Links of the Ecotourism Value Chain in San Carlos, Sonora, Mexico

Eslabones de la Cadena de Valor del Ecoturismo en San Carlos, Sonora, México

Marisela Aldecoa-León[1], Jesús Ángel Enríquez Acosta[2]
y José Humberto López Caballero[3]

1 Corresponding author: PhD in Regional Development and Master's in Social Sciences. Level C Professor at Universidad de Sonora.
E-mail address: marisela.aldecoa@unison.mx. ORCID: http://orcid.org/0000-0003-1805-1212.

2 PhD in Political and Social Sciences and Master's in Social Sciences. Research Professor in the Department of Sociology and Public Administration at Universidad de Sonora.
E-mail address: jesus.enriquez@unison.mx. ORCID: https://orcid.org/0000-0002-0931-8491.

3 PhD in Educational Administration and full-time Professor in the Department of Accounting at Universidad de Sonora.
E-mail address: humberto.lopez@unison.mx. ORCID: https://orcid.org/0009-0005-9750-4356.

Abstract

This study explores ecotourism and its potential to promote sustainable regional development (SRD) in a tourism-dependent area, specifically San Carlos, Sonora, Mexico (SCSM). The main objective is to characterize ecotourism activities in SCSM through the lens of value chains, analyzing the links that make up the Ecotourism Value Chain (EVC). The research employs a mixed methodology, including participant observation, semi-structured interviews, and the collection of 359 questionnaires. The results indicate that the locality has strong links in ecotourism activities, restaurant services, and hospitality. However, significant deficiencies were identified in marketing and both public and private transportation. Additionally, a notable disconnection between ecotourism businesses and other components of the EVC, hindering effective integration.

Key Words: Ecotourism, tourism value chain, mixed approach, San-Carlos-Sonora-México

JEL Codes: Z3, Z32

Resumen

Este estudio aborda la problemática de la dependencia del turismo en San Carlos, Sonora, México (SCSM), identificando como desafío principal la fragmentación de la cadena de valor (CV) del ecoturismo. Esta desconexión entre los actores clave limita el desarrollo regional sostenible (DRS) y el aprovechamiento integral de los recursos turísticos. El objetivo principal es caracterizar la actividad ecoturística en SCSM desde el enfoque de las cadenas de valor, identificando fortalezas y debilidades en sus eslabones. La investigación emplea un enfoque metodológico mixto, que incluye observación participante, entrevistas semiestructuradas y la recolección de 359 cuestionarios. Los resultados revelan que la localidad presenta eslabones sólidos en cuanto a las actividades ecoturísticas, servicios de restauranteros y hotelería. Sin embargo, se observan deficiencias significativas en términos de comercialización y transporte tanto público como privado. Además, se constató una notable desconexión entre las empresas ecoturísticas y los otros componentes de la CV, lo que impide una integración efectiva.

Palabras clave: Ecoturismo, cadena de valor turística, enfoque mixto, San-Carlos-Sonora-México

Códigos JEL: Z3, Z32

Introduction

This work presents an analysis of the CV of ecotourism in SCSM, recognizing it as a powerful tool for strategic planning, value creation, and cost minimization (Vergara, Acevedo, & González, 2019). As previously noted by ECLAC (2012) and ECLAC (2016), socio-economic progress depends on sectors and activities that drive dynamic productive growth, positively impacting production, employment, and international integration while promoting environmental conservation, the application of technological advancements, and the implementation of public policies aimed at equality. Following Padilla and Oddone (2017), in response to the global financial crisis (2008-2009), Caribbean and Latin American governments have increasingly focused on industrial policy. Countries such as Guatemala and El Salvador have implemented national plans for industrial policy development, crucial for defining objectives and priorities, influencing productive sectors, coordinating with other policies, and determining criteria for identifying the value chains that will benefit throughout the plan's duration. In contrast, Mexico and Costa Rica have implemented programs aimed at enhancing competitiveness and strengthening value chains.

The analysis of value chains helps identify constraints and develop strategies at different levels of participation within the chain, with the objective of increasing productivity and adding more value. According to the previously mentioned authors, reinforcing value chains fosters production diversification and structural transformation. This process involves increasing participation in more complex activities, shifting from simple tasks to those requiring greater sophistication.

In this study, integrating the concept of value chains into the analysis of ecotourism is considered essential, as it allows for identifying the strongest or most vulnerable links within this activity. This will facilitate a thorough examination of the actual involvement of all actors, creating the opportunities to propose new tourism management models. These schemes would be based on norms and strategies that span multiple sectors and departments, fostering coordinated public action.

Therefore, this study aims to characterize ecotourism activity in SCSM through the lens of value chains. To achieve this, the text is structured as follows, the first section provides an initial introduction, followed by a literature review in the second section. The third section describes the methodology, while the fourth presents and discusses the study's results. The fifth section outlines the conclusions, and finally, the sixth includes the bibliographic references. Theoretical and empirical findings are considered useful for ecotourism management.

