

## **Avoiding nightmares selling dreams: migration to U.S.A and ecotourism in protected areas. The case study of los Tuxtlas biosphere reserve, Mexico**

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In 1998, in response to the deteriorating state of its natural resources, part of the region known as Los Tuxtlas, in the Mexican state of Veracruz, is designated a Biosphere Reserve. Included within park boundaries are municipalities characterized by a high poverty rate and whose residents, due to restrictions placed on their traditional farming activities, have had to immigrate to the United States. Concurrently, the biosphere reserve's natural wealth has inspired environmentally friendly ecotourism initiatives. The purpose of our research was to analyze the relationship between migration and ecotourism in three communities located within park boundaries. We found that private and community-based ecotourism ventures can provide inhabitants with adequate employment which in turn strengthens their ties to the community and reduces the need for them to emigrate away for financial reasons.

### **Migration, Ecotourism, Los Tuxtlas Biosphere Reserve, Veracruz, Mexico**

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## Introduction

The international migration phenomenon in Mexico has been a characteristic of the country for decades; however, it had not impacted the country's southeastern corner until some 20 years ago. As part of this region, the state of Veracruz in Mexico went from being net receiver to net producer of migrants, a change related to opening the country to international trade and withdrawing government support for agriculture and industry. A large number of Veracruz workers have gone in search of new and better employment opportunities and wages in other parts of the country and the United States (Nava, 2009).

In immigration to the United States, according to data provided by the State Population Council, Veracruz went from being thirtieth place nationally in 1992 to fourth place 10 years later (COESPO, 2002). Chávez et al. (2007) state that evidence exists which indicates there is some degree of immigration in at least 900 towns and cities across the state, although the phenomenon is particularly significant in 220.

The early 1990s also marked the beginning in Mexico of an increase in community-based and private nature tourism ventures implemented in Protected Natural Areas (PNA), including the Los Tuxtlas region. Hence this phenomenon is relatively recent and its study is enormously interesting (SECTUR and CESTUR, 2007; Molina 2007; SECTUR 2004). When, in 1998, an area covering eight municipalities is designated Los Tuxtlas Biosphere Reserve, resource use and exploitation are limited by zones and certain properties are expropriated from residents of the park's rural communities. In response.

Some inhabitants begin looking for environmentally friendly means of making a living, out of which arise several ecotourism projects, all aimed at conserving natural resources (González, 2008) and supporting education for sustainability (CEATUX, 2009; García, 2009).

Los Tuxtlas Biosphere Reserve has an endless number of particularities which have been documented in numerous publications. Most of them refer to both the biological, geographical and environmental characteristics of the best-known municipalities in the reserve (Guevara, et al., 2006) and the importance of the role local government agencies and private interests play in managing the area's natural resources (Paré y Lazos, 2003).

The state of Veracruz has 212 municipalities, of which four are renowned for their nature tourism industries: Jalcomulco, Catemaco, San Andrés Tuxtla and Pajapan. The last three are located in Los Tuxtlas and are pioneers in promoting nature tourism in Veracruz (SECTUR y CESTUR, 2007).

The present paper analyzes ecotourism in migration-impacted communities for the purposes of exposing the relationship between these two phenomena, with special regards to the impact migrant remittances have on investments made in home communities, investments which lead to local job creation and increased incomes. Piñar (2007) notes that the nature tourism phenomenon aims at ensuring locals, service providers and visitors make sustainable use of and preserve their natural and cultural resources with an eye towards strengthening ties to the community and promoting diverse employment and grassroots economic initiatives. In other words.

It is possible to “make a living from conservation” as long as the nature tourism venture is based on a dual strategy: it must, first, conserve the community’s natural and cultural capital and, second, resolve the socio-economic backwardness of local economies (Piñar, 2012). Taking place concurrently alongside this ecotourism-linked conservation dynamic is emigration from rural communities, a predominant component of the globalization process which plays an important role in understanding rural reality (Nava, 2007).

The general objective of the present research was to analyze the relationship between migration and ecotourism in three rural communities belonging to the Los Tuxtlas Biosphere Reserve municipalities of Catemaco and San Andrés Tuxtla. We shall describe the characteristics and effects of migration in three rural communities, namely Pozolapan, López Mateos and Chuniapan de Abajo, characterize the ecotourism activity and analyze the particular relationship between ecotourism and migration as manifested in these communities.

### Methodological approach

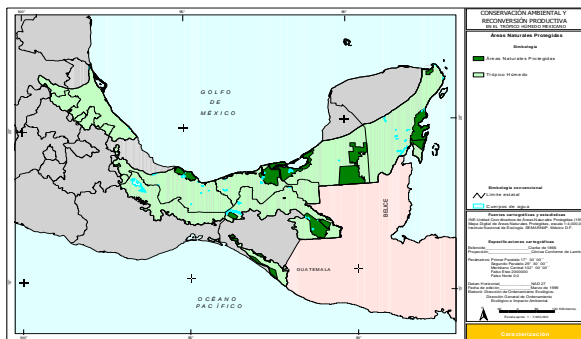
The methodology we applied was a mixed approach, given that it combined a survey (quantitative technique) for the purposes of assessing the characteristics of the migration phenomenon and its effects in the rural communities we studied, and a semi-structured interview (qualitative technique) in order to characterize the ecotourism activity (Hernández et al., 2006).

The two communities from the municipality of Catemaco chosen for this study were Pozolapan and López Mateos, while the one from the municipality of San Andrés Tuxtla was Chuniapan de Abajo.

