

Beyond Income: How Do Indigenous Communities Build Sustainable Local Economies? A Systematic Review of Economic, Social, Cultural, And Environmental Outcomes

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ABSTRACT

This study analyzes how Indigenous communities build sustainable local economies beyond income generation. Through a systematic review of the scientific literature, following PRISMA 2020 and consulting Web of Science and Scopus, economic, social, cultural, environmental, and governance outcomes were identified and analyzed. The findings show that in Indigenous communities in Escárcega, Campeche, activities such as agriculture, home gardens, beekeeping, handicrafts, microenterprises, community tourism, and biodiversity use contribute in different ways to local well-being. These activities promote food security, income generation, biodiversity conservation, cultural preservation, and stronger community organization, although they face limitations related to training, financing, marketing, organization, and governance. It is concluded that the sustainability of Indigenous economies depends on the articulation of territorial resources, traditional knowledge, productive diversification, and community organization. Therefore, their evaluation should move beyond an approach focused exclusively on income and incorporate economic, social, cultural, environmental, and community autonomy dimensions.

KEYWORDS: Indigenous communities; local economy; sustainability; livelihoods; Escárcega; Campeche.

Published online: October 22, 2026

Cite the Article: Chan Balam, M.A., Gómez Camal M.C., Luna Medina, F.A., Eligio, M.V. (2026). Beyond Income: How Do Indigenous Communities Build Sustainable Local Economies? A Systematic Review of Economic, Social, Cultural, And Environmental Outcomes. International Journal of Life Science and Agriculture Research, 5(10), 735-744.

<https://doi.org/10.55677/ijlsar/V05I10Y2026-05>

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INTRODUCTION

Indigenous communities maintain economic, social, and cultural systems closely linked to their territories, natural resources, traditional knowledge, and collective forms of organization. Unlike conventional approaches to economic development, in which performance is usually assessed mainly through indicators of income, employment, or productivity, Indigenous economies can simultaneously integrate objectives related to collective well-being, cultural identity, environmental conservation, autonomy, and the continuity of traditional knowledge. In this regard, sustainable development in Indigenous contexts requires recognizing that economic activities are part of broader socioecological and cultural systems in which the economic, social, environmental, and cultural dimensions are interconnected (Bansal et al., 2024; Gladun et al., 2021; Reyes-García et al., 2026). Recent literature has shown that Indigenous and local knowledge constitutes a relevant resource for addressing contemporary problems related to climate change, environmental degradation, food security, and livelihood vulnerability. Cajete (2020) argues that Indigenous knowledge systems can contribute to community resilience through forms of learning, adaptation, and collective construction grounded in relationships among people, territory, and nature. Similarly, Daniel et al. (2022) found that Indigenous local knowledge can contribute to the functioning of socioecological systems by guiding resource management practices and community relationships. In agricultural and food systems, Galappaththi and Schlingmann (2023) note that Indigenous and local knowledge can constitute important components of climate adaptation responses, particularly when they are articulated with the ecological, social, and cultural

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conditions of each territory. This relationship between knowledge, territory, and economy is also manifested through entrepreneurship initiatives based on local resources and practices. Entrepreneurship grounded in local knowledge and values can generate economic opportunities while strengthening cultural identity, community participation, and local resilience (Agus & Rukin, 2025). From this perspective, economic activities do not necessarily represent a break with Indigenous cultural systems; rather, they can become mechanisms for transforming local knowledge and resources into goods and services with economic value, provided that their incorporation into markets does not entail the loss of community control or the harmful appropriation or commodification of cultural elements. This tension between income generation, cultural preservation, and sustainability constitutes one of the central challenges of contemporary Indigenous economies. Indigenous social enterprises are one of the most relevant expressions of this process. Portales (2018) showed, based on experiences in Mexico and Peru, that Indigenous social enterprises can act as mechanisms for simultaneously promoting economic development, community strengthening, and sustainability. From a perspective focused on rural communities, Vázquez-Maguirre (2020) noted that Indigenous social enterprises can contribute to sustainable development when they place human well-being and collective needs at the center of their strategies. More recently, García et al. (2025) documented the potential of self-managed social enterprises to strengthen agricultural sustainability in Indigenous communities, highlighting the importance of economic initiatives arising from communities' own needs and capacities. However, the existence of an economic activity in an Indigenous community does not necessarily imply that its outcomes are sustainable. Indigenous economies may face constraints related to access to financial resources, markets, infrastructure, entrepreneurial capabilities, public policies, and commercialization processes. Maclean et al. (2024) specifically highlight the need for business planning tools that recognize Indigenous culture as a fundamental element in the design and development of enterprises. Complementarily, Rodríguez Reyes et al. (2025) show that social enterprises led by Indigenous peoples can constitute mechanisms for building community economic development when priorities and strategies are defined by the communities themselves.

