593 Digital Publisher
CEIT
ISSN 2588-0705

Strategies for the Sustainable Management of Tourism in the Manglar Route, Ecuador

Estrategias para la Gestión Sostenible del Turismo en la Ruta del Manglar, Ecuador

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doi.org/10.33386/593dp.2023.1.1390

V8-N1 (ene-feb) 2023, pp. 188-202 | Recibido: 26 de agosto de 2022 - Aceptado: 01 de diciembre de 2022 (2 ronda rev.)l

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Cómo citar este artículo en norma APA:

Mendoza-Mendoza, B., Villacrese- Viteri, J., Vera-Vera, J., & Rengel-Vega, P., (2023). Strategies for the Sustainable Management of Tourism in the Manglar Route, Ecuador. 593 Digital Publisher CEIT, 8(1), 188-202 https://doi.org/10.33386/593dp.2023.1.1390

Descargar para Mendeley y Zotero

RESUMEN

El turismo sostenible se ha convertido en un paradigma para el desarrollo de una comunidad a escala global. Por tal motivo, el objetivo de este trabajo fue construir estrategias para la gestión sostenible de las actividades turísticas en la Ruta del Manglar, Ecuador. Para su desarrollo, se realizó una caracterización de la situación actual de los recursos naturales y culturales del área de estudio, lo que implicó las tres dimensiones (económica, social y ambiental) además, se definieron las características de la demanda potencial y se utilizó un análisis FODA como base para diseñar las estrategias enfocadas a la gestión turística del destino bajo un enfoque de sostenibilidad. Se establecieron 7 estrategias que contienen 3 programas (Tourism, Environment and Socio-economic) con 19 proyectos orientados a mejorar la actividad turística; la calidad del servicio; capacitar a la población en temas turísticos y ambientales a través del trabajo articulado entre instituciones. Los hallazgos alcanzados en la presente investigación demostraron la pertinencia de las estrategias sostenibles para el desarrollo turístico de la Ruta del Manglar.

Palabras clave: turismo sostenible; estrategias; gestión sostenible; desarrollo local; Ruta del Manglar

ABSTRACT

Sustainable tourism has become a paradigm for the development of communities on a global scale. For this reason, the objective of this work was to design strategies for the sustainable management of tourist activities in the Manglar Route, Ecuador. To this end, a characterization of the current situation of the natural and cultural resources of the study area was carried out, which involved the three dimensions of sustainability (economic, social and environmental) in addition, the characteristics of the potential demand were defined and a SWOT analysis was carried out as a basis for designing strategies focused on the destination's tourism management under a sustainability approach. 7 strategies were established that contain 3 programs distributed in the areas of tourism, environment and socio-economic issues, with 19 projects aimed at improving tourism activity; the quality of service; population training in tourism and environmental issues through joint work between institutions. The findings reached in the present research displayed the relevance of sustainable strategies for the tourist development of the Manglar Route in Ecuador.

Key words: sustainable tourism; strategies; sustainable management; local development; Manglar Route

Introduction

Sustainable development is the purpose of modern society for the conciliation of interests in order to achieve economic growth with better living conditions. In the report prepared by the World Commission on Environment and Development (WCED): Our Common Future, promoted by the United Nations (UN), it was claimed that sustainability is "The satisfaction of human needs and aspirations in the major objective of development" (UN-WCED, n.d., p.41). However, it has been a large discussion on the implications regarding sustainable development since the end of the XX century, its meaning is still diffuse (Rublev, et al., 2021; Konold & Schwietring, 2021).

Despite the fact that its concept may be complex, it takes a special connotation in the case of tourism when analyzing its activities that imply human intervention, which inevitably causes impacts, however, a negative perspective is merely environmental as positive impacts may be far greater in the social and economic dimensions than its negative effects. Indeed, since the 90s, sustainable tourism is being considered as an important factor to reach good living conditions (Ruggerio, 2021) and as a means of social cohesion (Muñoz, Nechar, & Jiménez, 2020). In this context, Tomislav (2018) states that the current understanding of sustainable development is seen under the lens of the sustainable goals prepared by the United Nations (UN). So, it can be stated that tourism can play an outstanding role in the contribution to the achievement of those goals through the generation of socio-economic and environmental benefits raised by its implementation in any territory.

On the other hand, Monge & Yagüe (2016) claimed that "sustainable tourism development pursues three important goals: economic growth, sociocultural equity and environmental conservation" (conclusions section, para. 1). Nonetheless, it is conditioned by local capacities (planning, organization and management) of communities involved (Barros, 2021). Further, sustainability is a powerful development tool that requires the systemic integration of technical considerations and ecological principles involved in the design and implementation of ecological projects. Thus, special attention to tourism planning is imperative, as it constitutes a key pillar in the implementation of activities to ensure - on one hand- the right integration of the economy and - on the other- the care about tourists' satisfaction; in turn, it becomes an indispensable factor for the feasibility of tourist projects in any territorial context. For that to happen, it is necessary to understand the implications of its multidisciplinary and inter-institutional nature, both in the use of natural resources and the interaction with local and regional communities, which are involved in a continuous process that requires constant or corrective monitoring to achieve successful development upon ecotourism bases.