2. Theoretical Framework of Tourism Value Chains

The concept of value chains in tourism helps identify the various actors that form links within the chain, providing a holistic and innovative perspective on how tourism functions (Yumisaca et al., 2020). Similar to other value chains, it is essential to recognize the complexity of each link, as each one may be connected to multiple products (Oddone & Alarcón, 2017a).

Since tourism is an industry that encompasses diverse activities, actors, locations, and roles, its development and planning consider value-added activities that naturally form tourism value chains. These chains emerge at different scales and across all tourism modalities, with slight practical differences, generating benefits for suppliers, consumers, and key stakeholders (Sutomo et al., 2023).

Oddone and Alarcón (2017) describe the process as beginning with the tourist's initial desire to travel. The tourist purchases a ticket through a travel agency, a tour operator, or an online platform. The next step involves additional services such as airport transfers, currency exchange offices, and documentation procedures. Upon arrival at the destination, the tourist engages with various local services that enhance their experience, including tour operators, transportation companies, accommodations, gastronomic services, and excursions. Additionally, purchases of souvenirs and other goods contribute to local value chains, generating employment and income for the community.

In summary, Ávalos et al., (2022) state that the fundamental links in a tourism value chain include the product, service provision, accommodation, food, intermediation, and transportation.

Similarly, according to Alvarado et al. (2017), the tourism value chain consists of:

Table 1. Components of the value chain

TERRITORY	COMPONENTS OF THE CHAIN	FOOD PRODUCT SUPPLIERS
1. Tourism Territorial Planning Sectoral Plan	1. Tourists	
	2. Distributors	1. Agricultural Producers
	3. Means of Transportation	2. Fishermen
	4. Accomodation	3. Tour Guides
	5. Food Services	

Own elaboration based on the postulates of Alvarado et al (2017).

Intermediaries play a key role in the evolution and consolidation of destinations and products, as well as in the management of value chains (VC). Each link in the chain contributes to the overall value of a destination; if any of the elements fails to maintain an adequate level of quality, it can negatively impact the tourist's overall perception, as they evaluate the experience as a whole (Oddone & Alarcón, 2017a).

Pulido-Fernández and López-Sánchez (2016), argue that the value chain concept is essential for analyzing and planning ecotourism activities. They emphasize that this approach enables an innovative, holistic analysis of tourism, helping to establish the necessary guidelines for integrating sustainability as a strategic pillar in tourism management and in the competitive positioning of destinations within the markets.

Furthermore, López et al. (2008) describes the value chain as a collaborative framework among different organization, aimed at generating shared benefits, aligning goals with market demands, and maintaining a continuous flow of information between the involved parties. This model prioritizes quality, through a well-connected organizational structure.

Mapping these activities is crucial, as it provides a clear visualization of each stage of the process and the stakeholders involved. This approach facilitates the identification of market opportunities and the interaction between supply and demand (ILO, 2015). Pulido-Fernández and López-Sánchez (2016) highlight that it is an invaluable tool for tourism policy, as well as analysis planning and management, offering a comprehensive view of each link in the chain.

Its application allows for: the recognition of participants in tourism and their ability to manage and negotiate, an increase in community awareness of the benefits of tourism, resource management with contributions from direct stakeholders and institutional support, the promotion and consolidation of the destination by business actors and committees, and the integration of new stakeholders due to the recognition of consistent and responsible work (López et al., 2008).

However, it is important to highlight that, according to the previously mentioned authors, various challenges have been identified in the development of ecotourism experiences. Among these difficulties is the pressure on stakeholders to achieve short-term results, which can undermine credibility when actions progress slowly. Additionally, conflicts may arise among chain members, as some prioritize competition over collaboration, though establishing common objectives can strengthen collaboration. Another significant obstacle is the reluctance of official agencies to actively engage, despite their crucial role in policy guidance and resource allocation.

Finally, López et al. (2008) highlights key challenges in applying the value chain approach, including the consolidating and increasing the recognition of destinations, ensuring the fair and equitable distribution of benefits, developing unique and distinctive products, improving stakeholder coordination to strengthen destinations, and enhancing organizational and management capacity.

3. Methodology

The methodological design followed a mixed approach, combining qualitative and quantitative techniques to analyze the ecotourism value chain in San Carlos, Sonora. For quantitative data collection, convenience sampling was employed, as surveys were conducted at various ecotourism sites with visitors who were available and willing to participate. The selected locations included beaches, trails, and protected areas, representing a diverse range of tourist sites characteristic of the region.

The sample size, consisting of 359 surveys, was determined using the formula for infinite populations, considering a 5% margin of error and a 95% confidence level. This approach was necessary due to the lack of specific data on the average ecotourism population in the region. Although convenience sampling presents certain limitations

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in statistical representativeness, efforts were made to distribute surveys across different times and days to capture a broad spectrum of perspectives and visitor profiles.

In the qualitative phase, 13 semi-structured interviews were conducted with guides and entrepreneurs in the sector. Participants were intentionally selected based on criteria such as their experience in the ecotourism sector and involvement in key activities, allowing for a deeper understanding of the internal dynamics of the value chain.

