



PORTFOLIO OF TOURIST INVESTMENT OPPORTUNITIES

ARCHIPELAGO NATIONAL PARK

LOS ROQUES

THE DREAMED PARADISE

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Presentation

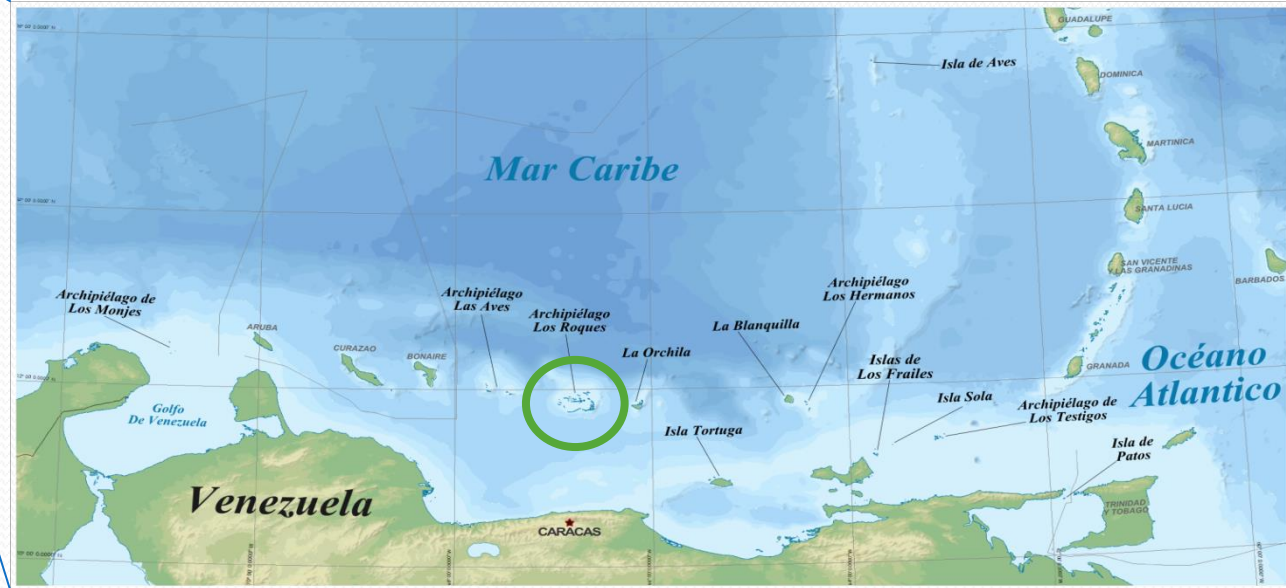
The Ministry of People's Power for Tourism, through the Vice Ministry of Tourism Projects and Works, together with the Ministry of People's Power for Ecosocialism and Water and the National Institute of Parks (INPARQUES) and Insular Territory Miranda are pleased to present the Portfolio of Tourist Investment corresponding to the Los Roques Archipelago National Park, which aims to present the world's entrepreneurs with the potential and investment opportunities in the territory that makes up this national park.

Based on the constitutional consideration of tourism as a strategy of diversification and sustainable development, and by virtue of which traditionally are the protected areas, mainly the national parks and tourist interest zones, the biggest attractors of visitors in the country due to the quality, variety and hierarchy of natural and cultural attractions that protect these spaces, the Venezuelan State decides as a sectoral policy to promote sustainable tourism in our protected areas, considering Nature Tourism, as a strategy for its conservation and protection and in the specific case of the Park National Archipelago of Los Roques opts for the development and positioning of "Ecotourism" also called "Tourism FOR nature", whose main motivation is the contemplation, enjoyment and / or knowledge of the natural environment, with different degree of depth, on which I know you can perform physical activities of low intensity without degrading the natural resources of the site. This type of tourism at a global level, grows at a rate of 10-12% per year and it is maintained that this growth trend will play an important role both in conservation and in the tourism industry, especially in countries with high levels of biodiversity in the world.

Under this premise and convinced of the importance of incorporating foreign investment into our economy, as a fundamental lever for the development of the tourism sector, through the contribution of fresh capital, technology transfer and access to new foreign markets, we present this portfolio for your consideration of Investment that presents different investment options within this protected space, as well as the economic, financial and fiscal benefits that can be accessed.



1. Prime Location



It is located in the Caribbean Sea, between the coordinates $11^{\circ} 58' 36''$ and $11^{\circ} 44' 26''$ north latitude and $66^{\circ} 57' 26''$ and $66^{\circ} 36' 25''$ west longitude. The archipelago is part of the Federal Dependencies of Venezuela and is approximately 160 kilometers north of the central coast of La Guaira, and 300 km from Isla de Margarita¹. Los Roques are part of the Lesser Antilles or Leeward Islands.

2. Splendid Nature

In the form of an atoll, it measures 54.30 kilometers from east to west and 40.64 kilometers from north to south, including its internal and surrounding waters, for a total area of 2,211.2 km² (221,120 ha). In this relatively small, surface are 01 island, 42 cays and about 300 sandbanks with extensive coral reefs alive.

A narrow and abrupt submarine platform where the depths of the sea oscillate between the 500 and the 1,700 meters, to the South and wider platform and with lower depths, to the 15 meters to the North.

The days are sunny and hot but temperatures drop during the night, reaching in the astronomical winter of the northern hemisphere, 18°C. Hottest months August and September.

