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THE VALIDATION OF THE COMMUNITY-BASED ECOTOURISM DEVELOPMENT MODEL IN LATIN AMERICA: A CASE STUDY OF ALTA AND BAJA VERAPAZ, GUATEMALA

LA VALIDACIÓN DEL MODELO DE DESARROLLO DEL ECOTURISMO COMUNITARIO EN AMÉRICA LATINA: UN ESTUDIO DE CASO EN ALTA Y BAJA VERAPAZ, GUATEMALA

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The Validation of the Community-Based Ecotourism Development Model in Latin America: A Case Study of Alta and Baja Verapaz, Guatemala

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ABSTRACT

In many Latin American countries, dependence on primary commodities has contributed to economic instability and structural vulnerabilities. Regional development in rural and indigenous areas is further constrained by a trilemma involving economic benefits, environmental conservation, and the quality of life of local residents. In response to this tension, Community-Based Ecotourism (CBET) has emerged as a development strategy, particularly for indigenous communities with limited access to capital. Building on previous research in Mexico and Bolivia, this study examines the applicability of a five-step CBET development model in Guatemala. Four case studies from the Verapaz region—Chirrepec, Chicoj, Chicacnab, and Ranchitos del Quetzal—were analyzed using qualitative fieldwork and quantitative survey data. The analysis evaluates five key factors: community pride, cooperative formation, sustainable local management, work system flexibility, and external support. While Chirrepec and Chicoj aligned closely with the model, Chicacnab revealed risks of external control and weak internal governance. Ranchitos del Quetzal represents a family-led approach emphasizing ecological values and long-term sustainability without formal cooperatives. Survey results from Guatemala, Mexico, and Bolivia indicate shared environmental and cultural motivations for CBET participation, with Guatemala showing strong interest in education. Overall, the findings support the five-step CBET model as a framework for examining how community-based ecotourism can mitigate trade-offs inherent in the regional development trilemma

Keywords: regional development trilemma, indigenous communities, sustainability, five-step CBET model, quetzal

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La Validación del Modelo de Desarrollo del Ecoturismo Comunitario en América Latina: Un Estudio de Caso en Alta y Baja Verapaz, Guatemala

RESUMEN

En muchos países de América Latina, la dependencia de los productos primarios ha contribuido a la inestabilidad económica y a vulnerabilidades estructurales. El desarrollo regional en áreas rurales e indígenas se ve además limitado por un trilema que involucra los beneficios económicos, la conservación ambiental y la calidad de vida de los habitantes locales. Como respuesta a esta tensión, el Ecoturismo Comunitario (Community-Based Ecotourism, CBET) ha surgido como una estrategia de desarrollo, particularmente para comunidades indígenas con acceso limitado al capital. Con base en investigaciones previas realizadas en México y Bolivia, este estudio examina la aplicabilidad de un modelo de desarrollo de CBET de cinco etapas en Guatemala. Se analizaron cuatro estudios de caso en la región de Verapaz —Chirrepec, Chicoj, Chicacnab y Ranchitos del Quetzal— mediante trabajo de campo cualitativo y encuestas cuantitativas. El análisis evalúa cinco factores clave: orgullo comunitario, formación de cooperativas, gestión local sostenible, flexibilidad del sistema de trabajo y apoyo externo. Mientras que Chirrepec y Chicoj mostraron una fuerte alineación con el modelo, Chicacnab evidenció riesgos asociados al control externo y a una gobernanza interna débil. Ranchitos del Quetzal representa un enfoque liderado por una familia, que enfatiza valores ecológicos y sostenibilidad a largo plazo sin cooperativas formales. Los resultados de las encuestas en Guatemala, México y Bolivia indican motivaciones ambientales y culturales compartidas para la participación en el CBET, destacándose en Guatemala un fuerte interés por la educación. En conjunto, los hallazgos respaldan el modelo de CBET de cinco etapas como un marco analítico para examinar cómo el ecoturismo comunitario puede mitigar los compromisos inherentes al trilema del desarrollo regional

Palabras clave: trilema del desarrollo regional, comunidades indígenas, sostenibilidad, modelo CBET de cinco etapas, quetzal

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INTRODUCTION

The United Nations Conference on Trade and Development (UNCTAD, 2021) states that many developing countries remain heavily dependent on primary commodities, exposing them to volatile price swings and economic shocks, and heavy reliance on commodities in their exports creates vulnerabilities intensified by global crises like COVID-19. UNCTAD continues, however, that examples like Costa Rica show that investing in technology, innovation, and human capital can help countries diversify away from commodity dependence. In this context, it is increasingly suggested that developing countries should foster alternative industries in lieu of reliance on primary commodities.

In the case of Latin American countries specifically, Ocampo (2017) points out that persistent dependence on natural resources and primary commodities has led to structural vulnerabilities such as the so-called *Dutch Disease* [1] and macroeconomic instability. He argues that there is a growing need for new industrial policies to overcome such dependence and to ensure more stable and sustainable development.

Regional development in rural and indigenous areas is often constrained by a fundamental trilemma[2] consisting of three competing objectives:

(1) the maximization of economic benefits,

(2) environmental conservation, and

(3) the maintenance and improvement of the quality of life of local residents

(Elkington, 1997; Bramwell & Lane, 2011; UNWTO, 2018).

Conventional mass tourism has frequently addressed regional development challenges by prioritizing short-term economic gains. However, such approaches often generate negative externalities, including environmental degradation, cultural commodification, and social fragmentation (Baloch et al., 2023; Amin & Budilestari, 2025). Conversely, strict conservation policies that prioritize environmental protection without providing viable economic alternatives may restrict livelihood opportunities for local communities and weaken long-term social sustainability (Brockington et al., 2006; Pandey & Dar, 2025).