In the case of Ecuador, the growing concerning about negative impacts associated to the development of tourist activities has expanded among governmental institutions and Non-Governmental Organizations (NGO) to the interest of evaluating real incidence in development levels in local communities (Mendoza, Rivera, & Vera, 2021). For Fuentes, de la Cruz, & Mendoza (2021) sustainability is not observed in the development of tourism in Ecuador. According to the Ecuadorian Ministry of Tourism (MINTUR, 2019) in 2018 tourism contributed 2.392 million dollars, which placed it as the third source of non-oil income, after bananas and shrimp exportation, however, the numbers only reflect economic implications but there are no sustainable concerns addressed in the report.

In the view of Perrone, Cajiao & Burgos (2009) tourism in marine areas is one of the most growing and potentially expanding activities in the world, mainly of that implying the sun and beach modality; however, about twenty years ago, new modalities of tourism started to show up, those have been useful to diversify the tourist supply in the natural scenario. This situation creates the need to raise mechanisms concerted through plans and projects oriented to the protection of coast ecosystems and the sustainability of production activities in the involved communities.

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For instance, nature tourism is the one of those which takes place in mangrove zones, dry and humid coast forest, as well as in beaches, bays and estuaries in great conservation state, where tourist activities such as marine mammals and birds' observation, adventure sport and experiential tourism in rural villages, are all developed on the basis of natural resources in acceptable conditions which are generally located near protected areas. In this context, public and private entities have to set out multiple initiatives to strength and boost the area as a tourism destination.

Over the last ten years, the government started working in tourism projects, strategic development and plans preparation to ensure people's welfare. In this case, the Manglar Route is one of the most affected areas by the accelerated growth of shrimp activity. The overexploitation of marine and coastal resources, combined with the weak application of policies and the low level of environmental awareness, have caused profound productive and ecological changes linked to the degradation of ecosystems, which in turn, has directly affected the fishing, shellfish and crab sector and led the community into serious socio-economic problems due to the low catch obtained from everyday-fishing activities.

The problem emerged from low catch of fish, shells and crabs, substantially cuts down economic income for family support, and the communities are forced to abandon their territory in order to seek a better quality of life. For this reason, this research studies the current development of tourist activities in the Manglar Route of the Costa Rica community, in order to design socio-economic and natural strategies that benefit its inhabitants and promote the conservation of natural and cultural resources by means of sustainable tourism practices set into programs and projects.

Materials y methods

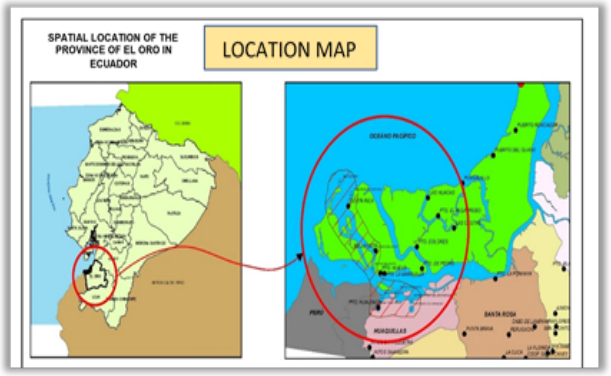
The present study exploratory study has a mixed approach, its purpose was to design strategies for the conservation and sustainable development of tourist activities in the Manglar Route.

Area under study

The Manglar Route is located in the south-western part of the Province of El Oro. It belongs to the town of Huaquillas y Santa Rosa, however, the main incidence emerged from the activities performed in the route (figure 2). It is located at the confluence of two ecological zones, the one that extends to the south of the desert type (Peru); and the area that extends to the south of the Jubones river basin at UTM coordinates: latitude 9619537 to 9618182 and longitude 590373 to 591520, in Ecuador. The area owns vegetation adapted to the dry climate and saline soils.

Figure 1.

Geographical location of the Manglar Route



Note: the map on the right shows the location of the mangrove zone in the province of El Oro (Ecuador) whereas the one on the left shows the mangrove zone affected by tourist activities. **Source:** self-reported information

Diagnosis of the area under study

The diagnosis of the Manglar Route, started from a general characterization of the area in the aspects associated with the dimensions of sustainability and territorial factors that deals with its tourism development. In this context, the geographic and hydrographic conformation and environmental state of its main resources was analyzed through the review of primary sources such as interviews with the inhabitants and the consultation of official documents such as the Plan for Development and Territorial Ordering (PDOT) and official reports from institutions and

public control organizations such as MINTUR and the MAE and on the other hand, through the application of technical visits to contrast the information available in the scientific literature with the current reality of the area under study.

