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AUTONOMY OR DEPENDENCE? TRANSFORMATIONS IN FOOD PRACTICES OF MAYAN COMMUNITIES IN THE PRESENCE OF ECOTOURISM

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ABSTRACT

This study analyzes the relationship between food provision and ecotourism in Mayan communities—particularly Lacandon and Mam—in southeastern Mexico. Through an ethnographic approach that included participant observation, interviews, and document analysis, the study examines the transformations in local food provision practices—hunting, fishing, gathering, farming, breeding, and purchasing—under the influence of ecotourism. The findings reveal tensions between the preservation of local culinary knowledge transmitted orally and the incorporation of products from external markets and ultra-processed foods. These dynamics affect both the food sovereignty of the communities and the ethnic identity of their members. The study concludes that, while ecotourism generates economic benefits, it also contributes to a growing dependence on external markets and to cultural erosion. In this context, public policies are needed that promote a balance between economic development, food sovereignty, and cultural preservation.

Keywords: autonomy, ecotourism, local practices, knowledge, socio-territory.

INTRODUCTION

This study analyzes the relationship between food provision and ecotourism in Mayan communities in southeastern Mexico: Lacanjá Chansayab, in the Selva region, and Ejido El Águila, in the Soconusco region. Tourism contributes more than 8.7% to the national GDP (INEGI, 2020) and has generated increasing interest in modalities focused on nature and local culture. For the purposes of this research, the definition of ecotourism by Suárez *et al.* (2022, p. 61) is adopted, who conceive of it as a type of tourism oriented towards the enjoyment and study of nature, with low environmental impact, that promotes conservation, generates income, and respects the local community; this is a key characteristic of the case studies.

This research focuses on the analysis of food provision dynamics and their relationship to ecotourism, framed within a broader socio-territorial process. Ecotourism in rural areas of Mexico is presented as a strategy directed towards both sustainable development and the socio-economic improvement of communities that participate in this activity.

The study concentrates on social reproduction strategies, understood as the strategies through which people ensure their subsistence based on their living spaces, practices, and local knowledge. These strategies manifest in the territory, revealing transformations in local productive activities and the incorporation of new occupations linked to the service sector, in addition to primary activities (Estrada, 2021). From this perspective, a conceptual approach is articulated that integrates ecotourism as a branch of sustainable tourism, food culture, and the socio-territorial process.

It is argued that the incorporation of ecotourism in Lacanjá Chansayab (Lacandon) and El Águila (Mam) has acted as a key factor in transforming their food provision practices. This influence is manifested through two main, interrelated pathways: dependence on external products and reconfiguration of local culinary knowledge, understood as the adaptation, simplification, or displacement of traditional techniques and local knowledge due to tourist demand for standardized menus and the reduced availability of time for practices such as milpa cultivation. However, the persistence of local culinary identity elements is observed, which act as centers of cultural resistance and demonstrate a complex process of change that is not one of total substitution, but rather of negotiation and hybridization.

THEORETICAL FRAMEWORK

Ecotourism as part of sustainable tourism: towards a food culture

Ecotourism, as a form of sustainable tourism, is often linked to the responsible use of natural resources and environmental conservation. At the local level, while this activity is usually planned, it is frequently done under a top-down model (Medina and Gutiérrez, 2016), where external agents (government, NGOs, tour operators) define the agendas, relegating communities to a secondary or symbolic role (Ochoa, 2020). One of the main challenges of ecotourism lies in the inequitable distribution of its economic benefits (Yagüe, 2002; Medina and Gutiérrez, 2016).

A fundamental principle of ecotourism is its commitment to the equitable distribution of benefits among local stakeholders (Ceballos-Lascuráin, 1996). However, studies in southern Mexico reveal a considerable gap between this ideal and the practice, showing that economic benefits are rarely distributed equitably and, on the contrary, tend to be concentrated among external operators or specific actors within the community (Aguilar *et al*., 2018; Barriga, 2017; Oseguera *et al*., 2021; Suárez *et al*., 2021; Suárez *et al*., 2022). Regarding food cultures, their reinterpretation in tourism and gastronomy contexts has led to their implementation as a mechanism for profitability (Campos and Hernández, 2015). Even though this revaluation increases the visibility of rural and indigenous communities, it also evidences the existence of different interests (De Suremain, 2017) and affects cultural autonomy, since local food

practices can be displaced, intervened in, or reinterpreted according to logics that are foreign to the communities.

In this context, questions arise such as: What happens to food provision practices when communities incorporate ecotourism as another activity within their economic repertoire? What consequences does this incorporation have for local cultural expressions linked to food? What new power relations emerge in this process?