This structural tension highlights the difficulty of achieving balanced regional development and serves as a fundamental analytical lens for examining alternative development models in rural and indigenous contexts. Ecotourism has long been studied as a potential approach to reconciling economic development with environmental conservation and social considerations, and a substantial body of literature has examined both its promises and limitations (Goodwin, 1996; Weaver, 2001). These studies have emphasized that while ecotourism can contribute to environmental conservation and local development, its outcomes depend heavily on governance structures and the degree of local involvement.

Considering the financial circumstances of many Latin American countries—particularly those of indigenous communities—it is desirable to develop industries that do not require large-scale investment but instead make use of local natural and cultural resources. Within this broader ecotourism discourse, Community-Based Ecotourism (CBET) has emerged as a more locally grounded approach, emphasizing community participation, collective benefit-sharing, and local control over tourism activities. CBET is thus the central focus of the present study as a potential development approach capable of mitigating the trade-offs inherent in this trilemma.

CBET has gained increasing attention in Latin America as a tool for local development and tourism promotion. However, according to the author's previous research, the mechanisms for the emergence and establishment of CBET vary considerably depending on the local and regional context. For example, in Mexico, institutional support at the national and state level for indigenous communities has played a significant role in promoting CBET initiatives (Hirami & Hidalgo Morales, 2024).

In contrast, Bolivia has exhibited greater fragility in community formation due to historical and political circumstances (Mansilla, 1980). Even so, there are cases where communities have united to form cooperatives and successfully established CBET projects. In regions where forming a cooperative has proven difficult, some communities have instead adopted loosely connected, network-based approaches that have also enabled the successful establishment of CBET. In addition, there are cases in which tourism projects claim to fall under the category of ecotourism but are, in reality, individually operated, family-based tourism businesses.

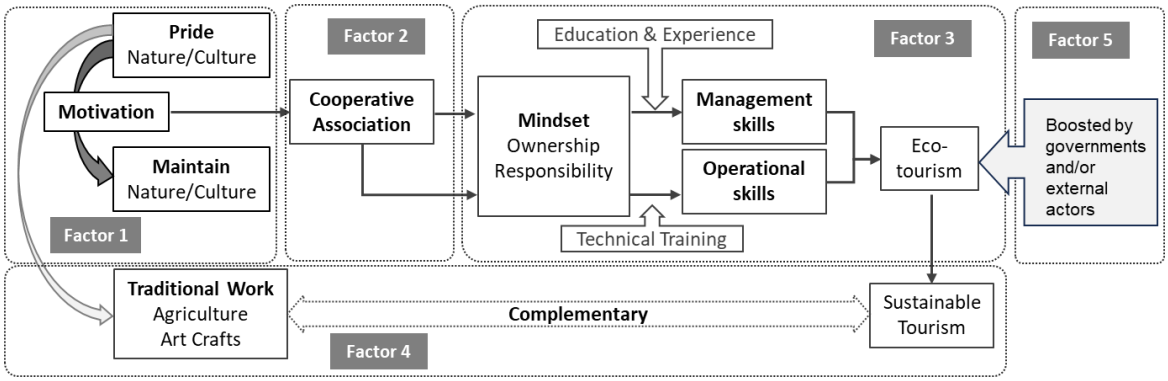
These lack community-wide integration or shared benefit structures and thus deviate from the fundamental principles of CBET (Hirami & Hidalgo Morales, 2025).

As a continuation of these field studies and their analysis, this research investigates another representative CBET initiative led by indigenous communities in Guatemala. The aim is to identify distinguishing features and verify whether the models hypothesized and evaluated thus far remain valid in this new context.

Theoretical Framework

Based on fieldwork conducted in various regions of Latin America, the author initially proposed a step-based model for the emergence and development of Community-Based Ecotourism (CBET) at an international symposium (Hirami, 2023). Since then, the model has been refined through a series of subsequent publications and now consists of five key factors, as illustrated in Figure 1.

Figure 1. Key steps and factors in the establishment of CBET



Factor 1: Community pride and motivation to participate in ecotourism

(This serves as the foundation for the formation of cooperatives.)

Factor 2: Formation of cooperatives

(Local community members participate in all stages of decision-making and operations.)

Factor 3: Capacity for sustainable management

(Tourism activities are independently managed and operated by community members.)

Factor 4: Flexible integration with traditional livelihoods

(Ecotourism is positioned as a complementary activity that coexists with traditional means of subsistence.)

Factor 5: External support mechanisms

(Governments, NGOs, or other stakeholders provide technical, financial, or institutional support.)

Table 1. Evaluation of initiatives using the five-step CBET model (based on prior studies)

Initiative \ Factor		1 Community pride and motivation	2 Cooperative formation	3 Sustainable management by locals	4 Link with traditional livelihoods	5 External support	Subjective evaluation of ecotourism establishment
Oaxaca (Mexico)	Cuajimoloyas	Very high	Present	Present (Local Organization Lead Expediciones Sierra Norte)	Complementary	Unknown	Very high
	Benito Juárez	Very high	Present	Present (Local Organization Lead Expediciones Sierra Norte)	Complementary	Fund for lodge construction	Very high
	La Nevería	Very high	Present	Present (Local Organization Lead Expediciones Sierra Norte)	Complementary	Fund for lodge construction	Very high
	Latuvi	Very high	Present	Present (Local Organization Lead Expediciones Sierra Norte)	Complementary	Fund for lodge construction	Very high
	Capulalpan	Very high	Present	Present (Local Organization Lead Expediciones Sierra Norte)	Complementary	Designated as Pueblo Mágico	Very high
	El Almacén Mujeres Milenarias	Neutral	Under Discussion	Weak	Complementary	Not applied	Low (Initial stage)
	Apoala	Very high	Present	Present	Complementary	Fund for lodge construction	Very high
Puebla (Mexico)	Taselotzin	Very high	Present	Present	Complementary	Interest-free loan	Very high
	Cuetzalan Ecoturismo Rural	Neutral	Not established	Present	Complementary	Not applied	Low (Initial stage)
	Tosepan Kali	Neutral	Present	Present (Sturctured organization)	Complementary	Small amount available (NGO/Gov)	High (Over organized)
Santa Cruz (Bolivia)	Villa Amboró	Different origin but very high for nature preservation	Present (Directorio)	Present	Complementary (more focus on agriculture)	NA from government; Technical support by Biodiversity NGO (Probioma)	Very high
	La Chonta	Not observed	Present (past) now weak	Present (Local animal doctor leads the activity)	Not enough income (more focus on agriculture)	No Gov. support even after mountain fire	Low (suspended)
	San José de Chiquitos	Family base Indivisually high	Loosely organized local group (SaboreArte	Two leaders manage the partnerships	Complementary (Demonstration/ craft goods)	NA from government; Immigrant from France	Very high
	Chochís	High	Not established	Mixed (community & local NGO)	Complementary	Limited (Belgium & local env. institutions)	Moderate (Operated as traditional tourism)
	Estancia Aguas Calientes	Not observed	Not established; Indivisual family base	Indivisual family base	Not complemental	Not applied	Moderate (Operated as traditional tourism)
	Santiago de Chiquitos	Very high	Present (Local guide organization)	Present (Guide, natural medicine)	Complementary	Limited (European NGO)	Very high

