

**Community-Based Ecotourism Development and Management in the
Rio Platano Man and the Biosphere Reserve, Honduras**

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**Submitted by:
Erik A. Nielsen**

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Executive Summary

This paper describes three community-based ecotourism initiatives in the Rio Platano Man and the Biosphere Reserve (RPBR). The reserve lies in the La Mosquitia region of eastern Honduras, an area isolated from the social, cultural, and political context of Honduras. The rich diversity of ecosystems in the cultural zone of the reserve support an abundant flora and fauna representative of the Central America Isthmus' biotic wealth and four distinct ethnic groups. At approximately 8,500 km² in size, the RPBR is one of Central America's largest protected area and has been called "Central America's Little Amazon" for its attractions.

The three communities of interest that have worked with MOPAWI and its partners in the management of ecotourism are; Las Marias, a river Pech community; Raista, a costal Miskito community; and Plaplaya, a costal Garifuna community. Each of these communities has developed unique approaches to ecotourism with differing results. In general, the communities have pursued a supply side-management of ecotourism with the wide participation by community members to assure local ownership and control of visitor services and infrastructure, to identify and obtain training opportunities, and to develop additional ecotourism attractions and services.

These initiatives and strategies have produced important economic benefits while the results are less clear in terms of direct conservation and socio-cultural benefits. However, some positive signs indicate that the conservation and socio-cultural benefits will continue to grow and their costs minimized through the continued implementation of these strategies. Valuable lessons may be learned through the seven-year history of this initiative and provide the foundation for further developing these and other community-based ecotourism projects within the reserve. This paper provides an overview of this history and the respective strategies and mechanisms used by communities to reach conservation, economic and socio-cultural goals. The paper also examines some lessons learned from this work and details recommendations to further the goals of sustainable ecotourism development and management in the RPBR.

Introduction-Community Based ecotourism

Some elements that distinguish ecotourism from traditional tourism include: a genuine respect and knowledge on the part of the traveler, minimal impact on the local environment and culture, the conservation of biological diversity, the education of all participants, small scale and slow growth, supply driven development, and the involvement of local people throughout the development process (Gunn 1993, CANARI 1994, Boo 1992, Renard 1994, Wight 1993). If developed and managed in this way, "ecotourism is about principles of balancing tourism, conservation and culture" (Western 1993). It has been argued that to be legitimate, ecotourism must be an instrument of sustainable social, economic, and cultural development (Renard 1994).

Background on TNC partner MOPAWI and activities in the Biosphere Reserve

MOPAWI (Mosquitia Pawisa-Development of La Mosquitia) is a non-governmental indigenous grass-roots development/conservation organization that has been working throughout the Mosquito region of eastern Honduras for the past 16 years. MOPAWI's mission is "to support integrated human development and nature conservation". MOPAWI's integrated conservation and development mission for the entire region of La Mosquitia includes the following program areas: sustainable agriculture, women in development, community forest development, preventative health, bi-lingual-intercultural education, organizational strengthening, public policy, institutional strengthening, small business/credit, coastal marine management, and integrated management of the Rio Platano Biosphere Reserve.

Since it's founding in 1985, MOPAWI has been actively involved in the integrated management of the Northern zone of the Biosphere Reserve with the support of numerous international organizations and agencies. Utilizing the diverse human resources of its distinct

program areas, MOPAWI is actively promoting integrated development and conservation with the local indigenous Garifuna, Miskito, Pech, and native ladino communities through the following program components: management and protection of biodiversity, sustainable economic development, organizational strengthening, and institutional strengthening. Community based ecotourism development forms a part of the sustainable economic development program. The challenges faced by MOPAWI and its partners working in the RPBR include; lack of government presence, recently formed community groups, transportation and communication difficulties, high personnel turnover, shortage of experienced personnel balancing the agendas of various donors, the large geographic area of the program and a wide variety of projects. MOPAWI's partners in the development of the community-based ecotourism initiative have primarily included the US Peace Corps, World Wildlife Fund (WWF), US Department of the Interior (USDOI), US Agency for International Development (USAID), Tearfund, and The Nature Conservancy (TNC). These cases illustrate how and to what affect three distinct communities, working with MOPAWI and its partners, have had in the planning and management of community-based ecotourism.

