels⁴ and other tourism services in the area. The economic center of all this tourism activity is San Ignacio Town, a small riverside community that shares its banks with Santa Elena Town on the East bank of the Macal River. San Ignacio is located 11 km from the Guatemalan Border and 41.4 km from the district's capital, Belmopan.

Persons Employed by Tourism 2013		
	Persons	Share
Corozal	1,555	8.2%
Orange Walk	1,386	7.4%
Belize	8,716	46.2%
Cayo	4,243	22.5%
Stann Creek	2,126	11.3%
Toledo	824	4.4%
Total	18,850	100.0%

Source: BTB Statistics Digest 2013

Table 2 Persons employed by Tourism in 2013

Cayo is Belize's second largest tourism destination, representing 26.4% of the tourism industry, second only to the well-developed island destination of San Pedro, Ambergris Caye (41.6%). (See figure 8)

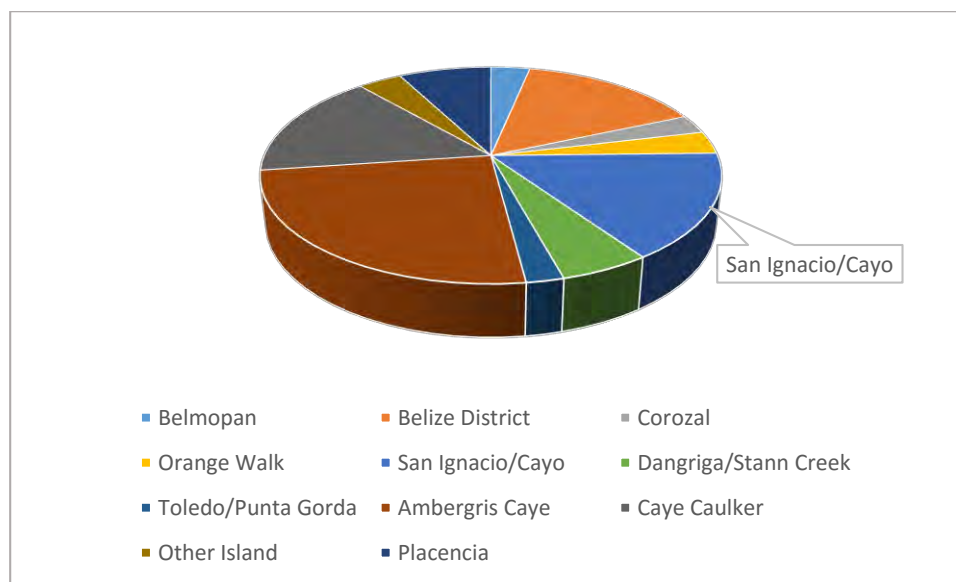


Figure 8 Average visitation numbers per destination

⁴ BTB – Hotels Registry 2014

The majority of tourists who visit these four protected areas originate from the San Ignacio Hub and primarily purchase one day tours to go to Caracol. Very little data is captured on visitor use at MPR, CF or CNP. However, visitor figures on Caracol from the Institute of Archaeology report an average visitation of around 10,787 people per year. About 14% of the number Cayo's annual visitation.



Figure 9 Tourism marketing on the Caracol road

Tourism in Cayo:

The San Ignacio/Cayo tourism product has been a stronghold of Belize's ecotourism brand for more than a decade, averaging between 72,000 and 75,000 guests per annum. San Ignacio is the epicenter of tourism for the Cayo District, with a wide variety of resorts, hotels, restaurants, tour operators and other services. This development is supported by a wide range of destination alternatives such as Caves, Maya Sites, River Activities, Nature Trails etc. that support the soft adventure package defined in the NSTMP. Accommodation options also range from hostel and backpacker stays averaging \$25 USD per night to high end enclaves starting at \$500 USD per night.

Tour packages from San Ignacio offer a wide variety of day trips to either one of seven⁵ archaeological reserves in the district or various ecotourism activities such as canoeing, horseback riding, butterfly farms etc. More recently, local tour operators have begun selling packaged tours to Tikal in Guatemala as well.

When investigations were carried out to determine why local operators were selling tours outside the country, several mentioned that tourists frequently opted to go to Tikal instead of Caracol due to bad road conditions and poor infrastructure. The snapshot below shows a sample page from a local tour operator, the Archaeological Site in the background is temple four in Tikal.