These three were selected due to the fact that exploring their different migration and ecotourism characteristics was an especially interesting proposition, for the following reasons: a) Adolfo López Mateos was the first ecotourism community in Los Tuxtlas, is home to a well-established community-based ecotourism operator and, while in the past there used to be significant emigration from the town, at present emigration is low; b) Pozolapan has two private ecotourism operators and the emigration rate is high; and c) Chuniapan de Abajo offers no ecotourism service and its emigration rate is high. Our units of analysis were peasant families which have experienced the emigration of at least one member. Ideally, the questionnaire was completed by the family breadwinner. The total number of questionnaires applied was 52 (25 in Pozolapan and 27 in Chuniapan de Abajo) which gathered information from both community inhabitants and those reported to be migrants. In Adolfo López Mateos, we were only able to locate four families with active migrants (7 migrants in total), which is why we decided against applying the survey; information on migration was gathered by interviewing key informants. With regards to ecotourism activity, the SECTUR and CESTUR (2007) inventory of community-based and private ecotourism operators was used to select our subjects. Three were chosen from the municipality of Catemaco: the community-based project “Selva el Marinero” (Adolfo López Mateos) and two private ventures, “Bahía Escondida” and “El Teterete” (Pozolapan). No interviews were held in Chuniapan de Abajo, municipality of San Andrés Tuxtla, since no ecotourism activity was identified, despite the fact that locals there are genuinely interested in this means of making a living.

### Los Tuxtlas as Protected Natural Area

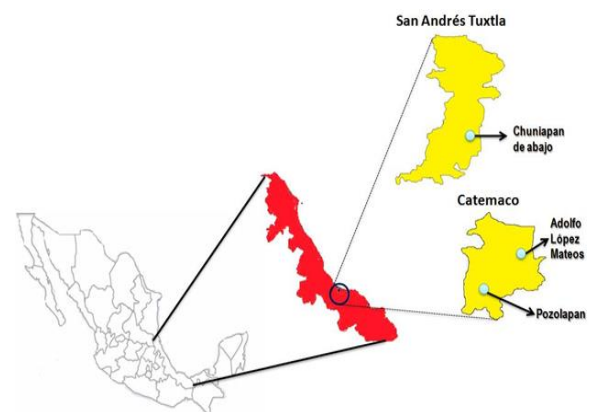
The region known as Los Tuxtlas has great ecological importance thanks to the diversity of species that are found there, many of which are endemic. For this reason, in 1998, a significant part of the region is declared by presidential decree a Protected Natural Area enjoying the particular status of Biosphere Reserve. Its total area of 155,122 ha is added to the collection of Mexico's Southeastern Protected Natural Areas (Figure 1). The Reserve consists of a core zone covering 29,720 ha around three volcanoes: San Martin Tuxtla, Santa Martha and San Martin Pajapan; the other 125,402 ha make up the buffer zone. Included in this area are eight municipalities, namely Angel R. Cabada, Catemaco, Mecayapan, Pajapan, San Andres Tuxtla, Santiago Tuxtla, Soteapan and Tahuicapan de Juarez, wherein numerous ecotourism initiatives have sprung up (CONANP, 2006).



**Figure 1** Protected Natural Areas in Southeastern

### The municipalities of Catemaco and San Andrés Tuxtla: Case Studie of three Communities

The population of Catemaco is 46,702 inhabitants living in 275 villages and towns, while San Andres Tuxtla has 148,447 inhabitants and 234 villages, towns and cities (INEGI, 2006). Both municipalities are blessed with rich soils which, however, require careful management when used for farming and grazing due to their being prone to erosion, (INEGI, 2007). Data on both municipalities and the three villages studied are presented in Figure 2.



**Figure 2** Location of the municipalities of Catemaco and San Andrés Tuxtla. Three villages studied.

For each municipality the Economically Active Population (EAP), expressed as a percentage, employed in each of the three economic sectors is presented in Table 1, where we can see that in San Andres the main source of livelihood is agriculture followed by tertiary services while in Catemaco the principal source of income is tertiary (tourism), followed by the primary sector:

Municipality	ECONOMIC SECTOR (%)			
	Primary	Secondary	Tertiary	Not specified
	2010	2010	2010	2010
Catemaco	40.2	14.8	43.4	1.6
San Andrés Tuxtla	40.4	20.4	37.6	1.6

**Table 1** EAP percentages by economic sector in Los Tuxtlas. 2010.

With regards to the primary sector, principal crops in San Andres Tuxtla are maize, mangos, tobacco, sugarcane, common beans, watermelons, bananas, oranges and jalapeño peppers; in the case of Catemaco, the important crops are maize, common beans, tobacco and peppers (INEGI, 2006). Cattle raising, fishing, beekeeping and logging of precious tropical hardwoods such as Spanish cedar and mahogany are also important activities in both municipalities (CEDEMUN, 2000; Municipality of Catemaco, 2007; Municipality of San Andres Tuxtla, 2007).

In the service sector (tertiary), 30 lodging establishments and 38 restaurants are reported for the year 2006 in Catemaco (INEGI, 2007). This municipality is blessed with great natural wealth and has a long tradition of nature tourism; among other tourist attractions we can mention: Lake Catemaco, Nanciyaga Ecological Reserve, Sontecomapan Lagoon, and beaches such as Hicacal, Playa Escondida and Monte Pio (Municipality of Catemaco, 2007). For its part, in San Andres Tuxtla in 2006 there were 39 lodging establishments, 19 restaurants and two travel agencies. The municipality's main tourist attractions include the following: Eyipantla Falls, Encantada Lake, Escondida Lake and Roca Partida Beach (INEGI, 2007).

