

Ecotourism as a cultural and sustainable business alternative in the Cavernas El Tocglo tourist center in Ecuador

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Abstract

This investigation arises from identifying a problem within the territory of the Tena canton, located in the north of the Ecuadorian Amazon, a biodiverse area at a natural and cultural level but that suffers from a waste of tourist attractions, especially in the Santa Rosa sector, which worsens due to the absence of adequate infrastructure, affecting the well-being of its inhabitants, who would imminently benefit from the rescue of their culture and the generation of income from ecotourism. For this reason, this project proposes the determination of the tourist potential of the study territory, to then characterize a market study, then carrying out the technical design of the ecotourism center for recreational purposes supported by a legal, administrative, environmental study and landing on the economic and financing of the project as a local business alternative,

highlighting local cultural practices, a quality service and at the same time helping to educate about the importance of preserving and safeguarding the natural environment [1].

Keywords: Ecotourism, culture business, sustainable, tourist center, Ecuador.

1. Introduction

The Tourism as a human activity has a long history [2] and at the same time it is renewed to the beat of the world situation and to tastes and social trends [3]. For this reason, it has been recognized as a fundamental activity of human health and therefore as a universal right [4] in addition, in one of the activities with the greatest contribution to the global and local economies, tourism at the ex-port level occupies the third position, as only behind fuels and chemical products, and ahead of food and the automotive industry. In many developing countries, tourism is even the first sector in exports [5] (World Tourism Organization, 2016). Within this panorama, ecotourism appears as a new option, different from the traditional forms of tourism [6]. It favors sustainability, preservation, appreciation of the natural and cultural environment, in which the most important thing is the well-being of local populations, which is reflected in the operation of companies and groups dedicated to this area [7]. (Ministry of Tourism of Ecuador, 2014). Ecuador as a biodiverse country contains wonderful territories with ecotourism potential, one of them is the Amazon [8], whose natural and cultural wealth honors the concept of ecotourism from a perspective of responsible management and use of the resource [9]. Thus, decentralized governments should encourage the creation of new conscious tourism proposals [10] such as the implementation of a recreational ecotourism center since tourism according to this type of business generates employment since it requires a considerable workforce [11], giving the possibility of improving the quality of life of the inhabitants of a sector and contributes to the conservation of natural and cultural resources [12].

2. Methodology

This research was carried out in the Puerto Napo parish, Tena canton, Napo province. The parish of Puerto Napo is in the Tena canton between the projected coordinates UTM zone 17S, Datum WGS 84., 532 meters above sea level, average temperature of 24 degrees Celsius [13]. This research was of an applied, non-experimental type, bibliographic review techniques and an exploratory, analytical and descriptive level were used. For the achievement of the project, the following objectives were met: First, the tourist potential of the parish of Puerto Napo was evaluated, which was the information available in the closest

geographical radius to the study area; This entailed carry-ing out the star diagnosis that thoroughly analyzes five territorial components known as: Physi-cal-Spatial, Ecological-Territorial, Socio-cultural, Economic-Productive and Politi-cal-Administrative [14] and followed by analysis the elements that make up the tourism system with primary information, through the SWOT matrix. It was also necessary to continue with the inventory of all the natural and cultural tourist attractions detected in the area thanks to field trips and community workshops through official files of MINTUR (2017) [15] and the INPC (2011) [16].

For the fulfillment of the second objective, a market study was carried out, analyzing both the na-tional and foreign demand, as well as the offer, with their respective projections and confrontation of both in order to determine an unsatisfied demand which was obtained thanks to the 90% ac-ceptance that The proposal had among the respondents and finally from this figure the real value of how much demand can be effectively met according to the capacity of the proposed business was taken [17].

As for the third objective, the technical design of the project is proposed considering the infor-mation from the inventory of natural and cultural attractions and the market study, with which the following was proposed: Project location, size, architectural design, requirements, marketing study, and details of all those requirements [18].

Next, the local and national legal framework in which the project will be framed, as well as the administrative and personnel needs for its future tourist operation, were studied [19].

The environmental study, as an essential requirement, especially due to the highly sensitive area where the proposal is located, was achieved thanks to the application of the Lázaro Lagos method-ology and socio-environmental impact matrix, which determines the project activities and their impact on all the elements of the ecosystem including the social part and determining how many are the positive impacts and how many are the negative ones in order to finally be able to deter-mine some mitigation measures on the activities proposed by the project for the future tourist oper-ation [20].