Predominant easterly winds and rains from September to January



3. Settlers and Workforce

The human presence in the archipelago goes back to the Caribbean aborigines who visited it to collect botutos, fish, hunt turtles and extract salt. Archaeological discoveries and scientific studies indicate that they established their camps on the islands of Dos Mosquises, Cayo Sal and Crasquí, among others, and that they visited the archipelago well into the sixteenth century. Ancient constructions of salt works with dams, stone paths and remains of houses are testimony to the period of exploitation of salt between the seventeenth and nineteenth centuries. The inhabitants of the Dutch Antilles began to take advantage of natural resources such as guano (massive accumulation of seabird excrement) and mangrove coal.

The names of the keys and islands are testimony to their cultural heritage, where the indigenous word "cayo" was translated by English-speaking buccaneers into "key" that ended up being written phonetically in Spanish as "quí". Other names have influence of the inhabitants of the Dutch Antilles and many are a mixture, distortion or translation of the Creole names, such as: Frank'skey or France'skey that became Francisquí. Crab'skey in Crasquí, Domus' Key in Dos Mosquises. Mixing the French word "soeur" (sister) with "key" gave rise to the name of the cay that today is known as Sarquí.

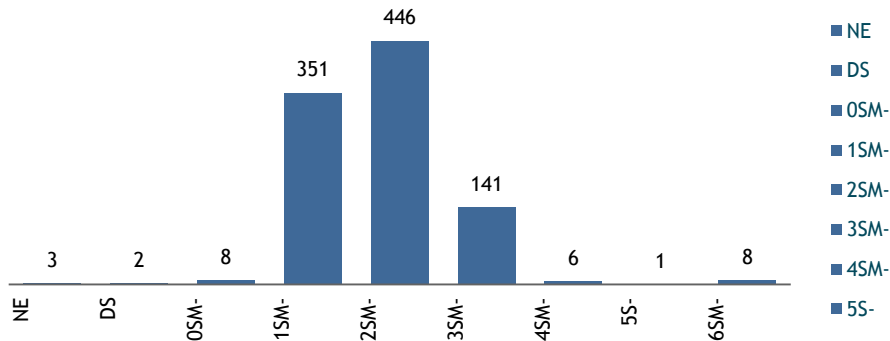
The permanent occupation of Los Roques begins at the beginning of the 20th century with the arrival of fishermen from the Island of Margarita who eventually brought their families to the archipelago.

Current Population: 2081 inhabitants for the year 2019 according to the Insular Territory Miranda Census, this population is located mainly on Isla Gran Roque, administrative and service capital of Los Roques Archipelago.

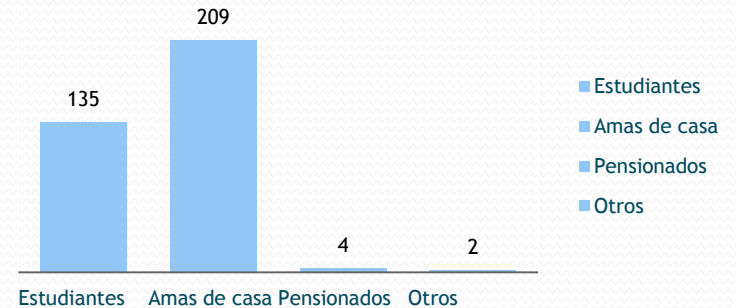


3. Population and Labor Force

Economically Active Population



Economically Inactive Population



Source: June-2016 CensusTIFM

Economically Active Population (2016): 953 people.
Economically Inactive Population (2016): 350 people.

Fishing is an important economic activity for the inhabitants of Gran Roques and represents an important source of food for the rest of the country. This national park produces 94% of the total consumption of lobsters in Venezuela, as well as an important percentage of certain fish species with high commercial value such as snappers, rabirrubias, carites and groupers (Gondelles 1997). This activity is strictly regulated and during the fishing season a little over 300 fishermen are temporarily settled on the island.

Sport fishing, sailing sports, ultralight aircraft rides, the Virgen del Valle festivities during the second week of September and the lobster festival in November, when the fishing season of this crustacean begins, are some of the activities that can be enjoyed in this national park.

Tourism in the Archipelago of Los Roques has had its highest peak since 1990, after the declaration as a national park.



4. Basic Services

Basic Services	EXISTING					
	Typology	Quantity	Installed capacity	Property	Location	Status
1. Electricity						
1.1 Generation	Gasoil power plant	4	7600 MW	Public	Gran Roque	Operative / In maintenance
1.2 DistribuTION	High voltage underground network	11 (transf.)	300 KVA c/u	Public	Gran Roque	Operative
2. Water						
2.1 Production	Reverse Osmosis Plant	2	4 l/s c/u	Public	Gran Roque	Operative
	Steam Compression Plant	1	2,5 l/s	Public	Gran Roque	Fuera de servicio
2.2 Storage	Storage tank	6	-	Public	Gran Roque	Operative
3. Wastewater						
3.1 Treatment	Oxidation pond	1	-	Public	Gran Roque	Operative
3.2 Drains	Underground network	-	-	Public	Gran Roque	Operative
4. Telephony and telecommunications						
4.1 Fixed telephony	CANTV	1	Own Antenna	Public	Gran Roque	Operative
	Movilnet	-	CANTV antenna	Public	Gran Roque	Operative
4.2 Mobil Telephony	Movistar	1	Own Antenna	Public	Gran Roque	Operative
	Digitel	-	CANTV antenna	Public	Gran Roque	Operative
4.3 Internet	ABA - CANTV, Residencial / WI-FI Public	-	-	Public	Gran Roque	Operative
5. Solid waste						
5.1 Disposition	Dump	1	-	Public	Gran Roque	Operative
5.2 Treatment and classification	Incineration outdoors	-	-	Public	Gran Roque	Operative
6. Catering						
6.1 Fueling	-	-	-	-	-	-
6.2 Supply of supplies	-	-	-	-	-	-
7. Transport						
7.1 Aquatic	-	-	-	-	-	-
7.2.1. Ports	-	-	-	-	-	-
7.2.2 Piers and docks	-	-	-	-	-	-
7.2.3 Anchorages	-	-	-	-	-	-
7.2 Air	-	-	-	-	-	-
7.2.1 Airports	Airport Los Roques		15 a 20 aeronaves	Public	Gran Roque	Operative
7.2.1.1. Airstrip	Asphalt	1	860 m	Public	Gran Roque	Operative
7.2 .2. Terminal	-	-	-	-	-	-
7.2.4. Frequency of flights	Aircraft with 15 seats	4	14 pas.	Public	Gran Roque	Operative
7.2.5. Auxiliary landing tracks	Two Mosquises	1	500 m	Public	Dos Mosquises	Operative