In terms of social conditions in the two municipalities, the Index of Social Backwardness is moderate for both, compared to high for the state of Veracruz as a whole. This index refers to a population's living conditions and is estimated from the percentage of people who have access to education, health services, piped water, drainage, and paved streets and from the proportion of single-room homes. On the other hand, if we analyze the Human Poverty Index (Table 2) we can observe that values in both municipalities for each of the three poverty indicators are greater than those for the state of Veracruz as a whole.

Place	Longevity	Knowledge	Standard of Living
Veracruz	28	36.3	59.3
Catemaco	43.8	55.5	79
San Andrés Tuxtla	48.9	59.3	80.4

**Table 2** Human Poverty Index. 2005

With regards to migration, Table 3 presents data showing San Andres has more migrants in other Mexican states and the United States than Catemaco does.

Municipality	Total population	Non-migrant		Migrant in another Mexican state		Migrant in U.S.A.		Migrant in country other than U.S.A.		Not specified	
		Total	%	Total	%	Total	%	Total	%	Total	%
Catemaco	41,645	41,005	98.46	561	1.35	33	0.08	9	0.02	37	0.09
San Andrés Tuxtla	133,312	131,246	98.45	1710	1.28	102	0.08	14	0.01	240	0.18

**Table 3** Migrant types from Los Tuxtlas. 2000

### Migration in Catemaco and San Andrés Catemaco: Pozolapan and López Mateos

The 2005 Population Count (INEGI, 2006) reports that Pozolapan has a total population of 702 inhabitants.

As relates to migration, in 2000, 606 individuals five years old and over lived in the village while only four people lived in another Mexican state and none lived in the United States (INEGI, 2006). This data does not coincide with migrants registered during the fieldwork due to the fact that in the 2005 Population Count People were asked where they lived over the previous five-year period (2000) when international migration was only just beginning to intensify.

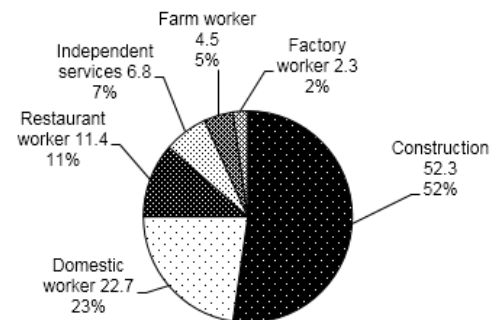
Pozolapan is a rural community and the principal economic activity is smallholder subsistence farming. Main crops are maize, peanuts, coffee, common beans, and pasture for cattle. Produce is destined primarily for family consumption. Some families combine agriculture with small-scale cattle raising, allowing grazing over extensive areas and using minimal technology.

In this community we applied a survey to 25 families of national and/or international migrants, some still active, others with previous experience. We obtained data from a total of 138 members of these families, of which 99 (71.1%) remain in the community and 39 (28.3%) are migrants that work permanently outside the community. Data for migrants was obtained indirectly since in most cases it was a family member who responded for the absent worker. Finally, it is worth mentioning: of the 25 families surveyed, 24 have migrant members; only one has no one currently working outside the community, although in the past it has had a migrant member.

The average number of migrants per family is 1.6. The average age of the migrants is 29 years old. 59% of them are in the age range 16-30 years old and the other 41% between 31 and 50 years old.

From this we can see they are individuals of productive age that emigrate as labor force in search of better job opportunities.

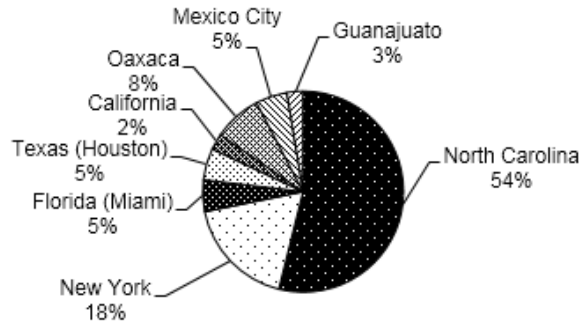
The average number of years migrants have spent in school is 8.1 years (close to completing middle school), which is higher than the years of schooling of those who remain in the community (5.3 years, equivalent to just starting middle school). With regards to migrants' most recent job outside the community (Figure 3), the overwhelming majority (94.9%) worked in either the secondary or tertiary sectors of the economy, very few (5%) doing agricultural work.



**Figure 3** Pozolapan migrants: most recent migrant job. 2008

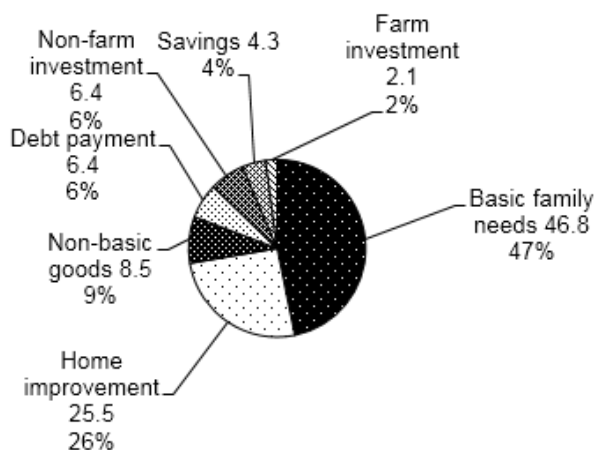
Figure 4 illustrates the predominant nature of international migration. Of the 39 migrants, 33 (84.6%) live in the United States, the state of North Carolina being the most frequent destination. As for the 6 (15.4%) national migrants, the state of Oaxaca and Mexico City are the two most frequently reported destinations. Of the 39 migrants, 97.4% (38) sent remittances back home; only 2.6% (1) didn't. Of the 25 families, all of them have at some point received money from their migrant member, generally from the United States.