Methodology

The present case study utilizes various data sources and data collection methods to analyze the experiences of community-based ecotourism in the RPBR. These included group interviews and workshops, key informant interviews with community participants, commercial tour operators and tourists, secondary documents, a community census, prior visitor surveys, and participant observation in the communities from November 20, 2000 to May 16, 2001 (See Annex 1). Conclusions about the benefits, costs, mechanisms and techniques in the three community-based ecotourism projects relied on data triangulation where various sources of data converge to provide a valid and reliable source of information. Nevertheless, some of the conclusions are more anecdotal or rough estimates due, for example, to the lack of long term monitoring of wildlife populations and the poor quality of visitor data.

Historical background to reserve and the development of ecotourism

The history of Rio Platano Man and the Biosphere Reserve (RPBR) reflects the diverse cultural and biological values of this region of the Honduran Mosquitia that provide the basis for the current community based ecotourism management. In 1960, Honduras created the Ciudad Blanca Archaeological Reserve (c. 5250 km²) for the Plátano River region and in 1969 declared the region an archaeological national park. The cultural significance of the reserve and the vast relatively undisturbed forests of the area led to numerous scientific investigations and the recognition under decree No. 79 as the Rio Platano Man and the Biosphere Reserve in 1980. The reserve was internationally recognized as a Biosphere Reserve under UNESCO's Man and the Biosphere Program in 1980, the first such reserve in Central America, and later inscribed on the World Heritage List in 1982 (UNEP/WCMC 2001). The reserve was placed on the List of World Heritage Sites in Danger in 1996 where it currently remains due to peasant colonization, large-scale clearing of forests for cattle pasture, illegal timber extraction, governmental indifference, unregulated hunting and fishing, theft of archeological sites and population growth. In 1997, the amplification of the boundaries of the reserve to the Patuca River in the southeast expanded the size of the reserve to 8500km². The reserve forms the largest protected area in the Honduran portion of the Meso-American Biological Corridor (figure 1). It is divided into three zones, the core, buffer, and cultural zones, in accordance with the Biosphere Reserve concept (figure 2). The three community-based ecotourism projects are located in the cultural zone.

Reserve Resources

The Rio Platano Biosphere Reserve is geographically isolated from the rest of Honduras in the region of La Mosquitia with access is by plane or boat. The land within the reserve has a long history of human occupation and there are over 200 documented archeological sites distributed throughout the three management zones (UNEP/WCMC 2001). Approximately 20,000 people currently inhabit the in cultural zone (84% Miskito, 5% Garifuna, 1% Pech & 10 % Mestizo) (GTZ/PRBRP 1997).

The reserve is topographically diverse and elevations range from sea level to 1,500 meters (figure 3). It contains diverse ecosystems including broadleaf tropical forest, broadleaf gallery forest, wet and dry costal savannas, mangrove forests, coastal lagoons, beaches and near shore marine (figure 4). The area of highest ecosystem diversity is the cultural zone. Due to the high ecosystem diversity within the reserve, it is estimated the reserve contains are over 2,000 vascular plant species as well as approximately 350 documented bird, 39 mammal, 126 reptile and amphibian species (UNEP/WCMC 2001). Particular species of interest include: giant anteater *Myrmecophaga tridactyla*, Baird's (Central American) tapir *Tapirus bairdii*, jaguar *Panthera onca*, Caribbean manatee *Trichechus manatus*, harpy eagle *Harpia harpyia* (LR), scarlet macaw *Ara macao*, green macaw *A. ambigua*, king vulture *Sarcoramphus papa*, great curassow *Crax rubra* and crested guan *Penelope purpurescens*.