Although ecotourism aims to revitalize local cuisine, this objective is not always reached due to the demands of the tourism market. The presentation and commercialization of traditional local food tend to prioritize external criteria, relegating the food supply chain to a secondary role. In recent decades, local food has been conceptualized as a creative practice or tourist attraction, which has favored the study of gastronomy at the expense of an integral approach to food as a cultural system.

Food culture

The sociocultural criterion manifests when the search for and access to food not only respond to nutritional needs but also involve cooperative relationships and social interactions mediated by the ecological environment (Contreras and Gracia, 2005; Díaz and Gómez, 2005; Ekmeiro-Salvador and Matos-López, 2023; Guerrero, 2021). These relationships are expressed in practices associated with obtaining, producing, distributing, preparing, and consuming food, which vary according to the environment and in the ways of eating, sharing, and offering food, reinforcing collaborative patterns within each community (Contreras and Gracia, 2005; Díaz and Gómez, 2005; De Garine, 2016).

Food is not limited to the existence of resources, but also to the ability to access them and the local knowledge of how to do what is necessary to utilize them. Today, many rural communities integrate combined strategies to guarantee their sustenance, while urban populations depend on these traditional systems, albeit mediated by complex distribution chains (De Garine, 2016; Soares *et al*., 2020).

Food preparation requires cooperation, technology, and collective memory. As Belmontes (2020, p. 44) points out, "the ecological niche, when humanized, is transformed into the cultural niche, where each group of people defines its own space, largely as a result of how it feeds itself".

From this perspective, indigenous food systems are defined as "those in which people generally live in rural areas and which depend mainly on foods that are locally hunted, fished, gathered, raised and cultivated […] where a set of activities, local knowledge, technologies, traditions, beliefs, norms, organizational forms, social and economic relationships are linked, with the purpose of obtaining food for their social and biological reproduction" (Guzmán, 2013, p. 45; HLPE, 2017).

Food provision comprises activities carried out within a territory, based on local experiential knowledge. Discussing local food systems implies caring for the production systems that make this food possible.

This local knowledge is challenged by new activities such as ecotourism, which demand new forms of organization, interaction with external actors, and adaptation of food practices.

During the 1960s and 70s, the study of peasants focused on their economic and productive dimension, considering them as a homogeneous unit, subordinate to capitalism and lacking transformative agency (Hewitt, 1988). Recent research recognizes the internal diversity of the peasantry and its capacities for social reproduction, local organization, and adaptation (Edelman, 2022; Oseguera *et al.*, 2021; Suárez *et al.*, 2021, 2022). These forms of interaction are projected onto the territory, transforming productive activities and generating new forms of work, including tourism services (Estrada, 2021). Analyzing the insertion of ecotourism in communities in southern Mexico is crucial for understanding the interaction between peasant ways of life and capitalist dynamics. In the area of food provision, these tensions translate into changes in social relations, where reciprocity and connection to the land remain central. Thus, food and its associated practices become an expression of cultural transformation, based on intergenerational local knowledge that constitutes a cultural territory.

Domestic knowledge about useful plants, animals, and fungi includes identifying species, optimal harvesting times, lunar phases, time of year, which part to use, and local culinary uses. This profound local knowledge, transmitted inter-generationally, integrates biological, ecological, symbolic, and organizational dimensions (Belmontes, 2020).

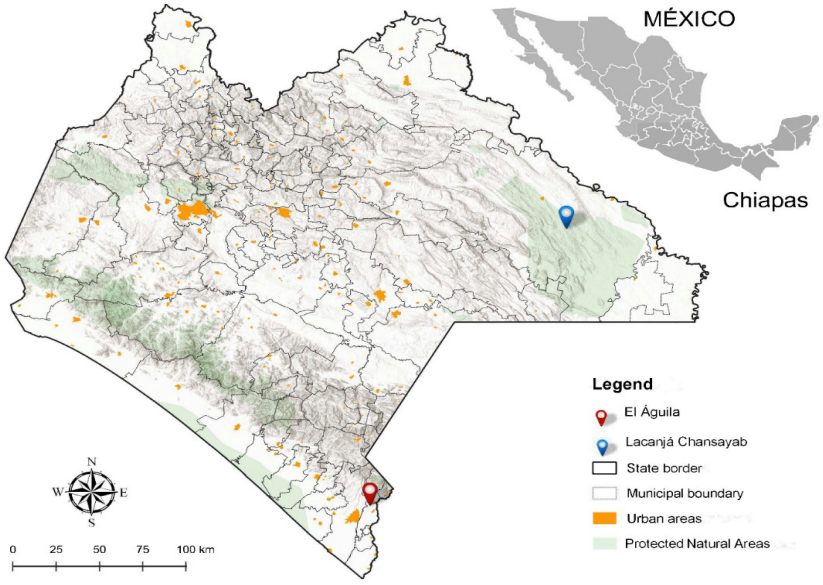
In this study, the concept of *Metik*/*Betik o'och* ('making food') is recovered (Guerrero, 2021), from the Lacandon Maya, which integrates local and foreign understandings, products, and practices. Among the Mam people, cooking refers to "stewing" or "preparing stews" (Barranco, 2019), an activity based on local knowledge transmitted orally within families. Food provision thus constitutes a cultural practice rooted in the daily lives of domestic groups, combining local and external knowledge and relating in complex ways to the territory and to norms of commensality, which are fundamental for the configuration of local food systems (Goody, 1995).