This framework captures the diverse forms that CBET can take depending on regional and cultural contexts. At the same time, the five-step model offers a flexible structure that can be adapted to a wide range of ecotourism initiatives by contextualizing the individual practices and actors involved. Table 1 summarizes the findings from investigations conducted in Oaxaca and Puebla in Mexico (Hirami & Hidalgo Morales, 2023), and in Santa Cruz, Bolivia (Hirami & Hidalgo Morales, 2024),

each evaluated according to the five-step framework and the corresponding subjective assessment of ecotourism. The results clearly show that regions where the initial steps have not been sufficiently established tend to receive lower subjective evaluations or are instead classified as traditional mass tourism rather than ecotourism. These findings suggest that a firm progression through all five steps is essential for the successful establishment of CBET.

Specific comparative results from Bolivia and Mexico

As stated earlier, the investigation in Bolivia was carried out based on hypotheses previously validated in Mexico. The comparison between the two cases revealed the following several noteworthy insights:

While indigenous communities in Mexico have demonstrated a deep sense of attachment to and pride in their land (Factor 1 in Figure 1), and have developed CBET initiatives rooted in long-standing traditions, many communities in Bolivia consist of relocated populations due to political circumstances.

These groups tend to exhibit weaker regional identity and face challenges in building consensus. Of particular interest is the case of “SaboreArte Chiquitos” in San José de Chiquitos, where a loosely connected network has been formed to manage tourism routes. Even in contexts where cooperative formation is difficult, this model has shown that CBET can function effectively through flexible, informal structures. Based on these findings, CBET initiatives in the Santa Cruz region of Bolivia can be categorized into three distinct types (Hirami & Hidalgo Morales, 2024):

1. Organized community-based model (e.g., Villa Amboró)
2. Loose network-based model (e.g., San José de Chiquitos)
3. Family-operated individual model (e.g., Estancia Aguas Calientes)

Each model is shaped by a different developmental background. The first model suggests that even communities with diverse origins can establish sustainable CBET initiatives if a certain level of organization is achieved, similar to cases observed in Mexico. The second model indicates that in regions where formal community structures are difficult to form, adopting a flexible, network-based approach can still ensure sustainability. In contrast, the third model, which centers on family-run

operations, tends to lack collective integration and public benefits. Therefore, it is more appropriate to classify this form as private or household-based tourism rather than as a genuine example of CBET.

These cumulative findings reveal the existence of diverse forms of CBET. Building on these insights, this study centers on the question of whether these patterns can be observed in other parts of Latin America, or whether distinct patterns emerge depending on the region. In doing so, the current research contributes to the primary objective of clarifying the mechanisms underlying the emergence and establishment of ecotourism in Latin America.

Guatemala as a comparative case

Guatemala provides a valuable comparative case to Mexico and Bolivia, as it shares a strong indigenous cultural foundation while differing in its historical trajectories of state involvement, community organization, and external support mechanisms influencing the development of community-based ecotourism.

Building on prior validations of the five-step CBET framework in Mexico and Bolivia, this study extends the analysis to Guatemala in order to further examine its applicability across diverse cultural and historical contexts. Guatemala was selected as a critical case study because it combines a deeply rooted indigenous heritage, derived from the legacy of the ancient Maya civilization, with exceptional biological and cultural diversity. The Guatemalan government has explicitly positioned ecotourism as a national development strategy aimed at balancing environmental conservation and local livelihoods, particularly in indigenous regions rich in natural and cultural resources (Instituto Guatemalteco de Turismo [INGUAT], 2003).

In this study, special attention is given to the Q'eqchi' people, an indigenous Maya group residing in the Verapaz region, known for their strong territorial attachment and sociocultural identity. Previous research has shown that conservation initiatives centered on emblematic species such as the resplendent quetzal have fostered interactions among external actors, conservation policies, and indigenous communities in Guatemala's cloud forest regions, thereby creating conditions in which ecotourism and local livelihoods become closely intertwined (Kockelman, 2016). The Q'eqchi' people's long-standing connection to the land, community-based traditions, and emerging

involvement in ecotourism thus make them an ideal population for testing the universality and adaptability of the CBET framework.

The ecotourism landscape of Guatemala

The Guatemalan Tourism Institute (Instituto Guatemalteco de Turismo [INGUAT], a governmental agency, describes Guatemala's abundant cultural and natural resources at the beginning of its *National Ecotourism Policy* (*Política Nacional de Ecoturismo*, 2003) as follows:

"Guatemala, as the heartland of the Maya civilization, has a historical background in which advanced knowledge, science, art, and culture were developed. Even today, 23 ethnolinguistic groups, including Maya peoples, continue to preserve their unique cosmovision and ceremonial traditions. This has earned the country recognition as an international cultural tourism destination. Geographically, Guatemala is located in the Mesoamerican biological corridor, a transition zone of biodiversity between North and South America. Its varied altitudes give rise to numerous endemic species, diverse microclimates, and vegetation zones, making it a country rich in natural tourism resources. This convergence of cultural and natural assets grants Guatemala a distinct comparative advantage as a differentiated tourism destination on the international stage."