The institutional dimension is equally important. Community participation, governance, and environmental education can function as mechanisms that promote sustainable development processes at the local level (Bueloth et al., 2026). Likewise, available evidence suggests that informal institutions and community norms can influence how economic benefits are distributed and natural resources are managed. Lobato-Sales et al. (2026), for example, show that informal institutions can influence the generation of social, economic, and environmental value in community-based production systems. Therefore, the sustainability of an Indigenous economic initiative depends not only on its capacity to generate income, but also on governance structures and social rules through which decisions are made, benefits are distributed, and resources are managed. This discussion is particularly relevant in the face of climate change and socioeconomic transformation processes affecting Indigenous communities. Dharmasiri et al. (2025) argue that Indigenous entrepreneurship can constitute a climate adaptation strategy by combining local knowledge, entrepreneurial capabilities, territorial resources, and economic diversification mechanisms. Sangha et al. (2025), in turn, argue that understanding the economies of Indigenous peoples and local communities is fundamental to transforming conventional conservation approaches, particularly because these economies are linked to the management of territories and natural resources. In this sense, the community economy can simultaneously be a subsistence mechanism, an adaptation strategy, and a conservation instrument.

Experiences developed in different regions also show a wide diversity of economic models. In the Arctic, Indigenous economies combine traditional activities, contemporary income-generation systems, and particular relationships with territories and natural resources (Gladun et al., 2021). In other contexts, strategies include community enterprises, ventures based on local knowledge, agricultural activities, artisanal fishing, tourism, production of cultural goods, and other forms of livelihood diversification (Agus & Rukin, 2025; García et al., 2025; Portales, 2018; Vázquez-Maguirre, 2020). Yeh et al. (2021) also show that the revitalization of Indigenous cultural heritage can be linked to community practices and local development processes, demonstrating that culture can constitute an active component of development strategies rather than merely an element to be preserved. The relationship among culture, knowledge, and innovation has also begun to receive greater attention. Arias (2026) argues that Indigenous and local knowledge can play a central role in the design and implementation of innovations for sustainable development, particularly when external solutions are adapted through processes of local experimentation and learning. Gupta (2026) similarly maintains that Indigenous knowledge can contribute to sustainable community development by providing principles and practices adapted to the social and environmental conditions of territories. Likewise, Kumari (2025) highlights the potential of Indigenous knowledge systems to guide sustainable management practices in rural economies. Nevertheless, the existing literature is significantly fragmented. Some studies focus on Indigenous entrepreneurship and income generation, while others analyze traditional knowledge, climate adaptation, conservation, social enterprises, governance, or cultural revitalization. This specialization has enabled in-depth analysis of particular components of Indigenous economies, but makes it difficult to understand in an integrated manner what outcomes different economic models produce and under what conditions those outcomes can be considered sustainable. Bansal et al. (2024), in a review of the literature on Indigenous communities and sustainable development, identified dimensions related to economics, ecology, livelihoods, sociodemographic factors, sustainable development and policies, partnerships, and governance. However, there remains a need to move from a general thematic classification toward an integrated assessment of the outcomes

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associated with the different economic models adopted by Indigenous communities. This gap is particularly relevant because measuring success solely through economic indicators may conceal effects that are fundamental to Indigenous communities. An initiative may increase income while simultaneously generating dependence on external markets, environmental degradation, or loss of community control. Conversely, an activity with modest economic benefits may contribute significantly to the conservation of traditional knowledge, social cohesion, community autonomy, and territorial resilience. Therefore, it is necessary to adopt a multidimensional conception of sustainability that allows economic, social, cultural, environmental, and governance outcomes to be assessed jointly.