Although the frequency of sending money home varies considerably, it is most commonly done on a monthly basis.



**Figure 4** Pozolapan migrants: current place of residence. 2008

Migrant remittances are spent in more than one way (Figure 5); of greatest importance is the family’s basic needs (food, clothing, health care and schooling), followed by home improvements. Investment in farming or some other business is minimal. None of the families mentions investing their remittances in some ecotourism-related activity.



**Figure 5** Use of migrant remittances in Pozolapan. 2008

An analysis of when migrants first left their communities illustrates that migration starting increasing in the year 2000; 79.5% of our survey participants made their first trip during the period 2000-2008. The most common reason for migrating (93.2%) is economic: migrants mention looking for a job, increased income, paying off debt, poverty, rural stagnation, and home improvement as reasons for leaving their communities. 6.6% mention other reasons, namely adventure or the influence of other migrants. 81.8% worked in farming before leaving their communities.

The impact of increased migration on the community as perceived by family members of migrants (Table 4) is relatively balanced between positive and negative perceptions (approximately half go one way, half go the other). The most commonly mentioned positive effect is home improvement while the most commonly mentioned negative effect is family disintegration.

TYPE OF EFFECT	FREQUENCY*	%
<b>POSITIVE</b>		
Home improvement	9	27.2
Vehicle purchase	2	6.1
Lifestyle improvement	2	6.1
Property purchase	2	6.1
Livestock increase and improvement	2	6.1
Increased farm investment	1	2.9
Subtotal	18	54.5
<b>NEGATIVE</b>		
Family disintegration	8	24.3
Labor shortage	3	9.1
Loss of rural culture	2	6.1
Increased delinquency	1	3.0
More work for those who stay behind	1	3.0
Subtotal	15	45.5
<b>TOTAL</b>	<b>33</b>	<b>100</b>

**Table 4** Effect of migration in Pozolapan. 2008

As regards the community of Lopez Mateos, the 2005 Population Count reports a total population of 114 inhabitants. In the year 2000 no community member lived in another state or in the United States (INEGI, 2006).

Lopez Mateos is a rural community located on the border between the buffer and core zones of the biosphere reserve. It is blessed with an impressive diversity of flora and fauna and for this reason has been able to develop ecotourism activities. The community has been working in ecotourism for 12 years and is part of the Los Tuxtlas Community-based Ecotourism Network (RECT). Farming is another important livelihood, centered on growing maize and common beans for family consumption, tended mainly by the family with low technological input (RECT, 2009).

Unlike in other communities, where international migration has progressively increased, in Lopez Mateos it has apparently halted. Upon doing our fieldwork (2008) we were only able to identify four families with migrant members, 7 migrants in total, all in North Carolina working in the service sector. An indirect effect their remittances have had is in promoting ecotourism: encouraged by RECT, families have invested part of the money they receive in furthering this activity.

“Ecotourism has brought emigration to a halt (...). We started the project with the help of Luisa Paré and later with the Biosphere Reserve and the Los Tuxtlas Ecotourism Network in order to stop our townsfolk from emigrating. From jungle logger to ecotourism entrepreneur, it’s not easy but we’re giving it our all” (Lopez Mateos, March 28, 2009).

The hope of many inhabitants who at one point were migrants is to continue improving and growing as ecotourism operators without abandoning the community’s other livelihoods, namely farming and handicrafts (using local wood and seeds).

Emigration has given many inhabitants the opportunity to compare their home village with other places and realize the importance of the reserve and the environmental services it provides. Lopez Mateos has apparently found an alternative to immigrating to the United States while at the same time, although somewhat paradoxically, migration has become a source of funding for ecotourism projects.

### **San Andrés Tuxtla: Chuniapan de Abajo**

The 2005 Population Count reports that Chuniapan de Abajo has a total population of 1040 inhabitants.

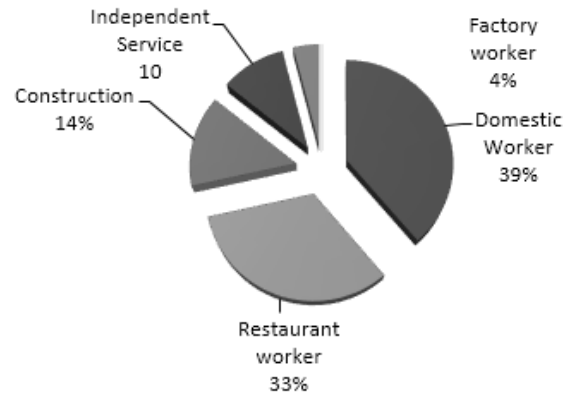


As regards migration, in the year 2000, 915 people five years old and over were living in the town and only 2 people were living in another Mexican state and none in the U.S.A. (INEGI, 2006). Chuniapan de Abajo is rural, mainly dedicated to smallholder subsistence farming for which family members provide labor and there are few technological inputs.

We applied a survey to 27 families of national and/or international migrants, some still active, others with previous experience, and gathered data on a total of 146 family members. Of this total 110 (75.3%) reside in the community and 36 (24.7%) are emigrants who work elsewhere on a permanent basis. Of the 27 families we surveyed, 23 had active migrant members while 4 had no migrant member at the time, although they had had migrant members in the past.