Based on this context, the ecotourism policy positions ecotourism as a key strategy for sustainable development and is structured around the following four pillars:

1. Environmental Aspect: Conservation and sustainable use of natural resources
2. Social Aspect: Active involvement of local communities in the management and operation of ecotourism projects, ensuring benefit-sharing and promoting coexistence and respect among different cultures
3. Economic Aspect: Development of profitable tourism businesses that meet international standards and incorporate high technical capacity
4. Institutional Aspect: Promotion of ecotourism through coordination among governmental bodies, private enterprises, and community organizations

In essence, this policy aims not merely to promote tourism, but to pursue a comprehensive vision of sustainability centered on the protection of cultural and natural heritage and the improvement of local livelihoods.

The quetzal and its conservation in Guatemala

Guatemala's national bird, the Resplendent quetzal (Pharomachrus mocinno), is widely regarded as one of the most beautiful and mystical birds in the world. The quetzal is prominently featured at the center of the national flag and also lends its name to the country's official currency. Guatemala has taken national-level efforts to protect the quetzal, with the National Council of Protected Areas (Consejo Nacional de Áreas Protegidas, CONAP) publishing a strategic document titled "Conservation Strategy for the Quetzal and Its Habitat in Guatemala" (CONAP, 2020). This document emphasizes that conserving the quetzal is vital for protecting local biodiversity and calls for the collaboration of all stakeholders to safeguard the bird's habitat through sustainable methods. Today, quetzals are primarily found in specific regions such as Verapaz and Quetzaltenango.

Beyond its ecological importance, the quetzal has also become a focal species linking conservation initiatives with local livelihoods and ecotourism development in Guatemala's cloud forest regions. Previous studies have shown that efforts to protect the quetzal and its habitat have fostered ecotourism and attracted external actors, thereby highlighting tensions and synergies between conservation, tourism, and indigenous communities as mentioned above (Kockelman, 2016).

METHODOLOGY

Research areas in the Verapaz region

The Verapaz region of Guatemala was selected for further investigation due to its rich natural, cultural, and historical diversity. Located in the country's central highlands, this area is composed of two departments: Alta Verapaz and Baja Verapaz. It is home to many indigenous Maya peoples, particularly the Q'eqchi' in Alta Verapaz, who continue to maintain their own language and cultural traditions. The region also serves as a vital habitat for rare wildlife, including the quetzal.

In Alta Verapaz, the research focused on visits to key sites such as Finca Chirrepec (a black tea plantation) and Finca Chicoj (a coffee plantation), as well as the village of Chicacnab, which is well known for quetzal watching. The study then shifted to Ranchitos del Quetzal in Baja Verapaz, a location that has recently expanded its quetzal-related ecotourism initiatives.

Data collection and analysis

In the present research area, interviews and questionnaire surveys were conducted in parallel. In-depth interviews were carried out with representatives or designated proxies of the targeted organizations. A semi-structured interview format was employed to allow for both consistency and flexibility in responses. The questionnaire was administered face-to-face, allowing the interviewer to provide clarification and answer questions from respondents as needed. Notably, the interview questions and survey items were identical to those used in the authors' previous studies conducted in Mexico and Bolivia, enabling direct comparison of the results across cases.

The following section first presents the findings from each research site in Guatemala. These results are then compared with those from previous studies conducted in Mexico and Bolivia, and the analysis concludes with a discussion of newly emerging insights in relation to the CBET framework.

RESULTS

Chirrepec: Building CBET after the decline of foreign ownership

Finca Chirrepec, located in the outskirts of Cobán, is particularly noteworthy for being the sole producer of black tea in the region—a rarity in Guatemala. The plantation cultivates and processes tea under the brand name Té Chirrepeco, which is distributed both domestically and internationally.

In 1906, German settler Oscar Majus Kloeffer established a tea plantation in Chirrepec using seeds brought from Germany, making it the only tea-producing finca in the Cobán region, where coffee dominated. His contributions earned him Guatemala's *Orden del Quetzal* [3] in 1999.

Following the end of German dominance after World War II, the local indigenous Q'eqchi' people continued tea cultivation. In March 1968, they formally joined "Fedecovera," a second-level cooperative (an intermediate organization linking local cooperatives with national-level institutions), through which they received technical training to maintain tea production. Around the early 2010s, Fedecovera proposed the introduction of ecotourism to the community. This marked the beginning of ecotourism initiatives in Chirrepec, which have since continued to grow.

In the case of Chirrepec, the turning point in the establishment of CBET can be identified in Factor 2 of the five-step CBET process—namely, the formation of a cooperative and integration into Fedecovera. In the Guatemalan context, where local communities needed to achieve independence

from foreign capital, the nationally supported structure of Fedecovera appears to have played a crucial role in facilitating sustainable community-based ecotourism. In this regard, Fedecovera can be considered as an example of Factor 5 in the five-step CBET process.

Chicoj: A cooperative-driven CBET model

In the Chicoj community of Alta Verapaz, Guatemala, a Q'eqchi'-led cooperative has successfully developed a CBET initiative grounded in sustainable coffee production. Originally a subsistence-based area with limited agricultural resources, Chicoj began cultivating coffee in collaboration with a nearby German-owned farm. In 1985, with technical and institutional support from Fedecovera, a national second-tier cooperative, Chicoj established its own coffee plantation and formalized its cooperative governance (Factor 2). The cooperative is managed by five rotating representatives, elected biannually with limited reappointment to ensure balanced leadership.

Facing economic pressures following the 2005 global coffee price crash, the community explored diversification through ecotourism. With assistance from Fedecovera and Anacafé (the National Coffee Association), the Chicoj cooperative launched a community-led ecotourism initiative (Factor 3). The project includes guided coffee tours (Coffee Tour Chicoj), canopy experiences, multilingual interpretation services, and hospitality infrastructure such as dining facilities and future accommodations.