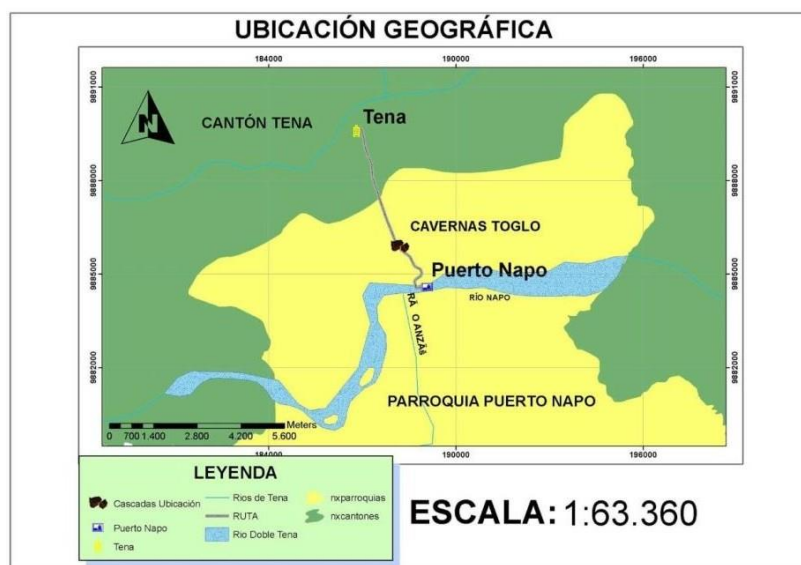
Finally, the Economic study was calculated through the analysis of fixed assets, deferred assets and working capital, sources of financing and use of funds were also considered, as well as budget of costs and expenses, costs, income, income statement and cash flow. Once the economic analysis is obtained, it is finalized with the obtaining of the financial ratios such as the VAN, IRR, Capital recovery period and Profit/Cost [21].

3. Results

EVALUATION OF THE TOURISM POTENTIAL OF THE PARISH OF PUERTO NAPO

The diagnosis was made together with primary information according to the latest PDOT 2015 update of the Puerto Napo Rural Parish Decentralized Autonomous Government, and respectively with field trips to complement information required according to the biophysical, sociocultural, productive economic, human settlements and institutional political.

Figure 1: Mapa de la parroquia de Puerto Napo



Source: Instituto Geográfico Militar, 2017s

Table No. 01. Material

TERRITORIAL SITUATIONAL DIAGNOSIS		
COMPONENT		DETAIL
a. PHYSICAL	1) Territoy	extension 215.47 km2, altitudinal range is 306 and 2010 m.s.n.m.
	2) Water	low and flat Amazon basin, 8 rivers of which 61% of the water bodies are clean.
	3) Soil	cultivated pasture plus natural forest, minor crops such as cassava, corn, and other short-cycle crops.
	4) Climate	Rains throughout the year, areas at risk of flooding, precipitation 3125 mm - 800 mm, average temperature of 24 °C. The climatic floor

		is semi-humid tropical with 80-90% humidity
	5) <i>Ecosystem</i>	Evergreen lowland forest of the Napo, Evergreen footmontane forest of Galeras, Evergreen footmontane forest on limestone outcrops of the Amazon Cordilleras.
	6) <i>Flora</i>	21 species of medicinal plants, 25 species of fruit trees and shrubs.
	7) <i>Fauna</i>	10 species of mammals, 15 species of birds and 11 species of insects and reptiles
b. SOCIO-CULTURAL	1) <i>Population</i>	5,393 inhabitants in the parish of Puerto Napo (INEC Census 2010).
	2) <i>Ethnicity</i>	Kichwas (63%), followed by the mestizo population (32.5%), whites (3%) and Afro-descendants, montubios and mulattoes (with less than 1%), the most remote communities are predominantly indigenous.
	3) <i>Level of instruction</i>	24 educational centers of all levels of education. 67% of the educational establishments are Hispanic and the rest are bilingual. The net rate of attendance at basic education is 94.45, the net rate of attendance at high school corresponds to 50.12.
	4) <i>Social organization</i>	34 communities. However, there are 53 neighborhood and community boards elected by the population and are in charge of managing services to meet the needs of the community.
c. ECONOMIC PRODUCTIVE	5) <i>EAP</i>	corresponds to 37.93% (2046 inhabitants), agriculture, livestock, forestry and fishing correspond to 56.01%.
	6) <i>Principales productos</i>	3.72% for pastures, 3.44% cocoa, 1.02% for banana, 0.93% for cassava and 0.34% for corn, cocoa; banana.
d. HUMAN SETTLEMENTS AND CONNECTIVITY	1) <i>Main products</i>	Less than 40% of human settlements are legally constituted.
	2) <i>Basic services</i>	18% are provided with drinking water and 25% of the homes have piped water. 13% of the homes in the parish have sewerage. 79.72% public network. 49% of human settlements have a collection car service. 100% fixed telephone coverage in the parish capital, but only 9% of the homes in the parish. There is internet access. The road network is made up of an asphalt road ring, with second-order roads with loose two-lane coating, passable all year round.