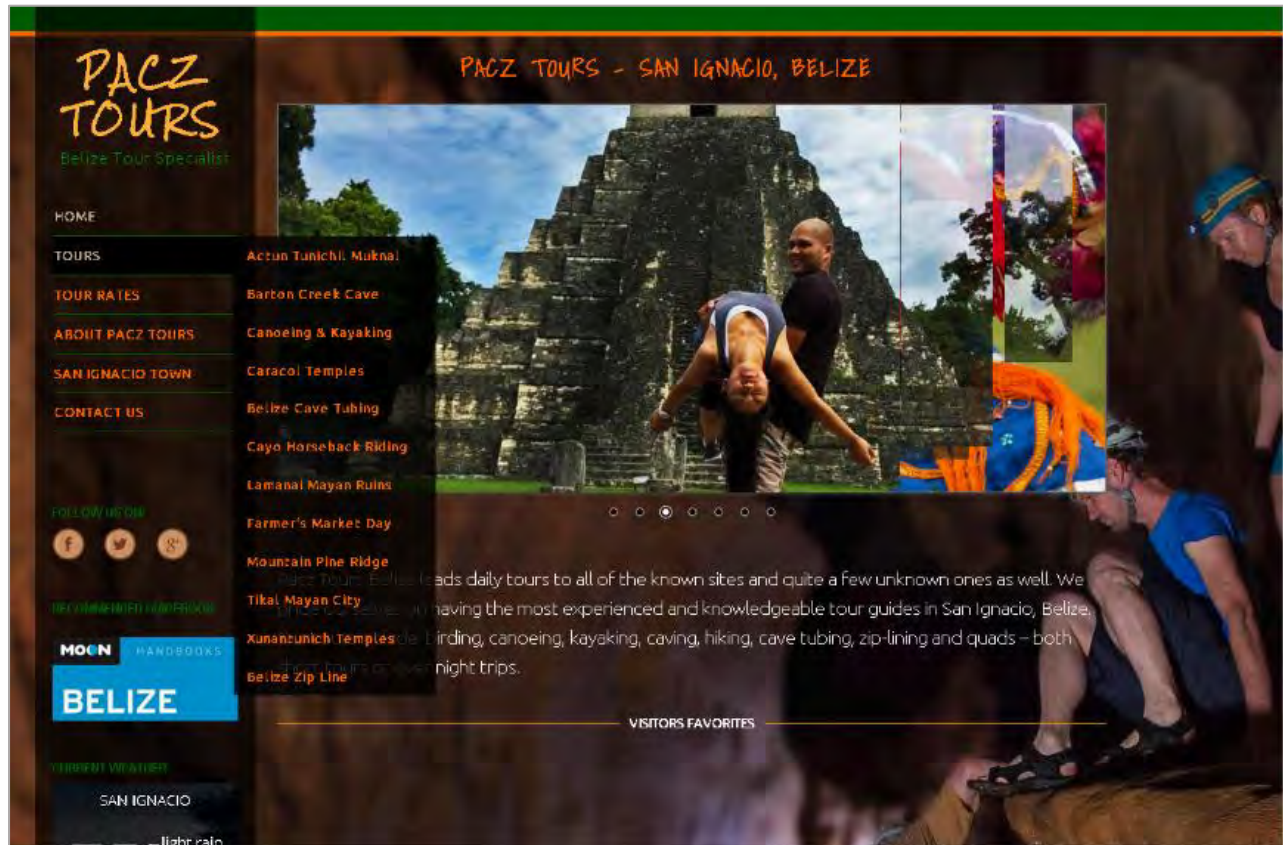


Figure 10 Local tour operator's webpage.

Competitive Markets:

The tourism market study commissioned by the Ministry of Tourism under this project, identified the four competitive destinations as the primary rival markets to Belize:

Costa Rica: Ecotourism was developed in Costa Rica via the rampant push towards sustainability of the eco-system while catering to nature-lovers and soft adventure enthusiasts of water sports and of land-based activities.

Guatemala: Cultural Tourism is the mainstay in Guatemala. Guatemala is able to present the varied Mayan cultures, heritage and lifestyle in such a manner as to keep it fresh and relevant to the tourism package that is being offered. The Mayan world in both its ancient ruins and the living culture

Mexico: It is primarily the Chiapas, Yucatan and Quintana Roo states that are competitive. They offer the living Maya society, many ancient Olmec and Maya archaeological sites, Palenque, Chichen Itza, Uxmal and Tulum being the best known.

Honduras: It positions itself as a ridge to reef destination pairing its inland parks and major Maya archaeological site of Copan.



Figure 11 Map of countries that have competitive tourism markets

Within these identified competitive markets, the tourism product offerings are a combination of attractions and cultural experiences at specific destinations. Perhaps the largest competitive destination to the Mountain Pine Ridge complex is Tikal in Guatemala. This ancient Maya City is located inside the Tikal National Park in Flores Petén, Guatemala and is 114 Km from San Ignacio Town.

Tikal's temple 4 (seen in the figure 12) has become the icon for tourism in



Figure 12 Temple 4, Tikal. Photograph by Jose Hosttas

Guatemala and Tikal attracts some 142,152 local and international tourists per year.⁶

Other protected area destinations such as Arenal Volcano National Park in Costa Rica (a 9,692 acre National park located within a 504,094 acre conservation) highlights how successful tourism destination development can provide sustainable economic activities and foster tourism in protected environments.

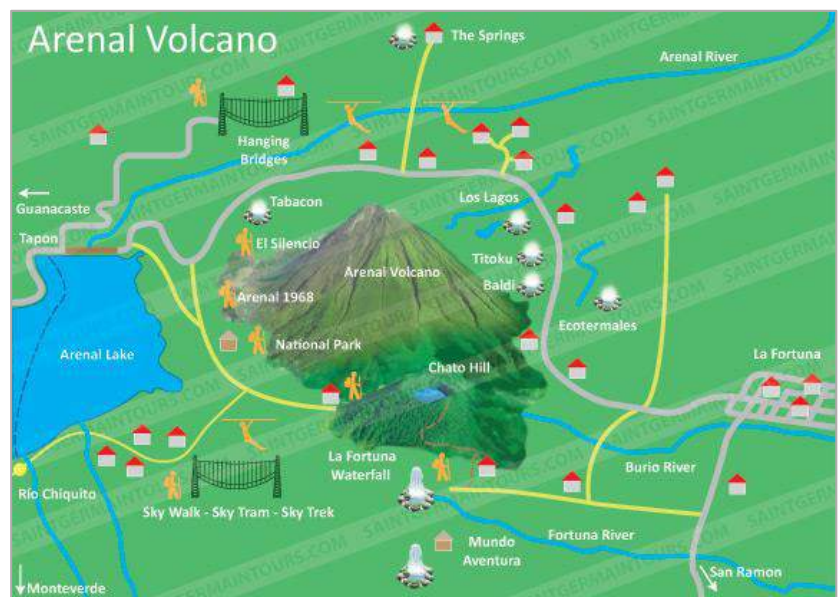


Figure 13 Map of Arenal Volcano, Costa Rica

⁶ Data taken from INGUAT www.inguat.gob.gt

Tourism Asset Inventory:

These four protected areas encompass some of the most wondrous landscapes in the country. As a component of this plan, a product audit of these areas was conducted listing both traditional and potential attractions by protected area. The following table lists attractions within the protected for the development of the destination.

It is important that these attractions alone do not constitute the destination, however with the exception of Caracol, none are developed or managed for Tourism purposes.

Mountain Pine Ridge	Chiquibul Forest Reserve	Chiquibul National Park	Caracol
Chalillo Reservoir		Las Cuevas Cave & Research Station	Caracol Ruins
1000 ft. falls	Nohoch Ch'en Sinkhole	Natural Arch	Maya Trails
Rio Frio Cave	Ceiba Chico	Aktun Kabal Cave	Caracol Visitor's Centre
Big Rock falls	Chiquibul cave system		
Rio On Pools	Kuxti Bani Archaeological Site	Cahal Pichic Archaeological Site	
Pinol Sands Pool			
Dan Shaw Falls			
St Peter's Pools			
Los Altos Watchtower			
Augustine/Douglas D' Silva			

Table 3 Attractions within the four protected areas

An online marketing assessment of these products was conducted to determine which attractions were most identified, sold or marketed by the tourism industry. The results tabulated are shown below help to prioritize the development areas for future investment.