Source: Insular Territory Francisco de Miranda, Caracas(2018)

4.1.Services and Urban Equipments

Location			Gran Roque	Cayo Pirata	Isla Agustín	Cayo Dos Mosquises	Cayo Crasquí	Isla Locos	Cayo Carenero	Cayos Francisquises
Services	Drinking water	Desalination Plant	1							
		Supply in Containers		1	1	1	1	1	1	1
	Water Served	Sewage networks	1							
		Septic tank		1	1	1	1	1	1	1
	Telephony	Central Telephony	1	1	1	1	1	1	1	1
		Power Plant	1							
	Electricity	Electric generator		1	1	1	1	1	1	1
		Landfill	1							
Equipaments	Solid waste	Waste deposits		1	1	1	1	1	1	1
		Primary	1							
	Educational	Secondary	1							
		Ambulatory	1							
	Assistance	Community park	1							
		Square	1							
		Playground	1							
		Court	1							
		Stadium	1							
		Church	1							
	Cultural partner	Cultural center	1							
		Police module	1							
	Security	Enramado	6	3	2		3	1	1	
	Maintenance									

Source: Ministry of Popular Power for Habitat and Housing (MPPHV-DGPEAH), General Directorate of Strategic Planning of Human Settlements, Caracas, Venezuela, 2018..



5. Tourism in the Archipelago

Tourism began to become important in Los Roques at the end of the 19th century. In the year 1990 the tourist activity did not involve the inhabitants of the island, the few existing inns were managed by foreigners - Venezuelans of the upper class of Caracas and foreigners - who bought houses in the archipelago. It was accessed through private planes or boats. In the tourism boom, 60% of the visitors were foreigners, mostly from the United States, Italy, Spain, Germany, France and the United Kingdom, however, in recent years the trend has reversed and there is a greater influx of domestic tourism.

Tourist profile, year 2018

- 72% is domestic tourism and 28% receptive tourism.
- Average of 4 people per group, with an average expenditure of \$ 3,500 per group.
- The tourist comes in 75% of the central region of Venezuela.
- The United States ranks first with 30%, followed by Germany with 25%, Argentina with 15%, China and Saudi Arabia with 10% each, and Peru and France with 5% each.
- 49% have a stay of 1-3 nights 47%, 1 to 6 nights corresponds to 49%, and of 7 or more nights only 4% of the total remains.

95% of tourists arrive in Los Roques by plane while the rest visit the park by boat (AUA 2002). At present (2019) there are 04 airlines, with two daily flights and capacity of 10 or 12 pax per flight. Traditionally 96% of tourists stay in inns, 3% in sailboats and less than 1% in carp (AUA 2000). For the year 2019, the situation is similar, observing that operate in the Archipelago Los Roques, 69 tourist establishments that have 413 rooms corresponding to 988 beds / beds, to which are added approximately 23 rooms for 47 beds / beds in sailboats, for a total installed capacity of 988 beds. In addition, there are 19 food and beverage establishments that represent approximately 106 tables for 483 diners; 02 school of kite and surf, 58 boats and 1 catamaran for trips to the keys and an installed capacity of 536 passengers.



5.1.Movement of Tourists

Tourist Mobilization Los Roques Archipelago National Park						
	2013	2014	2015	2016	2017	OCTOBER 2018
Internal Turism	39.948	33.367	32.619	22.715	24.208	14.523
Receptive Tourism	15.715	12.853	12.060	8.740	5.266	1.954
TOTAL	55.663	46.220	44.679	31.455	29.474	17.466,00

Los Roques Archipelago National Park Tourists Interannual Variation Rate Year 2013 - October 2018						
	2013	2014	2015	2016	2017	OCTOBER 2018
Mobilization Tourist / year	55.663	46.220	44.679	31.455	29.474	17.466,00
Variation		-17%	-3%	-30%	-6%	-44%

Source: SATIM 2018



5.2. Venezuela Multi destination



From the archipelago of Los Roques you can access all these wonders that this Venezuela biodiverse, multi-active and multicultural offers, from here it is possible to connect in a short time of flight, with the different destinations that are offered for enjoyment such as: Extensive Caribbean coast, impressive Andean mountains, Amazonian tropical forests, extensive plains inhabited by diversity of exotic fauna and the famous tepuyes as the highest and oldest rock formations in the world, with the monumental Angel Falls, as well as the spectacular natural phenomenon of the Ray of Catatumbo.

6. Protected Area



The Venezuelan State to protect this marine ecosystem of exceptional beauty and ecological value, dominated by coral reefs, during the "Second World Conference on National Parks", in 1972, the archipelago of Los Roques was accredited as a **National Park, and Ramsar Site** in the year 1996, for being a wetland of exceptional importance as a reservoir of food resources and biodiversity.

This National Park covers 221,120 hectares making it the largest marine park in the Caribbean and is located about 130 km from the continental coast of Venezuela, consists of 1500 km² of coral reefs and two extensive barriers

Eastern Barrier: 24 Km.