e. POLITICAL-ADMINISTRATIVE	<i>1)Parish executive</i>	Parish Government with structural organization chart.
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Table No. 02. Inventory of natural and cultural attractions

VALIDATION OF THE INVENTORY OF NATURAL AND CULTURAL ATTRACTIONS

NATURAL RESOURCES					
N°	Name of attractive	Category	Type	Subtype	Hierarchy
1	Latas Waterfall	Natural Site	Ríos	Waterfall	III
2	Napo River		Ríos	fast or flow rates	III
3	Yutzupino Lookout		Montañas	Lookout	II
4	Tapir Licking		Lugares de observación de flora y fauna	Fauna	II
5	Waterfall Yaku Tapir		Río	Waterfall	II
6	Birth Licking		Lugares de observación de flora y fauna	Fauna	II
7	Toglo Cavern		Fenómeno espeleológico	Cavern	II
8	Toglo Sanctuary	Cultural manifestations	Históricas	Religious demonstrations	II
9	Ceibo petroglyphs		Históricas	Archeological site	II
CULTURAL RESOURCES					
	Name of Intangible Good	Ambit		Sub scope	
1	Yachak Outfit	Social Uses, Rituals and Acts holidays		Vestimenta ritual, festiva y cotidiana	
2	Maitos, uchu manga	Knowledge and Related Uses with Nature and the Universe		daily gastronomy	

3	La Chicha de chonta, Yuca y la Wayusa	Knowledge and Uses Related to Nature and the Universe	Daily drink and holidays
4	Handicrafts	Knowledge and Related Uses with Nature and the Universe	Handicrafts
5	Dance and music	performing arts	traditional dance and music
6	Medicine	Conocimientos y Usos Relacionados	Conocimiento de la medicina
	ancestral	con la Naturaleza y el Universo	ancestral
7	beliefs and dreams	Tradiciones y Expresiones Orales	Creencias y sueños
8	Festivities	Usos Sociales, Rituales y Actos Festivos	Fiestas cívicas, religiosas, otras celebraciones

Source: Andy, 2017

MARKET STUDY

National tourist profile

Most of the potential client who would visit the project is male, 53%; Regarding age, the majority are young people between 18 and 28 years old, 32%; 20% of national tourists come from the city of Quito; and 59% have a higher education.

Regarding the travel trend, 46% do it as a family; and 50% travel for any tourist activity and to find out about tourist destinations, 31% get information online; and the average cost per day between \$5 -15 USD is 37%.

Of the 100% surveyed, 87% are unaware of the existence of a recreational ecotourism center to which 100% state that they would like to know, which is consistent with the interest of creating the project; 72% consider the infrastructure of services, information elements, classified garbage cans, trails, rest areas and viewpoints to be important; Regarding the activity of greatest interest in the ecotourism center, it is the exploration of caves 53%; 51% of those surveyed want the pool - whirlpool service; 59% are willing to visit the ecotourism center twice a month and 90% want to pay between \$2 to 4 USD to access it.

Foreign tourist profile

The potential of the foreign tourist, most of it is female 63%; Regarding age, the majority are young people between 18 and 28 years old, 38%; 25% of foreign tourists come from the United States and 63% have a higher education.

Regarding the travel trend, 38% do it in groups of friends; for what they travel to Ec-uador for tourism reasons 58%; for which the visitor 35% are

informed of tourist destinations through the internet; and when enjoying tourist activities, 33% spend between \$66 – 85 USD per day.