These findings combined Chiquibul Forest Reserve and National Park as many respondents were not aware of the differentiation between the two protected areas.

Mountain Pine Ridge	Chiquibul Forest & National Park	Caracol Forest Reserve
1. Douglas D' Silva Forest Station	1. CNP Welcome Centre	1. Ca'ana
2. Rio On Pools	2. Chiquibul Caverns	2. Visitor's Centre
3. Rio Frio Cave	3. Natural Arch	3. Trails
4. 1000' Falls	4. Nohoch Ch'en Sink Hole	
5. Big Rock Falls	5. Las Cuevas Cave & Research Station	

Table 4 Attractions most used by tourism industry



Figure 14 Rio Frio Cave



Figure 15 Nohoch Ch'en Sinkhole

Product gap analysis:

Despite numerous and bountiful attractions within these protected areas, visitation and tourism growth remain constrained. This is partially because, with the exception of Caracol, none of these protected areas are developed, managed or marketed specifically for tourism. Other factors such as road access, security, time constraints and connectivity were also discovered in a survey of Cayo based tour operators operating within the complex. The results of the survey were collated and ranked in the table below: (See Table 5)

Mountain Pine Ridge	Chiquibul Forest Reserve	Chiquibul National Park	Caracol Archaeological Reserve
1.Bad Road Access	1. Bad Road Access	1. Safety and Security	1.Bad Road Access
2. Safety & Security	2. Safety & Security	2. Access Road	2.Water & Power Supply
3. Dilapidated infrastructure	3. No Management Presence	3. Tours are longer than a day trip	3. Not given sufficient Time to Visit (Security Escort leaves at 2 pm)
4. No Signage	4. No Marketing (Lack of visitor information)	4. Lack of Visitor Activities (Information)	4. No Museum
5. No Tourism Services/ amenities Low management presence	5. Time constraints		5. No communication or connectivity outside the area.

Table 5 Survey Results for low visitation

SWOT Analysis for the Protected Areas Complex:

A swot analysis of the protected area complex was carried out to look at the Tourism readiness, as well as identify special areas of concern for development the results are tabulated in *table 6*.

	POSITIVE	NEGATIVE
INTERNAL	<u>STRENGTHS</u> <ul style="list-style-type: none">▪ Vast area of land with numerous attractions▪ Close proximity to San Ignacio▪ Existing tourism use at Caracol▪ Existing development at Douglas D'Silva▪ Developed tourism infrastructure at Caracol	<u>WEAKNESSES</u> <ul style="list-style-type: none">▪ Poor access roads▪ Need for security▪ Areas are under different management authorities (Fragmented Legislation)▪ No telecommunications▪ No ancillary services▪ Lack of infrastructure
EXTERNAL	<u>OPPORTUNITIES</u> <ul style="list-style-type: none">▪ Excellent location for the creation of a destination village▪ Wide range of tourism products▪ Vast history and ecology▪ Largest protected area complex in Belize▪ Caracol is the largest Maya Site in Belize	<u>THREATS</u> <ul style="list-style-type: none">▪ Separated management will lead to competition rather than collaboration▪ Poor road access limits development▪ Competition from Guatemala▪ Tourism may attract more crime from Xateros▪ Lack of coordination will undermine tourism development▪ Tourism may not coincide with other uses in the protected areas

Table 6 SWOT Analysis

Service Gaps:

Despite the variated management authority of the complex, tourism services for the destination are minimal, and limited only to Park Rangers (NICH) and Tour Guides who conduct tours in the area. The Belize Defence Force does provide security services for Tours in the complex however do not integrate into the service package for the area as well as possible.

Other services such as forest rangers (Forest Department) and conservation officers (FCD) are present but do not contribute in a tourism capacity to the services provided. Most tourism other services such as Hotels, Restaurants etc. are located outside the complex, and clustered mainly in San Ignacio Town.

Action to implement:

The findings of the gap analysis confirmed that road access was the number one deterrent for visitors to all four protected areas. In his Independence Day address (September 21st, 2015) Prime Minister Barrow announced that the Government would be paving the access road from the Western Highway to Caracol.

This will inevitably increase visitation and bring about new demands for tourism products that will require the development of these protected areas. Increased visitation will increase traffic and site visitation to these areas and will subsequently increase the need for security and basic utilities.

An increase in tourism will also place greater demand on protected areas managers to provide better products and services to meet demands of the market. Structural changes are also required by the management agencies to adequately develop, promote and manage the areas as a visitor destination which may involve assessing the feasibility of creating a destination management unit.

Institutional capacity:

A key element of the gap analysis is the type of management each protected area is under. The Management structure dictates, in many cases, the type of engagement the agency can have with the tourism industry, potential access to funding and can predetermine challenges to implementing tourism plans. Limitations to this are that the Forest Reserves are controlled under the Forest ACT, Chiquibul National Park is governed by a co management agreement between the Forest Department and FCD an NGO and the Caracol falls under the Institute of Archaeology under the Ancient Antiquities and Monuments Act.

The institutional gap analysis is further illustrated in *table 7*:

	Forest Department	Friends for Conservation & Development	Institute of Archaeology
Organization's Main Objective:	Management & Protection of Forest Resources	Research, protection and promotion of conservation and biodiversity	Preservation and protection of ancient patrimony
Sector	Government	NGO	Statutory Body
Specialized Technical capacity in Respective field	Yes	Yes	Yes
Tourism Department / Unit	No	No	Yes (Parks)
Legislative support	No	No	Yes
Suitable Human Resources	No	Yes	No

Existing Partnerships or linkages to tourism Industry	No	No	Yes (Ministry of Tourism)
Investment Capital	No	No	No

Table 7 Institutional Gap Analysis results

Climate Change

Climate is an essential consideration for the tourism industry as it holds the potential to influence tourism & travel trends. Changes in climate and weather patterns at tourist destinations are increasingly affecting tourists' travel decisions, as well as impacting tourism businesses and related sectors such as agriculture and infrastructure. The impacts of climate change on tourism is a global issue, hence the Caribbean is not exempted from its direct or indirect impressions.