South barrier: 30 Km.

42 coral keys

300 sandbanks, numerous patches and small reefs.



This park is an exuberant representation of the marine and coastal ecosystems typical of the tropics, such as: beautiful beaches of white sands adjoining with extensive coral reefs, lagoons full of life, large salt flats, green sea grass meadows, lush mangrove forests and even rocky cliffs and variety of animal species that infinitely benefit and enrich this fragile marine oasis.

The Los Roques Archipelago National Park is composed of a marine area that occupies approximately 98% of its surface, and the rest between cays and islands, where the marine importance of the area undoubtedly stands out.

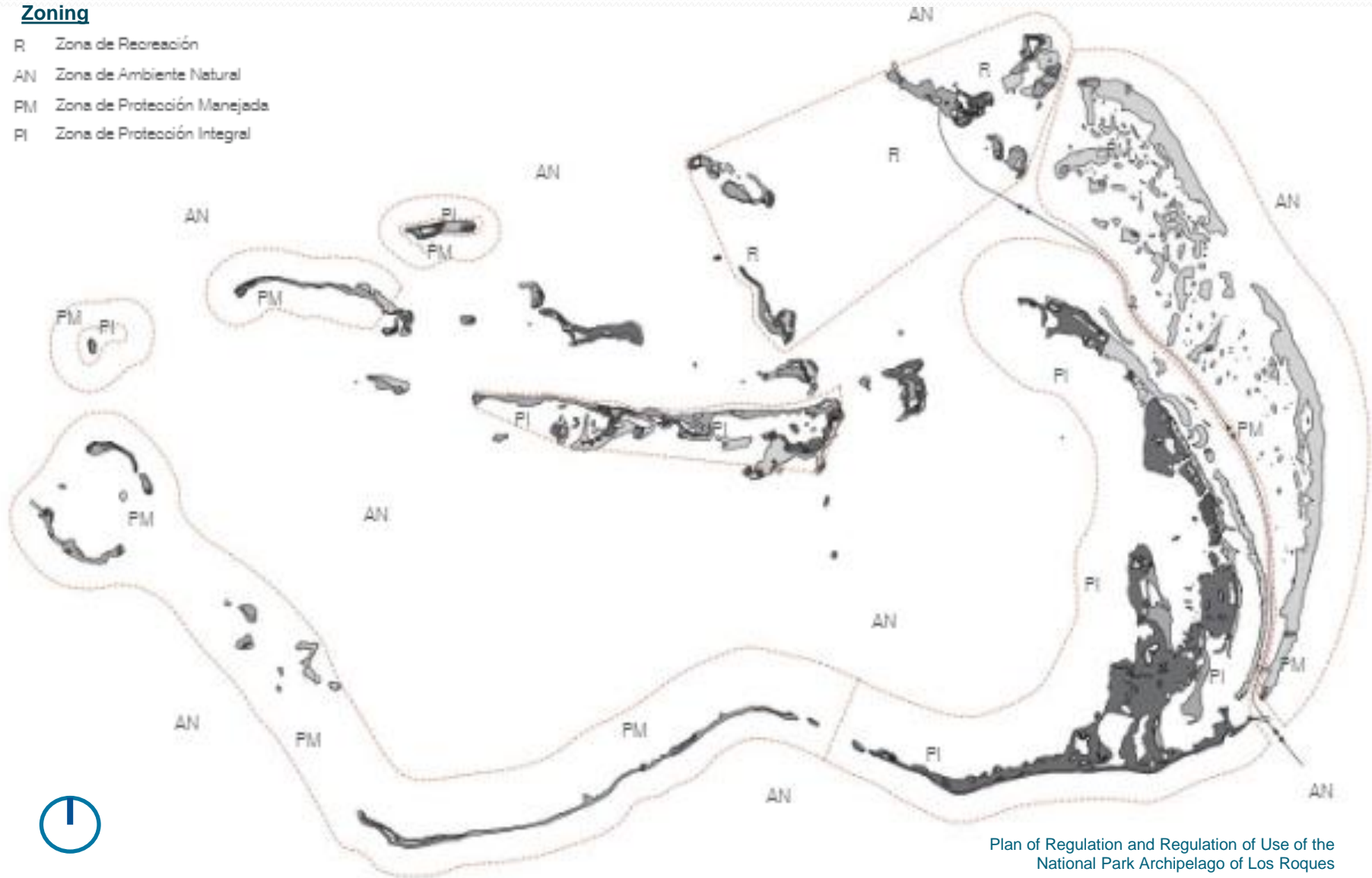
The climate is dry and warm. The average annual temperature is 28 °C with an average annual precipitation of 250 mm (480 mm maximum). The warmest months are September and October



6.1. Protected and Ordered Territory

Zoning

- R Zona de Recreación
- AN Zona de Ambiente Natural
- PM Zona de Protección Manejada
- PI Zona de Protección Integral



6.2. Loading Capacity

The Decree to create the Los Roques Archipelago National Park and its Plan of Regulation and Regulation of Use establish that its fundamental objective is "to preserve and conserve the important environmental values represented by its relevant marine natural resources ...", being among its specific objectives of the conservation of its resources, "to provide means and opportunities for education, scientific research and tourism", based on these premises, the maximum load capacity for this national park is presented below.