METHODOLOGY

Study areas

Lacandon Maya

The community of Lacanjá Chansayab is located in southeastern Chiapas (Figure 1), within the region known as the Lacandon Zone Community, which includes the communities of Nahá and Metzabok (Boremanse, 1984; Ochoa *et al*.,



Source: prepared by the authors.
Figure 1. Study sites.

2021; Trench, 2005). In 2018, this locality had 976 inhabitants (481 men and 491 women) (Nečasová, 2010; Ochoa *et al*., 2021). Specifically, there are more than twenty businesses in Lacanjá Chansayab, including lodging and restaurants (Guerrero, 2021; Suárez, 2011). In the late 1990s, the community maintained a degree of food autonomy based on maize cultivation (*milpa*), although the variety and quality of the grain had declined, which led to the adoption of products and eating habits that were previously nonexistent or marginal in their diet (Marion, 1990). The penetration of modernity impacted gender dynamics: women's working days intensified, while men became more involved in public and political spheres, displacing some traditional symbolic references. In Lacanjá Chansayab, social changes reflect a gradual transition in which both men and women have increasingly abandoned agricultural and domestic tasks to enter jobs linked to commerce and the service sector. This economic reorientation has reduced the historical dependence on farming and gathering, generating profound transformations in both community dynamics and family structures, from daily practices to traditional roles (Trench, 2005; Nečasová, 2010).

The development of ecotourism in the community is closely linked to the domestic sphere. According to Ochoa *et al*. (2021), ecotourism centers are located within family residential spaces. Some members of these domestic groups acknowledge that "the new economic activities and money have affected the way of relating within the *vejo'ovex* and with other communities" (Ochoa *et al*., 2021:40).

To counteract the loss of traditional local culinary knowledge (Ochoa *et al*., 2020), local cultural revitalization initiatives emerged. A notable example is the Maya Lacandon Hach Winik Festival, organized in 2018 by four ecotourism centers with family and community management. This event aimed to "create a space of community gathering to strengthen ties between families and service providers, promote Lacandon culture among locals and visitors, and showcase the ecotourism, gastronomy, and artisanal offerings of Lacanjá Chansayab" (Ochoa *et al*., 2020, p. 99). The organization of the festival by these local businesses underscores the active and self-management role of the community in the revaluation of its cultural heritage in face of transformative pressures. Fifty families participated, offering artisanal products and traditional local food, including snail tamales, snail ceviche, *k'oi bi k'ach* (tortillas filled with chicken), papaya sweets, the *Om* beverage, and fruit drinks (Ochoa *et al*., 2020).

Mam Maya

Ejido El Águila, in Cacahoatán (Figure 1), Chiapas, is located in the Soconusco region, within the area of influence of the Tacaná Volcano Biosphere Reserve. It has 1,274 inhabitants, of whom 611 are men and 664 are women (INEGI, 2005). Coffee production is the main economic activity, along with vegetable farming, fruit orchards, and beekeeping (Ballinas *et al*., 2024; Barranco, 2019; Suárez, 2011). The community has also diversified its activities through ecotourism.

The *ejido* of El Águila covers an area of 9.54 km². Of this, 242.99 hectares are designated for conservation within the framework of the National Forestry Program, under the modality of Payment for Environmental Services for Biodiversity Conservation. The rest of the territory is occupied by coffee plantations and human settlements (Barranco, 2019). The land area per *ejido* member varies from 22 *cuerdas* (one *cuerda* is equivalent to 21 × 21 m, that is, 9702 m²) to a maximum of four hectares (Barranco, 2019).

Coffee production, with Robusta and Arabica coffee being grown, is the most important productive activity in the community. This crop is accompanied by various plant species in an agroforestry system. Firewood is the main source of energy in households, collected primarily from fallen trees in coffee plantations. In some homes, gas is also used as a supplementary fuel source (Barranco, 2019; Suárez, 2011).