Biosphere Reserve Management Approach

To discuss conservation and the management of community-based ecotourism in the RPBR it is important to note that ecotourism development and management takes place within the cultural zone of the reserve. Within the framework of the biosphere-reserve concept, not only biotic and archaeological resources are protected but also indigenous cultures. The biosphere reserve represents one of the early attempts to study and manage the human-nature interface within a sustainable development context through UNESCO's Man and the Biosphere Reserve Program (MAB). The program provides the framework for integrating the goals of wildlands management and the needs of local people through the establishment of a worldwide system of Biosphere Reserves (Batisse, 1986). The "...bold goal of the MAB program is to promote a balanced relationship between people and their environment, and thus to serve human needs by promoting sustained, ecologically sound development" (IUCN/CNPPA 1982). Indigenous peoples residing in biosphere reserves have a crucial stake in guiding this development, not only to meet human needs but also to protect cultural and biological diversity. The success of the community-based ecotourism initiatives in the RPBR should be judged by how well they meet this goal.

History of Ecotourism

Ecotourism has a long history in Rio Platano Biosphere Reserve. According to local residents of Las Marias, prior to 1980, the early visitors were a few small groups of scientific tourists conducting various studies in the forest. After the declaration of the reserve an increasing number of tourists, no more than 7 groups per year, or approximately 30-40 persons, visited the community before 1992 and 1993. Tourists began to arrive in significant numbers after the 1991 promotion of the RPBR by "Paseo Pantera", a regional conservation organization, and the first mention of the reserve in the Berkeley and Lonely Planet travel guides to Central America. In 1992, three commercial tour operators began operations to bring tourists to Las Marias. With the improvements in basic infrastructure and services, the publication of detailed itineraries in over 10 travel guides and on the Internet, and the emergence of nine commercial tour operators, visitation has almost tripled. The past nine years have witnessed continual growth in the number of ecotourists traveling through the northern zone of the reserve en route to Las Marias (figure 2). Nevertheless, today the Rio Platano is not widely publicized as a travel destination in Honduras'

key tourism areas such as Copan, La Ceiba and the Bay Islands and thus holds potential for future growth.

General ecotourism attractions

Unlike most other ecotourism destinations in Central America, the diversity of ecosystems, cultures, flora and fauna, and archeological sites in the RPBR offer a unique variety of attractions to visitors. Ecotourists have a multitude of opportunities including, but not limited to: traveling on rivers, lagoons and inland waterways in dugout canoes; swimming in the Caribbean Sea; experiencing three different indigenous groups; observing abundant flora and fauna and learn about their uses by local communities; visiting ancient archeological sites; hiking through lowland tropical rainforests; assisting in the protection of the largest sea turtle in the world; or seeing how butterflies can provide a sustainable economic alternative to traditional slash and burn agriculture (figures 5 and 6). The RPBR provides essentially an eco-ethno tourism experience for the adventure traveler. The geographic isolation of the reserve and the time and costs required to access the area provide the setting for a true cultural immersion. Although many ecotourists visit the reserve with the primary intention of observing wildlife, experiencing the varied cultures within their environment or knowing their “way of life” provides an unforgettable experience for most visitors. Ecotourists have no access to computers, telephones, or cable television and must, for a brief 5-6 day period, eat, live and travel as the local indigenous groups do.

Other attractions or potential attraction within the RPBR include world class sport-fishing for snook and tarpon in Brus Lagoon, exploring the expansive wetlands surrounding Brus Lagoon, rafting trips down the entire length of the Rio Platano involving 5 days floating through pristine rainforest (figure 7), and exploring colonial and pirate historical sites.