The methodology was developed based on the first stage of the methodological model for Ecotourism and Sustainable Tourism Value Chains by López et al. (2008), titled "Development of the Chain," as well as the structural framework proposed by Alvarado, Oddone, & Gil (2017). The resulting structure consists of four levels:

Development of the Chain. - The objective is to understand how the value chain operates within ecotourism by identifying the attractions, products, services, involved actors, and the relationships that exist among them. To facilitate analysis, the study has been divided into four stages:

The Object of Study: SCSM. - Secondary information available about the area under analysis was collected.

Identification and characterization of attractions. - This process was carried out through participant observation, which involved creating a detailed inventory that characterized the ecotourism attractions. Several indicators were considered, such as: accessibility, promotional activities, site appeal, guides, infrastructure, service providers, safety, and complementary services.

Structure of the Ecotourism Value Chain. – The different links that make up the ecotourism value chain are detailed and explained: accommodation, marketing, guides and sector entrepreneurs, food services, transportation, and visitors. Information was collected through semi-structured interviews and questionnaires. Thirteen interviews were conducted with ecotourism guides and/or entrepreneurs, of whom 10 were men and 3 were women, aged between 31 and 60 years. Nine of them hold certification as tour guides, and eight manage businesses related to ecotourism. Additionally, 359 of the questionnaires applied to tourists were validated, allowing for an analysis of their profiles.

Mapping the value chain. – Finally, based on the collected information, a diagram of the value chain is developed, visualizing the links and their lack of interactions.

4. Results. The Development of the Chain

4.1 The Object of Study: SCSM.

SCSM is part of the urban area of Guaymas, which economy is diversified across sectors such as agriculture, livestock, fishing, maquiladoras, and, most notably, tourism (H. Ayuntamiento de Guaymas, 2019). Tourism plays a crucial role in the region, attracting approximately 850,000 domestic tourists and around 200,000 international visitors annually, mostly from the United States and Canada. This sector generates about 9,000 jobs, with around 3,000 being direct jobs. In 2023, the hotel infrastructure offered over 2,000 rooms, with an occupancy rate of 56%. Tourism revenues in SCSM reached 260 million pesos, solidifying the area as one of the most important tourist destinations in the state of Sonora (INEGI, 2020a; Mexico News Daily, 2023).

SCSM is located 117 km south of Hermosillo, the capital of Sonora, and 416 km from the U.S. border. Its beaches, situated on the western coast of Mexico, form part of the Sea of Cortez.

Figure 1. Geographic location

Source: Google Maps. (n.d.). Location of San Carlos, Sonora, Mexico.
https://www.google.com.mx/maps/place/85506+San+Carlos,+Son./@29.8310602,-113.2725066,7z/data=!4m6!
3m5!1s0x86c96319f9360f85:0x544470a59a1fc6d8!8m2!3d27.9617875!4d-111.0370989!16zL20vMDZtd3Q1?entry=
ttu&g_ep=EgoyMDIoMTAwOC4wIKXMDSoASAFQAw%3D%3D

It is characterized by desert vegetation, a natural marine environment, and a notable high-level tourism offering (Playas México, 2019). Its reddish hills and warm waters further enhance the area's appeal. During the warmer months of July and August, SCSM is mainly visited by domestic tourists, with temperatures ranging from 23°C to 40°C. In contrast, December and January, which see the highest influx of tourists from the United States and Canada, have average temperatures ranging between 8°C and 27°C (AccuWeather, 2023). .

The development of SCSM as a tourist destination began in 1964, driven by the growth of the real estate sector, which focused on attracting second-home visitors, mainly from the United States and Canada (García, 2011). This development was spearheaded by Rafael T. Caballero, who was instrumental in securing the official recognition of the bay as "Bahía de SCSM Nuevo Guaymas" by the H. Congress of the State of Sonora.

Weekend tourism, primarily from Hermosillo and Obregon, has played a significant role in the growth of SCSM. However, its distance of approximately 420 km from Tucson, Arizona, has made it difficult for the area to become a popular destination for weekend visitors from that city (García, 2011). To address this challenge, the state government launched programs such as OnlySonora, which allows the temporary importation of vehicles by foreigners and Mexicans residing abroad, authorizing their circulation exclusively within Sonora.

Today, SCSM has established itself as one of the primary tourist destinations in Sonora, with a population of 2,508 residents, including those of U.S. and Canadian origin (INEGI, 2020a). The town boasts 45 restaurants, 12 hotels, and a wide variety of vacational rental houses l (INEGI, 2020b).

According to a study by Chavez and Enriquez (2022), SCSM achieved a Competitiveness Index of 51%, establishing itself as the second most competitive tourist destination in Sonora. This success is attributed to its strategic location, natural attractions, adequate infrastructure, and services designed to satisfy visitors, as well as its well-regarded market image.