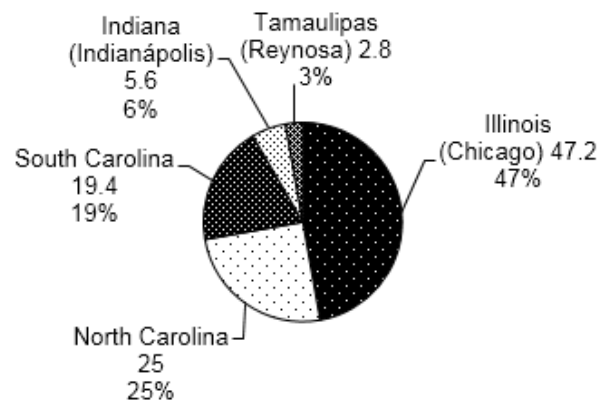
The average number of migrants per family is 1.6. Migrants' average age is 28 years old and average number of years in school is 6.8 (halfway through middle school) which is greater than the years of schooling locals that remain in the community have had (4.3 years, equivalent to not finishing elementary school)

More than half of Chuniapan de Abajo emigrants have most recently found employment as domestic workers, the rest in restaurants and other secondary and service sector jobs; no migrant had most recently found employment as a farm worker (Figure 6).



**Figure 6** Chuniapan de Abajo emigrants: most recent migrant job. 2008.

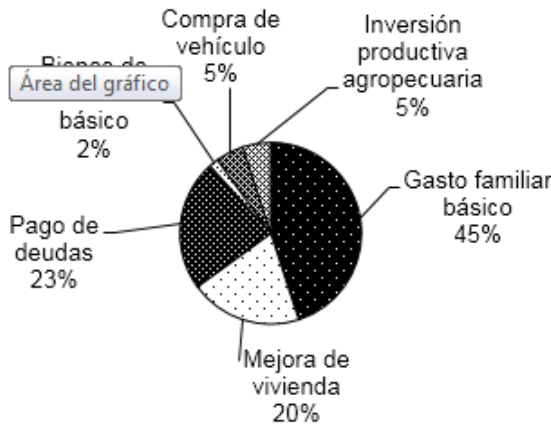
Regarding emigrants' final destinations, out of a total of 36 individuals, only one (2.8%) resides in Mexico while 35 (97.2%) live in the United States. Figure 7 illustrates for Chuniapan de Abajo the overwhelming dominance of international migration; Chicago, Illinois is the most common destination.



**Figure 7** Chuniapan de Abajo emigrants: current place of residence. 2008.

Of the 36 active migrants, 94.4% (34) of them send money back to their families in town; only two currently do not. Hence, all of the 27 families we surveyed have at some point received remittances from their migrant members.

Currently, 74% (20 families) are receiving money pretty much every month from their migrant member in the United States. Remittances are used for more than one kind of expenditure (Figure 8). The most common is basic family needs (food, clothing, health care and schooling) followed by home improvement and debt payments. Investing the money in farming is minimal and there was no report of investing it in any other livelihood activity, such as services, tourism, and commerce.



**Figure 8** Use of migrant remittances in Chuniapan de Abajo. 2008

Starting in 2000, emigration from the town increases. We know this because it is between 2000 and 2008 that 89.8% of migrants report having first emigrated. The 49 individuals with experience of migrating (100%) report that the motive for the first migration was economic, including looking for work, improving income, paying debt, poverty and rural stagnation. Before leaving town, 91.9% of migrants used to work in farming.

In discussing community impact due to increased migration (Table 5), negative effects are mentioned more than positive ones.

TYPE OF EFFECT	Frequency*	%
<b>POSITIVE</b>		
Home improvement	5	9.7
Livestock increase and improvement	4	7.7
Small business openings	2	3.8
Property purchase	1	1.9
Increased farm investment	1	1.9
Subtotal	13	25
<b>NEGATIVE</b>		
Reduction in farming or abandonment	10	19.3
Family disintegration	10	19.3
Increased alcoholism	6	11.5
Labor shortage	4	7.7
Increase in urban diseases (gastritis, diabetes)	3	5.8
More work for those who stay behind	2	3.8
Aging village population	2	3.8
Loss of rural culture	1	1.9
Migrants who fail end up in debt	1	1.9
Subtotal	39	75
<b>TOTAL</b>	<b>52</b>	<b>100</b>

**Table 5** Effects of migration in Chuniapan de Abajo. 2008

The most commonly mentioned negative changes are a reduction in farming and family disintegration while the most commonly mentioned positive changes are home improvements and investments in livestock.

**Ecotourism in Los Tuxtlas**

Nature tourism in Los Tuxtlas is offered in 13 villages and towns, in which there are currently 14 ecotourism operators. These enterprises offer basic food and lodging services although they lack complementary services which would enrich the tourism experience.

In addition, there is a notably poor road infrastructure in the area and a lack of public-sector investment aimed at improving it, none of which helps the ecotourism operators and their communities. Similarly, utilities (drinking water, electricity, telephone service, garbage collection and wastewater treatment) are mediocre to bad in ecotourism communities. In sum, inadequate public infrastructure is a limiting factor for the further growth of the region's ecotourism industry. What is remarkable is that, despite these deficiencies, an ecotourism industry has managed to establish itself and develop in Los Tuxtlas.