Current Resident Population: 2,081 inhabitants *

Current Tourist Population: 998 tourists *

Tourist capacity Maximum potential: 253 spaces / beds **

Tourist population in existing yachts and cabins: 145 ****

Temporary fishing population: 300 ***

Maximum Load Capacity: (Current Resident Population + Tourist Population + Population for temporary fishing operations)

: 2,081 inhabitants + 1,396 seats / beds + 300 fishermen = 3,777 people

Load Capacity Indicator PN Archipiélago Los Roques: 1.81 inhabitants / tourist



* Insular Territory Francisco de Miranda (2019)

** Calculation maximum capacity of PN Archipiélago Los Roques : Inparques,- Mintur 2019 (without including current existing touristic population of Los Roques)

***Insular Territory Francisco de Miranda (2019)

**** Inparques, 2019

7. Investment in Tourism

The attraction of investments, both national and foreign, in the tourism sector as a tool allows conserving and preserving the natural and cultural resources of this national park, through the improvement and strengthening of the administrative management capacity of control and management thereof.

Investment Opportunities

- Works or tourist buildings: inns, special accommodation establishments, restaurants and others.
- Environmental education and passive recreation works: interpretation or visitor centers, interpretation trails, viewpoints, leisure and sports facilities.
- Operative companies of active and / or passive recreation: surfing, windsurfing, sailing, scuba diving and others.
- Infrastructure works: facilities for garbage collection and treatment, desalination plants, solar or wind power plant and other

Investment Modalities

- Mixed: private- public
- Private
- Business Alliance

Investment Management Model

The Venezuelan state provides the land to locate the agreed investment, through a concession contract or commercial alliance for a specific time, where the investment partner performs the architecture project, builds and / or manages the establishment under ecological and environmental guidelines. sustainability





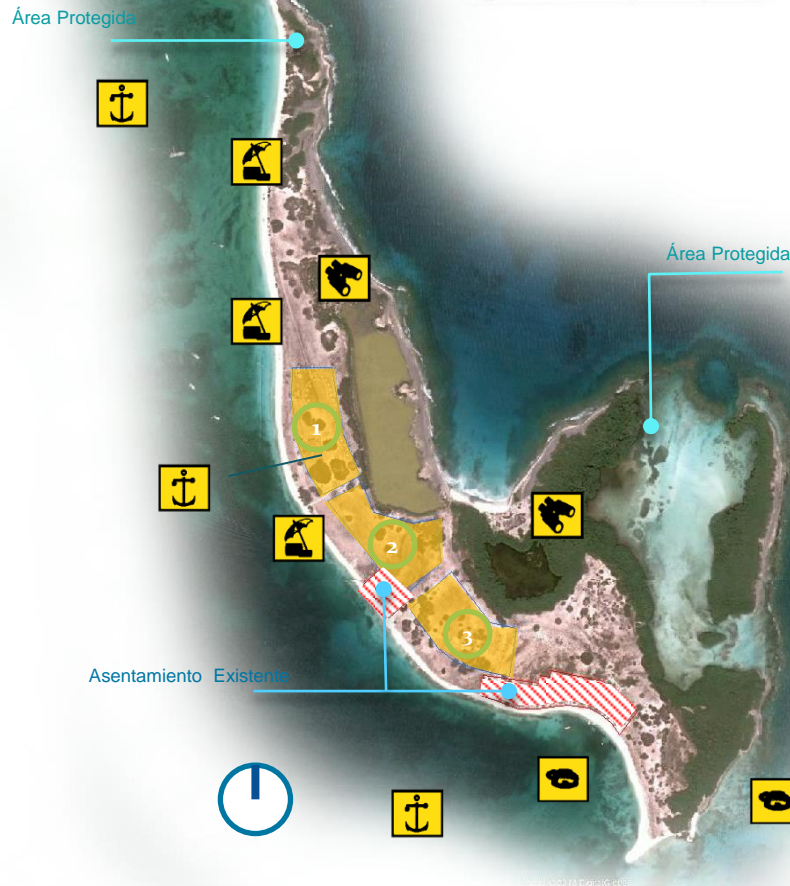
7.1. Cayo Crasquí

A map of the Cayman Islands with Cayo Crasquí highlighted by an orange dot. The map includes labels for various islands and locations such as Franciscoises, Nórdicu, El Gran Roque, Madriscul, Cayo Vapor, Bajo Fabian, Gotadui, Bona del Medio, Esparqui, Boca del Medio, Crasquí, Isla Agustin, Rabasqui, El Palafito, Boca de Ceto, Cayo Sal, Dos Mosquises, Cayo de Agua, Bequevé, Mosquilloqui, Lanqui, Esenqui, Noronquises, and Sanqui. A small inset map in the top left corner shows the location of the Cayman Islands within the Caribbean Sea, with a red dot indicating the specific location of Cayo Crasquí.

Along the beach there are several restaurants that operate in the old fishermen's houses and at the southern tip there is a place called "Bajo de los Venados" which is great for snorkeling.

In addition to the beaches it has other resources and natural attractions such as lagoons, mangrove areas, turtle spawning areas and reproduction of birds such as: Guanaguanare, Pelicano and others, and cultural resources such as cultural historical site (figurines, human remains, etc.)), conditions for the funding of recreational tourist boats and the development of tourist accommodation.

7.2.Cayo Crasquí



Investment Opportunity

Three (03) tourist accommodation establishments, in lots of three (03) hectares each, for a maximum capacity of total accommodation of 126 guests distributed in 63 rooms.

Lot 1, is intended for the construction of a camp on the footprints of the Crasquí campsite, with a maximum of 25 rooms or 50 guests staying simultaneously. Lot No. 2 proposes 20 rooms or 40 guests and lot No. 3, with 18 rooms or 36 guests. None of the lots has a project.