Coffee production has been the economic axis and continues to be the primary source of income for many families. However, some residents have begun to diversify their livelihoods. New productive activities include growing vegetables such as tomato, cilantro, and chayote; beekeeping; and providing tourism services. The ecotourism center of the *Pak'al Tsix a'* (Water Wing Butterflies) group is a notable example, which has a restaurant and four

cabins (Barranco, 2019; Suárez, 2011). Despite the importance of coffee as an emblematic crop, a generational change in job preferences is observed: young people opt to migrate to nearby cities (Ballinas *et al*., 2024; Barranco, 2019; Suárez, 2011).

Unlike Lacanjá Chansayab, El Águila is experiencing changes linked to its proximity to urban centers such as Cacahoatán, Tuxtla Chico, and Tapachula. This interaction has significantly influenced daily practices and food culture, which reflects a growing adoption of new habits and products as a result of frequent contact with urban areas and regional markets.

Selection criteria for case studies

The selection of Lacanjá Chansayab and El Águila is based on a controlled comparison strategy, designed to analyze the transformations in food provision systems, under the influence of ecotourism, in contrasting socio-ecological scenarios.

Lacanjá Chansayab represents a well-established ecotourism model. Its location in the Lacandon Jungle, its relative historical isolation, and its economic transition make it a key site. It is ideal for observing the pressure of tourism on traditional food systems in an environment of high biodiversity and communal land ownership.

Ejido El Águila exemplifies an emerging and multifunctional ecotourism context, embedded in a landscape dominated by coffee production. Its proximity to the border and urban centers like Tapachula, as well as its historical integration into global markets through coffee, introduce key variables of connectivity and a peasant commercial economy which explain the impact of tourism. Here, ecotourism is a complementary activity to a pre-existing and more diversified economic base.

The methodological strategy and data collection techniques (Table 1) focused on ecotourism centers and the domestic groups associated with them. These centers serve as privileged observation points where ecotourism is articulated with daily life. By studying these families, it is possible to more clearly capture the tensions, adaptations, and negotiations between traditional food practices and new tourism dynamics.

In Lacanjá Chansayab, work was done with 13 domestic groups, associated to four ecotourism centers: *Topche*, *Ya'ax Pepen*, *Ya'ax Can*, and Lacandon Camp. Support and reciprocity connections were identified, evidencing a distribution of roles in ecotourism (Guerrero, 2021).

Among the Mam Maya, the work was concentrated at the *Pak'al Tsix a'* (Water Wing Butterflies) ecotourism center, where 21 women, known as *comideras* (renowned cooks), were interviewed. Furthermore, interviews were also conducted with coffee farmers (35 interviews were carried out, where 23 men

Table 1. Correspondence between research techniques and information collected on food practices.

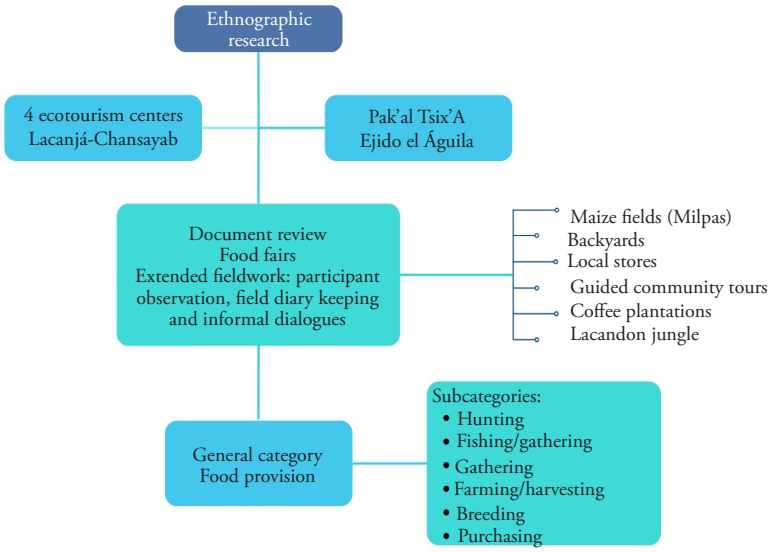
Technique	Specific information obtained
Document review	Historical context, demographic data, public policies related to tourism and food, previous studies in the zone.
Food fairs	List of traditional dishes offered, ingredients used, preparation techniques observed, interaction between community members and visitors, discourses on the "authenticity" of the food.
Participant observation	Daily routines for food procurement (e.g., going to the milpa, to the forest, to the store), gender roles in the kitchen, family consumption dynamics, food preparation for tourists.
Informal dialogues	Subjective perceptions about dietary changes, cultural meanings of food, personal preferences, life histories related to local culinary practices.
Interviews	Work history (transition from farmer to service provider), specific provisioning strategies (what they grow, what they hunt, what they buy), detailed local knowledge about edible flora/fauna.
Guided tours	In situ identification of plant and animal species used for food, location and condition of productive spaces (milpas, coffee plantations, backyards).