Data collection

The Manglar Route has ideal characteristics for the development of ecotourism in conjunction with gastronomic activities. For this reason, a questionnaire was designed in order to learn the motivation of visitors based on the scope of ecotourism and gastronomy as the main qualities to generate capacities for the development of tourist activities in the destination. Thus, the variables considered for the questionnaire preparation were motivation for the visit, activities to develop, best time to visit, form of travel and average spending at the destination. For the data collection, a non-probabilistic sample was obtained, considering as individuals to be surveyed, the students of the Environment and Tourism careers in the nearby cities of Cuenca, Machala, Zamora and Loja, (cities located in the south of the country) as they are the most potential and actual tourist demand in the destination and to be committed to the protection of the environment. By the date of the study, the population of students (N) was 5028. Once the population was selected for the study, sample was calculated as suggested by (Torres & Salazar, 2006). The confidence level (Z) was 95%, with a success-failure (p-q) probability of 50% each, and the standard error (e) was estimated at 5%. A total of 370 surveys were collected.

Design of strategies

The design of the strategies was carried out under a community-participatory approach. To this end, working groups with local actors were built implying the public-private sector and fishermen's associations, with whom the identification of the main Strengths, Weaknesses, Opportunities and Threats (SWOT) existing in the Manglar Route. Participatory workshops were carried out to gather relevant information for the design of strategies based on the SWOT analysis which involved the application of a matrix of weighted internal, external and prioritized factors (cross-impact matrix) according to the level of incidence where 1 little, 2 regular and 3 very much. Factors with no relation were scored with 0. The implementation of the strategies is proposed according to the criteria established in the 5w2h matrix (What, When, Why, Where, Who, How Long and How Much) to draw the guidelines for the fulfillment of them, as applied in previous research works in the social sciences (Lobelles, 2021; Mesquita et al., 2021).

Results and discussion

Tourism is a multidisciplinary activity that integrates a wide variety of disciplines that contribute to knowledge and, in turn, is a catalyst for the sustainable development of the communities that carry out tourism activities. Under this background, a proposal is presented to design strategies for the sustainable management of tourism in the Manglar Route in Ecuador, for this purpose it begins with the situational diagnosis of the route, the expectations of tourists are analyzed to later design the strategies.

Situation of the natural and cultural resources in the Manglar Route

The Manglar Route has a historical richness because it was the cradle of aboriginal people in the territory known as Ecuador, since Pre-Hispanic times. Moreover, it was the land of crucial situations for the country, such as the battle of Jambelí in 1941. The rout is mainly located in the Costa Rica community, which was considered the first resort of the Jambelí Archipelago. Most of its inhabitants are dedicated to shell and crab collecting and fishing.

The Manglar Route is located at the confluence of two ecological zones, the one that extends to the south of the desert type (Peru); and the area that extends to the south of the Jubones river basin where there is vegetation adapted to the dry climate and saline soils. It has an extension of 21 km, the study area is made up of Puerto Hualtaco, Canal Internacional, Boca de Hualtaco, Pampa de los Pollos, Robalo Island, Las Banderas, Estero Isla Seca or la

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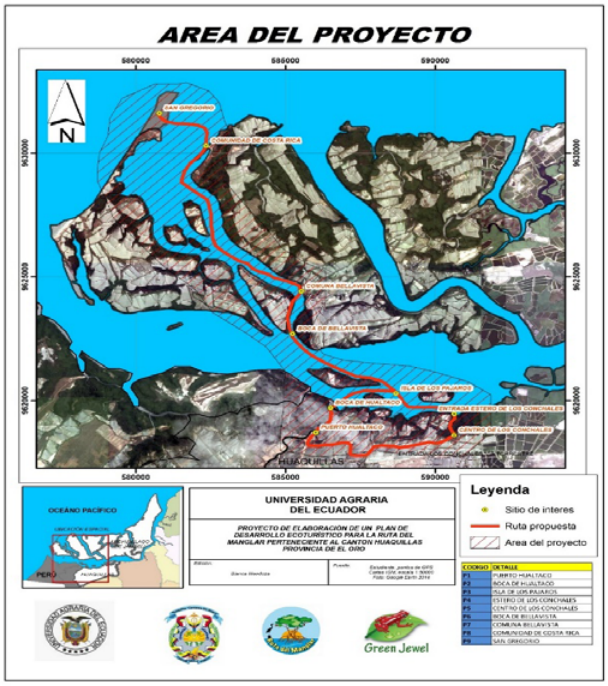
Aguada, the Seca Island or Cascajal. Therefore, it has a direct impact on the Community of the Island of Costa Rica and the San Gregorio beach.

Figure 2

Representation of the Manglar Route



Source: Proccessed on topographic platform Google Earth

The mangrove owns an ecosystem that fulfills essential functions and provides environmental services such as protecting the coasts from waves, erosion, apart from its scenic beauty. However, it has suffered serious problems of environmental degradation like deforestation (of mangrove) for the construction of shrimp pools, which represents the destruction of approximately 70% of its forest; added to the permanent pollution of estuaries and canals caused by sewage, use of chemicals for shrimp treatment, barbasco by artisanal fishermen and the disrespecting of the fishing close season.