Type of Accommodation: Fixed Tourist Camp			
Category	4*	5*	5* Higher
Minimum area per room m ²	55	75	120
Average construction cost per room * (Referential) USD \$	180.000	270.000	420.000
Total Cost Average of the building (Referential USD \$)	4.500.000 (25 cuartos)	5.400.000 (20 cuartos)	7.560.000 (18 cuartos)

* Reference of a cost of a hotel room in the international market, according to category

Legal Condition: Land State Property

Modality of the offer: concession on land of national ownership

Zoning: Recreational (R)

Uses and activities Permitted: water sports, such as scuba diving without a bottle and with autonomous equipment, minor sailing, skiing, windsurfing, fishing with angling, sport fishing and hiking.

Maximum buildable location: 10%

Maximum height of the construction: 1 floor (5,5m)

Type of Receptive Installation: Tourist camp

7.3. Cayos Francisquises

Made up of the Cayos Francisquí, Arriba, Medio y Abajo keys.

- Cayo Francisqui de Arriba has from North to South an extensive sandy beach, mangrove and bird nesting. The views from this island are very diverse and beautiful. Its waters are deep, warm and crystal clear, it is a traditional anchorage of tourist boats. When crossing this key from East to West, we arrive at an ideal reef for snorkeling.
- Cayo Francisquí Abajo, the largest, at its northern end has waves suitable for surfing. To the south, it has sandy beaches but with marine herbs and to the north coral and rocky bottoms that make difficult its use for bathing activities. Presents mangroves and nesting of birds and turtles, fishing ranches in period of lobsters, school of kitesurf. The rest of the key is an ideal place to practice sports such as windsurfing and kitesurfing. Surface: 119,560m²
- Cayo Francisqui del Medio, consisting of sandy beaches, mangroves and a semicircular reef known as the pool, beautiful natural space where snorkeling is practiced. To the north of this cay the waters are shallow, with wind and ideal space to practice water sports.
- The internal landscape of these keys presents lagoons, mangroves and vegetation meadows.



7.3.Cayos Francisquises

3 Suites with a maximum capacity of
15 guests
Lot Area: 5 ha



Restaurant-Lookout
Max Lot : 5000m²

Protected Area

Main module of administration and general
services
20 Rooms
chap. Max 40 guests
Lot Surface Max. 3ha

Protected Area

Investment Opportunity

Establishment of special tourist accommodation developed on three cays with a total maximum capacity of 55 guests. It is proposed to locate in a lot of 3ha in Francisquí Arriba, 03 suites that will house 15 guests, 5 in each suite, and in 5 ha of the Francisqui Sur key, the administrative module will be developed, of general services and 20 double rooms for a total of 40 guests. In Francisquí medio, a lookout restaurant is located at 5000 m². The total hotel development would be developed on a maximum total area of 8.5ha.

Type of Accommodation: Special Tourist Accommodation Establishment	
Category	5*
Minimum area per room m ²	75
Average construction cost per room (Reference) USD \$	270.000
Average Total Cost of the Establishment (Referential) USD \$	6.210.000 20 rooms+ 3 suites

* Reference of a cost of a hotel room in the international market, according to category

Legal Condition: Land State Property

Modality of the offer: concession on land of national ownership

Zoning: Recreational (R)

Uses and activities Permitted: water sports, such as scuba diving without a bottle and with autonomous equipment, minor sailing, skiing, windsurfing, fishing with angling, sport fishing and hiking.

Maximum buildable location: 10%

Maximum height of the construction: 1 floor (5,5m)

Type of Receptive Installation: Special Accommodation

7.4. Cayos Noronquises

This group of three cays and its barrier reef form an exceptional bay that is home to a large number of sea turtles. If you enter the water with great respect and tranquility, it is possible to observe them in their natural environment.

- **Cayo Noronquí de Arriba:** mangrove areas, presence of pelicans, to the west nesting of turtles Parape or Carey, and Verde, anchorage, camping area.
- **Cayo Noronquí del Medio:** it is zone of nesting of Tortoise Parape or Carey, and Green, presence of iguanas, camping area.
- **Cayo Noronquí de Abajo:** the most visited is for its beautiful horseshoe-shaped beach, has mangrove areas, presence of seabirds such as the Pelican and the Guanaguanare, nesting of Parape tortoise, anchorage and areas for camping.



An aerial photograph of a tropical coastline. The water is a vibrant turquoise, transitioning to a lighter, sandy beach area. A small white boat is visible in the water. The land is lush green, and a small portion of a white building is visible on the shore.



Tipo de Alojamiento Especial	
Category	5* Superior
Minimum area per room m²	120
Average construction cost per room (Reference) USD \$	420.000
Average Cost of the Establishment (Referential) USD \$	5.040.000,00 (12cuartos)

Type of Installation Parareceptive: Observatory of fauna and viewpoint

8. Eco Guidelines

- **Reduction of the consumption of non-renewable natural resources**, conserving the physical integrity of the ecosystems contained in the area. It implies the use of materials from renewable natural resources (wood, bamboo, fibers, etc.) and processes of reuse and recycling.
- **Efficiency and energy rationality**, throughout the life cycle of the building, from the production of raw materials, materials and components, use and maintenance of the building (habitability, modification and possible demolition)
- **Reduction of Pollution and Toxicity**, means using cleaner construction techniques on site, avoid the use of polluting materials (lead, asbestos, PVC and others)
- **Build well from the beginning**, is to design and build for a long life, build with quality, lower cost, durability, ease of maintenance and flexibility for changes and adjustments in buildings.
- **Build under the premise of "zero waste"**, corresponds to the reduction of waste from the preventive design, reuse, recycling and disposal of waste and incineration



1.



2.