Figure 16 Ca'ana at Caracol

The impacts of climate change on tourism destinations, their competitiveness and sustainability can be categorized into four segments as follows:

1. Direct climate impacts: this includes geographic and seasonal redistribution of climate resources for tourism and changes in operating costs; such as heating and cooling days, food and water supply and insurance costs.
2. Indirect environmental change impacts: environmental changes induced by climate such as biodiversity loss, decline in landscape aesthetics, altered agricultural production, water availability, damage to infrastructure and increase in vector borne diseases.
3. Impacts of mitigation policies on tourist mobility: changes in tourist flow as a result of increased costs, alterations to aviation routes as it relates to changes in the proportions of short-haul and long-haul flights.
4. Indirect societal change impacts: this includes the consequences of climate change on societies such as economic growth, development patterns and social-political stability. (Climate Change and Tourism)

Based on Figure 17, which highlights major climate change impacts affecting tourism destinations by geographic distribution, Belize as a part of the Caribbean region is susceptible to the following:

- Warmer summers
- Increase in extreme events
- Water scarcity
- Marine biodiversity loss
- Sea level rise

- Increase in disease outbreaks
- Political destabilization
- Travel cost increase from mitigation policy

All major climate change impacts have a corresponding implication specific to tourism destinations, independent of their locations. Such implications are detailed in table 7.

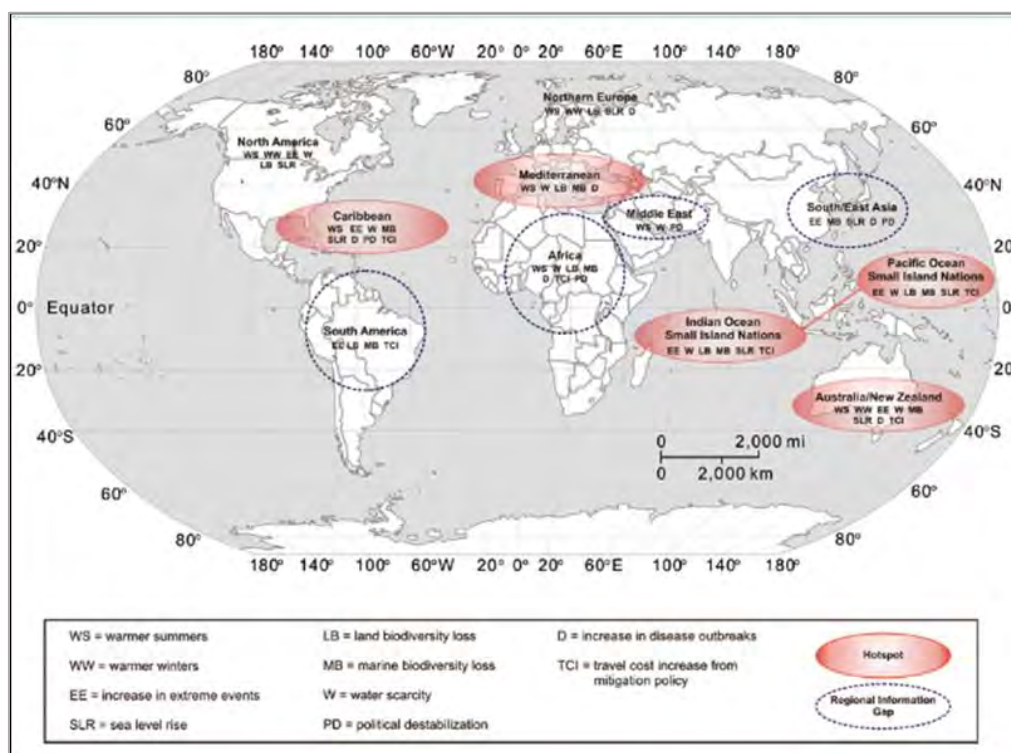


Figure 17 Geographic distribution of major climate change impacts affecting tourism destinations. Source: WTO

Impact	Implications for tourism
Warmer temperatures	Altered seasonality, heat stress for tourists, cooling costs, changes in plant-wildlife-insect populations and distribution, infectious disease ranges
Increasing frequency and intensity of extreme storms	Risk for tourism facilities, increased insurance costs/loss of insurability, business interruption costs
Reduced precipitation and increased evaporation in some regions	Water shortages, competition over water between tourism and other sectors, desertification, increased wildfires threatening infrastructure and affecting demand
Increased frequency of heavy precipitation in some regions	Flooding damage to historic architectural and cultural assets, damage to tourism infrastructure, altered seasonality

Changes in terrestrial and marine biodiversity	Loss of natural attractions and species from destinations, higher risk of disease in tropical-subtropical countries
More frequent and larger forest fires	Loss of natural attractions; increase in flooding risk; damage to tourism infrastructure
Soil changes (e.g. moisture levels, erosion and acidity)	Loss of archaeological assets and other natural resources, with impacts on destination attractions.

Table 8 Major climate change impacts and implications for tourism destinations

As an economic sector, tourism can be influenced by local environment, climate and climate-influenced natural resources. Research indicates that consumers in key tourism markets are increasingly focusing on climate change. In some markets, perceptions of the contribution of tourism to climate change (i.e. air travel) have the potential to affect the destination choices of tourists. Tourists may also make decisions based on personal well-being such as their thermal comfort and length of stay due to length of rain showers, which can be analysed based on average temperatures and precipitation.

Consumer demand may be affected by the response of the tourism industry and governments to climate change issues, hence the need to monitor changes in consumer perceptions and purchasing behaviour in order to provide consumers in the tourism market with positive responses to climate change issues. This requires the assessment of climate change impacts on destinations to date and mitigation policies and measures to address past, present and future effects.

These protected landscapes are highly susceptible to climate change. These areas make up the key watershed area for the Macal River which flows into the Belize River, Belize's main water vein, providing drinking water to the country's two cities and over 20 villages. The area is also the site for two hydroelectric dams a vital source of power for the national grid.

Currently Caracol already experiences shortages of water during the dry season (February – June) which were exaggerated this year with an extended drought attributed to (El Nino)⁷ Further stresses due to climate change include drought and water shortages, increased forest fires, and reduced power supply. Certain spikes in insect infestations such as the southern Pine Bark Beetle (1999) which devastated the Mountain Pine Ridge are also linked to changes in climate conditions.

The National Adaptation Strategy to address climate change in the water sector in Belize has presented five key adaptation actions which include the establishment of an agency to execute integrated water resources management; strengthening the existing institutional and human resources capacities in the water sector for improved management practice, formalizing the legal mandate and operations of the National Climate Change Committee, strengthening the trans-boundary relationships to cover the impacts of climate change on the water sector and increasing public awareness and education in water culture and climate change⁸.