General services

Rustic and traditional best describes the food and lodging services throughout the RPBR. Lodging primarily consists of one-room dormitories constructed of local materials with thatched or tin roofing (figure 8). No electricity exists. Guests are provided with mosquito nets, single beds with foam mattresses, pillow and sheets (figure 9). Bathroom facilities are pit latrines and a bathhouse for bucket baths. More developed lodging facilities exist in Palacios, the entry and exit point into the reserve. Food is prepared and served in local kitchens. The menu consists of locally produced foods prepared in traditional dishes. Coffee or purified water accompany meals. Visitors can expect little in terms of fruits and vegetables as the traditional diet includes little of either. In general, the coastal communities provide more variety in terms of food and beverages.

In addition to the three communities analyzed in this study, six other communities provide ecotourism services throughout the northern cultural zone of the RPBR. These include the coastal communities of Palacios, Batalla, Cocobillia, Nuevo Jerusalem, Kuri and Barra Platano.

Description of the communities

The three communities analyzed in this case study differ in terms of culture, ecotourism attractions, location and history of ecotourism planning and development (Figure 10). Nevertheless, each of these communities participates with MOPAWI, its partners, and the private sector to develop its unique ecotourism opportunity and management.

Las Marias

The village of Las Marias lies ten kilometers (37 river kilometers) from the Caribbean coast in the heart of the reserve (figure 2). The village consists of five barrios stretched out along seven kilometers of the river and is the last community upriver prior to entering the core zone of the reserve. Although Las Marias is considered a Pech community, most of the men are Miskito Indians and thus the majority of children are of mixed blood and do not speak Pech. The Pech culture is threatened by assimilation into the Miskito culture. Key community organizations involved in ecotourism include the Pech Tribal Council, the Ecotourism Committee, the United Women's Group and RAYAKA.

The 354 indigenous residents of Las Marias subsist via small-scale slash and burn agriculture and hunting activities. They are also a commercial or purchase society that requires cash income to supplement traditional subsistence activities. Income generating activities include the sale of gold, dugout canoes, timber, wild game, wildlife, cattle, surplus agricultural products, wage labor aboard lobster boats and ecotourism services and products. The community has remained isolated from the development activities of the country as a whole. Historic exposure to a market economy has been through a series of exploitive natural resource ventures by outsiders over the past 100 years. Gold, river otters, rubber, and hardwoods have been extracted in a series of boom and bust ventures utilizing local wage labor.

History and Development of Ecotourism

The community of Las Marias had never participated in a comprehensive planning and development exercise prior to 1994. Tourist arrivals to Las Marias began in the late 80s. In the early 1990s, three tour companies initiated tours to Las Marias and stayed in the local church or homes. By 1993, ecotourism represented a new boom industry to the community. Visitation rates doubled from year to year in the early 1990s and severe consequences were noted in 1993 by research biologist Gustavo Cruz who has worked in Las Marias over the past 28 years. In a report to WWF, he lamented the changes brought on by tourism.

“The ecotourist activity had its highest increase in 1992-1993, and is already making its impact. The travel agencies are fighting between themselves, the national tourist institute does not show up in the area, there are no regulations, and the locals were caught unprepared to deal with this new activity. Most tourist groups who go up from Batiltuk [Las Marias] by river are fed by the locals with products of their fishing and hunting due to scarce food provisions taken by tourists. Social impacts inside the community were known less than six months after the big tourist wave of 1992. By 1993, the [tribal council] is divided and is still in the process of dividing...family and intra-familial division, ethnic division to gain control or to be the key person in the tourist trade, and conflict over the handling of the \$2.00 entrance fee have resulted.” (1993)

The community, with MOPAWI and its partners, responded to this situation by initiating a participatory planning process to address the threat of ecotourism and develop strategies to manage and control tourism. Over the past seven years, they have been working together to broaden this initiative and continue to strive for the conservation, economic and socio-cultural goals of community-based ecotourism.