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4.2 Identification and Characterization of the Attractions

Through participant observation, a qualitative data collection technique, the necessary information was gathered to create an inventory that characterizes the attractions (Table 2). These were considered as such because they have the infrastructure required for various activities. For example, Rancho Nuevo, Rancho del Desierto, the three beaches of Los Algodones, and the Pearl Farm are private properties where tourist activities are carried out within defined areas. In contrast, places such as the inclusive beach, the SCSM sign, Estero El Soldado, the Mirador, and the Delfinario are managed by public organizations. As for public spaces such as the cliff/sundial, Isla San Pedro Nolasco, the Sawari trail, and the Aquarium, it was noted that private companies provide services at these locations. The indicators evaluated in the inventory include: promotion, service providers, infrastructure, guides, appeal, and accessibility.

Ecotourism resources in SCSM add value and provide an additional attraction for those visiting the bay. These elements are crucial in encouraging tourists to extend their stay or return multiple times, as they enhance the variety of experiences available in the area. Additionally, they help disperse the influx of visitors, preventing overcrowding in any one location and encouraging the exploration of different points throughout the area, which in turn improves local tourism management.

4.3 Structure of the Ecotourism Value Chain in SCSM.

Following the proposals of Alvarado et al. (2017) and Oddone and Alarcón (2017a), the fundamental components of the ecotourism value chain include accommodation, marketing strategies, ecotourism guides and operators, transportation, food and beverage services, and tourists.

In the context of SCSM, each of these elements has its own characteristics, which are described below:

Ecotourism Guides and Entrepreneurs

According to the interviews, most ecotourism businesses (Table 3) are identified as family-owned businesses, such as Gary Shop, Enrike's Adventures, and Rancho Nuevo, or as micro-businesses, including Rancho del Desierto, Playa Libre, Playa Cobro, El Mar Diving Center, Cañón de Nacapule, and Beach Club Marinaterra. Only two, the Delfinario and Estero El Soldado, are managed by the Commission

Table 2. Identification and Characterization of Ecotourism Attractions in SCSM

	Attraction	Accessibility	Infrastructure	Service Providers	Guides	Promotion
	Granja de Perlas	Yes	Yes	Perlas del Mar de Cortez	*In situ*	Yes
	Estero el Soldado	Yes	Yes	Cedes	*In situ*	No
	Playa Inclusiva	Yes	Abandoned	Ayuntamiento de Guaymas	No	No
	Mirador	Yes	Yes	Ayuntamiento y Gobierno del Estado	No	No
Playa los Algodones	Playa libre	Yes	Yes	Playa libre	No	No
	Playa cobro	Yes	Yes	Playa cobro	No	No
	Playa Paradiso	Yes	No	Caseta de cobro	No	No
	Playa San Francisco	Yes	No	No	No	No
	Cerro Tetakawi	Yes	No	No	Privados	No
	Cañón de Nacapule	Yes	Bathrooms, lack of maintenance	Cañón de Nacapule	Privados	No
	Delfinario	Yes	Yes	Cedes	In situ	No
	Isla San Pedro Nolasco	Yacht or boat.	No	No	No	No
	El Acuario	Yacht, boat, or walk	No	No	No	No
	Rancho Nuevo	Yes	Well-defined roads and trails	Rancho Nuevo	*On-site and private*	No
	Sendero Sawari	Yes	No	Hotel Sawari	In situ	No
	Acantilado, Reloj Solar	Privatized access by houses	No	No	Private	No
	Rancho del desierto	Yes	Yes	Rancho del desierto	*In situ*	No
	Letrero "San Carlos"	Yes	No	Ayuntamiento de Guaymas	No	No

Source: Own elaboration based on field information.

for Ecology and Sustainable Development (CEDES). These businesses operate independently, without being part of cooperatives, associations, or clusters. Fundings for these businesses comes from private and local sources. Regarding employment, it is estimated that approximately 162 jobs are generated by this sector. Interviewees mentioned that they are not aware of any policies that promote ecotourism.

According to the directory of tour guides, there are currently nine certified guides in SCSM. During the fieldwork, three additional individuals were identified working as ecotourism guides. Although all of them claimed to be certified, some mentioned that their certification was not up to date. Regarding the owners of ecotourism businesses, it was observed that most of them, except for Cañón de Nacapule, also take on the role of guides for the activities they offer.

Visitors

According to data from the Convention and Visitors Office (OCV), the Guaymas-San Carlos region recorded a significant tourist flow in 2023, attracting over 600,000 visitors. This accounted for approximately 11% of the total number of tourists who visited the state of Sonora, positioning SCSM as one of the state's most prominent tourist destinations, surpassed by Puerto Peñasco and Hermosillo (Meganoticias, 2023; OCV, 2023).

Based on the results obtained from the surveys and fieldwork observations, it can be concluded that ecotourism in the area, although still in its early stages, has experienced consistent and notable growth. The majority of ecotourists are day-trippers or weekend travelers who prefer to travel in groups, either with friends or family, with no significant gender differences observed. This group is mostly composed of young adults, aged between 15 and 64, with 51% falling in the 28-42 age range, and an average age of 31. The demographic is highly educated, with income levels ranging from medium to high.