On the other hand, the Manglar Route does not have an environmental management plan to ensure its conservation. There is only evidence that there was only established a Coastal Resources Program in agenda 21 aimed at protecting, restoring and conserving natural resources, including the mangrove ecosystem. Likewise, in 2009 the Arcoíris ecological foundation joined the development of a Management Plan for social consultation for the recovery of the mangrove zone in Puerto Hualtaco. Indeed, mangroves face serious environmental problems that are causing their biological and ecological levels to alter, affecting –in turn- human populations and especially ancestral communities, who depend on the resources and benefits of the mangrove.

Social and infrastructural problems were observed in this study. For instance, the biggest part of the fishing community lacks basic services in their homes; drinking water, and a sewerage system to adequately manage polluting waste and a health center. In the social matter, Arcoíris (2009) states that the fishing sector is made up of six organizations. This social guild is made up of people whose ages range from 20 to 60 years and have economic burdens from two to eight family members.

Tourist infrastructure is not an isolated problem, according to the survey applied to fishermen, shell fishermen and crabbers from the different associations, they state that 70.89% percent do not have infrastructure, equipment and basic services to receive tourists. 29.11% who live in the Costa Rica community state that they do have tourist infrastructure, where families have organized to provide lodging and food to tourists in their homes. Despite the fact that the fishing communities do not have sufficient tourist infrastructure to receive tourists in their homes, a few kilometers away is the Huaquillas canton, there are accommodation, restaurants, recreation and entertainment centers for visitors.

Tourism supply of attractions and its conservation state in the Manglar Route

The Hualtaco Port

With its enchanting natural environment and its sea breeze, it is today the most important tourist center on the south-western border of the country, either because of its important

ecological zone or because of its scientific value in the archaeological field. It is located on the shores of the estuary that bears the same name and that at the same time is the limit with Peru. Approximately 130 years ago it was a small port, where the small boats transporting merchandise were docked for commercial exchange with Peru. Currently, Puerto Hualtaco forms one of the five Comprehensive Territorial Intervention Programs (PITIs), directed by the Ministry of Urban Development and Housing (MIDUVI), which consists of the urban regeneration of this sector, which is characterized by the fishing trade that its inhabitants do. It is worth mentioning that the activities carried out by artisanal fishermen are limited by the water levels determined by the tides.

The Mangrove Forest

It is located within the Conchales Islands and on the sides of the estuaries of the archipelago. From the arrival moment at Puerto Hualtaco on boat, it is possible to observe the scenic beauty, flora, and fauna that inhabit this ecosystem. It can be appreciated in a better way when going four kilometers into the Aguada estuary that leads to the Seca Island of the Conchales. The natural formation of this ecosystem is made up of species of red mangrove (Rhizophora), black mangrove (Avicenniagerminans) and white mangrove (Laguncullariacemosa), among the most representative, which can measure between 2 - 5 meters high. The mangrove ecosystem is considered a source of life for a large number of species. The mangrove forest is maintained as breeding grounds for molluscs, crustaceans and fish; species that are collected by fishermen, shell fishermen and crabbers and that through this activity, the artisanal fishing sector has a source of work. However, this mangrove ecosystem and its surroundings have been altered due to the usurpation of the forests to convert them into shrimp pools and begin to exploit without measures of control and without any type of remediation of the environmental and social impacts generated.

Birdwatching at the Hualtaco Estuary

Birdwatching can be done on the Banderas Island, which corresponds to 1.5 kilometers of navigable estuary from Puerto Hualtaco, until reaching the mouth of the Capones Canal that has abundant mangroves whose height varies between 5 to 16 meters. The landscape is characterized by the exuberant and colorful vegetation that is mainly made up of high-rise mangroves bordering the estuary in an estimated extension of 1.5 km. It is home to a diversity of aquatic birds such as frigates, pelicans, kingfishers, cormorants and herons that feed on the fish that inhabit in the area.

The state of conservation is in a degradation process due to the fact that the mangrove has suffered deforestation, in addition there is the presence of solid waste used in fishing boats and chemicals applied by shrimp farms that directly affect the aquatic component of the resource.

The Dry Forest

It is located within the Seca Island of the Conchales and has an extension of 10 hectares. It belongs to Hualtaco port. This small area constitutes one of the most important habitats, since it houses a variety of endemic species of the area. This area provides great conditions to carry out research studies, environmental education and recreation and leisure activities due to the diversity of flora and fauna that it has. The state of conservation of the attraction is being altered by deforestation for the construction of shrimp farms. In addition, there is the presence of solid waste that directly affects the forest.

The Shell Mound

The Conchales, a site named for having several mounds of seashells of approximately 10 meters that form mountains of still unknown origin. It is believed that ancient human settlements were created, the same ones that accumulated and used the shells as windbreak curtains, or by bartering between neighboring towns. To visit the mounds of shells it can be done by land and by sea through the Aguada

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estuary, it is considered a site of great interest to generate educational, research and tourism activities, benefiting local populations.