From this perspective, Indigenous communities can be considered not merely beneficiaries of development policies, but agents of transformation capable of generating, adapting, and strengthening their own development models. Reyes-García et al. (2026) specifically highlight the role of Indigenous peoples and local communities as agents of transformative change for sustainability. This perspective implies shifting the analysis away from predominantly external, intervention-centered approaches toward models that recognize the capabilities, knowledge, institutions, and economic strategies developed by the communities themselves. Consequently, it is necessary to systematically synthesize the available evidence to determine which economic models and livelihood-generation strategies have been documented in Indigenous communities, what mechanisms explain their outcomes, and what their economic, social, cultural, and environmental contributions are. Such a synthesis would make it possible to identify common patterns, contradictions, enabling factors, barriers, and knowledge gaps, as well as to establish a research agenda aimed at strengthening sustainable Indigenous economies.

Therefore, the objective of this review is to identify, classify, and synthesize the available scientific evidence on the economic, social, cultural, and environmental outcomes associated with economic models and livelihood strategies developed by Indigenous communities, as well as to identify the factors and mechanisms that promote or limit their sustainability. Based on this synthesis, the study seeks to develop a conceptual framework for understanding the performance of Indigenous economies beyond income generation and that can serve as a reference for diagnosing and strengthening community economic initiatives in different territorial contexts.

MATERIALS AND METHODS

A systematic review of the scientific literature was conducted on economic models and livelihood strategies developed by Indigenous communities and their contributions to economic, social, cultural, and environmental sustainability. The review was structured according to the principles established by PRISMA 2020, with the purpose of ensuring a transparent and reproducible process for identifying, selecting, and analyzing the literature. The bibliographic search was conducted in the Web of Science Core Collection and Scopus databases, considered international reference sources for retrieving peer-reviewed scientific literature. Publications from January 2000 to December 2026, in English and Spanish, were considered. The search strategy combined, using Boolean operators, terms related to Indigenous communities and peoples (“Indigenous communities,” “Indigenous peoples,” “Indigenous entrepreneurship,” “Indigenous economy”), economic models and livelihoods (“sustainable economy,” “sustainable livelihoods,” “community enterprises,” “social enterprises,” “Indigenous enterprises,” “livelihood diversification”), and sustainability-related outcomes (“sustainability,” “resilience,” “social innovation,” “community development,” “self-determination,” “cultural revitalization,” “conservation,” and “climate adaptation”).

Peer-reviewed scientific articles were included if they analyzed Indigenous communities and addressed economic activities, entrepreneurship, social or community enterprises, production systems, livelihood strategies, or initiatives related to the sustainable use of natural resources, provided that they reported outcomes related to at least one economic, social, cultural, environmental, or governance dimension. Duplicate documents, studies without a substantial relationship to Indigenous communities, opinion publications, and works that only mentioned Indigenous populations incidentally were excluded. The retrieved records were screened to remove duplicates and subsequently evaluated through title and abstract review; potentially relevant studies were examined through full-text reading. Information from the selected articles was systematized according to year and study location, Indigenous community, economic activity or model, methodology, implementation mechanisms, and main results.

Finally, the studies were classified according to five analytical dimensions: economic, social, cultural, environmental, and governance/community autonomy. The economic dimension included aspects such as income generation, employment, and productive diversification; the social dimension considered well-being, participation, inclusion, and capacity building; the cultural dimension comprised identity, heritage, and knowledge transmission; the environmental dimension incorporated conservation, sustainable resource management, and climate change adaptation; and the governance dimension addressed participation in decision-making, self-management, and community control. The evidence was integrated through a thematic and comparative synthesis, with the purpose of identifying patterns, enabling factors, barriers, and knowledge gaps related to the capacity of different economic models to contribute to the sustainable development of Indigenous communities.