Source: prepared by the authors.

and 12 women participated); while with the elderly population (66-90 years), 15 interviews were carried out (eight women and seven men).

The ethnographic record was guided by a socio-territorial approach, documenting the practices associated with the six categories of food provision (hunting, fishing, gathering, farming, breeding, and purchasing). The selection of sites to visit was based on two main criteria: (1) the identification of key locations where participants carried out their procurement activities, and (2) the principles of accessibility and consent. Analysis of the information obtained was conducted in two main phases: systematization/coding and contextual interpretation. In the first phase, all field data (diaries, interviews, observations) was coded using the Atlas.ti software in six subcategories: hunting, fishing/gathering, gathering, farming/harvesting, breeding, and purchasing, based on the anthropology of food (Goody, 1995; De Garine, 2016). To analyze the regional historical overview, this information was organized chronologically and contrasted with community narratives, allowing the identification of key events (political, economic, environmental) that have shaped the current food landscape in each *ejido* (Figure 2).

In the contextual interpretation phase, the analysis was guided by questions from Mintz (2003) regarding food as a social and historical fact, which allowed for a diachronic reading of the transformations. The practices were symbolically mapped in space: Where is hunting done? Where is food purchased? Meanwhile, the conflicts or negotiations in access to resources were analyzed, evidencing the territorial dimension of food sovereignty. Finally, the proposal



Source: prepared by the authors.
Figure 2. Methodology and categories of analysis.

by Olivé (2011) on the constitutive elements of the practices allowed for a rich and situated reading of the changes, integrating the material, symbolic, and organizational aspects of food.

RESULTS

Lacandon Maya and their food provision practices

The natural wealth of the Lacandon Jungle has been fundamental to the subsistence of Lacandon domestic groups, because of their relationship of interdependence, adaptation, and interaction with the environment. These communities use a wide range of food resources, exceeding 170 varieties of plant and animal origin, thanks to a diversified system of procurement practices, such as: gathering wild fruits and plants; farming in milpas, secondary growth fields, and backyards; hunting birds, mammals, and reptiles; fishing and collecting fish, mollusks, crustaceans, insects, and amphibians; as well as breeding poultry (Table 2).

Hunting: Fifty-one wild species have been documented over more than seven decades, reflecting the persistence of intergenerational food preferences. However, permanent settlement, territorial declarations, and institutional agreements have contributed to stricter land regulation, leading to a decrease in hunting.

Hunting continues to be a male activity, organized within close kinship groups, where game is distributed among the participants or, occasionally, sold. Knowledge about wildlife and hunting techniques continues to be passed down through generations, although older adults perceive a growing

Table 2. Ecotourism centers and domestic groups of Lacanjá-Chansayab and their food provision practices.

Ecotourism Center	Topche	Yaáx pepen	Ya´ax kan	Lacandon Camp
Number of domestic groups	5	4	2	2
Sex	Nine men Nine women	Five women and eight men	Four men and five women	Three women and three men
Average age	46	32	18	19
Hunting	They buy from people who hunt	They buy from people who hunt and share	They buy	They hunt share
Fishing/collecting	They do it and share	They do it and share	They do it and share	They do it and share
Gathering	They gather and buy	They gather	They gather	They buy
Farming/harvesting	They farm and share what they harvest	They do not farm	They farm and share	They do not farm
Breeding	They raise and share among themselves	They raise and share them among themselves	No	No
Purchasing	Yes	Yes	Yes	Yes

Source: prepared by the authors based on fieldwork.

disconnect between young people and the rainforest. Nowadays, young people use technologies like GPS for their hunting trips.

Fishing and collecting: Twenty-one species are used, including fish, mollusks, crustaceans, amphibians, and insects (Guerrero, 2021). Restrictions imposed by Protected Natural Areas (PNAs) limit the use of fishing gear in some zones. Gathering of mollusks and crustaceans involves both men and women: women collect snails, and men collect clams, insects, eggs, and amphibians. Both also participate in crab capture. However, male participation has decreased due to work commitments at population centers. This has reconfigured gender roles, with women taking on previously male activities such as fishing and gathering, and passing on knowledge to their children through daily practice (Marion, 1990; Suárez, 2011).

Gathering: This practice involves the manual procurement of wild resources in the rainforest, with 39 documented food types, including fruits, fungi, climbing plants, vines, palms, herbs, vegetables, grains, and seeds. It is generally carried out during opportunistic outings near settlements or while engaging in activities such as fishing or firewood collection. Its frequency has decreased, and it is primarily men who continue to perform this task. Its continuation depends on the persistence of other complementary activities, such as milpa and fishing.

Farming and harvesting: The milpa, secondary vegetation, and backyard gardens have historically been fundamental for food provision. Cultivation of approximately 56 types of foods has been recorded, including bananas, fruits, herbs, vegetables, legumes, tubers, onion, tomato, spices, and maize.