⁷ <http://www.elnino.noaa.gov/>

⁸ National Adaptation Strategy to address climate change in the water sector in Belize, Strategy and Action Plan 2009

Destination Development:

By definition a tourism destination is: *“a physical space in which a tourist spends at least one overnight. It includes tourism products such as support services and attractions and tourist resources within one day’s return travel time. It has physical and administrative boundaries defining its management, and images and perceptions defining its market competitiveness.”*⁹

The World Tourism Organisation has identified six basic pillars of a destination as listed in the table below:

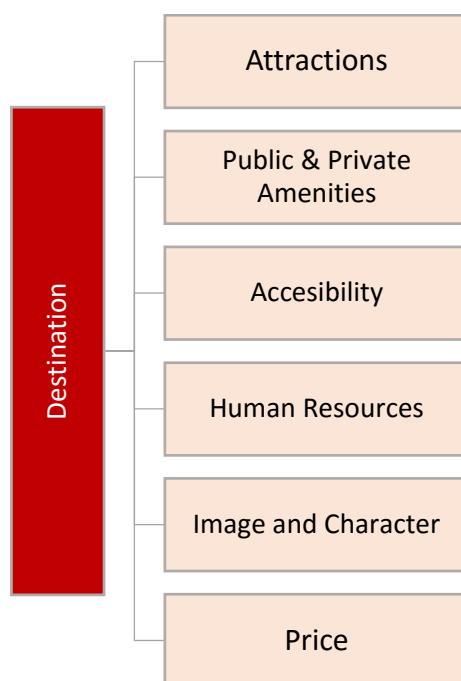


Figure 18 Diagram showing the six basic pillars of a destination

One of the main issues of approaching these four protected areas as a tourism destination is the heterogeneity within the area. A successful destination development plan requires the four areas to operate on a unified platform as one destination (i.e. *“Maya Mountain Tourism District”*). It also requires a cooperative Tourism Planning Agency that can foster shared growth and not competition among the protected areas managers.

The gap analysis confirmed that there are several issues within the “Maya Mountain Tourism District” (MMTD) that are universal, such as: road access, lack of communication and human safety and security. These issues will require continuous collaborative work with both Government bodies and private stakeholders, inclusive of regular meetings of the working group.

⁹ WTO: 2007 A Practical Guide to Destination Management

Now that the Government has recently announced the paving of the access road from San Ignacio Town to Caracol, more focus can be placed on building the destination. This has also alleviated the need to mitigate poor road access as part of this DDP. Improved access will bring about new challenges in the development of these protected areas. It is expected that the paved road will increase traffic and site visitation to these areas and will subsequently increase the need for security patrols.

An increase in visitation will also place greater demand on protected areas managers to provide amenities and services such as: “utilities, public transport, accommodation, visitor information, recreational facilities, guides, operators and catering and shopping facilities which will have to be strategically developed for each protected area.

1. Mountain Pine Ridge Forest Reserve:

The Mountain Pine Ridge Forest Reserve is the natural gateway to the protected areas complex, visitors to all four protected areas must enter through MPR and register with the Belize Defence Force Guards at Douglas D’ Silva.



Figure 19 Tourist map of the Mountain Pine Ridge

MPR is the most developed of all four protected areas and possesses some of the most natural assets for tourism development. Poor road access has long been the limiting factor for tourism development within the MPR. However, with recent commitments from Government to pave the main access road from San Ignacio, will alleviate this problem.

Legality: The Forest Department is the management agency in charge of MPR, however, the agency has no tourism development unit, programme, nor tourism management experience. Under the Forest Act Chapter 213 of the revised laws of Belize 2000, the Forest Department lacks so much as a mandate to legally operate as or collect fees as a tourism destination management organization.

Management: In order to address this matter for both the MPR and CFR, the standing legislation governing the Forest department will have to be adjusted enabling the department to manage forest reserves for tourism purposes. Due to the complexity and time required to develop such a unit, a stronger recommendation would be for the development of a “Maya Mountain Tourism District Advisory Board” comprised of membership from all three management agencies, the BDF, BTB and Beltraide as shown below.

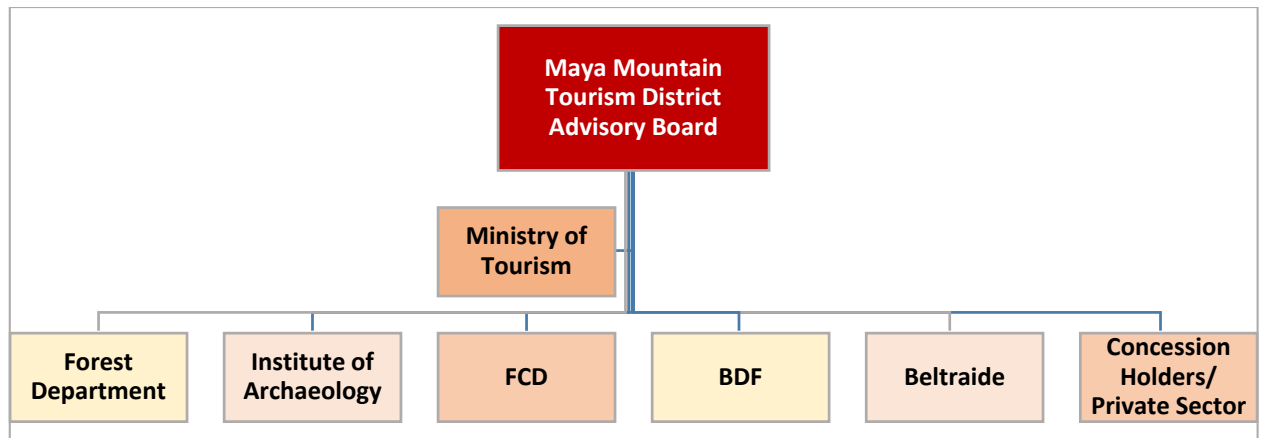


Figure 20 Organization Table for the MMTD Advisory Board

The function of this advisory board will be to determine the roles, rights, and responsibilities of the management board. The advisory board would also act as a Private - Public entity, whose purpose is tourism development within the MMTD.