RESULTS

The literature review identified that the local economies of rural and Indigenous communities in Campeche are characterized by marked diversification of productive activities and by the combination of strategies aimed at income generation, subsistence, natural resource conservation, and the maintenance of cultural practices. In Escárcega specifically, the available evidence shows that these strategies are primarily organized around agriculture, home gardens, beekeeping, handicrafts, service microenterprises, forest resource use, and opportunities associated with rural and community tourism. This diversity is consistent with the multidimensional sustainability approach proposed in this study, in which the performance of an economic model should not be assessed solely by its capacity to generate income, but also by its social, cultural, environmental, and community autonomy effects.

Indigenous and Territorial Context of Escárcega

The municipality of Escárcega has a sociocultural composition that is relevant to the analysis of community economic models. According to the Local Participatory Ecological Planning Program, in 2020 there were 3,133 people aged five and older who spoke an Indigenous language, equivalent to 5.2% of the municipal population. The main Indigenous languages were Ch'ol, with 1,045 speakers; Maya, with 556; and Tseltal, with 96 speakers (Gobierno del Estado de Campeche, 2024). This composition demonstrates that the municipality is a culturally diverse territory and that the analysis of community economies must consider not only the economic dimension, but also knowledge, productive practices, social relationships, and forms of territorial appropriation. The same territorial assessment shows that the communities of Escárcega maintain significant dependence on primary activities. Community participation exercises identified agriculture, livestock, and beekeeping as recurrent productive activities, in addition to forest resource use, conservation, and activities with tourism potential. In various localities, subsistence milpa systems, maize, beans and chigua production, mechanized agriculture, livestock, beekeeping, and extraction or management of forest resources have been reported (Gobierno del Estado de Campeche, 2024).

Table 1. Scientific and Institutional Evidence on Sustainable Economic Strategies in Escárcega and Campeche

Territory/activity	Evidence identified	Main results	Sustainability dimensions
División del Norte, Escárcega	40 interviews with home-garden owners	96 plant species and six species of domestic animals; gardens mainly fulfill food and medicinal functions	Economic, social, cultural, environmental
Escárcega and Calkiní	18 women artisans	9 types of handicrafts and 15 obstacles were identified; limitations include time, financial resources, government support, and administrative knowledge	Economic, social, cultural
Escárcega	258 service microenterprises	Practices associated with the social and solidarity economy were identified, particularly cooperation and mutual benefits	Economic, social, organizational
Escárcega	Municipal agriculture	Nine crops were identified; paddy rice and maize represent 97% of the reported cultivated area	Economic, productive
Escárcega	Rural tourism	Four communities have resources suitable for tourism use; two have conditions for routes and two for guided tours	Economic, social, environmental
Campeche	Maya honey microenterprises	Training, motivation, cohesion, and networks support persistence; they generate modest income and strengthen cultural identity	Economic, social, cultural, environmental
Northern Campeche	Honey production	Producers are predominantly ejidatarios; profitability was identified with a benefit-cost ratio close to 2	Economic, social
Campeche	Wildlife use	In Pich, 135 plant species and 76 animal species were recorded as being used, along with 20 potential productive alternatives	Economic, cultural, environmental
Campeche	REDD+ programs	The programs analyzed did not produce sustainable diversification or intracommunity equity; deforestation processes persisted	Environmental, economic, governance

Agriculture and Home Gardens as the Basis of the Local Economy

Agriculture constitutes one of the most important components of Escárcega's economic strategies. Burgos Rangel et al. (2022) identified nine agricultural crops present in the municipality, out of a total of 15 recorded for the state of Campeche. A particularly relevant finding is that paddy rice and grain maize jointly represented 97% of the cultivated area considered in the study. In addition, both crops have value-added generation mechanisms: rice through industrial processing and maize through artisanal processing. The authors also point to a marked difference in the production structure, since maize production is associated with small-scale farmers, whereas rice production is strongly concentrated among larger-scale producers (Burgos Rangel et al., 2022).