Some crops were consolidated between 1950 and 1980 and are maintained today through self-consumption or purchases. In households that combine agriculture with restaurant operations, products such as maize and beans are sold to tourists. This creates a tension between the tourist market and self-sufficiency, forcing them to purchase supplies when their own resources run out.

Breeding: Animal breeding was not a traditional Lacandon practice. Its introduction with turkeys and chickens represented a significant change, led by women. Today, backyards house chicken coops and corrals, with approximately 12 bird species, both domestic and wild. These include ducks, tinamous, great curassows, guinea fowl, and turkeys. Women and children are responsible for the care, feeding, and occasional sale of eggs and chickens. These animals hold economic and symbolic value for the women, who use the income for personal purchases. Although originally foreign to Lacandon culture, animal breeding has been culturally assimilated and has become an inherited female tradition.

Purchasing: Acquiring food through purchasing is a recent practice, resulting from the agri-food consumption model that emerged in the 1990s. The rise of small businesses marked a turning point, introducing refined and ultra-processed products —such as industrial salt, white flour, pasta, cold meats, and vegetable oils —displacing traditional ingredients like wild honey, artisanal sugarcane sweets, and animal fats. This has led to new consumption patterns with impacts on health, especially for older adults and children.

Workers involved in ecotourism —cooks, waiters, guides, and maids— consume primarily food purchased because of their affordability. Some families buy milpa produce from neighbors or purchase basic food items at local stores. This shift has led to new forms of food organization, such as collective purchasing and shared consumption.

In the ten stores in the locality, the sale of 85 food products was documented, including meats, cold meats, eggs, dairy products, grains, cereals, breads, sweets, soft drinks and prepared meals.

Mam Maya and their food provision practices

The territory of Ejido El Águila is product of a complex history where cultural, economic, and environmental processes converge, which have shaped its food landscape. The region holds a deep Mayan heritage, particularly from the Mam people. For generations, these indigenous groups have maintained a tense relationship with the interests of coffee production, marked by labor subjugation and appropriation of their lands.

The last third of the 19th century radically transformed the region. The Soconusco region became a coveted frontier due to its agricultural potential

and geopolitical value. American, German, and Spanish migrants arrived to settle, fostering commercial crops and large-scale livestock production. For the Mexican government, this zone represented the nation's territorial limit and a space to be domesticated, which generated profound transformations in the original ways of life.

Hunting: Older adults agree on mentioning a decline in the availability of game species. This phenomenon is attributed to two factors: proximity to the NPA and expansion of the coffee plantations. As a result, a shift has been seen in hunting practices towards more accessible species, such as wild birds and iguanas. Hunting continues to be a predominantly male activity, organized in close kinship groups, where game is distributed according to a system of reciprocity. However, the intergenerational transmission of hunting local knowledge shows signs of weakening. Older adults perceive that young people show less interest and technical skill, which they interpret as a growing distancing from their knowledge of the forest.

Fishing and aquatic collecting: Fishing with net or bait is not a common practice. The main activity is collecting mollusks and crustaceans, with the river snail (*Pachychilus spp.*) being the most frequently mentioned resource in the interviews. Twelve families reported consuming river snails seasonally, mainly during the rainy season. This activity shows a division of roles by gender. According to the records, in 8 out of 10 documented outings, snail collection was carried out exclusively by women and children, while crustacean capture was a predominantly male task.

Gathering: Gathering takes place in three areas: the backyard, the coffee plantations, and the milpa system.

In the backyard adjacent to the house, 23 edible species with multiple uses were documented. Among the fruit trees, the following stand out: avocado (*Persea americana*), sweet lemon (*Citrus limetta*), banana (*Musa sapientum*), soursop (*Annona muricata*), and mamey (*Pouteria sapota*). Vegetables and herbs are also cultivated, such as chayote (*Sechium edule*), amaranth (*Amaranthus hybridus*), tomato (*Solanum lycopersicum*), and epazote (*Dysphania ambrosioides*), the latter with food and medicinal uses. Nearly 75% of backyard species have medicinal uses, such as fennel (*Foeniculum vulgare*) and noni (*Morinda citrifolia*).

In coffee plantations, edible species adapted to the agroecosystem can be found, such as cacao (*Theobroma cacao*), mandarin (*Citrus medica*), and plantain (*Musa sapientum*). Many of these have multiple uses, with white leaf (*Solanum sp.*) and amaranth being particularly noteworthy. Among the medicinal plants, riñonina (*Lantana camara*) and guarumbo (*Cecropia obtusifolia*) stand out.