Of the 100% surveyed, 92% are unaware of the existence of a recreational ecotourism center to which 100% state that they would like to know, which is consistent with the interest of creating the project; 83% consider the infrastructure of services, information elements, classified garbage cans, trails, rest areas and viewpoints to be important; Regarding the activity of greatest interest in the ecotourism center, it is the exploration of caves 46%; and 54% of those surveyed want the pool-hydromassage service; 52% are willing to visit the ecotourism center twice a month and for access to it, 50% want to pay between \$5 to 10 USD.

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TECHNICAL DESIGN

Toglo Recreational Ecotourism Center will be located in the province of Napo, Tena canton, Puerto Napo parish, The El Toglo Recreational Ecotourism Center will be located in the Puerto Napo parish, in the Santa Rosa sector.

Figure 2. Micro location map



Source: Proyecto las cavernas el Toglo, 2017

To determine the size of the company, it was based on the objective demand, the same one that was calculated with 12% of the unsatisfied demand, the calculation was made for the next 5 years, obtaining semiannual, quarterly, monthly, biweekly and daily data. The number of projected clients gives us a total of 25 daily clients for the year 2018, and according to the projection it is expected to have an increase of 26 daily clients for the year 2026.

Apparent consumption with respect to the demanded services.

Tabla 3. Preference of tourist activities and services due to potential demand

Year	Potential Demand	Tourist activities and services			
		cave exploration (50%)	Hiking (16%)	Pool (52%)	Feeding (48%)
2017	119482	59741	19117	62131	57351
2018	126533	63267	20245	65797	60736
2019	134004	67002	21441	69682	64322
2020	141923	70962	22708	73800	68123
2021	150318	75159	24051	78165	72153
2022	159214	79607	25474	82791	76423

Source: Andy, 2017

The construction and areas of the ecotourism center will have the following characteristics:

The physical environment, being in contact with nature, will have a traditional style that transmits harmony with nature, which will allow the rest and recreation of visitors. The facilities will have an alternative-mixed architectural style that seeks to optimize natural resources, this in turn implies the use of multiple different materials such as stone, wood (from the area), iron and tile roof.

Areas Distribution

The purpose is to give attention and clear and true information to customers, with a friendly and professional treatment [22]. The area measures 43.86 m², it has a living room and a bathroom, equipped with the necessary utensils and furniture for the comfort of the visitor.

In addition, the food area aims to provide a quality service, consuming local food, complying with the best quality standards in the preparation of each dish, rescuing traditional flavors and recipes. The food area measures 65, 20 m² and will have the following spaces: Kitchen: The restaurant has a specific area for food preparation, it will have the necessary equipment and utensils for the preparation of each dish. Dining room: The dining room has a capacity for 24 people and its structure is made of cement and a ceramic floor, with a small wooden bar.

The purpose of the recreation area is to have ample spaces to interact with nature with adequate outdoor infrastructure, where people can enjoy large green areas, children's games, and different activities so that they can have fun. entertain and re-create, individually, in the company of family or friends. The recreation area will have the following spaces: Swimming pool: It consists of a large 17.58 m² pool with a shallow depth suitable for use by children and adults, it has changing rooms and 9.20 m² showers, made cement with tile roof. Sports court: It measures 240 m² and is designed so that they can play different disciplines such as indoor and volleyball. Children's games: It has 40 m² adequate with wooden benches, swings, seesaws, slides and a handrail, all with the necessary security. Hike, viewpoints and cave exploration: It has a 947.48 m² trail and cave exploration with a minimum duration of 30 minutes that has the necessary equipment so that visitors can enjoy nature; as for the viewpoint, it will have an area of 8.50 m², with an altitude of 7 meters where you can enjoy the general flora and fauna.

- The purpose of the parking area for vehicles and bicycles is to provide security to tourists who visit the site in their own vehicle. Vehicles: The parking lot has 200 m², will be paved, will have a capacity for ten vehicles, and has two ramps for people with disabilities. Bicycles: The bicycle parking area has 10 m², it will have capacity for 10 bicycles.

Guardian area will provide information and security to the tourist who visits the site, it has a space of 9.60 m² comfortable space to provide security facilities to the visitor inside and outside the complex.