This structure reveals a first characteristic of local economic models: the coexistence of commercial agriculture and small-scale agriculture oriented partly toward subsistence. The Ecological Planning Program confirms this diversity by documenting communities where subsistence milpa production of maize and beans is practiced alongside commercial crops, livestock, and beekeeping (Gobierno del Estado de Campeche, 2024).

A particularly relevant finding for the focus of this review concerns the home gardens of División del Norte. Rivas et al. (2025), through 40 interviews, found gardens ranging from 10 to 2,000 m², in which 96 plant species belonging to 46 families and 77 genera were recorded, in addition to six species of domestic animals. The Shannon-Weaver index was 1.8 and the Simpson index was 0.022. The species with the highest cultural value were lemon, avocado, sour orange, mango, and spearmint, while food and medicine were the main purposes of the gardens.

These results suggest that the home gardens of Escárcega should not be considered merely food-production units. They constitute reservoirs of agrobiodiversity, local knowledge, and cultural practices, and function as mechanisms for reducing dependence on external markets. Therefore, from a “beyond income” perspective, the gardens represent a form of natural, social, and cultural capital that potentially contributes to household resilience.

Beekeeping as an Economic Model with Potential for Territorial Integration

Beekeeping represents another relevant economic strategy in Campeche, particularly in Escárcega. State-level evidence shows that Campeche is one of Mexico's main honey-producing states. Chan Chi et al. (2018) reported that in 2014 the state produced more than 7,000 tons of honey, with a value exceeding 225 million pesos. In their study of the northern part of the state, they found that producers were predominantly ejidatarios, over 50 years of age, and had low levels of schooling. Production costs exceeded 82,000 pesos, while average income was above 160,000 pesos and the benefit-cost ratio was close to 2, indicating profitability under the conditions studied.

The evidence most directly related to Escárcega comes from Mendoza Juárez (2023), who analyzed 395 beekeepers from four municipalities in Campeche. The study found that Escárcega had an average productivity of 28.8 kg of honey per hive, close to that recorded in Champotón, at 29.3 kg per hive. The results also indicated that producers' schooling and experience influence various productive and economic parameters, while economies of scale favor the profitability of larger production units.

However, beekeeping should not be interpreted solely in terms of profitability. Abud-Russell et al. (2023), in studying two Maya honey microenterprises in Tankuché, Campeche, found that training, motivation, group cohesion, and networks with external organizations were fundamental factors in the persistence of the ventures. Although the income generated was modest within a context of multiple livelihood activities, the enterprises contributed to strengthening cultural identity and generating new livelihood opportunities. Overall, these results indicate that beekeeping can constitute an economic model compatible with territorial conservation, provided that organization, training, market access, and maintenance of floral resources are ensured. This characteristic is particularly important for Escárcega because the territorial assessment identifies beekeeping as a productive activity present in numerous communities in the municipality (Gobierno del Estado de Campeche, 2024).

Handicrafts and the Social Economy: A Strong Cultural Component but Limited Business Consolidation

Handicraft activity constitutes another economic model in which the cultural dimension is especially important. Gómez-Xul et al. (2024) studied 18 women artisans from Escárcega and Calkiní and identified nine types of handicrafts, including hammock embroidery, blouse embroidery, bull-horn crafts, and seed jewelry. The artisans had an average age of 48 years; 61% devoted part-time to production and marketing, 72% worked individually, and only 28% belonged to an artisan group. Likewise, 72% of the businesses were not legally incorporated.

In Escárcega specifically, the main obstacles identified were lack of time, limited financial resources, gender identity, limited government support, and lack of administrative knowledge. The analysis identified 15 types of obstacles, showing that the main limitation is not necessarily the absence of economic activity, but rather the difficulty of transforming cultural activity into a stable, collective venture with greater market capacity (Gómez-Xul et al., 2024).