The milpa system, based on the cultivation of maize (*Zea mays*), continues to be central to the Mam diet, along with beans (*Phaseolus vulgaris*), cassava

(*Manihot esculenta*), squash (*Cucurbita spp*.), and quelites (*Amaranthus spp*.). This polyculture reflects ancestral ecological local knowledge (Barranco, 2019). Gathering is done manually, complemented with tools such as machetes. The participation of men and women varies depending on the space: women dominate the backyard, while coffee plantations and milpas involve both genders.

Farming and harvesting: The backyard garden remains important as a productive space. The food system is structured around two pillars: coffee as a cash crop, and maize as a staple food.

The progressive reduction of arable land is due to population growth and the fragmentation of land ownership through inheritance. Although there is no precise measurement of farming area per capita, accounts from *ejido* members agree that plots have become smaller and insufficient for family subsistence due to division from inheritance. Families combine milpa farming with managing touristic restaurants, where they redirect part of their production towards preparing food for visitors. This has had two effects: reduced family self-consumption and greater dependence on external markets.

Breeding: The breeding of domestic birds such as chickens (*Gallus gallus domesticus*) and turkeys (*Meleagris gallopavo*) is the responsibility of women and children, who oversee feeding them and their daily care. The construction and upkeep of chicken coops and corrals is the responsibility of the men. The resulting products have economic and social value, representing income that the women use to purchase personal goods.

Food purchasing: The families that combine milpa farming with tourism redirect part of their maize and bean production towards preparing food for visitors. This has had two direct effects: a decrease in family self-sufficiency and greater dependence on external markets. Basic milpa crops such as native maize, native beans, and some varieties of squash have been displaced from their daily diet and replaced with purchased products, such as industrial maize flour and rice.

The introduction of shops, particularly by the CONASUPO network, has led to the displacement of local foods. Currently, purchases are primarily focused on industrialized products such as oils, sugar, instant soups, rice, cold meats, canned goods, commercially produced bread, and carbonated beverages. This phenomenon has been intensified with trips to Cacahoatán and Tapachula, where residents have access to store chains like Bodega Aurrera or Chedraui, increasing their consumption of simple carbohydrates and low-quality protein, thus altering their daily diet.

Culinary knowledge: The preparation of traditional dishes reflects local culinary knowledge passed down orally within families. This knowledge is inherited from mothers, grandmothers, and mothers-in-law to daughters, granddaughters, and daughters-in-law, as evidenced by recurring phrases

such as: "my mother was the one who taught me to cook" or "my mother-in-law taught me". The notion of "homemade flavor" stands out, an attribute that distinguishes certain women known as *comideras* (renowned cooks). These experts are recognized for their unique seasoning and are sought after for community events. This culinary prestige is a symbol of pride and social status.

A technological transition was observed in the kitchen, confirming the coexistence of the wood-burning stove with appliances such as microwaves and gas stoves. This transformation implies a reconfiguration of the domestic space and the time devoted to cooking. Nevertheless, the stove retained a profound symbolic value; it was referred to as the 'heart of the home', demonstrating cultural resistance as traditional techniques and flavors are preserved, even when new technologies are adopted.

The food practices of the Mam people reveal a complex interaction between ancestral knowledge, economic changes, and technological transformations. Activities such as gathering, breeding, farming, and local cuisine articulate a hybrid food system that expresses both continuities and ruptures, where identity, reciprocity and territory are still fundamental pillars.

The analysis of the six food provision practices identifies common patterns of adaptation in the presence of ecotourism and modernization:

- Hunting and gathering show a decrease in their practice, associated with the regulations of the NPAs and the reduced interest of new generations.
- Farming and breeding show reorientation, where maize production and poultry breeding are primarily destined for restaurants, resulting in a recurring need to purchase.
- Culinary knowledge and gender roles are transforming, although resilience mechanisms persist, such as the transmission of 'homemade flavor' (*sabor de la mano*, the cook's unique and personal flavor) in family kitchens.
- Purchasing consolidates a food transition quantified by the diversity of industrialized products (85 items) in local stores and their frequent mention in interviews, as the basis of the current diet.

DISCUSSSION

The analysis of food provision practices in Lacanjá Chansayab and El Águila reveals that changes in their food systems result from multiple converging factors. Among the most relevant is the establishment of natural protected areas (NPAs), whose impact was directly documented in the fieldwork. In Lacanjá Chansayab, accounts by hunters evidenced how NPA restrictions have limited access to traditional hunting grounds, reducing the diversity of available species and forcing a shift towards purchasing meat protein. This factor adds

to other processes such as economic diversification through ecotourism, the incorporation of ultra-processed foods, and the modernization of household equipment. Together, these factors have modified the availability of resources, the organization of households, and the patterns of knowledge transmission.