In addition, around 2020, an indigenous women-led craft shop was established within the grounds of Finca Chicoj. Although located on cooperative property, it operates independently and represents a grassroots economic initiative. The shop aims to generate income through the sale of local handicrafts, showcasing traditional Q'eqchi' culture to ecotourism visitors. This initiative highlights the complementary relationship between tourism and community-led cultural preservation, further strengthening Chicoj's position as a sustainable CBET model (Factor 4).

The community sustains a self-contained lifestyle within the cooperative and places strong value on preserving ancestral land, culture, and social structures across generations. The ecotourism project contributes to household incomes, and through its activities, it fosters a renewed sense of community pride, which in turn strengthens the foundation for long-term sustainability. Visitor numbers have grown significantly, from around 50 annually at inception to 3,000–4,000 in recent years. Notably, the

cooperative reinvests tourism profits into community development rather than pursuing individual gain, reflecting a strong commitment to collective benefit (Factor 1)—a hallmark of authentic CBET.

Chicacnab: A case demonstrating the importance of local ownership in CBET

The ecotourism initiative in Chicacnab, a community in Guatemala's Verapaz region with a local economy based on forestry and agriculture, began around 2000. It was inspired by a foreign visitor who recognized the area's potential for quetzal observation. With a strong community support (Factor 1), the initiative launched as a non-profit project (Factor 2) aimed at both conservation and local development. A coordinating office, *Eco-Quetzal*, was established in the nearby city of Cobán to manage logistics and promote the site.

A study by Bascomb and Taylor (2008) reported a decline in annual visitors from 500 in 2000 to 175 in 2008. Despite this, the limited number of tourists helped reduce environmental and social strain, contributing to the project's initial success. Residents generally welcomed tourism and associated it with heightened environmental awareness and improved resource management. Limited infrastructure and early-stage development also helped avoid overtourism. At that point, no clear obstacles suggested the eventual suspension of the project.

Signage for birdwatching was reportedly installed in 2009 with support from Japan International Cooperation Agency (JICA, Factor 5), further enhancing the visitor experience (JICA & INGUAT, 2010). However, according to a former guide, the project was discontinued around 2020. As the initiative expanded, decision-making became increasingly centralized in Cobán, marginalizing the Chicacnab community. Tensions over a lack of transparency and perceived inequities in profit-sharing led to a loss of local engagement and the eventual closure of the Eco-Quetzal office (implications of the absence of Factor 3).

This case illustrates that even with globally significant biodiversity—such as the quetzal—CBET initiatives cannot thrive without strong local ownership and internal governance (Factor 3). Unlike sustained models such as Mexico's Sierra Norte, where cooperatives are managed by community members (Hirami & Hidalgo Morales, 2024), Chicacnab lacked the organizational capacity to maintain long-term operations.

Chicacnab represents an externally initiated CBET model: a foreign visitor sparked local recognition of environmental value, fostering community pride (Factor 1). A cooperative was formed in the small village (Factor 2), and the initiative initially progressed through collaboration. However, without sufficient internal management capacity (lack of Factor 3), control shifted externally, leading to the project's eventual decline.

Ranchitos del Quetzal: A gradual, family-led model of sustainable ecotourism

Ranchitos del Quetzal is located in Purulhá, Baja Verapaz, near the Biotopo del Quetzal nature reserve, approximately one hour southwest of Cobán. This area is primarily inhabited by the Poqomchi' people. Unlike Chicacnab, where quetzal tours have been discontinued, Ranchitos del Quetzal offers a well-maintained setting for birdwatching, featuring nature trails, eco-lodges, and a restaurant. The site is especially notable for sightings of the quetzal, a bird of ecological and cultural significance in the region.

The following account is based on an interview with the current site manager in February 2025. The ecotourism initiative began with a private landowner who was captivated by the area's natural beauty. Without any external funding, he began developing the land gradually. The second generation expanded these efforts by enhancing the habitat—planting fruit trees favored by quetzals—and the third generation rebranded the site as "Ranchitos del Quetzal." This phase included infrastructure upgrades such as shared restrooms, a dining hall, and an observation trail. Tourism remains intentionally small-scale, with accommodations limited to four family units. Local guide training was also initiated, including sending a guide to Costa Rica for skill development.

At the heart of this initiative is a vision of "Preservación de Naturaleza" (Nature Conservation), first articulated by the founding owner (Factor 1). This philosophy has been upheld across generations, prioritizing ecological coexistence over commercial gains and striving to minimize environmental impacts. Despite the absence of a formal cooperative or legal organization, the site's operations align with key principles of CBET. The manager also expressed a desire to collaborate with other quetzal habitats, such as Chicacnab, reflecting a broader conservation-oriented mindset.

This case represents an alternative model of CBET: one that emerged without reliance on foreign assistance or large-scale cooperatives (independent of Factor 5), and instead through locally driven

motivation (Factor 1) and gradual, family-based development (a distinct form of Factor 2). While lacking a formal community governance framework, the site illustrates how internal vision, adaptive management (a localized form of Factor 3), and commitment to sustainability can foster long-term success. Its balance between ecological integrity and visitor satisfaction makes it a compelling example of self-sustained, low-impact ecotourism.

This model also differs notably from the "family-operated individual model" observed in Bolivia mentioned above, where family-run eco-lodges have been criticized for problems like overtourism and weak integration with local communities. In contrast, the case of "Ranchitos del Quetzal" in Guatemala represents a more successful and community-conscious form of CBET. It demonstrates how small-scale, family-led initiatives—when rooted in a strong conservation ethic, gradual development, and adaptive management—can offer a viable and sustainable alternative to both large-scale cooperative models and underregulated private ventures.

The findings from the present field research in Guatemala can be mapped onto the five-step CBET model, as illustrated in Table 2. As with the findings from previous research shown in Table 1, the results from the Guatemalan cases also indicate that regions where the certain steps have not been sufficiently established tend to receive lower subjective evaluations. These findings affirm that a firm progression through all five steps is essential for the successful establishment of CBET.