This finding is particularly significant for the conceptual model of this study. Handicrafts represent a case in which cultural capital exists, but is not necessarily converted into sufficient economic capital. Strengthening administrative capacities, collective organization, marketing, and market access therefore appears to be a necessary condition for cultural heritage to become a sustainable economic strategy.

Social and Solidarity Economy in Escárcega's Microenterprises

Evidence on service microenterprises complements this picture. Atlahua et al. (2023) analyzed 258 service microenterprises in Escárcega and found a considerable presence of practices associated with the social and solidarity economy. The results indicate that a significant proportion of these economic units incorporate practices oriented toward mutual benefit and local development, demonstrating that Escárcega's economy does not operate exclusively according to a logic of individual profit maximization.

This finding identifies cooperation and social relationships as informal economic mechanisms that can contribute to the persistence of productive units. However, the available evidence also shows that these practices still have low levels of formalization and face constraints related to financing, training, innovation, and marketing.

Rural Tourism and Natural Resource Use

Tourism constitutes an emerging strategy for diversifying the community economies of Escárcega. Cervantes Sánchez et al. (2025) studied four communities in the municipality through questionnaires directed to community representatives, residents, and local leaders. The authors identified natural and cultural resources with tourism potential and reported that two communities had conditions for designing tourism routes, while two others had conditions for developing guided tours. The main areas of opportunity identified were organization, communication, tourism training, route design, and marketing.

These results are relevant because they show that the municipality possesses territorial assets that could be transformed into economic products, but their use depends on organizational capacities that still require strengthening. Thus, tourism can represent a model of economic diversification, but its sustainability will depend on ensuring that benefits remain within communities and that tourism use does not cause deterioration of natural resources.

The experience of Miguel Colorado, in the neighboring municipality of Champotón, provides useful regional evidence. Viveros Moreno et al. (2022) found that 56% of the households studied obtained direct or indirect income from the community ecotourism center. The project was also identified as a source of employment and as a mechanism for protecting a natural attraction by local residents themselves (Viveros Moreno et al., 2022).

This case suggests that community tourism can simultaneously generate income, employment, social organization, and conservation, although transferring this model to Escárcega should take into account the particular characteristics of each community.

Natural Resource Use and Productive Diversification

The literature on Maya communities in Campeche also demonstrates the potential of economic strategies based on diversified biodiversity use. In the Maya community of Pich, Retana-Guiascón et al. (2011) documented the community use of 135 plant species and 76 animal species, grouped into 17 and seven use categories, respectively. Based on these resources, 20 integrated use alternatives were identified as feasible for development through Wildlife Management Units (UMA). The authors concluded that this model can simultaneously contribute to productive diversification, strengthening local capacities, and biodiversity conservation. Although the Pich community is not located in the municipality of Escárcega, the finding is relevant as regional evidence because it demonstrates that natural resources can become economic assets without necessarily depending on their intensive exploitation. In Escárcega, the territorial assessment identifies conservation areas, forest resources, beekeeping potential, and sites of tourism interest, providing a territorial basis for exploring similar productive diversification models (Gobierno del Estado de Campeche, 2024).

Limits of Models Based Solely on Resource Use

The evidence also shows that not every productive strategy associated with community-based natural resource management automatically generates sustainability. Špirić et al. (2021), studying two communities in Campeche participating in REDD+ programs, found that the programs did not produce intracommunity equity or sustainable diversification of economic activities. The authors observed that deforestation associated with livestock production and agricultural mechanization remained dominant and concluded that the programs required longer implementation periods, sustainable productive activities, and monetary benefits distributed among the different local groups.

This finding constitutes critical evidence for the present study: the existence of an environmental program, a community organization, or a natural resource does not by itself guarantee a sustainable economic model. Governance, benefit distribution, local participation, and articulation with productive activities are determining variables.