The average spending of ecotourists in SCSM amounts to $7,614 pesos. An analysis conducted using cluster segmentation techniques revealed three main segments: 23% of ecotourists spend approximately $10,106; 38% allocate around $6,037 pesos; and 39% spend about $1,492 pesos. Common interests among these tourists include a connection with nature, an appreciation of local culture, gastronomy, and interaction with local communities. These preferences highlight their desire for a comprehensive and authentic experience at the destination.

Commercialization

The selection of a tourist site or activity depends on various factors, both internal and external. Internal factors include personal tastes and preferences, while external factors encompass the available information (Pérez and Echarri, 2021). In terms of the latter it was found that:

Table 3. SCSM: Ecotourism Service Providers

Atractivo	Tipo de empresa		Origen de capital	Empleos	Conocen políticas de fomento
	Por tamaño	Cooperativa, asociación o clúster			
Rancho Nuevo	Family-owned	No	Private	5	No
Rancho del Desierto	Micro	No	Private	3	No
Playa los Algodones	Free beach	No	None	Private	2
Playa los Algodones	Pay beach	No	None	Private	10
Marina San Carlos	Pyme	No	Private	120	No
Granja de Perlas	Pyme	No	Private	Sd	No
Gary Shop	Family	No	Private	3	No
Estero el Soldado	Micro	No	Governmental	4	No
Enríke's Adventures	Family	No	Private	2	No
El Mar Diving Center	Micro	No	Private	2	No
Delfinario	Governmental	No	Governmental	Sd	No
Cañón de Nacapule	Micro	No	Private	10	No
Beach Club Marinaterra	Micro	No	Private	1	No

Note: 'Sd' indicates that no specific information is available for this category.
Source: Own elaboration. Data collected through semi-structured interviews and direct field observation during the study conducted in SCSM.

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- Ecotourists in SCSM usually organize their itinerary primarily based on recommendations from acquaintances. Most visitors arrive at the activities independently, using their private vehicles, and in less frequent cases, they hire the services of a guide.

- Despite the high interest and preparation of the guides, their operational reach is limited, as, like many of the tourist attractions in the area, their existence is not well known. Nearly 50% of the interviewees, both tourists and locals, stated that they are unaware or do not know how to contact a guide.

- No travel circuits/packages were found that integrate activities, hotels, restaurants, souvenirs, etc., or even a promotional alliance between these elements. According to Parillo (2022), the tourist package is more commercial, secure, and complete. It also helps in the revaluation of the territory, facilitates promotion, and is more practical for tourists in terms of planning time.

- Although the significant role of travel agencies and their influence on decision-making is well known (Cortés, Cañas, & Sarmiento, 2019), the role of intermediaries in SCSM, Sonora, is nonexistent.

In the words of an interviewee:

> In this place, we don't have a single point where visitors can come to ask for information, so that anyone, regardless of their situation, can receive at least the basics... like what's going on with the area, how it's doing, and how far someone who struggles to move or has trouble seeing or hearing can go. (Ignacio, 59 years)

There is a Convention and Visitors Office; however, its location is not very visible, which hinders its ability to interact with the diverse range of tourism stakeholders. According to statements made in interviews, its reach is limited to distributing brochures to those who arrive directly at the office, as its main focus seems to be on promoting overnight stays in hotels.

Transportation

One of the main difficulties identified is the area's poor connectivity. There is no adequate transportation system to access the area or to move around within it. Public transportation is not useful for tourists, and taxi service is limited. In reality, the only viable option for visitors is the use of private vehicles. As one interviewee mentioned:

- You arrive wanting to go to Nacapule... and there's no way to get there! It's that simple! There should at least be a bus that runs from Guaymas to San Carlos regularly, let's say every hour; and then, from San Carlos, there should be direct transportation to the canyon. That's where we lack a key connection.
(Ignacio, 59 años)

- There are no buses, no taxis, no Uber, I mean, we don't have the basics for people to get to the destination. That's how the value chain is cut off, for both sun-and-beach tourism and those coming for ecotourism. (Estaban, 41 años)

Accommodation

According to the National Institute of Statistics and Geography (INEGI, 2020b), 12 accommodation establishments are identified in San Carlos (see Figure 2). Notably, some hotels are not listed in the registry, such as Hotel Sawari, which opened in 2019, and Hotel Gringo Pete, whose opening date is undocumented, though it is known to have been in operation for at least 20 years. It is also notable that the INEGI map does not include the Algodones area, where other important hotels and condominiums, such as Plaza San Carlos and Condominios Playa Blanca, among others, are located.

Two RV parks, five condominiums/apartments, six hotels, and residential homes for rent were observed, with the latter sector being the fastest growing. Of all the accommodations, only one, Hotel Sawari, offers a package combining the stay with an ecotourism tour. It is important to note that this hotel is also the only one belonging to an international chain, while the others are local or regional initiatives.