Community-based ecotourism in Adolfo López Mateos: "Selva el Marinero"

The community of Adolfo Lopez Mateos belongs to the municipality of Catemaco and lies on the border between the buffer and core zones in Los Tuxtlas Biosphere Reserve. Its location is the reason why diverse flora and fauna may still be found there.

The birth of the ecotourism industry in Los Tuxtlas took place in Lopez Mateos in the early '90s. From that point on, numerous other private and community-based ecotourism operations have sprung up around the area, fostered by the activity of academics who have been working in the region and were a big part of getting Los Tuxtlas designated a Biosphere Reserve in 1998. In 1993, during a Lopez Mateos ejido-community assembly, an important step in this process was taken: ejido members decided to voluntarily restrict use and exploitation of 100 ha of virgin jungle in order to ensure its conservation. In 1997, the community ecotourism project gets underway.

Since 1998, the community has worked to consolidate their ecotourism operation, legally incorporating it as a mercantil society for social solidarity, and calling it "Cielo, Tierra y Selva, Reserva Del Marinero". Currently, it has 24 partners, all ejido members.

Their efforts have been pioneering. They built the first community-based ecotourism center in Los Tuxtlas Biosphere Reserve. They are a crucial member of the Los Tuxtlas Community-based Ecotourism Network (RECT). The services they offer guests include: lodging in cabins; meals served in the houses of local villagers; walks along interpretation trails, passing rivers, lakes and lagoons; birdwatching; visits to see wild boars in their natural habitat; and handicraft making out of cocuite or coconut wood or bullhorn (only confiscated wood or that felled by storms is used). As of 2008, this enterprise was employing 35 people on a permanent basis. In the context of our research and this paper, it is important to mention that some families who have received migrant remittances from family members in the U.S.A. have invested them in "Reserva el Marinero".

Private Ecotourism in Pozolapan

Pozolapan is a small community situated on the banks of Lake Catemaco. It does not lie within Los Tuxtlas Biosphere Reserve and has been involved in ecotourism for a relatively short period of time. Two private enterprises operate out of Pozolapan: El Teterete and Bahia Escondida, founded by two university-educated businessmen – one from Mexico City, the other from Switzerland -- who settled in the community in 1978 and 2001, respectively. These companies offer ecotourism services in Pozolapan and the Biosphere Reserve and collaborate with other private and community-based ecotourism operations in the region. Below, we shall describe each company more thoroughly.

### Pozolapan: “El Teterete” Ecotourism Center

The notion of ecotourism in Pozolapan started with the arrival of Roberto Barrón in 1978, who together with his wife work in matters of family planning. Back then, they worked with community youth in reproductive health programs and establishing freshwater snail and tilapia aquaculture projects. At some point the ecotourism idea came to Roberto and his wife:

“(…) we saw that the need for family planning had past and the infrastructure we had needed upkeep and it had to pay for itself (...). That was when we said to ourselves, let’s start a business offering lodging and a small restaurant”. (Pozolapan, July 12, 2008)

Regarding job creation, “El Teterete” hires few people due to the fact that, first, it is family-owned and operated; second, ecotourism is a seasonal activity; and third, the guest load is purposefully light in order to avoid damaging the environment. Job creation varies depending on the number of guests that arrive in high season and on weekends; in general, one to five people are working for the company on a permanent basis. These individuals are all trained in natural resource conservation and low-impact tourist activities:

“The cook, cleaner and groundskeeper are from Pozolapan and are permanent employees. For now we only work weekends – Saturdays and Sundays – in the restaurant. We don’t work during the week due to our other responsibilities and sometimes we hire people from other nearby villages. Everyone is trained in ecotourism.” (Pozolapan, July 12, 2008)

Despite these limitations, El Teterete is a private ecotourism operation which contributes to both environmental conservation and local economic development. It hires local villagers which makes it a source of employment and income for a few Pozolapan families. The services it offers are the following: cabin rental; event hall rental; swimming pool; herpetarium; and meals during high season, on weekends and holidays. It also offers walks along trails in Pozolapan, sailboating on Lake Catemaco and visits to other attractions, namely “La Joya”, “Dos Amates” and “El Brujo”, and fishing villages. Pozolapan: “Bahía Escondida” Ecotourism Center

This private ecotourism operation was founded by a Swiss who, after traveling around Mexico for two decades, decided to settle in Pozolapan:

“I was born in Switzerland and came to Mexico in the ‘80s. It’s a wonderful country, rich in culture and much laid back. Of all the countries I’ve been to in Europe and Latin America, I prefer Mexico. I spent 15 years traveling around the country, selling handicrafts, silver and leather goods. I know the whole country well; my daughter was born in Chiapas. I settled in Los Tuxtlas because the locals treated me really well, they’re kind and polite. I enjoy traveling to Catemaco. After a few years, we purchased property in Pozolapan in 2001, we opened for business in late 2002, and then we set up the website which since 2004 has brought in a lot of people. My daughter and I started the business.” (Pozolapan, March 26, 2009)

This ecotourism operation is aimed at the “backpack” tourist, both domestic and foreign, especially university students, professors and researchers concerned about natural resource conservation. Although “Bahia Escondida” lies outside Los Tuxtlas Biosphere Reserve, it also has benefited from the area’s Protected Natural Area status. Its ecotourism proposal is based on offering the visitor two things: nature and good service.

Currently, Bahia Escondida offers the following services: 1) different lodging options, namely cabins, dorms and camping; 2) meals and a kitchen where guests may prepare their own meals using ingredients purchased in the village; 3) sale of handicrafts; 4) although the business doesn’t have its own attractions, by collaborating with other ecotourism operators it offers its guests a variety of activities, including jungle walks, interpretation trails, visits to caves, waterfalls, lakes, lagoons, and rivers, nature walks and birdwatching, boating, visits to archaeological sites, horseback riding, rappel and rafting.