Attractions

Las Marias provides a unique mix of attractions and opportunities for the adventure and soft adventure traveler. Primary attractions include the dramatic landscape, the tranquility of the village life on the river, petroglyphs (figure 11), rare birds and mammals, non-motorized dugout canoe trips up river (figure 12), forest hikes, Pech music and dance, and stargazing. The

combination of these rural indigenous attractions presents a unique experience for any Central American ecotourist. Tourists can engage in challenging guided three-day forest hikes to conquer Pico Dama (figure 13) or they can enjoy casual guided day trips up-river to explore pre-Columbian petroglyphs and the surrounding forest. At least one member of each household works as a guide. Currently there are 86 guides, 16 who have received advanced training, 70 with basic guide training, and two English-speaking guides.

Raista

Raista is located on a narrow strip land dividing Ibans Lagoon from the Caribbean Sea approximately 90 minutes by motorized boat transport from both Palacios and the mouth of the Rio Platano (figure 2). The majority of the village's 53 residents belong to one extended Miskito family. The residents subsist via traditional agricultural activities, income from the lobster industry, management of the butterfly farm and most recently ecotourism services and products. Raista has become the logistical hub for entry into the Rio Platano and a logical stopover prior to traveling up the Rio Platano.

History and Development of Ecotourism

Prior to the development of the butterfly farm in 1995, two families provided basic lodging and food services for the clients of one commercial ecotourism operator. With the initiation of the butterfly farm, the community became more involved in thinking about strategies to enhance the benefits of ecotourism including the sale of souvenirs and guided tours of the farm. Although the original focus of this sustainable development project was to export pupae to zoos around the world, tourism has become an important component of the financial viability of the farm as it has become a destination within the reserve. The community has never been involved in a comprehensive ecotourism planning process yet they have progressively improved the conditions of services and attractions in and around their community.

Attractions

The primary ecotourism attraction in Raista is the butterfly farm, the first such farm in Honduras. Visitors to Raista may enjoy guided tours of the facilities to learn about the butterfly's different life stages and how the farm exports pupae to butterfly exhibits around the world. The location of the community provides easy access to the pristine white Caribbean beaches as well as scenic views of Ibans Lagoon and the mountains of the RPBR (figure 14). The trails around the community pass through primary and secondary wetland forests and traditional Miskito agricultural plots.

Other attractions accessible from the community include dugout canoe trips in Ibans Lagoon to view aquatic birds, mangrove forests, search for the manatee, explore the remains of the last large scale logging operation in the area, and explore primary rainforests on the other side of the lagoon. From Raista ecotourists may also contract guides to hike 8 hours to Las Marias through primary and secondary rainforest.

Plaplaya

Unlike other communities located on the coast of the RPBR, Plaplaya is relatively isolated from its neighboring communities with Ibans 5 kilometers to the east and Palacios 8 kilometers to the west. Plaplaya lies on a thin strip of coastal land separating a lagoon waterway from the Caribbean. The village has three barrios stretched out along 3 kilometers of the coast. The Garifuna people make up the majority of the 625 residents although small populations of Miskito and Ladino inhabit the community (figure 15). The Garifuna are descendents of African and Carib Indian rebel slaves who were deported from Saint Vincent to Honduras' Bay Islands approximately 200 years ago. They settled this area of Honduras approximately 140 years ago. Current residents subsist through small-scale fishing in the lagoon and along the coastal waters,

the cultivation of yucca and other basic grains and through wage labor as boat captains, merchant marines and deck hands in the Honduran fishing and shipping fleet.

History and Development of Ecotourism

Ecotourism in Plaplaya has been a direct result of the Sea Turtle Conservation Project. When the project was initiated in 1995, one of its components was ecotourism. A small number of ecotourists participated in the nighttime patrols in the first few years of the project either as one-day visitors or as long term volunteers working with the community. The day-to-day challenges of the community's management of the project left little time for developing an ecotourism strategy. During the second year of the project, tourist participation in the nighttime patrols was discouraged for fear of disrupting the behavior of the nesting turtles. This policy changed after various members of the community participated in educational exchanges with turtle projects in Costa Rica and recognized that, with proper management, ecotourism and sea turtle protection activities could exist side-by side. Since 1997, the Sea Turtle Committee has trained the beach guards as guides and has worked to manage the flow of tourists through the project.