The infrastructure of the Ecotourism Center will have a total area of 1591.42 square meters of construction distributed as follows:

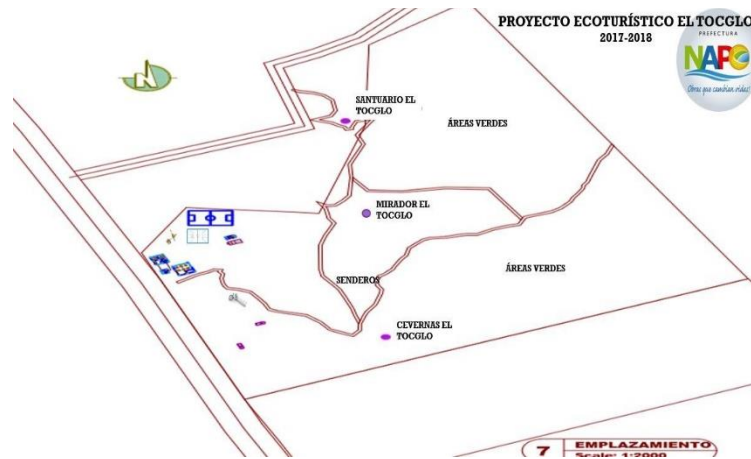
Table 4. Distribution of the areas

Description	Unit	Amount
Administration and reception area	m ²	43.86
feeding area	m ²	65.20
Guardianship	m ²	9.60
Pool	m ²	17.58
multipurpose court	m ²	240
Childish games	m ²	40
vehicle parking	m ²	200
bicycle parking	m ²	10
showers and dressing rooms	m ²	9.20
lookout	m ²	8.50
trail area	m ²	947.48
Total		1591.42

Source: Andy, 2017

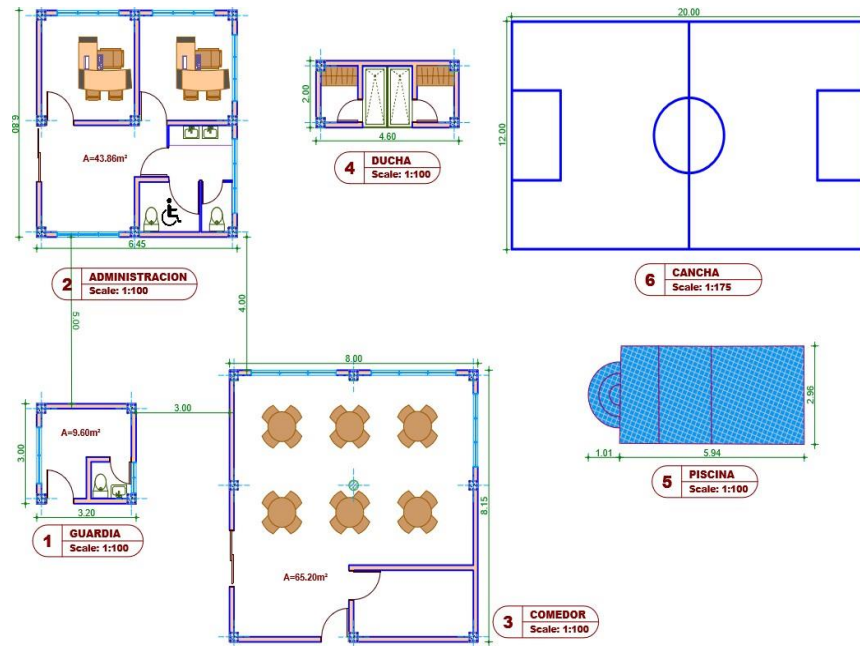
Architectural plans

Figure 3. Project design



Source: Andy, 2017.

Figure 4. Area design



Source: Andy, 2017.

In addition, the business intends to offer a varied menu of typical dishes of the region such as Creole chicken broth, juices with local fruits, American breakfast, continental and international dishes [21]. Everything that was contemplated for the economic analysis later.

Marketing

Through the profile of the national and international tourist, the following targets were identified: National target: national tourists will be people from the cities of Quito (20%), between the ages of 18 and 28 (32%), with an education university (59%). International target: international tourists are from the United States (63%), between the ages of 18 and 28 (38%), with higher education (63%).

Marketing strategies

Based on the 4 Cs of the Marketing Mix, the following is proposed:

- **Client:** the isotope of colors that identified the company, the Elements based on the main natural attractions of the place, such as caves and trees typical of the place, were considered. The identification of the product or slogan focused on different recreational activities in the green area with family and friends in a pleasant rest that determine the corporate image below:

Figure 5. Corporate image



Source: Andy, 2017

- In addition, this logo will serve to manage all the corporate identity embodied in business cards, mugs, caps, ballpoint pens, letterheads, and others.