Gastronomic Services

According to data provided by the National Institute

Figure 2. SCSM (Urban Area). Accommodation
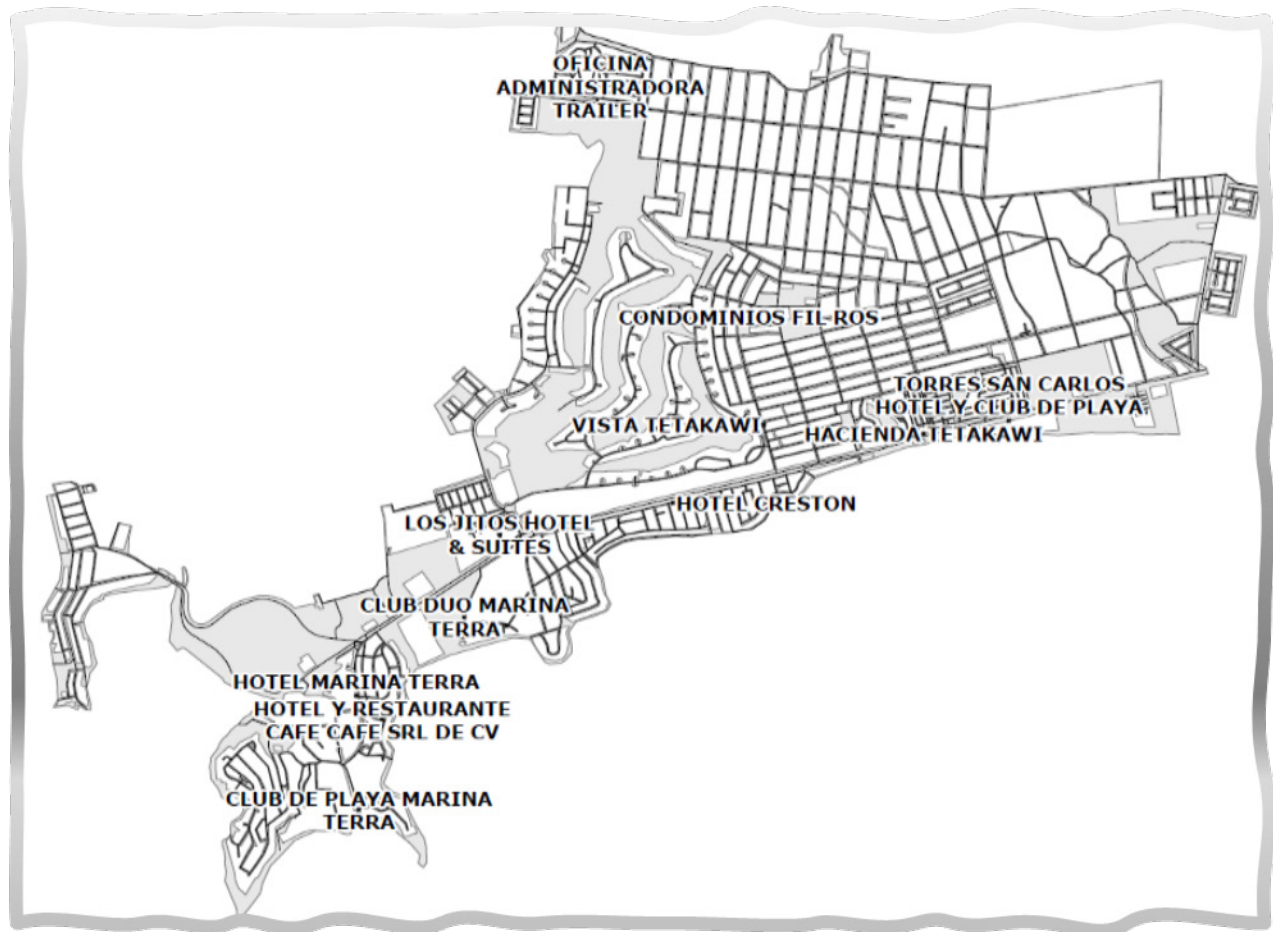
Source: Digital Map of Mexico, Cartographic Package 2020, INEGI.

of Statistics and Geography (INEGI, 2020b), there are 45 restaurants operating in the area (see Figure 3). Most of these are small local businesses that specialize in offering regional dishes. Only one of these restaurants has been incorporated into a larger chain, although it has maintained the authenticity of its menu, as well as in the hiring of employees and selection of suppliers.

In the surveys conducted, local restaurants were positively rated, receiving "good" ratings for both product quality and hygiene standards (see Figure 4).

Similar to other sectors, as part of the research, we explored whether there were connections between the restaurant industry and ecotourism activities. However, no links were identified between local restaurants and businesses or guides dedicated to ecotourism, which was found to be unsatisfactory.