Attractions

The leatherback (*Dermochelys coriacea*) and loggerhead (*Caretta caretta*) sea turtles and the community conservation project provide the primary ecotourist attractions in Plaplaya. Tourists accompany beach guards for nighttime patrols to observe nesting turtles, collect eggs and rebury them in the semi-artificial nursery from March to July (figure 16). From May to September tourists may also witness the emergence and release of the hatchlings from the nursery. In addition to the turtle project, attractions for tourists include; isolated expansive white sand beaches, typical Garifuna food, music and dances, fishing excursions, tours to the Pine Savanna and mangrove forests, observing the Caribbean manatee (*Trichechus manatus*), American crocodile (*Crocodylus acutus*), and the brown caiman (*Caiman crocodiles*) as well as undeveloped archeological sites.

Rio Platano Ecotourist Visitor Profile

One of the weaknesses of the community-based ecotourism initiative involves the collection of accurate data on tourist arrivals and consistent administration of a tourist survey. To provide an approximate account of the visitor profile in the Rio Platano, official records in Plaplaya, Raista, and Las Marias were compared to the author's census of tourists for the same period. A correction factor was applied to the number of visitor days. Additionally, ecotourist surveys from 1994-1998 were reviewed and compared to the summary statistics from an incomplete 2000 survey. The profile presented below reflects a synthesis of these survey efforts and provides an overview of the typical tour, annual visitation, activities, and visitor satisfaction.

What is the Typical Tour?

The most common tour of the Rio Platano, both commercially guided and unguided, lasts five days and begins by flying from La Ceiba to Palacios (figure 1). From there travelers take motorized dugout canoes to Raista where they pass the day touring the butterfly farm and visiting the beaches. The second day entails a 5-7 hour journey through mangrove canales and up the meandering Rio Platano passing small settlements and farms along the river's edge until arriving in Las Marias. Once in Las Marias travelers contract local guides to take them one day upriver in dugout canoes to view petroglyphs and hike in the rainforest. The following day visitors return to the coastal community of Plaplaya where they recover from the journey prior to setting out on a nighttime patrol for sea turtles.

Annual visitation

Officially, 410 tourists registered in Las Marias in the year 2000. This represents a tripling of visitation since the ecotourism project initiated in early 1993 (figure 17). A more reasonable estimate would be approximately 600 tourist arrivals in Las Marias due to the observed discrepancies between actual arrivals and recorded arrivals. Not all tourists who arrive in Las Marias, the primary destination in the reserve, also visit the communities of Raista and Plaplaya. Plaplaya and Raista receive approximately 20 and 60 percent respectively of the tourists that arrive in Las Marias. In addition, approximately 15 percent of the ecotourists that arrive on the coast do not visit Las Marias due to the high transportation costs or other travel plans. Therefore, we can reasonably assume that in the year 2000, approximately 700 visitors arrived in the RPBR with the purpose of tourism. Both Raista and Plaplaya receive additional numbers of other visitors that are not classified as ecotourists but rather visitors from development and conservation organizations active in the northern zone of the reserve. Approximately 50 percent of tourist arrivals occur during the dry season from February to May. Peak visitation occurs during the months of March and April. The rainy season appears to be the shoulder season, although the high rainfall period of November, 2000 through January 2001, exhibited high levels of visitation.

Who are these Ecotourists?