Cost: the price of the activities was defined based on the analysis of the competition and costs, in this way they can be established and be profitable for the project, the prices will be modified according to the evolution of the market.

Table 5. Price of tourist activities

Activity	Price per pax
Hikking	\$ 2,50
Cavern Exploration	\$ 4,00
Total	\$ 5,50

Source: Andy, 2017

From this analysis, certain collection policies and very particular forms of payment of this tourist product emerged, such as cash collection.

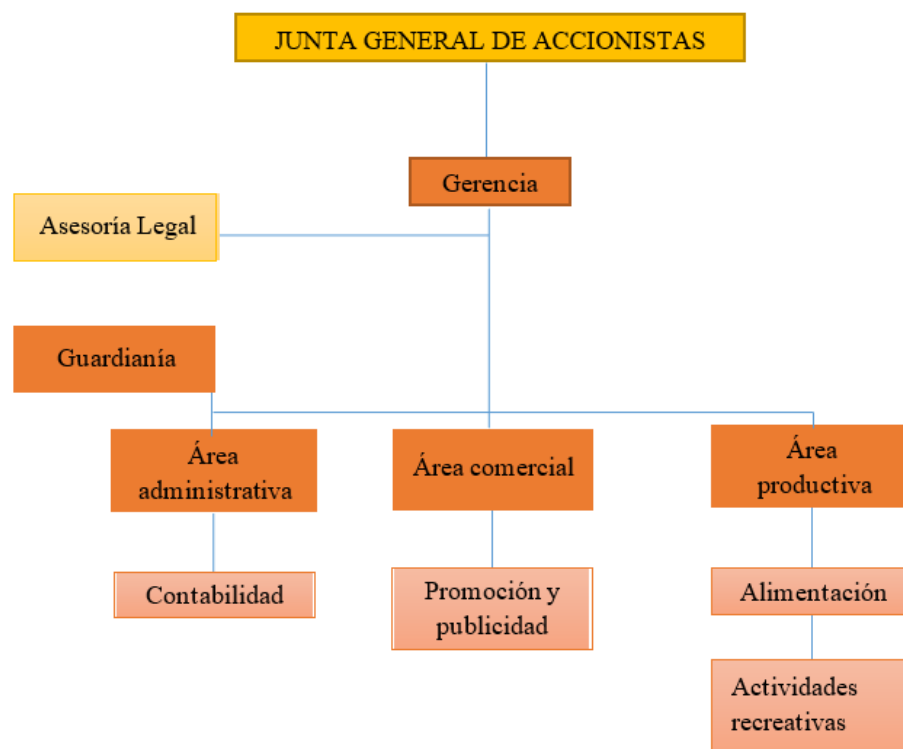
- Convenience: distribution channels were considered primarily because 50% of national tourists and 58% of foreign tourists make their trips to carry out any tourist activity. The distribution channel for the ecotourism center will be done through media-tors between the producer and the final consumer, this will be done because 28% of national tourists and 29% of foreign tourists use an agency travel, tour operator for tourism.

- Communication: advertising media for the project were established thanks to the responses of the demand in the market study, thus among the first were the website of the tourist center, social networks, online search engines, flyer, pop material, mugs, t-shirts and caps.

All the items and requirements of the commercial area were analyzed and broken down through budgets that are not detailed in this section for space. Thus, fixed assets, ex-penses, inputs and materials, human talent and deferred investments were considered.

LEGAL ADMINISTRATIVE STUDY

Figure 6. Structural organization



Source: Andy, 2017

It was possible to structure a Regulation for visitors and employees, in order to safeguard the integrity of natural, cultural and cosciocultural resources, the purpose is that the experience that the tourist has is of quality in terms of tourist service and well-being for the parish and community where the project is located.

In addition to this, a manual of functions and remuneration plots was also generated, with the purpose that the personnel that will work in the company have the knowledge and empowerment of the functions and responsibilities that they have in their work areas.

The legality of the company is established with a figure of a tourist service company with a mixed economy that is legally supported by Ecuadorian laws related to vacation complexes.

In this part of the analysis, an analysis of legal constitution expenses, fixed assets for the administrative area, supplies and materials and human talent and economic remuneration was also carried out.

ENVIRONMENTAL STUDY

For the environmental study, the construction and operational stage of the Toglo rec-reational ecotourism center was considered, the Lázaro Lagos Matrix was used through which it was possible to analyze the activities that can impact the components: water, soil, air, landscape , flora-fauna and socio-economic.