The state of conservation of the shell beds is altered, due to the misuse of the shell material for the readjustment of the road, which serves as the entrance to the shrimp farm, and due to the presence of looters and visitors who steal the antiques.

The Costa Rica Community (island)

The community of Costa Rica is a very old town, located within the Jambelí Archipelago. It is a town of humble people who are dedicated to artisanal fishing, breeding and marketing of the shell. The island of Costa Rica has a unique gastronomy, for the preparation of its typical dishes for which the main resources are extracted from the estuary, the sea and the mangrove swamp (which also constitutes the food base), becoming traditional in this place. In the community it is possible to go walking around the mangrove forest through a natural trail that is easily accessible.

The state of conservation of the Costa Rica Island is in the process of deterioration due to the inappropriate use of solid waste and the discharge of sewage into estuaries, in addition to the migration of the inhabitants of the community to other cities.

Community of Fishermen, Shell Fishermen and Crabbers

The community of fishermen, shell fishermen and crabbers belong to different associations that are located in different sectors of the Huaquillas canton, the Hualtaco port and the community of Costa Rica. All the associations are made with the same goal, which is to conserve the mangrove resources. One of them is the Association of Crabbers and Annexes "January 15". Part of the work that has been developed to protect the mangroves, aims to promote the integration of local actors aimed at the rational management and conservation of the mangrove ecosystem and other natural resources of Puerto Hualtaco. All the artisanal fishermen, after carrying out their daily tasks of fishing, collecting shells and extracting crabs, move to Puerto Hualtaco to sell their products.

The San Gregorio Beach

The beach is located in the south-west area with an extension of 2 km long with regular topography. Its average width is 25 meters. The water quality is one of the fundamental aspects that affect tourism in a beach area for recreational activities. San Gregorio Island is one of the resorts with great tourist potential in the Jambelí Archipelago, it is open type, stretched out in all its context and with a minimum slope. The water that bathes the beach provides optimal conditions for recreation and leisure. The view reflects the peace and harmony of the landscape. The sand is characterized by being fine, clear and without garbage, natural phenomena and marine currents cause the shore of the beach to find shells, churos and other elements from the sea, which mix with the sand.

The state of conservation of the San Gregorio beach is good, favoring the concentration of tourism, which is more active on weekends and with greater concurrence in high seasons such as holidays and carnival.

The Typical Gastronomy

The Gastronomy offered by the Community of Costa Rica is prepared by families and they have a great variety of typical dishes, among the main ones are: shell ceviche, mixed ceviche, fish stew, grilled fish, rice with shell, soup of shell; All these dishes are prepared with fresh seafood of the day that is extracted by artisanal fishermen from the estuaries and the sea. Its main product in the preparation of its food is the shell.

Analysis of visitors' motivations and perception

The total number of individuals surveyed was 370. The analysis of the data collected showed that the 100% of respondents was interested in visiting the Manglar Route from which 83.28% would do it for tourist activities available in the destination. Nonetheless, the

biggest part of the tourists (69%) considered two predominant tourist modalities from the ones that can be performed in the route, as the most interesting (the sun and beach tourism and cultural experiences); this fact brings about the reality that the combination between the sun and beach tourism along with cultural activities is upon the consciousness of environmental care. In the question related to the most interesting sights to visit within the route, 30.79% of respondents indicated that it was the mangrove forest (contrary to what they had stated according to their preferred tourism modality) followed by visiting the San Gregorio beach which clearly evidences the tourists' visit motivation. On the other hand, food service was marked as the most relevant to the demand (89.82%) and 43.68% indicated that weekends are the most ideal days to visit the tourism attraction, from this data it is possible to infer that the tourists are also motivated by the gastronomic supply in the destination. Further, the average of expenditure resulted relatively medium-high as 77% indicated that they are willing to spend between $75 and $100 American dollars (USD) in their visits. However, 37.04% stated they organize their trips without the help of travel agencies or tour operators and a significant 41.24% indicated that the modality of tourism they are steadily motivated about is ecotourism.

In line with the results of the survey, it can be observed that data collected might present limitations caused by the actual supply of the route, as the list of activities and services, might not be totally adjusted to the visitors' expectations. However, the development of ecotourism is a highly potential modality combined to sun and beach, and the design of cultural experiences as they were pointed out as the most interesting to the demand.

SWOT analysis of the Manglar Route

The participatory workshops addressed the most influencing strengths, weaknesses, opportunities and threats (SWOT) that affect the sustainable development of tourist activities in the Manglar Route. The main factors resulting from the analysis are shown in table 1.