Table 2. Evaluation of initiatives according to the five-step CBET model (Guatemala)

Initiative \ Factor		1	2	3	4	5	Subjective evaluation of ecotourism establishment
		Community pride and motivation	Cooperative formation	Sustainable management by locals	Link with traditional livelihoods	External support	
Alta Verapaz (Guatemala)	Chirrepec	Very high	Present (community base)	Present (Management for CBET to be stengthened)	Complementary (Tea)	Fedecovera	Neutral (Under development)
	Chicoj	Very high	Present (community base)	Present (Effective 5 people management structure)	Complementary (Coffee)	Fedecovera	Very high
	Chicacnab	Very high	Present (Weak/currently in charge only of funding)	Weak	Complementary (forestry/agriculture)	Eco-Quetzal	NA (Currently suspended)
Baja Verapaz (Guatemala)	Ranchitos del quetzal	Very high	Alternative family style	Family owner deligates management to locals (locals being trained)	Complementary (agriculture)	Family base (Not required)	Very high

DISCUSSION

As discussed above, the five-step CBET model has been found applicable even to the Q'eqchi' and other Maya-descended communities with long historical and cultural traditions.

This section aims to analyze and evaluate responses to individual quantitative survey questions based on the data collected through the questionnaire survey and then discuss the trilemma of ecotourism for future local development.

Motivation driving CBET participation

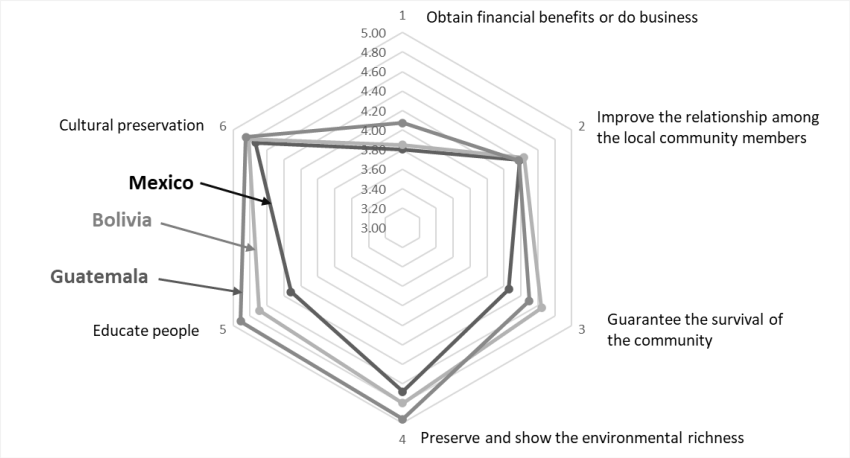
As part of the items related to Factor 1, the average responses to six questions regarding motivations for participating in CBET were compared across three countries: previously studied Mexico and Bolivia, and newly collected data from Guatemala. The results are summarized in Table 3 (a five-point Likert scale was used: 1 = very weak, 5 = very strong).

Correlation coefficient analysis revealed strong positive correlations among all country pairs: Mexico–Bolivia (r = 0.90), Mexico–Guatemala (r = 0.83), and Bolivia–Guatemala (r = 0.91). Radar chart results in Figure 2 shows that all regions scored highest on "4. Preserve and show the environmental richness" and "6. Cultural preservation," while "1. Obtain financial benefits or do business" received the lowest scores. "2. Improve the relationship among the local community members" also showed relatively low scores. Scores for "3. Guarantee the survival of the community" and "5. Educate people" varied by region. Despite the small sample size, the findings clearly indicate that CBET efforts across all regions are driven more by environmental and cultural values than by financial motives. Among the surveyed regions, Guatemala places particular emphasis on these aspects and demonstrates a notably higher interest in education compared to others. Although institutional support remains limited as compared to Mexico, the strong awareness of traditional indigenous culture and the natural environment suggests promising potential for the endogenous development and consolidation of CBET in the future.

Table 3. Responses on motivations for CBET participation

	Mexico (n=68)	Bolivia (n=39)	Guatemala (n=27)
1.Obtain financial benefits or do business	3.80	3.85	4.07
2.Improve the relationship among the local community members	4.38	4.44	4.38
3.Guarantee the survival of the community	4.26	4.64	4.50
4.Preserve and show the environmental richness	4.68	4.79	4.96
5.Educate people	4.32	4.69	4.91
6.Cultural preservation	4.74	4.82	4.85

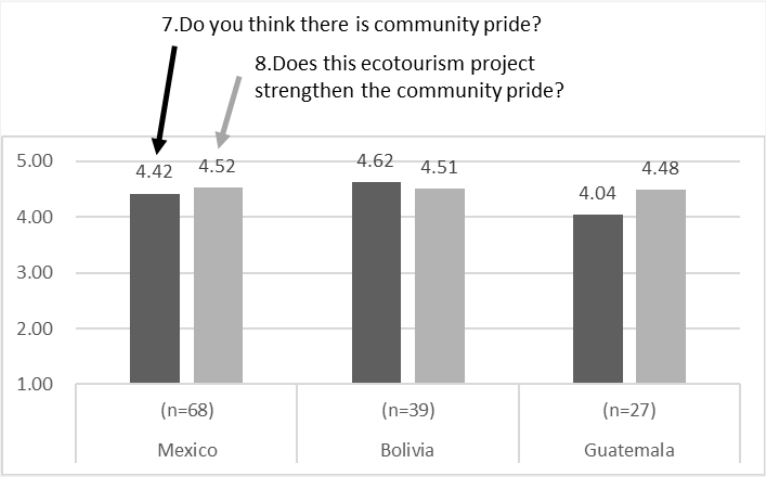
Figure 2. Comparison of motivations for CBET participation



Perceived community pride enhancement by CBET

Let us examine the responses to questions regarding civic pride in one's own community as shown in Figure 3 (a five-point Likert scale was used: 1 = very weak, 5 = very strong). Question 7 asked whether respondents currently feel a sense of pride in their community, while Question 8 asked whether ecotourism contributes to strengthening that pride. In both Mexico and Bolivia, responses were largely consistent between the two questions. In contrast, in the Guatemalan case, respondents showed relatively low current pride but expressed a belief that ecotourism could serve to enhance it (Figure 3). This study reaffirms that CBET is not merely an economic activity aimed at environmental conservation and cultural preservation but also serves as a catalyst for fostering civic pride and a strong sense of ownership and initiative among local communities.