Function of the Advisory Board - Provide guidance and direction for the Management Board

Function of the Management Board - Formulate direction and policy for tourism development in MPR

Objectives:

- Optimize, increase efficiency, and increase accountability of tourism management in the "MMTD"
- Create an effective mechanism and clear multi sector coordination in sustainable tourism management
- Develop and promote sustainable tourism to increase visitation to the MMTD
- Manage concessions within the MPR
- Increase active roles of community by generating job opportunities and increasing local income from tourism activities.
- Conserve biodiversity as well as environmental services within the MMTD
- Manage permits and concessions related to tourism use and development
- Raise funds for tourism management

Site Development:

Apart from being the natural gateway for all tourists to the MMTD, the Mountain Pine Ridge is also the most developed of all four protected areas. The old Forest Station at Douglas D' Silva is an already established hub for tourism with the area. This Station, once home to just under 300 workers, has dilapidated houses, plumbing, electric wiring, an airstrip, and houses security forces and Forest Rangers. This along with the central location of Douglas D' Silva Forest Station within the

MPR also makes it an ideal hub for transportation, Visitor Information, administration, accommodation and ancillary tourism services with very low environmental impact.

The agency will be responsible for planning and zoning the D' Silva area, designating development areas for small hotels, spas, restaurants, stores, tour offices and other tourism amenities. The management agency should be allowed to raise funds, seek financing or enter into negotiations with private investors for the development and management of these concessions.

Because the Douglas D Silva Station is within the Forest Reserve it is essential that MMTD Management Agency assume administration of the hub as lands and properties should be leased, not sold to private entities, thus developing and fostering greater private-public partnerships for the development of the complex. Civil works such as to refurbish the airstrip & ranger station, seek connection to the power grid from the Chalillo hydrodam, and refurbish the attractions and several concession buildings for retail opportunities should all remain the responsibility of the MMTD.

Recommendations for the Financial Mechanism:

Limited management budgets have been the main obstacle in MPR's tourism management, including environmental preservation, carbon sequestration and forest management budgets funded by the Government. The tourism sector has been allowed to use these resources without cost and this has led to the dilapidation of infrastructure throughout the Reserve.

Direct funding has to be capitalized upon and utilized directly in the field, to improve facilities and maintenance of sites and attractions throughout MPR. Management also must enable an increase in the quality and image of MPR to the industry. An "Entrance ticket" system should be put in place to collect revenue and monitor numbers, areas visited and visitor safety and satisfaction. This is best done at the entrance gate. Combined with concession revenues, landing fees, road fees (Toll) and service fees for bathrooms, facilities, grill rentals etc. the Destination will develop into a hub for tourism in the area.

Areas for Development:

The Mountain Pine Ridge Forest Reserve currently has some dilapidated infrastructure at its attractions and sites. This infrastructure would need to be upgraded to make these areas suitable for tourism use. (See photos below)



Figure 21 Current facilities at Rio On Pools



Figure 22 Restrooms at Rio On Pools



Figure 23 Current view of the Douglas D'Silva Airstrip



Figure 26 Entrance to Rio Frio Cave



Figure 25 Current tourism signage at Rio Frio Cave



Figure 24 Dilapidated housing at the Douglas D'Silva Forest Station



Figure 27 Directional Signage at Douglas D'Silva



Figure 28 View for Douglas D' Silva from Los Altos

Most works & development upgrades have been identified in the work chart below for the Mountain Pine Ridge.

Proposal	Goal	Agent Responsible	Key Implementation Actions	Challenges to Implementation	Cost
Enable a Tourism Management arm of the Forest Department	To effectively develop, manage and maintain tourism assets.	GOB: FD/Sol Gen / MoT	Provide necessary legislation to allow the forest department to manage reserves for tourism use	It may be difficult to change legislation for Reserves without DE reservation.	\$ 350,000
Build Capacity within the Forest Department in Tourism Planning & Destination Management	Create a skilled Unit to Manage Destinations	Forestry Department / University of Belize	Hire and Train Skilled Tourism experts to manage sites.	Many Forestry staff are skilled foresters and have no background in Tourism. Training will require time away from work	\$ 150,000/ year
Douglas D' Silva - Tourism Village	To develop a tourism/ Transportation hub that can receive air traffic as well as terrestrial visitor's and can accommodate, day visitors, overnight or long term visits.	Forest Department/ Ministry of Tourism/ BTIA/ Civil Aviation	<ul style="list-style-type: none"> - Upgrade existing Airstrip - Improved signage - General Store - Service Station (Fuel, tyre repair) - Overnight Facilities (Camp grounds, Rental cabins, Resort accommodations. - Activities rentals (Bikes, kayaks, golf carts, GPS, etc. - Restaurants - Tele-Communications service - Other Concessions - gift shops etc. - Forestry Museum (Include archaeology and biodiversity) - Emergency Services: Fire, Security, Clinic Etc. 	Planning Cost of Implementation Lack of Electricity	\$16,000,000
Gate	Transform the old Mai Gate to MPR into a welcome centre	Tourism Unit/ Forest Department	Develop a welcome centre where guests pay park entry, sign in and receive maps etc. of the attractions.	Cost implementation of Training of Personnel Development of maps, brochures	\$ 90,000
Rio On Pools/Rio Frio Cave/ Big Rock/1000' Falls	Develop attractions with standards amenities	Tourism Unit/ Forest Department	Standardize welcome areas, pavilions, parking signage, restrooms, picnic	Cost implementation of Lack of electricity	45,000 each \$180,000

			areas and concessions at all attractions.	Lack of running water	
New Products	Identify and develop new products for Tourism activities in the MPR	Tourism Unit Forest Department/ Cayo Tour Guide Assn / BTIA	Open new trails Bicycle paths Aquatic activity on the Chalillo reservoir	Trail security Dependent on bicycle rental concession expensive	\$ 30,000 each
Improve Signage at all sites	Provide proper tourism signage to all attractions	Forest Department / Road Construction	Develop interpretive plan and tourism signage	Construction companies traditionally only focus on road signs	\$130,000
Marketing & Branding	Begin Intense Branding and Marketing Campaign	Belize Tourism Board	Create destination Brand and marketing strategy	BTB is responsible for National Marketing and other destinations	\$60,000

2. Chiquibul Forest Reserve & Chiquibul National Park:

The Chiquibul Forest Reserve is again managed by the Forest Department and is faced with the same limitations of the Mountain Pine Ridge. Chiquibul National Park operates on a provisional co-management agreement with Friend for Conservation & Development (FCD) to manage the area. Both are limited in structure and need to be active on the MMTD Advisory Board. It is intended that with the training and capacity building, FCD can become the managing board for the CNP with overlapping responsibilities within the CFR.