Table 1

SWOT of the Manglar Route

Strengths: Land and river accessibility to the attractions of the route. Natural, cultural and archaeological sites with great potential Natural wealth in the mangrove ecosystem Great gastronomic supply with competitive and convenient prices, typical gastronomy based on shellfish (crab, shell, fish and shrimp). Existence of several associations with different roles in the communities throughout the route. A fishing port for commercial activities. Existence of community tourism, ecotourism, and sun and beach in the mangrove zone. Fishing-closure seasons to protect species Permanence of dry forest and pre-Hispanic shell beds (archaeological site) important for segments of tourists who show interest in the acquisition and dissemination of scientific knowledge.	*Weaknesses:* Limited infrastructure Lack of tourist information, tourist and road signage. Weak support on the side of the local authorities for the conservation of natural, cultural and archaeological resources. Weak sense of unity among the members of the associations in the different communities. Conflicts of the fishing sector within the Fishing Unions Federation of Ecuador (FENACOPEC). Weak public-private integration to achieve a common goal. Weak maritime control by fishing authorities. Low management for the commercialization of sea products that derives on low prices. Poor financial support by governmental institutions. Deforestation caused by the growth of shrimp pools border. Weak environmental awareness and poor waste and wastewater management practices.
Opportunities: International financial support to community projects by Non-Governmental Organizations (NGO). The Marine Army provides security to the communities. Growing interest of tourists in rural and community tourism. Universities and other Scientific Research Centers Strategic partnerships to promote tourism in the destination	*Threats:* Eventual low harvesting of species caused by inadequate use of marine resources. Natural disasters (Tsunami, hurricanes, landslides, etc.) Global crisis Political instability (unexpected change of authorities, new policies) Insecurity (pirates, robberies, etc.)

Source: prepared from participatory workshops with the association's representatives of the communities in The Manglar Route.

The key factors (internal and external) outlined in the SWOT (table 1) were weighted in a cross-impact matrix according to the level of incidence where 1 little, 2 regular and 3 very much. Factors with no relation were scored with 0 as shown in table 2.

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Table 2

Cross-impact SWOT matrix

		OPPORTUNITIES						THREATHS						
		O1	O2	O3	O4	O5	T	A1	A2	A3	A4	A5	T	TG
STRENGTHS	F1	2	0	3	1	3	9	1	1	2	1	1	6	15
	F2	3	0	3	2	3	11	1	2	2	2	1	8	19
	F3	3	1	3	2	3	12	3	1	1	2	1	8	20
	F4	3	1	3	2	3	12	3	1	2	2	2	10	22
	F5	2	0	2	2	2	8	1	1	2	2	2	8	16
	F6	2	0	1	0	0	3	2	1	1	1	1	6	10
	F7	2	2	3	1	3	11	2	2	2	2	2	10	21
	F8	3	0	2	3	1	9	0	2	1	3	2	8	17
	F9	2	2	1	2	0	7	3	3	1	2	2	11	18
	T	22	6	21	16	21	83	16	14	14	17	14	75	
WEAKNESSES	D1	2	0	3	2	2	9	1	1	1	2	1	6	15
	D2	2	0	2	3	2	9	1	1	1	2	1	6	15
	D3	2	1	3	2	2	10	3	1	1	1	1	7	17
	D4	1	1	2	1	1	6	2	0	0	1	0	3	9
	D5	2	1	1	1	2	7	3	0	1	2	2	8	15
	D6	3	1	2	1	2	9	3	0	0	2	0	5	14
	D7	3	1	2	1	1	8	3	0	1	2	1	7	15
	D8	1	1	1	1	2	6	1	0	1	2	1	5	11
	D9	1	1	3	2	2	9	1	0	2	2	1	6	15
	D10	0	2	1	1	1	5	3	1	2	2	1	9	14
	D11	2	1	2	2	1	8	2	0	1	2	1	6	14
	T	19	10	22	17	18	86	23	4	11	20	10	68	
TG		41	16	43	33	39		39	18	25	37	24		

Note: Total sum of the individual weighted factor (T). Total sum of the weighted factors in the respective square (TG). **Source**: self-reported information

The cross-impact matrix led to the identification of the main SWOT that affect the destination, they are shown in table 3.

Table 3

Main SWOT in the Manglar Route

STRENGTH	S4	*Great gastronomic supply with competitive and convenient prices, typical gastronomy based on shellfish (crab, shell, fish and shrimp).*
WEAKNESS	W3	*Weak support on the side of the local authorities for the conservation of natural, cultural and archaeological resources.*
OPPORTUNITY	O1	*International financial support to community projects by Non-Governmental Organizations (NGO).*
THREATH	T1	*Eventual low harvesting of species caused by inadequate use of marine resources.*

Source: self-reported information

The weighting process based on the SWOT of the Manglar Route showed a narrow difference in the scores between the strengths and weaknesses. However, it claims that the destination is internally weak as the weaknesses square reached the highest score (86) as shown in table 2. Therefore, the destination requires the design of defensive strategies.

Strategies for the sustainable management of tourism in the Manglar Route

The modality of sustainable tourism offers a diversity of options and activities that can be developed within a natural area, for this reason, these strategies play an important role in encouraging people to develop this type of activity, while protecting the natural wealth that exists in the area. The Manglar Route has an extensive coastal area with a varied wealth of natural resources, it is a clear example of mega diversity suitable for developing ecotourism activities. The strategies proposed in this work are aimed at conservation, through programs and projects that allow promoting the socioeconomic development of the communities in the area in a sustainable way without damaging the ecosystem.