Figure 3. Comparison of community pride related responses



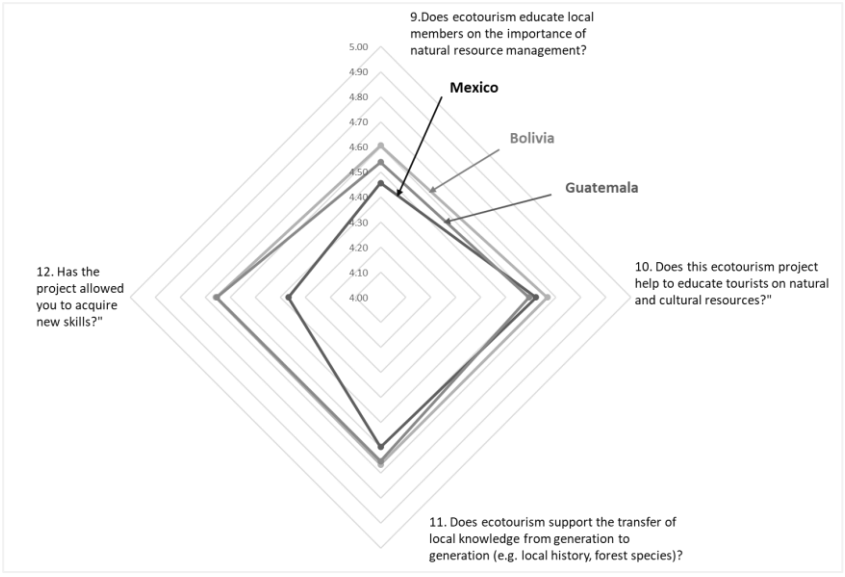
Perceived educational impacts of CBET

The educational impact of CBET on local residents and visitors was examined, and the results are presented in Table 4 (using a five-point Likert scale: 1 = very weak, 5 = very strong). As shown in Figure 4, Guatemala exhibits a trend similar to that of Bolivia, with respondents recognizing the educational effects of CBET not only on local residents and visitors but also across generations. In contrast, Mexico rates the educational impact on local residents comparatively lower, particularly with regard to the acquisition of new skills.

Table 4. Responses on the educational impact of CBET

	Mexico (n=68)	Bolivia (n=39)	Guatemala (n=27)
9. Does ecotourism educate local members on the importance of natural resource management?	4.46	4.61	4.54
10. Does this ecotourism project help to educate tourists on natural and cultural resources?	4.62	4.67	4.59
11. Does ecotourism support the transfer of local knowledge from generation to generation (e.g. local history, forest species)?	4.60	4.67	4.65
12. Has the project allowed you to acquire new skills?	4.37	4.66	4.65

Figure 4. Comparison of perceived educational impacts of CBET



Comparison between genuine community base and family base ecotourism

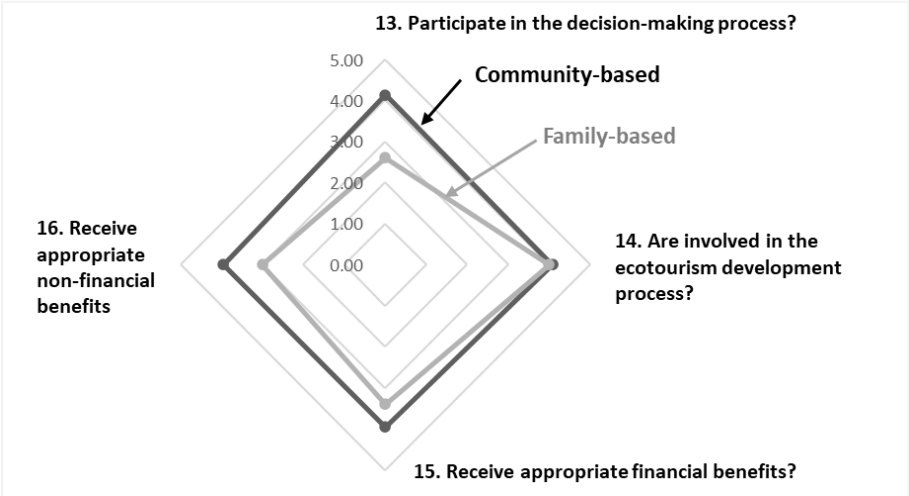
As noted above, the family-based ecotourism style observed in Guatemala differs from the model found in Bolivia. Since the Guatemalan model can be considered a distinct form of ecotourism, we compared the perceptions of staff working within this family-based ecotourism style with those of staff from a purely indigenous cooperative. The results of this comparison are presented in Table 5 and illustrated in Figure 5.

Staff engaged in family-based ecotourism appear to feel that their overall participation in the decision-making process is lower and that the benefits they receive are relatively limited compared to those involved in community-based ecotourism. This may be attributed to the fact that, in community-based ecotourism, decisions are generally made through consensus at annual general meetings, and the rules for benefit distribution are clearly defined. It is desired that similar considerations or mechanisms should be implemented in family-based ecotourism as well. On the other hand, responses regarding involvement in the development of ecotourism were nearly identical in both cases. These results suggest that staff from both models possess a strong awareness of their contributions to preserving traditional indigenous culture and the natural environment.