4.4 Mapping of the Chain

I n summary, the ecotourism value chain (VC) in SCSM is considerably fragmented. Although the different links coexist in the area, no significant connections between them were identified. Ecotourism entrepreneurs show no interaction with other key sectors, such as restaurants, marketing, transportation, or accommodation. Only one case was identified where a guide was linked to a hotel to offer a package that included both the tour and accommodation. As one interviewee expressed:

> The truth is that the ecotourism value chain doesn't even show up! It simply doesn't exist! CEDES, which leads the protected areas in San Carlos, has been working with the ejidatarios and the local people, but they do it without much structure, nothing that resembles a cluster. They provide support with training and everything, but they haven't managed to get them to come together in an organized way.

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Figure 3. SCSM (Urban Area). Food Services

Source: Digital Map of Mexico, Cartographic Package 2020, INEGI.

Figure 4. Frequency Chart "Quality and Hygiene in Restaurants and Bars"
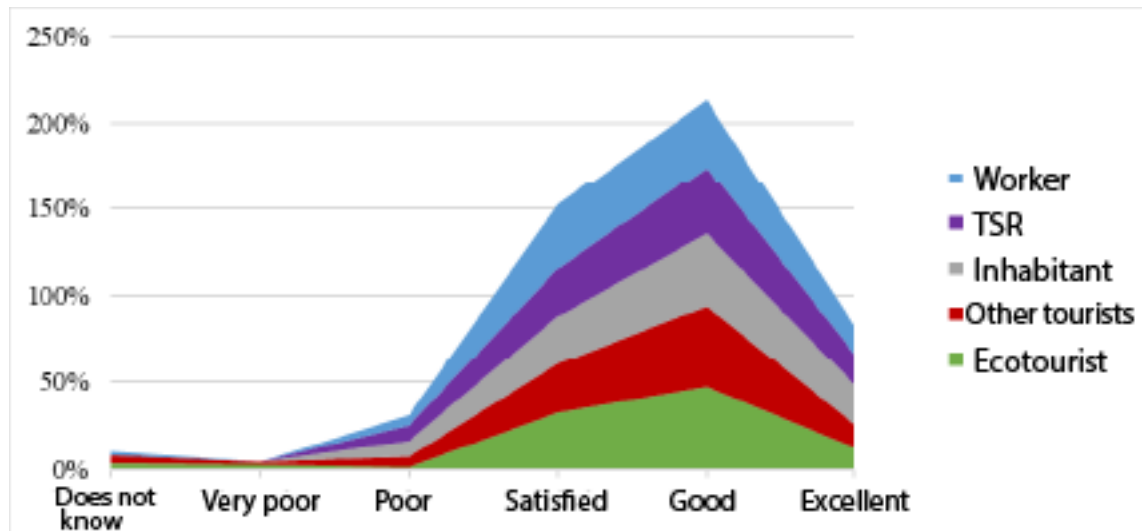
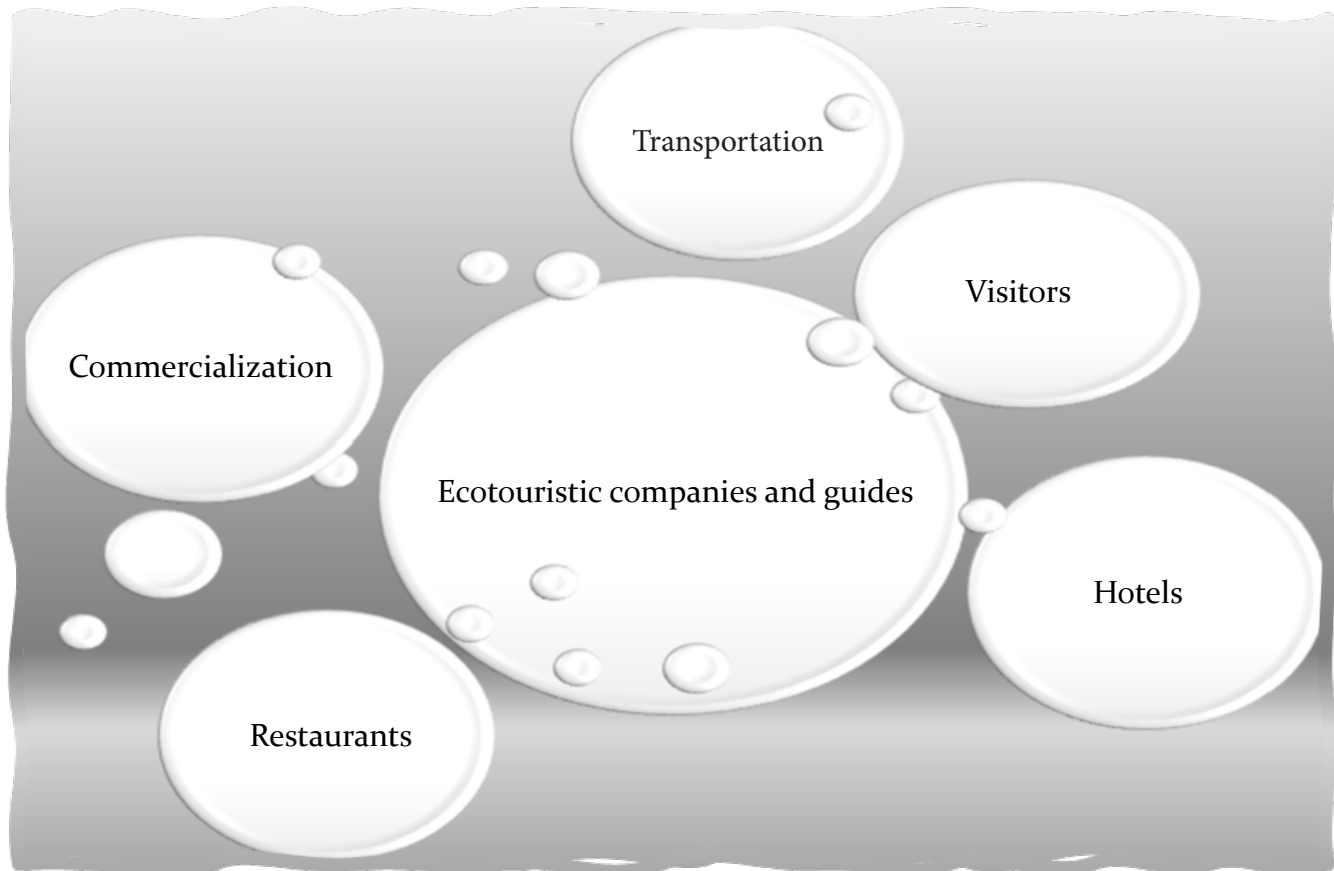**Source:** Own elaboration based on field information.