Chiquibul's Product and Niche suggests the development of Expedition based tourism, building on the proposed hub at Douglas D'Silva, visitors can be brought into the MMTD and overnight at Douglas D Silva with planned expeditions into the Chiquibul to visit areas like the Chiquibul Caverns, Natural Arch, Sinkhole etc.

Special Events development is also needed within the area. These include: jungle survival, adventure racing and marathons which are excellent tour opportunities for this area.



Figure 29 Entrance Sign to the Chiquibul National Park

A list of Development needs is listed in the table below:

Proposal	Goal	Agent Responsible	Key Implementation Actions	Challenges to Implementation	Cost
Need to Develop an outpost (Chiquibul Activity Centre)	Develop Expedition style Tourism	FCD/CTGA	Develop tour packages offering Chiquibul Expeditions	Some require overnight stay Guests must be in good physical shape	\$ 100,000
Training of FCD Staff in Tourism Management	Strengthen capacity of Site managers in Tourism Management	FCD/ UB	Hire skilled tourism planners and trainers to train FCD Staff	Many Forestry staff are skilled foresters and have no background in Tourism. Training will require time away from work	\$ 150,000/ year
Develop activity tours	Jungle Survival Educational Tours Medicinal/ Spirituality Tours	FCD /CTGA	Develop Tours with local and international travel agents that promote specific tours at special moments (lunar eclipse, summer solstice etc.	Tours are dependent on a third party Management skills for cancellations, transfer issues will be needed	\$50,000
Special Events	Ironman Adventure Racing Hike & Bike etc. Marathons etc.	FCB/BTIA/BTB	Develop a calendar of events for several specialized actives. Identify a planning and marketing agency that can assist in executing the events	Events are not regular and subject to weather conditions. A variety is needed to support return competitors	\$120,000
Upgrade facilities	Sign at entrance to Forest Reserve Signage to different attractions on the road. Improve current welcome centre & overnight facilities at Las Cuevas	FCD/Forestry	Develop interpretive plan Develop signs to compliment the plan.	Cost of implementation Seasonal Use	\$90,000

Table 9 Development areas for Chiquibul Forest Reserve and Chiquibul National Park

3. Caracol Archaeological Reserve

The Caracol Archaeological Reserve is currently developed and managed by the Institute of Archaeology as the only managed tourism attraction in the complex. The Reserve receives an average of 10,787 visitors per annum¹⁰, all to visit the main centre of the ancient city.

Caracol was upgraded during the Tourism Development Project (2000 -2005) with new bathrooms, site excavation and the paving of 7 miles of road within the reserve.



Figure 30 View of paved Road within the Caracol Archaeological Reserve

Caracol presently has a visitor centre, bathrooms, ranger station and a recently constructed forward operating base for the BDF who provide security for the site.

The gap analysis revealed that Caracol, aside from having poor road access, prioritized continuous power and water as their main visitor needs.

The IOA currently expects that visitation will double with the completion of the paved road and that demand on these resources will be even greater than at present. New arrivals by air from new markets such as San Pedro and Placencia landing at the D' Silva Hub are also expected to greatly increase tourism arrivals to Caracol in the long term.

Caracol's remote location makes it difficult to connect to the grid, hence renewable solar/wind energy is recommended for the sites buildings. Buildings have ample cleared space to support a solar grid for power.

The site is also in need of a steady supply of potable water. Several attempts have been made in the past to both drill for water and truck in from the Guacamallo Bridge. The Reserve currently has two options: to continue exploring drilling options or to truck water to the site (which may become more feasible after the paving of the new road. With either option it is important that the Reserve be developed using green technology to consume less water or to save/recycle water via a constructed wetland (See figures 30 and 31)

¹⁰ Institute of Archaeology



Figure 31 Constructed Watershed at Black Rock Lodge, Belize

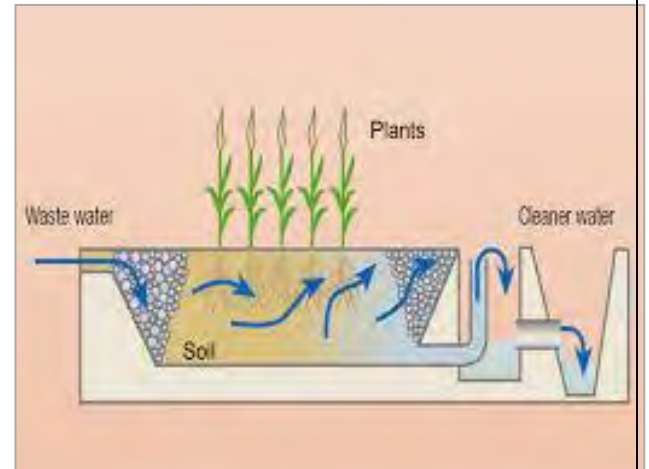


Figure 32 Concept behind the constructed watershed

Recommendations for Financial Mechanisms:

New activities at Caracol are dependent on available security from the BDF. Currently, escorts from Douglas D'Silva operate between the hours of 9 am and 2 pm. By shortening the travel time on a paved road visitors will also have an extended time on site for other activities. A concession is recommended for sale of water, snacks and souvenirs as well as an interactive interpretive centre/museum.

Caracol's current fee structure also needs to be re-visited; the admission fee of \$15 USD per person is one of the lowest in the region. Guides currently charge anywhere in a range from \$120 - \$150 USD per person per tour, but due to the bad road access the management agency received very little of that fee.



Figure 33 The most popular structure at Caracol – The Sky Temple Ca'ana



Figure 34 A view of Caracol from the Top of Ca'ana



Figure 35 Site infrastructure including restrooms and visitor pavilion



Figure 36 Current display area for site Stella and Altars

Caracol's development needs have been illustrated in the table below:

Proposal	Goal	Agent Responsible	Key Implementation Actions	Challenges to Implementation	Cost
Electricity at Caracol	Provide a steady source of power on site	IOA	Investigate solar/ wind or a combination of both on site	Cost of implementation Size of bank needed to power the site	\$200,000
Water Supply	Locate a dependable water supply for facilities	IOA	Determine the best source of water for the site: well, Water Truck	Well water may not be year round Trucks need to fill at Guacamallo	\$140,000
Caracol Interpretive centre	Develop new activities at Caracol	IOA	Develop an interactive education/ activity centre on site.	Cost of implementation Site already has a visitors centre	\$250,000

Table 10 Development areas for Caracol

Priority Actions:

Priority areas for each Reserve within the MMTD have been set about in the table below. The recommendations have been prioritized base on immediate impact from tourism and the pending promise of increased visitation from a paved access road.