Table 5. Responses on the involvements and benefits

	Community-based (n=21)	Family-based (n=5)
13. Participate in the decision making process?	4.14	2.60
14. Are involved in the ecotourism development process?	4.09	4.00
15. Receive appropriate financial benefits?	3.95	3.40
16. Receive appropriate non-financial benefits	3.95	3.00

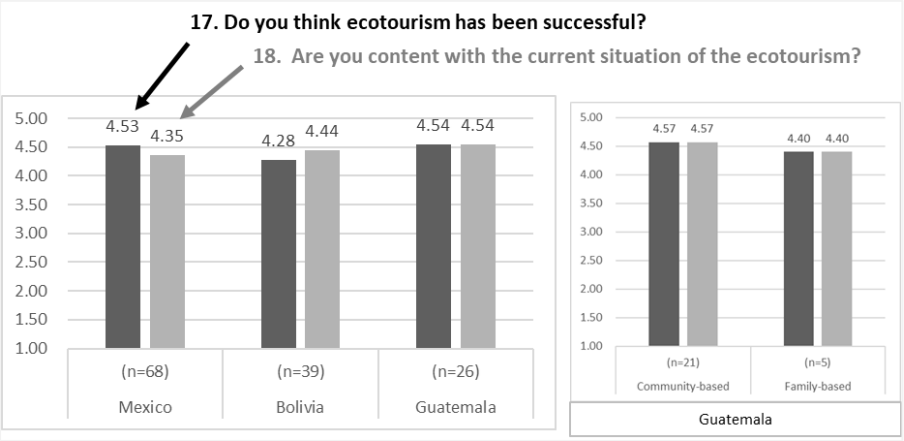
Figure 5. Comparison of perceptions of involvement and benefits between genuine community-based and family-based ecotourism



Finally, we examine the responses to two questions posed to staff members of each ecotourism initiative: whether they consider their activities to be successful, and whether they are satisfied with the current situation. The left side of Figure 6 presents a comparison among the three countries, while the right side compares community-based and family-based ecotourism in Guatemala.

The data indicate that Guatemala received relatively high scores on both questions, and no significant differences were observed between the community-based and family-based models.

Figure 6. Comparison of perceptions of the success and content level of the initiatives



CBET as a response to the regional development trilemma

As mentioned in Introduction, regional development in rural and indigenous areas is often constrained by a fundamental trilemma.

Conventional mass tourism tends to prioritize short-term economic gains, frequently at the expense of environmental sustainability and social cohesion. Conversely, strict conservation policies without economic alternatives may limit livelihood opportunities for local communities.

Community-Based Ecotourism (CBET) can be interpreted as a practical solution to this regional development trilemma. By embedding tourism activities within local governance structures, CBET enables communities to generate moderate but stable economic benefits while preserving ecological resources and reinforcing cultural identity.

The Guatemalan cases examined in this study illustrate how CBET mitigates trade-offs inherent in the trilemma. Cooperative-based models such as Chicoj demonstrate how economic benefits can be redistributed collectively, strengthening social cohesion and community pride, while family-based low-impact models such as Ranchitos del Quetzal show that environmental conservation and quality of life can be prioritized without large-scale commercialization.

These findings suggest that CBET should not be evaluated solely in terms of economic performance, but rather as an integrated regional development mechanism capable of balancing economic, environmental, and social objectives.

CONCLUSION

This study validated the applicability of the five-step Community-Based Ecotourism (CBET) model in Guatemala through four case studies in the Verapaz region. The findings confirm that the model remains robust across different indigenous and historical contexts, while also revealing the need for flexibility in its application.

Beyond model validation, this research contributes to the broader discussion on sustainable regional development by positioning CBET as a practical response to the regional development trilemma: balancing economic benefits, environmental conservation, and the quality of life of local residents. The Guatemalan cases demonstrate that CBET can mitigate the trade-offs inherent in this trilemma by embedding tourism within locally controlled governance structures.

Cooperative-based initiatives such as Chicoj illustrate how economic benefits from tourism can be collectively redistributed and reinvested in community development, reinforcing social cohesion and community pride while maintaining ecological integrity. Conversely, the case of Chicacnab highlights that without strong internal governance and local ownership, CBET initiatives are vulnerable to external control and eventual decline, even when environmental resources are abundant.

The family-led model observed at Ranchitos del Quetzal presents an alternative pathway. Although it lacks formal cooperative structures, its gradual development, strong conservation ethos, and adaptive management demonstrate that low-impact, small-scale ecotourism can successfully prioritize environmental preservation and local quality of life over short-term economic maximization. This suggests that CBET should be understood not as a single institutional form, but as a spectrum of locally grounded practices aligned with sustainability principles.

Quantitative survey results further support this interpretation. Across Guatemala, Mexico, and Bolivia, CBET participation is driven primarily by environmental and cultural motivations rather than financial incentives. In Guatemala, respondents emphasized the potential of ecotourism to enhance education and community pride, particularly in regions where such pride has historically been constrained.

In conclusion, CBET should be evaluated not merely as a tourism strategy, but as an integrated regional development mechanism capable of addressing the trilemma faced by rural and indigenous

communities. The five-step CBET model provides a useful analytical framework for understanding this process, while the Guatemalan cases underscore the importance of adapting the model to local social, cultural, and ecological conditions. Future research should further explore how different governance arrangements within CBET influence long-term sustainability and resilience in diverse regional contexts.

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Notes

[1] Dutch Disease refers to the economic phenomenon where a boom in natural resource exports leads to currency appreciation, making other export sectors like manufacturing less competitive. This often results in deindustrialization and overreliance on the resource sector.

[2] In general, Trilemma refers to a situation in which three desirable objectives are structurally difficult to achieve simultaneously, and prioritizing one often generates trade-offs with the others. In the context of tourism-led regional development in rural and indigenous areas, this trilemma typically involves economic benefits, environmental conservation, and the quality of life of local residents.

[3] Orden del Quetzal is the highest honor awarded by the Guatemalan government, recognizing distinguished contributions in fields such as diplomacy, culture, science, and public service.

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