Mision:

Develop a participatory tourism compatible with the preservation of natural, cultural and archaeological resources that allows the sustainable development of the communities around the Manglar Route.

Vision:

Position the Manglar Route as a highly diverse, competitive, safe and quality leading sustainable tourism destination based on ecotourism as an effective tool for economic, social, cultural and environmental development; where the inhabitants of the communities around efficiently develop ancestral activities and proper use of natural, cultural, and archaeological resources with sustainability criteria of good practices, with infrastructure and basic services.

Main objective:

Design a proposal for programs and projects that serve as a guide for the development and tourism management of the Mangrove Route. Integrating and strengthening the local population and users of the mangrove resource under the principles of sustainable tourism.

Specific objectives:

Position and consolidate the Manglar Route as a sustainable tourist destination, with social, cultural and environmental responsibility.

Raise awareness among the population about the conservation of the mangrove ecosystem and its communities.

Implement awareness campaigns towards good practices in Sustainable Tourism Management.

Strengthen institutions in compliance with the ordinances, policies and regulations that must be complied with in the mangrove ecosystem.

Sensitize the communities about the proper use of the natural, cultural and archaeological resources that exist on the Route with the due importance of the equitable distribution of the benefits of tourism (Inter-institutional coordination for the regulation of tourists activities and strengthen the natural, cultural and archaeological attractions, developing value chains that generate added value and quality services in a way that allows the improvement of the competitiveness of the tourism sector on the Route).

Policies

Ecotourism is the development model at all management levels of the Manglar Route to boost the local economy and contribute to the achievement of the Sustainable Development Goals (SDG).

The tourism management of the route seeks a coordinated operation between the actors of the public and private sectors and the communities.

Value and conserve natural, cultural and archaeological resources, based on a balanced development of the study area.

It seeks the competitiveness of the tourism system with quality products and services for sustainability purposes and the differentiation of the value added by the local contribution to tourism.

Strategies for the sustainable development of the Manglar Route

The strategies proposed below attempt to solve the main problems identified through the diagnosis and boost local sustainable development of tourism by taking advantage of its potential attractions.

Table 4

Strategies for the sustainable management of tourism on the Manglar Route

Strengthen of the sustainable tourism activities on the Mangrove Route in the social, institutional and political spheres.
Improve and ensure the quality of the provision of services and existing natural, cultural and archaeological tourism resources
Promote partnerships between public and private institutions for the proper development and use of tourism resources.
Train and educate the local population on issues of environmental education and good practices.
Work jointly between institutions to promote the sustainable use of the marine-coastal resources of the Manglar Route.
Strengthen the institutional management to improve infrastructure and tourist facilities.
Work actively in communication and participation programs between communities and institutions
Work on the design of experiences where typical gastronomy is considered as an key factor to strengthen tourism in the Manglar Route

Source: self-reported information

Programs and projects

A programmatic proposal is presented which responds to the problems of the artisanal fishermen community and give solutions for development of sustainable tourist activities. The general programs that have been registered are the following: Tourism, Environment and Socio-economic. The projects embodied in each program, are shown in tables 5, 6 and 7 respectively.

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Table 5

Program and projects for the tourism development of the Manglar Route

TOURISM PROGRAM
Project 1: What: Promotion and dissemination of the tourism destination. Why: To regionally and internationally position the Manglar Route Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 35.000
Project 2: What: Strengthening of the Local Tourism Committee Why: To train 100% of the Local Tourism Committee Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $19.000
Project 3: What: Strengthening of the Municipal Tourism Unit Why: To strengthen and professionalize the Tourism office, so that tourism activity is developed and the ordinances, policies and regulations are reviewed Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $15.000
Project 4: What: Manglar Route CTC Legislation Why: To legally constitute the Community Tourism Center, which will be in charge of developing tourist activities. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $9.500
Project 5: What: Management and Use Agreements of archaeological shells Why: To legally constitute the Conchales of the Seca Island as an archaeological protected area. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $7.000
Project 6: What: Internships and Volunteering Why: To promote agreements with institutions for students to carry out their internships or voluntary work in the community Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $10.000
Project 7: What: Tourist Territorial Planning Why: To develop a tourism land use plan, in order to make adequate use of tourist spaces. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $10:000
Project 8: What: Tourist Information and Environmental Interpretation Center in Puerto Hualtaco Why: To implement a Tourist Information Center that contributes to promoting the tourist attractions of the Manglar Route. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $65.000
Project 9: What: Huaquillas - Los Conchales Cycle-Tourist Route Why: To implement a cycling route, connecting Huaquillas with Los Conchales of the Seca Island. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $55.000
Project 10: What: Trails and signage Why: To implement trails and signage for the promotion of tourism in the Manglar Route Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $35.000
Project 11: What: Marketing Why: To position the Manglar Route in the domestic tourism market Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $30.000
Project 12: What: Infrastructure and Equipment Why: To provide infrastructure and equipment to the communities of the Manglar Route Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 170.000
Main implementation actors: The Manglar Route Workers Committee, Municipality of Huaquillas, Municipality of Santa Rosa, Town Board, Community of Costa Rica, MINTUR, Green Jewel. Secondary and/or related actors: Provincial Government of El Oro, NGOs, International Cooperation

Source: self-reported information

Table 6 shows projects that are aimed at conserving the environment through the development of Good Management Practices (GMP) that can and should be applied by institutions, associations, organizations and educational establishments. By applying GPM in the development of daily activities, local-based participation in tourism operations is being promoted, generating social and business responsibility and respect for the communities that belongs to the Manglar Route.