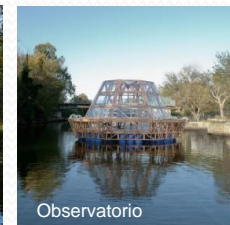
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Implementation of Structures

- 1 Seated directly on the ground
- 2 Palaphitic structures
- 3 Floating structures



Campamento

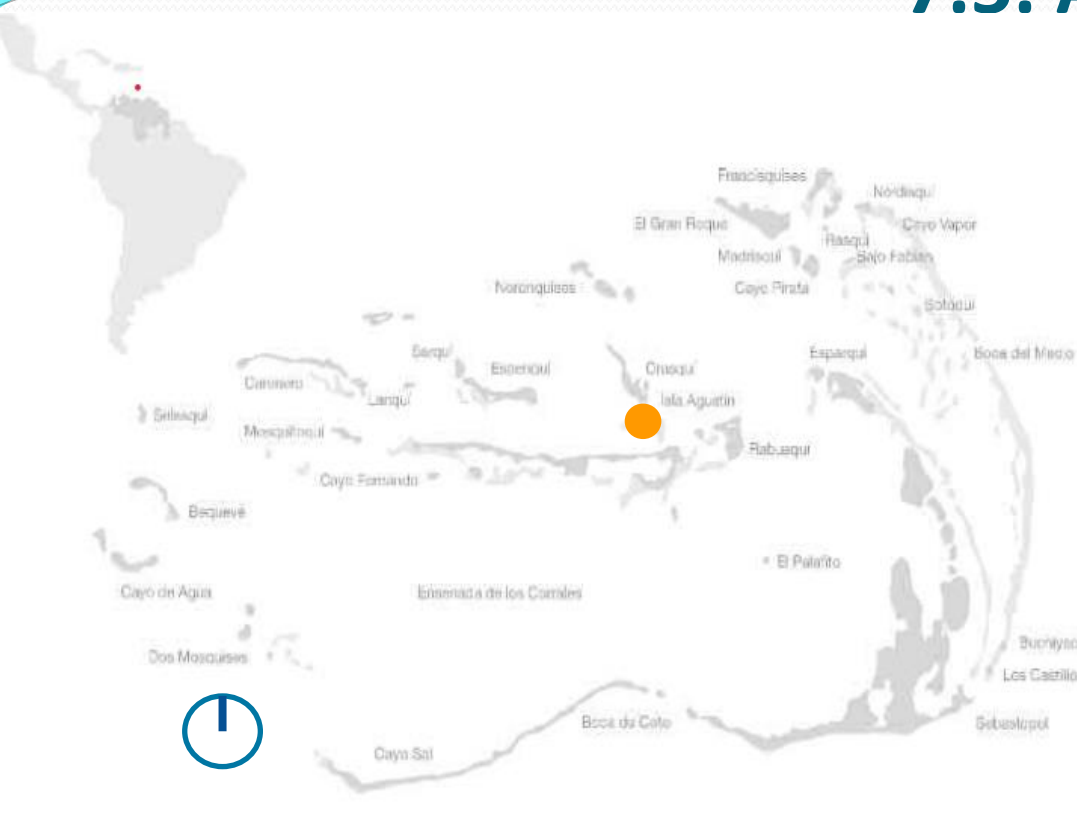


Observatorio



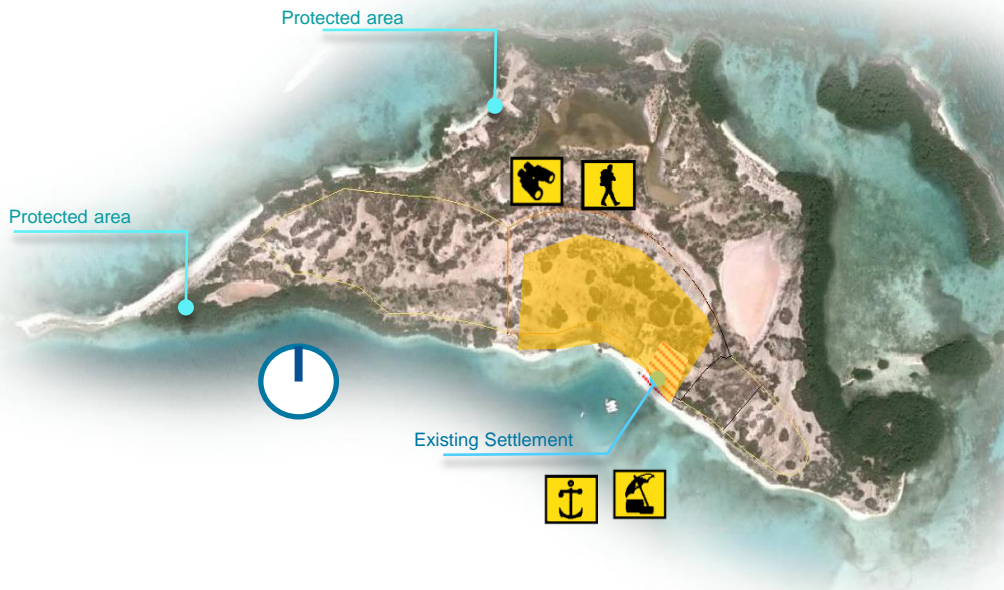
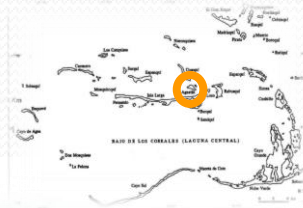
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7.5. Agustín Island/ Cayo Prestonquí



This island still conserves a set of houses, a legacy of the first fishermen who made this their home. Behind this group of unique houses there is a small beach that forms a lagoon with a mangrove barrier. Bathing in these warm waters and observing this magnificent landscape is a true gift of nature.