Synthesis of the Economic Models Identified

The integration of the results makes it possible to recognize at least six types of economic strategies present or potentially applicable in Escárcega:

Economic model/strategy	Evidence in Escárcega	Main benefit	Main limitation
Agriculture and milpa	High	Food, income, and subsistence	Climate dependence, pests, low value added
Home gardens	High	Food security, biodiversity, and cultural knowledge	Limited production scale
Beekeeping	High	Income, use of flora, and export potential	Need for training, organization, and climate adaptation
Handicrafts	High	Income, cultural identity, and women's participation	Low organization, financing, and marketing
Microenterprises/SSE	High	Employment, cooperation, and local dynamism	Informality and limited business capacity
Rural/community tourism	Emerging	Diversification, employment, and territorial valorization	Lack of organization, training, and marketing
Forest/biodiversity management	Potential	Conservation and economic diversification	Risk of overexploitation and weak governance

Overall, the evidence indicates that the models with the greatest sustainability potential are those that combine more than one economic and territorial function. Home gardens, for example, produce food and conserve agrobiodiversity; beekeeping generates income and depends on vegetation conservation; handicrafts generate income and maintain cultural elements; and community tourism can transform natural and cultural resources into economic services without necessarily requiring their extraction. Therefore, the results suggest that the sustainability of Escárcega's community economies does not depend on identifying a single productive activity, but on articulating diversified economic systems in which agriculture, beekeeping, biodiversity use, handicrafts, tourism, and small enterprises can complement one another.

Conceptual Model Derived from the Evidence

The synthesis of the reviewed studies makes it possible to propose a relationship among five fundamental components: Territorial and cultural resources → local organization and knowledge → economic model → strengthening mechanisms → multidimensional outcomes.

In Escárcega, territorial resources include land, biodiversity, melliferous flora, agricultural production, landscapes, and cultural heritage. These resources are combined with local knowledge and community capacities to generate economic models such as agriculture, home gardens, beekeeping, handicrafts, microenterprises, and tourism. However, the evidence shows that the existence of resources is not sufficient; positive outcomes depend on training, organization, networks, marketing, access to financing, community participation, and governance mechanisms (Abud-Russell et al., 2023; Gómez-Xul et al., 2024; Špirić et al., 2021).

Consequently, the results of this review support the conceptual hypothesis that a sustainable community economy should be evaluated through a set of interrelated outcomes: income and employment; food security; capacity building and organization; conservation and transmission of cultural knowledge; biodiversity conservation; and community autonomy or decision-making capacity. This perspective moves beyond an evaluation limited to monetary income and provides a conceptual basis for the empirical assessment that will subsequently be conducted in Indigenous communities in the municipality of Escárcega.

DISCUSSION

The results show that the rural and Indigenous economies of Escárcega are characterized by productive diversification and by the articulation of income generation, subsistence, environmental conservation, and cultural reproduction. This evidence is consistent with literature recognizing that Indigenous economies cannot be evaluated solely through monetary indicators because they integrate economic, social, cultural, and environmental dimensions (Bansal et al., 2023; Gladun et al., 2021; Reyes-García et al., 2026). In this sense, the diversity of activities identified in Escárcega can be interpreted as a resilience strategy in response to changing economic and environmental conditions.

Agriculture and home gardens constitute an example of this integration. In addition to contributing to food supply and generating products for exchange or sale, home gardens conserve agrobiodiversity and local knowledge. This multidimensional function is consistent with Daniel et al. (2022) and Cajete (2020), who emphasize that Indigenous and local knowledge forms part of socioecological systems that contribute to community resilience. Likewise, Arias (2026) notes that this knowledge can provide a basis for developing sustainable solutions adapted to the specific conditions of each territory. Therefore, in Escárcega, local knowledge should be considered a productive and cultural resource, rather than merely a heritage element.

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Beekeeping likewise has significant potential because of its capacity to generate income while depending on the conservation of floral resources. The results are consistent with Dharmasiri et al. (2025), who indicate that Indigenous entrepreneurship can contribute to climate adaptation when it is articulated with local knowledge, organization, and territorial resources. Similarly, Sangha et al. (2025) emphasize that Indigenous economies can form part of conservation strategies. However, profitability alone does not guarantee sustainability; training, organization, market access, and mechanisms that ensure adequate benefit distribution are required.