Table 6

Program and projects for the sustainable environmental management of the Manglar Route

ENVIRONMENTAL PROGRAM
Project 1: What: Environmental education. Why: To design and develop training and environmental education plans and good management practices for the artisanal fishing sector and private companies in the Manglar Route. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 29.500
Project 2: What: Raising of environmental awareness Why: To raise environmental awareness through campaigns to strengthen the local population Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 20.000
Project 3: What: Building-up an environmental working team Why: To develop a plan for articulation and integration between public and private institutions that includes standards, use and conservation of the mangrove ecosystem. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 35.000
Project 4: What: Management of solid waste Why: To implement a solid waste collection and treatment system. Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 82.000
Main implementation actors: The Manglar Route Workers Committee, Municipality of Huaquillas, Municipality of Santa Rosa, Town Board, Community of Costa Rica, MINTUR, Green Jewel. Secondary and/or related actors: Provincial Government of El Oro, NGOs, International Cooperation

Source: self-reported information

Table 7 presents three fundamental projects for the social and economic development of the communities. The implementation of demonstration pens will help ensure that there is no depletion of the species during the fishing-closure season and there will be fresh products of the day being marketed at a fair price, the savings and credit bank will benefit the inhabitants to be able to get credits. This will improve the quality of life of the communities.

Table 7. Program and projects for the sustainable socio-economic development of the Manglar Route

SOCIO-ECONOMIC PROGRAM
Project 1: What: Demonstration Corrals of Shells and Crabs Why: To contribute to provide development solutions and avoid overexploitation of marine-coastal resources Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 17.000
Project 2: What: Commercialization of Coastal Marine Products Why: To improve the living conditions of the artisanal fishermen community and reduce pressure on ecosystem Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 15.000
Project 3: What: Building-up a Maglar's Common Fund Why: To raise money to contribute to the development of the artisanal fishing sector Where: Manglar Route Who: Ministry of Tourism of Ecuador, Non-Governmental Organizations (NGO), private sector, and Community Tourism Center (CTC) How long: 5 years How much: $ 10.000
Main implementation actors: The Manglar Route Workers Committee, Municipality of Huaquillas, Municipality of Santa Rosa, Town Board, Community of Costa Rica, MINTUR, Green Jewel. Secondary and/or related actors: Provincial Government of El Oro, NGOs, International Cooperation

Source: self-reported information

The strategies presented in tables 5,6 and 7 will only be functional by the integrations of

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main and secondary actors related to the tourism sector. As shown in the aforementioned tables, all the projects are planned to be end after five years and the responsible actors for their implementation are the public, private and community sectors.

Conclusions

Literature review demonstrated that sustainable development is still a complex concept that is understood from different perspectives. Also, it was claimed that sustainability in tourism is strongly conditioned by the capacity of communities to plan and manage programs and projects in this field. In the context of tourism in Ecuador, there are critical perceptions of researchers who evaluate sustainability in tourism as limited. In the case of this research, the characterization of the current situation of the natural and cultural resources of the Manglar Route, allowed to learn that the area has an important natural wealth conducive to the development of ecotourism. In addition, it was perceived that the destination has highly relevant cultural resources, especially in the gastronomic field with cuisine related to seafood. However, deficiencies in terms of environmental management to safeguard the natural and cultural heritage, and serious social problems ranging from the lack of basic services to the conflict of interest between community organizations and associations were detected.

The tourist demand appears with a marked trend to sun and beach tourism but there is another important group motivated by cultural activities performed in the destination, such as food service which turned out to be the most interesting to visitors. Despite the fact that the practical implications of the survey might result limited for decision-making or planning, it can be inferred from the visitors' answers that the combination of ecotourism (alternative) along with typical gastronomy and sun and beach tourism (traditional) is highly potential and must be managed upon a community-based model to propitiate sustainable tourism development.

The strategic analysis SWOT determined that the Manglar Route faces a weak support on the side of the local authorities for the conservation of natural, cultural and archaeological resources despite its richness. In order to contribute to the conservation of resources, and the sustainable development of the destination, seven strategies were designed which embody a total of nineteen projects distributed among three types of programs (tourism, socio-economic and environmental) which are proposed to solve problems that stop the Manglar Route to succeed sustainably. Strategies address sustainability in the implementation of tourist activities, quality of service provision, public and private partnerships, local population training in tourism, infrastructure and tourist facilities enhancement and coordinated work.

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