The accumulated total represents 100% of the evaluated impacts, of which 63% of the assessment is positive, while 37% represents the negative impacts, which is insignificant.

Analysis of matrix results

In general, the results obtained from the matrix are positive, yielding a value of 211 compared to the negative variable with a value of 126. This is a logical result since this project is essentially friendly to the environment since the implementation of the eco-tourism center seeks the conservation of nature.

Regarding the recreational activities that are going to be carried out within the project, it was possible to demonstrate through the matrix that the socioeconomic environmental component is the most beneficial action of the project with a positive value of 123, this since, with the implementation of the ecotourism center, the parish will have economic growth due to sources of employment.

Regarding negative aspects, the matrix showed a negative value of 36 for the flora and fauna component, basically due to the change of habitat, loss of flora and fauna; followed by the soil component of 32 this due to the compaction of the land and the tourist operation, therefore, it is essential to mitigate the socio-environmental impacts.

Mitigation measures for negative impacts

Component	Efects	Mitigation measures	Recursos	Costo
Air	gas emission	Daily technical check of the machinery to be used to verify its correct condition and prevent it from emitting more combustion gases than allowed. Regular maintenance of project appliances	Trained technical staff	\$300,00

Soil	Soil compaction Pollution by organic and inorganic waste	Control the excessive concentration of tourists Train the personnel who work in the company on how to classify waste correctly. Give instructions to visitors about the classification of waste Place signage within the visitor awareness project	Garbage cans Didactic material for training Signage that indicates about the classification of waste	\$250,00
Water	Contamination of water sources for organic and inorganic waste	Treatment of black and gray water, giving it its respective process to be used later Train staff on the proper use of water	Local labor Didactic material for workshops and talks	\$180,00
Flora and fauna	Habitat modification Loss of flora	Implement interpretive signage Re-forestation. Explain to visitors the importance of flora and fauna through a welcome talk.	Indicative and informative signage on trails Endemic plants Local labor Teaching materials	\$180,00
Landscape	Environment modification	Instructions to visitors about the classification of waste Reforestation with native plants	Trash can	\$100,00
Total				\$1010,00

ECONOMIC AND FINANCIAL STUDY

Regarding the economic analysis, calculations of project investments, sources and uses of the project, project financing, calculation of debt payment, depreciation of fixed as-sets, amortization of deferred assets, cost and expense structure, income structure, were considered. income statement and obtain cash flow.

Finally, based on the economic analysis, the financial ratios were calculated, the results of which are summarized below:

FINANCIAL RATIO	VALUE
Net present value	\$ 98417,55
Internal rate of return	18%.
Recovery period	3th year
Benefit/Cost	\$ 1,72

Source: Andy, 2017

4. Conclusions

- Through the determination of the tourist potential of the parish of Puerto Napo, it was possible to know that the tourist plant in terms of lodging and recreation sites is very reduced, in this way there are shortcomings in the service provided to tourists who visit the parish, it was possible to know that the institutions do not provide support to

projects related to tourism and in the investigation of the attractions, it has important natural and cultural resources.

- The market study determined that 8,962 clients were captured in the first year, market study acceptance data, there is 100% of national tourists and foreign tourists who agree with the project for the implementation of the Ecotourism Center project. Recreational El Toglo.
- According to the technical study, the size of the project was determined, which consists of the tourist plant as: food, recreation areas and swimming pools, constructions that are intended to be adapted in an area of 1591.42 m² located in the parish of Puerto Napo, Tena canton.
- In the administrative - legal study, the project is viable by establishing itself as a Mixed Economy Company, it is organized in the laws and guidelines based on the Companies Law together with the Ecuadorian constitution, and the regulations established mainly in the Tourism Law, in order that the project is legally defended and there is no type of complication at the time of carrying out the activity.
- The environmental study shows that the project is viable, since there is a score of 63% positive impacts and a score of 37% negative impacts, which together with a mitigation and socio-economic plan would contribute financially to the population. location of the area.
- In the economic-financial study it was determined that the project is viable due to the following indicators; Net Present Value, which is \$98,417.55 dollars, this value is presented positively; the Internal Rate of Return (IRR) is 18%, the percentage obtained is higher than the interest rate presented by financial institutions. While the Benefit/Cost Ratio is \$1.72, that is to say that for every \$1 dollar of investment, \$0.72 of profit will be obtained; and the recovery period of the invested capital will be from the third year.

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