In the case of handicrafts, the results reveal a different situation: significant cultural capital exists, but difficulties persist in converting it into a consolidated business activity. This situation is consistent with Maclean et al. (2024), who highlight the need to develop culturally appropriate business planning capacities. Likewise, Yeh et al. (2021) show that revitalization of Indigenous heritage can contribute to local development when communities themselves participate in its management. Therefore, strengthening handicrafts in Escárcega should prioritize organization, marketing, and training without disconnecting them from their cultural meaning.

Microenterprises, rural tourism, and biodiversity use, in turn, offer opportunities to expand economic diversification. Social enterprises can articulate economic and social objectives and strengthen community development (Portales, 2018; García et al., 2025; Rodríguez Reyes et al., 2025). Similarly, community tourism can contribute to income generation and conservation when there is local participation and an adequate distribution of benefits (Bueloth et al., 2026). However, the existence of natural or cultural resources does not by itself guarantee sustainable outcomes; governance, local institutions, and community participation are determining factors (Lobato-Sales et al., 2026).

This consideration is particularly relevant given the evidence that some conservation programs do not necessarily produce economic diversification or equity. Therefore, development strategies should avoid exclusively productive or environmental approaches and promote integrated processes of organization, training, and governance. The literature indicates that Indigenous and local practices can contribute to adaptation and sustainability when there is adequate articulation among knowledge, institutions, and economic activities (Galappaththi & Schlingmann, 2023; Kumari, 2025). Overall, the findings support the idea that community economic development in Escárcega does not depend on a specific activity, but on the articulation of agriculture, home gardens, beekeeping, handicrafts, microenterprises, tourism, and sustainable resource use. This view is consistent with entrepreneurship based on local knowledge and with community economy models that seek to simultaneously strengthen economic well-being and territorial identity (A. & R., 2025; Vázquez-Maguirre, 2020). Therefore, development strategies should build on the resources and capacities already present in communities and strengthen them through training, financing, marketing, innovation, and participatory governance.

Finally, the evidence suggests that the sustainability of these models should be evaluated beyond economic income, also considering food security, biodiversity conservation, organizational strengthening, cultural transmission, participation, and community autonomy. This perspective recognizes Indigenous peoples and local communities as actors capable of driving transformative processes toward sustainability, rather than merely beneficiaries of development policies (Reyes-García et al., 2026). Consequently, for Escárcega it is appropriate to advance toward diversified and territorially integrated economic models that allow income generation without disconnecting economic activity from culture, territory, and environmental conservation.

CONCLUSIONS

The analysis conducted allows us to conclude that the local economies of Indigenous communities cannot be evaluated solely in terms of income generation. Their sustainability depends on the articulation of different economic, social, cultural, environmental, and community governance dimensions. In this regard, activities such as agriculture and milpa systems, home gardens, beekeeping, handicrafts, microenterprises, rural and community-based tourism, and biodiversity use contribute in different ways to community well-being and strengthening. The results show that these strategies can simultaneously promote income and employment generation, food security, natural resource conservation, the transmission of traditional knowledge, the preservation of cultural identity, and the strengthening of community organization. However, their development faces limitations related to access to financing, training, marketing, organization, governance, and institutional coordination. In the context of Escárcega, Campeche, the evidence reviewed suggests that the diversification of productive activities and the use of territorial resources, combined with traditional knowledge and community participation, constitute fundamental elements for building more resilient and sustainable local economies. Therefore, development policies and strategies aimed at Indigenous communities should move beyond approaches focused exclusively on income and incorporate indicators that consider social well-being, culture, the environment, participation, and community autonomy. Finally, there is a need to strengthen training, financing, marketing, and governance mechanisms that recognize the particularities of each territory and promote the active participation of communities in decision-making. Building sustainable Indigenous economies therefore requires an integrated vision that recognizes communities not merely as beneficiaries of development programs, but as actors capable of generating and managing their own strategies for well-being and territorial development.

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