7.5. Agustín Island/Cayo Prestonquí



Investment Opportunity

Establishment of tourist accommodation proposed on an area of 5 hectares and a capacity of 24 guests housed in 12 double rooms, implanted on a lot of 5 hectares

Type of Accommodation Unit: Tourist Camp	
Category	5* High
Minimum area per room m ²	120
Average construction cost per room (Reference) US \$	420.000
Average construction cost of Hotel Establishment (Reference US \$)	5.040.000,00 (12rooms)

* Reference of a cost of a hotel room in the international market, according to category

Legal Condition: Land State Property

Lot area: 50,000m²

Zoning: Managed Natural Environment

Permitted uses and activities: education, research and outdoor passive recreation

Maximum location: 10%

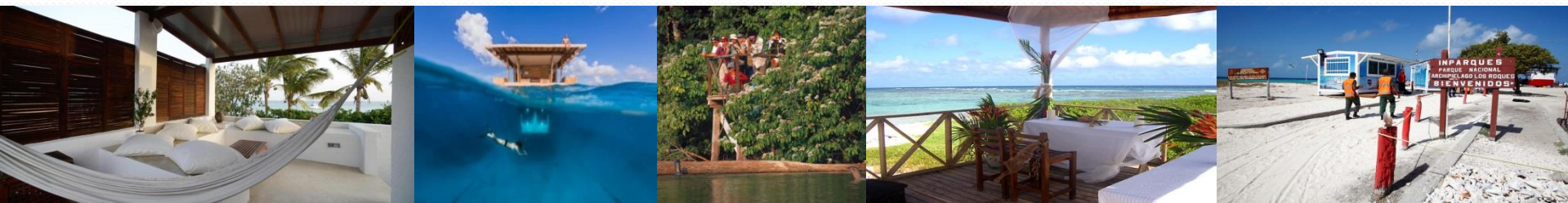
Maximum height: 1 floor (5.5m)

Type of Receptive Installation: Fixed Camp

Type of Installation Parareceptive: shelters, viewpoints, wharves, rural dining rooms, toilets, observatories.

8.1. Design and Sustainable Architecture

- Locate buildings and other structures, so as to avoid cutting significant trees and minimize disruption or significant transformation of natural features. Use, whenever possible, trees that have fallen due to natural causes (due to wind, river erosion, etc.)
- The buildings must be sufficiently spaced to allow the natural growth of the vegetation and the movement of the fauna.
- Bioclimatic design must take into account the shape of the building, its orientation, the artificial lighting of the whole should be strictly limited and controlled, in order to avoid disruption of the night life cycles of plants and animals and provide erosion controls in all buildings and trails. Take into account seasonal variations (rainfall, solar angle, etc.), seismic considerations and forecasts against tropical storms and hurricanes.
- Avoid sources of unpleasant sounds or smells near tourist facilities.
- Maintain vegetation areas adjacent to continuous or intermittent lagoons, rivers and streams as filter elements to minimize runoff of sediment and debris.
- Construction of low buildings for accommodation and other activities (maximum two levels) and always look for an overall design that has organic forms and in harmony with the environment.
- Take into account the aspects related to the control of insects, reptiles and rodents, minimizing the opportunities for intrusion, using mosquito nets, for example.
- Use local construction techniques and forms and use indigenous cultural images, as far as possible. Employ architectural forms in harmony with the natural landscape, designing with long-term environmental criteria.
- Use of innovative and sustainable alternative materials
- the use of local construction materials and indigenous techniques (but where necessary, modernized in order to achieve greater efficiency), the adaptation of architectural forms to the natural environment (buildings must not dominate the surrounding landscape and vegetation but, on the contrary, to subordinate themselves to them, since these constitute the main attraction, together with the wild fauna and, when the case arises, the native cultural environment), etc.



8.2. Alternating energy installations

- Ecological energy systems and resources with the use of alternative energy such as solar energy and wind energy, among others.
- Collection and reuse of rainwater (and where it is available: river and lake water).
- Recycling of all types of waste and garbage, natural cross ventilation instead of air conditioning, a high level of food self-sufficiency (through aquaculture, orchards, 'ecological farms', etc.),
- The landscape elements should be located in such a way that they facilitate the natural ventilation of the buildings and avoid the unnecessary consumption of energy in general. Avoid or minimize the use of air conditioning (only recommended in spaces where there may be computers or special research equipment). The design should use natural cross ventilation techniques to produce human comfort (at best, if it is unavoidable, use electric ceiling fans).
- Use of active or passive sources of solar energy (either to heat water or, in hard-to-reach places, to generate electricity), hydroelectric power and wind energy (if applicable). It is recommended to use intelligent water and energy control systems
- Water pipes should be located so as to require as little ground movement as possible, adjacent to roads and paths when possible.
- Hydroelectric power generation techniques, if used, should cause a minimum environmental impact.
- Waste management through the use of tidal energy (Ocean Thermal Energy Conversion), bio-fuel (algae, sunflower seeds, coconut oil or cactus).



Waste treatment



- Sanitary and garbage collection facilities located at strategic sites, provide environmentally appropriate methods to remove garbage (preferably, induce visitors not to throw garbage, but remove it from the corresponding natural area).
- Facilities for the recycling of waste with appropriate technologies for the treatment of organic waste such as septic tanks, compost and biogas.
- Methods to recycle wastewater for non-potable uses and treat contaminated or dirty water before returning it to the environment.
- Waste management and waste treatment with ecological sanitation techniques, recycling and natural purification of gray water, the use of sugar cane plantations for the drainage of greywater and operational incentives (internal)
- Waste treatment with the use of algae and ultraviolet radiation pools, the creation of artificial wetlands, the reuse of compost for gardening, the reconversion of gas produced into electrical energy

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