And to top it off, the tourism office hasn't even gotten involved to help organize something properly. (Ignacio, 59 años)

The analysis of the ecotourism value chain (VC) in SCSM reveals a fragmented and poorly cohesive structure. Although various components coexist in the region, such as guides, accommodations, and gastronomic services, their lack of connection limits the sustainable development of ecotourism. The absence of interaction between ecotourism entrepreneurs and key sectors, such as restaurants and transportation, prevents the creation of synergies that could strengthen the tourism offering. Additionally, the lack of integrated tourist packages and the limited visibility of the

Convention and Visitors Bureau contribute to the market fragmentation. Overall, this lack of integration and collaboration highlights the urgent need to better structure the value chain to maximize the ecotourism potential in the region.

Figure 5. Value Chain for Ecotourism in SCSM. Without connections.

Source: Own elaboration based on field information

5. Conclusions

The tourism value chain is a crucial tool for analyzing and implementing the complex relationships among the multiple actors and activities that shape the tourism industry. Strengthening these connections enhances destinations by maximizing economic and cultural potential through collaboration and integrative, sustainable strategies. From planning to post-experience follow-up strategies, each link plays a key role in generating value and fostering visitor loyalty.

SCSM is one of Sonora's most significant tourist destinations, distinguished by its unique desert biodiversity and proximity to the "aquarium of the world," the Sea of Cortez. This study identifies

key aspects that could support the sustainable development of ecotourism in the region.

The diversity of attractions offers a rich and varied experience for visitors. Guides and tourism companies hold appropriate certifications, provide high-quality tours, and receive positive ratings from tourists. Visitors align with the classic ecotourist profile: they are day-trippers or group travelers, young adults with an average age of 31, highly educated, and earning medium to high incomes. They show strong interest in exploring and connecting with nature, culture, people, and cuisine. Despite these strengths, marketing efforts remain uncoordinated, limiting visitor reach. Local

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and regional initiatives lack strategic partnerships that could enhance the promotion of the destination and improve its competitive positioning nationally and internationally. Additionally, transportation is a critical challenge. Public transportation and taxi services are scarce, restricting access to attractions, particularly for air travelers drawn by wedding tourism.

However, the lack of integration among the parties is evident, and it prevents the exploitation of synergies and economies of scale that could benefit all the stakeholders involved. The development of clusters or associations that promote collaboration is necessary.

In practical terms, this study provides a foundation for designing strategies to strengthen the ecotourism value chain. Key recommendations include developing strategic alliances between sectors and improving transportation infrastructure. In addition, training and organizational programs for local skateholders would support collaborative and sustainable management.

This research contributes to the conceptual framework of value chains in sustainable tourism by examining the dynamics of integration and disconnection in an emerging destination. Additionally, it provides a replicable analytical model that can be applied to other regions with similar characteristics, offering a broader framework for ecotourism development.

In summary, SCSM has considerable potential as an ecotourism destination. However, its future development depends on stakeholders' ability to collaborate, address existing challenges, and integrate the value chain.

As future lines of research, further studies should examine successful ecotourism destinations that have effectively integrated their value chains, identifying strategies applicable to SCSM.

Research should also explore cluster and association models that promote collaboration among the different links in the value chain, assessing their impact on ecotourism development. It is also recommended to conduct studies that analyze the economic impact of ecotourism on local communities, focusing on job creation and generated income, to support the development of public policies.

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