The coexistence of practices such as gathering in the wild and the growing reliance on purchasing illustrates a central principle of indigenous resilience, where 85% of households in Lacanjá buy industrial flour, but 60% still gather edible herbs. Adaptation does not necessarily imply total substitution, but rather, frequently, hybridization. This finding complements the perspective of Woodley *et al.* (2007), showing that ecological local knowledge persists selectively and is recontextualized. The detailed knowledge of edible plants held by Lacandon women is not only applied to self-consumption but is now also valued as a tourist attraction. This suggests that cultural resistance can operate through integration with new economies.

The analysis of these practices reveals a complex system in which local food serves as an articulating axis between the procurement of natural resources and its cultural transformation. Current dynamics reflect tensions between the preservation of traditional ecological knowledge and the pressures of modernization.

The changing gender roles reflect how women have taken on traditionally male activities, and the transmission of local knowledge is being reconfigured to adapt to the new economic context and to ecotourism. Even so, the persistence of identity elements such as traditional local cuisine, systems of reciprocity, and symbolic appropriation of the territory demonstrate the cultural resilience of these communities.

The results from this study reinforce the admonition by Woodley *et al.* (2007) and Ochoa *et al.* (2021) regarding ecotourism as a threat to the intergenerational transmission of local knowledge. In Lacanjá Chansayab, adolescents and young adults employed in ecotourism centers demonstrated less knowledge of hunting techniques and planting cycles. Older adults attributed this gap to the lack of time and interest among younger generations, who are absorbed by the labor demands of tourism. However, the analysis also puts this perspective into context, by identifying that ecotourism can create new contexts for the appreciation of local knowledge. At the Hach Winik gastronomic festival, traditional local culinary knowledge was revived and proudly displayed. This suggests that, while the threat is real, there is potential for tourism to contribute to strengthening the link between local knowledge and food provision.

The idea of Ochoa *et al.* (2021) regarding the community appropriation of ecotourism resonates with the results of this study, particularly in the way that households of Lacanjá Chansayab have integrated tourism into their living space. This appropriation was evident in the fact that the ecotourism

centers were not built in separate areas, but rather within the same family lands. This allowed, on the one hand, for women to manage the restaurants from their traditional kitchens; but, on the other hand, it reconfigured roles by intensifying their workday. This goes beyond mere economic adoption and manifests as a profound organizational transformation, where the logic of serving tourists is intertwined with family dynamics, modifying work cycles and gender relations, as documented in the field notes.

Ecotourism promotes income and social reorganization and acts as a catalyst for changes that create tension in the relationship between culture, food, and territory. This phenomenon cannot be understood in isolation, but rather as part of a set of interrelated factors, including the commodification of food, environmental policies, and intergenerational dynamics.

CONCLUSIONS

The analysis of six food provision practices in Lacanjá and El Águila leads to the conclusion that domestic groups face the pressures of ecotourism and modernization through a process of strategic adaptation that combines persistence, substitution, and hybridization. Three central findings of this research are:

- Substitution: The high dependence on purchases, particularly of flours and sugary drinks, shows a clear substitution of self-produced food, as reported by families who allocate their maize to the touristic restaurant.
- Appropriation: The family management of ecotourism centers demonstrates an appropriation of the tourism activity that, while reorganizing gender roles, allows maintaining local control over economic income.
- Hybridization: The coexistence in the same home of the use of the fire pit for traditional cooking and the gas stove for quick meals, along with the appreciation of local culinary knowledge in festivals such as Hach Winik, show cultural hybridization, where the traditional and the modern are reconfigured without being totally annulled.

This adaptation has allowed for a certain continuity of food systems; however, the trend towards substitution with ultra-processed products, documented in purchasing patterns, raises concerns about risks to health and food sovereignty, which require attention in public policies.

The tension between adaptation and loss was evident in cases like that of the families of Lacanjá, who allocate their maize production to tourism. This decision represents an immediate economic adaptation, but it forces them to buy maize for their own consumption.

Ecotourism is identified as an ambivalent driver of change: it generates economic benefits but reduces time for activities such as fishing or the transmission of

local culinary knowledge. A critical finding was the disparity in perceptions regarding the threats. Older adults express concern about the loss of maize varieties and local plants, while young people employed in tourism often value the convenience of purchased food. This lack of unanimous recognition of what is being lost underscores the need for spaces for community reflection. The case of food transition documented in this study is a microcosm of this global process. The substitution of animal fats with industrial vegetable oils, or *pozol* with sugary drinks, are not merely nutritional changes, but rather symptomatic of a deeper cultural erosion, where the identity-based relationship with the territory, mediated by local foods, is redefined in terms of the market. The globalization project has found fertile ground in the gradual erosion of intrinsic cultural elements. In this sense, the observed food transition not only constitutes a change in food provision, but also reflects deeper transformations in the relationship between culture, identity, and territory.

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