Being a family-owned and operated business, the owner and his daughter carry out most of the activities; only during high season is it necessary to hire locals. Nevertheless, the entrepreneurial desire for creating local jobs and benefiting the community is evident, as is the goal that guests’ environmental impact be low or nil.

### Discussion of results

In this section we shall discuss the results we obtained regarding migration and its effects, ecotourism characteristics, and the relationship between migration and ecotourism in the communities we studied.

### Migration and its effects in Los Tuxtlas

In the region we studied, migration is not a movement of individuals but rather of labor force which is displaced from poorly developed regions (in this case, rural Mexico) to more highly developed regions (in this case, the United States) looking to achieve its biological and social reproduction. Furthermore, although initially emigration from Los Tuxtlas had economic motives, its increase and perpetuation are made possible by the creation of social networks. That is, from their adopted homes migrants establish ties with friends and family back home. Since such networks diminish the risk and cost of emigrating for the next wave of community members looking to leave, the flow of migrants is perpetuated.

The migration phenomenon in our communities of study is not new; however, starting in the late ‘90s and early this century, the increase and predominance of migration towards the United States has been observed. Interestingly, data registered in the 2000 Population Census (INEGI, 2001) and the 2005 Population Count (INEGI, 2006) does not reflect the international migration reality as captured by our fieldwork in Los Tuxtlas. The reason is that each of the government studies only registers data from permanent residents at the time of the survey yet does not register any information related to absent members of the community.

In the communities we surveyed, percentages of international migrants as registered by our study are considerable. Of the families we studied, migrants account for 28.3% and 24.7% in Pozolapan and Chuniapan de Abajo, respectively. Nationally, it has been reported that 11% of the Mexican population are migrants residing in the United States (Leite et al., 2009).

Our studied revealed international migrants from Los Tuxtlas are primarily males of productive age with more years of schooling than those that remain in the community. In their places of origin they work mainly in farming but in the destinations – generally urban – they work in unskilled service sector jobs. Migrants are not isolated individuals but rather members of households, family groups and communities and through their respective social networks, each community gradually consolidates specific destinations for their migrants. In the case of Chuniapan de Abajo, international migration networks have mainly consolidated in Illinois (Chicago), North Carolina and South Carolina; from Pozolapan, migrant communities have formed in North Carolina and New York.

The community of Lopez Mateos is a special case. Although the flow of emigrants started in the late '90s towards North Carolina and a social network had been gradually increasing the flow, during our study we only identified 4 families with 7 international migrants working in North Carolina in service sector jobs. This indicates that the migration flow has been reversed.

Decisions regarding who emigrates, where to and why are made taking into account factors from both the community's broader socio-economic context (neoliberal agricultural policies, primary sector stagnation at a national level, hardening of regulation and control on the northern border) and each family's particular reality (gender considerations – men emigrate more than women do - family relationships, power hierarchies, and specific needs in each household).

The contradictory effects migration has had in our communities of study coincide with what numerous other authors have reported (Arango, 2003; Nave, 2009). Effects that have been observed include: 1) At the family level, a substantial improvement in quality of life and level of consumption, making emigration a short-term survival strategy for the family; 2) At the community level, deterioration of the economic and cultural base which underpins local agricultural production (primary economic activity) and disintegration of the rural family, making emigration a problem capable of unraveling rural society over the long-term.

In the specific case of the communities we studied, though there were several migration effects common to all of them, there were also several important differences worth analyzing further and which we summarize below:

Chuniapan de Abajo. The households we surveyed visualize more negative socio-economic effects (75% of responses) than positive ones (25%). Positive effects of migration are related to remittances households receive and which are spent on the following, in order of importance: home improvement, livestock increase and improvement, small business openings and, less importantly, property purchases and investment in farming. The most commonly mentioned negative effects were: reduction in farming or abandonment, family disintegration, increased alcoholism, labor shortages and as a consequence more work for those who stay behind; lesser responses included increases in urban diseases (gastritis and diabetes), loss of rural culture, and aging of resident population and debt for those migrants who don't manage to cross the border.

Pozolapan. In this community migration's positive socio-economic effects are considered more highly (54.4%). As with Chuniapan de Abajo, they are also related to migrant remittances which are mainly spent on home improvements and, to a lesser extent, on quality of life improvements, vehicle or property purchase and investment in farming. On the other hand, 45.5% of responses made mention of negative effects, such as: family disintegration, labor shortages and more work for those who remain in the community, loss of rural culture and increased delinquency.

López Mateos. Those we interviewed in this community coincide in pointing out migration's positive effects are economic through spending remittances on "construction jobs and quality of life improvements". The negative effect most commonly mentioned is family disintegration.

### Ecotourism in Los Tuxtlas

The municipalities chosen for our study have the characteristics necessary for successfully developing ecotourism activities: outstanding natural resources, accessibility (can be improved), quality services, human warmth, and proximity to important urban centers and regional tourist destinations (Bigné; Font and Andreu, 2000; Acerenza, 2007). We identified three ecotourism operations in the municipality of Catemaco:

Selva Del Marinero: Community-based ecotourism operation located on the ejido Lopez Mateos, established in 1997 and organized as a Mercantil Society for Social Solidarity consisting of 24 ejido-member partners.

The operation has basic lodging and meal facilities, walking trails and other activities. It is a member of the Los Tuxtlas Community-based Ecotourism Network (RECT) and employs 35 community members on a permanent basis.