Action		Cost	High	Medium	Low
MPR					
Enable a Tourism Management arm of the Forest Department		\$ 350,000	X		
Build Capacity within the Forest Department in Tourism Planning & Destination Management		\$ 150,000/ year	X		
Transform Douglas D' Silva into a Tourism Village		\$16,000,000	X		
Gate		\$90,000		x	
Rio On Pools/Rio Frio Cave/ Big Rock/1000' Falls		\$45,000		x	
New Products (trails Bike path etc.)		\$30,000 ea.			X
Improve Signage at all sites		\$130,000		x	
Chiquibul					
Need to Develop an outpost (<i>Chiquibul Activity Centre</i>)		\$ 100,000			X
Training of FCD Staff in Tourism Management		\$ 150,000/ year	X		
Develop activity tours		\$50,000	x		
Special Events		\$120,000		X	
Upgrade facilities		\$90,000			X
Caracol					
Electricity at Caracol		\$200,000	X		
Water Supply		\$140,000	X		
Caracol Interpretive centre		\$250,000		x	

Table 11 Priority areas based on immediate impact from tourism

Monitoring Evaluation:

Destination development within the four protected areas is highly dependent on the successful implementation of specific elements in each Reserve. Each Protected area has a specific role to play in the tourism dynamic of the MMTD, which needs to be monitored closely by the MMTD advisory board.

The Mountain Pine Ridge is the Hub for transportation, security and overnight visitation with a series of day activities within the vicinity of Douglas D' Silva.

The Chiquibul Reserves will build on the “hubbing” concept from Douglas D’ Silva and provide an array of tourism activities on packaged excursions and specialized activities.

Caracol specifically the image of Ca’ana should be branded as the cultural logo or icon to the area. The image should be prominently positioned in all tourism literature both local and foreign, placed on all signs and better marketed in the markets of San Pedro and Placencia.

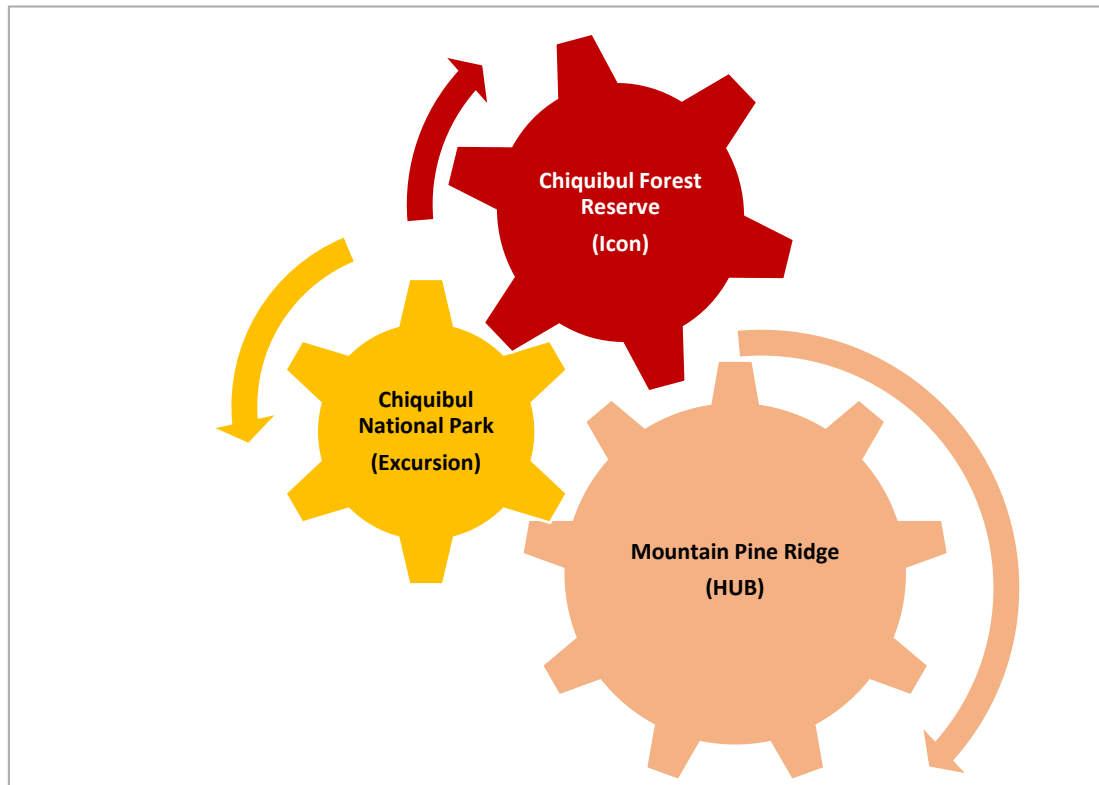


Figure 37 Working structure for the Maya Mountain Tourism District

All four Reserves will have to monitor this implementation very closely, to ensure that investments coincide with growth and development trends of the tourism market. Monitoring indicators are listed below.

Social

- a. Increased employment
- b. Community engagement, sustaining cultural assets, community participation, capturing economic benefits, sustaining the tourism product
- c. Protection of natural assets, managing resources, limiting negative impacts
- d. Destination planning, designing new products and services to controlling tourist activities, managing better quality

Economic:

- a. Increased Visitor arrivals

- b. Increased Visitor Satisfaction and Value for Money perception
- c. Reducing seasonality (ratio of tourist arrivals peak month relative to annual mean)
- d. Managing the pace of development (% occupancy, annual build rate)

Environmental

- a. Climate change (measures of vulnerability and resilience)
- b. Managing carrying capacity
- c. Energy management (use per day per tourist, ratio per capita staff use to tourist use)
- d. Water availability (shortages per year, cost of new water)
- e. Water Quality
- f. Visual pollution



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