"El Teterete" Ecotourism Center: Private Ecotourism business located in Pozolapan, established in 2003 by a university-educated professional who comes to work in the community. It has basic lodging and meal facilities, some trails and ecotourism activities. Since it is family-owned and operated, the activity is seasonal and the guest load is low, hirings are few. Job creation depends on tourist levels in high season and on weekends; generally between one and five community locals work for the business.

Bahía Escondida: Private Ecotourism business located in Pozolapan, started in 2002 by a foriegnier who comes to live in the community. It has basic lodging and meal facilities. It does not have its own trails and activities but connects its clients with other operations which do. Regarding job creation, for the same reasons as El Teterete hiring is limited to two employees in high season.

Each of the three ecotourism operations is concerned about nature conservation. The business ventures are not only motivated by economic reasons – jobs and incomes – rather there is a genuine interest in caring for the environment.

Despite the fact that these operations have been operating for a short period of time, they are either family-operated or community-based, and are small-scale due to the very nature of the industry (seasonal and low guest load), testimonials agree that the activity generates direct and indirect local employment and positive economic spillover for the region. The presence of the eco-tourist fosters economic linkages which can have considerable impact indeed.

Although the effects of ecotourism for the region, both in natural resource conservation and local economic development, are still limited, the industry has great potential for growing over the medium- to long-term. This development, however, is dependent on resolving environmental and socio-economic issues that face the ecotourism sector in Los Tuxtlas.

### **Migration and ecotourism in Los Tuxtlas**

Migration and ecotourism do not share a one-way relationship; each phenomenon influences the other. On the one hand, migrant remittances have contributed, albeit in a small way, to furthering ecotourism; this is especially evident in the community of Lopez Mateos where there is a community-based ecotourism operation. On the other hand, ecotourism has economic impact which affects the labor market and can influence individuals' decisions regarding whether to emigrate or not.

Directly, ecotourism operators create employment which gives some families supplementary income. The clearest case is that of Lopez Mateos where a considerable number of people are partners or employees of the ecotourism venture.

The private enterprises in Pozolapan hire few people due to the fact that they are small-scale family-operated businesses and operate seasonally.

Indirectly, community-based and private ecotourism operations have positive impact on the local and regional economy during high season. They provide temporary work for locals and consume goods and services offered by other tourism and non-tourism businesses.

According to testimonials, an indirect effect migrant remittances have had is promoting ecotourism since part of these funds has been invested in the activity. Furthermore, migrants have experiences while away from the community that teach them the importance of natural resources back home. This situation is more tangible in Lopez Mateos where migrants have returned and found a profitable enterprise in which to invest, one that generates further resources for their families, allows them to construct a life which strengthens their ties to the community, and conserves local natural resources.

Hence, in Lopez Mateos there is an established community-based ecotourism enterprise that has been operating since 1998 and which generates direct and indirect employment for the community. The ecotourism operation appears to have stopped the flow of emigrants; although it used to display the increasing migration pattern typical of other communities in the area, there are currently few active international migrants and many former migrants expect ecotourism to be the key to quality of life improvement and personal growth.



In Pozolapan, where there are two small family-owned ecotourism businesses which have been operating for a shorter period of time and hire during high season a much smaller number of people, 28.3% of the population we surveyed are active migrants. From this data we can infer that despite some direct and indirect positive impact from ecotourism, the small-scale nature of the two businesses makes it difficult for them to significantly impact the local labor market and reverse the migration trend. Their limited economic effect is also due to the fact that their operation is intermittent; that is, tourists are present during certain seasons or for short periods of time around holidays (Easter, over the summer while school is out, Christmas, weekends). At other times of the year tourist influx is exceedingly low.

This phenomenon is corroborated upon studying the case of Chuniapan de Abajo, where despite local interest in ecotourism, to date no community-based or private initiative has cristalized and 24.7% of the population resides elsewhere in the country or in the United States (lower than Pozolapan's 28.3% but still much higher than the national average we cited above of 11%). In addition, local opinion feels migration's positive impact (primarily related to reception of remittances) has not totally counteracted its negative impact. Finally, for several reasons, income from remittances has not been channeled into other locally productive activities such as ecotourism.

## **Conclusions**

Our study and the results it has generated would seem to indicate that ecotourism does represent a viable economic alternative for marginalized rural communities situated in protected natural areas with intact natural and cultural resources.

The greatest economic and social impact will be felt when the operation fosters the participation of a significant number of local families. The best way to do this is by establishing community-based ecotourism ventures where all partners are locals and the greater part of revenues and other benefits stays in the community. In the long run, community-based operations – and private ones, too, it must be mentioned, although to a different extent – are capable of generating sufficient direct and indirect employment and incomes for inhabitants and impacting positively on the local and even regional labor market. In a profitable local economy, inhabitants find viable projects to invest in and which strengthen their ties to the community. In such a milieu, the need to emigrate for economic reasons is greatly reduced.

Has ecotourism, through the direct and indirect employment and income it generates and greater community ties it fosters, made a contribution to stopping the flow of emigrants from our communities of study? In the case of Lopez Mateos, the community where there is a well established community-based ecotourism operation and significant local economic spillover, this would appear to be the case. From this community there is currently very little emigration.

In other local communities, such as Pozolapan, where there are only two small, private, family-owned and operated ecotourism businesses which do not generate significant job opportunities, emigration has not been halted and the proportion of the population that resides elsewhere in the country or abroad is almost triple the national average.

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