The typical ecotourist in the RPBR is a young professional from an industrialized country that speaks some Spanish, travels independently, and arrives in the Biosphere reserve with a small group of acquaintances or friends. Although no survey data exists about the knowledge and attitudes of these tourists, comments in the visitor log indicate that they are environmentally aware and concerned about the protection of the reserve and the indigenous cultures. According to visitor's registration at the three sites, ecotourists from 29 different countries visited the RPBR in 2000. Approximately 50 percent come from Europe (Germany, Holland, England and 9 other countries), 30 percent from United States, 15 percent Central America and Honduras, and 5 percent South America, Asia, Middle East, Australia and New Zealand. Of these, 50 percent were younger than 30 years old and 70 percent under 40 and the majority were professionals. Over 90 percent of visitors traveled in groups of 2-4 persons with friends or acquaintances. Approximately 50 percent of the visitors spend 5 days and 4 nights in the reserve while 36 percent stay for 5 nights or more.

The population of ecotourists divides into two general market segments that I have labeled "backpackers" and "soft adventure" travelers. Backpackers (65%) generally are younger, speak some Spanish and arrive independently while the soft adventure travelers (35%) are older professionals, speak less Spanish and generally utilize the services of professional commercial guides. Approximately 25 percent of all travelers use commercial guide services.

These visitors learned about Rio Platano primarily through guidebooks to Central America and Honduras (45%), word of mouth (36%), and various travel agencies or government agencies (19%) including Internet, newspaper and magazine promotions. Currently the Rio Platano is mentioned in 11 different guidebooks to Honduras and Central America and it is evident that this medium reaches a niche market for the reserve. Additionally word of mouth has consistently been an important marketing tool particularly since ecotourists appear to be quite satisfied with their stay.

Motivations for visiting the Biosphere Reserve

The typical tourist visiting Las Marias in the Rio Platano Biosphere Reserve is a self-described adventure traveler seeking out indigenous cultures and biological diversity. The principle reasons for visiting include adventure (87%), visiting indigenous cultures (80%), landscape (61%), and observation of wildlife (59%). The expectations of tourists are not

primarily to view wildlife, although this is an important motivation, but rather enjoy the spectacular scenery and experience indigenous cultures.

What to they do? Visitors to the RPBR engage in activities associated with adventure travel and ecotourism. The most popular activities in rank order include traveling upriver to visit the petroglyphs in non-motorized dugout canoes, hiking in the forest, visiting indigenous cultures, wildlife viewing, visiting the butterfly farm, enjoying the beaches, patrolling for sea turtles, and just relaxing.

Satisfaction

It is interesting to note that the RPBR has consistently provided an excellent experience for visitors. Approximately 95 to 100 percent of visitors rate their experience as either excellent or good. It is surprising that the overall experience rating is so high considering the evaluation of transportation, guide, food and lodging services received lower ratings and respondents provided numerous suggestions for improving the infrastructure and services of the reserve. This suggests that the niche adventure ecotourist currently visiting the reserve has high tolerance level for less than four-star service and that the possible deficiencies or problems with infrastructure and services do not leave a significant negative impression. Overall, visitors feel highly satisfied with their experience.

What they liked best? The first two years of the ecotourism survey in 1994-1996 asked tourists what they liked best about their visit and 51 percent of the respondents noted the natural landscape or wilderness experience. Interestingly, considering the high biodiversity and abundant visible avifauna, only 16 percent mentioned the wildlife. The overwhelming attractions noted were the people (52 percent), the culture and lifestyle (39 percent), travel by dugout canoe (33 percent), the overall peacefulness of the area (15 percent) and lack of tourists (10 percent). These responses indicate that the primary attraction is the culture within its environment. Culture and the environment are the two most valued aspects of the destination that satisfy tourist' tastes and preferences. Thus, tourism in the Rio Platano Biosphere Reserve is not strictly ecological tourism but also has a strong cultural component.

This conclusion is supported by the tourist's fears that future threats to the biosphere and the community will not be exclusively environmental but rather cultural. Tourists noted that the development of mass tourism (57 percent) and the ensuing deterioration of culture and quality of life (30 percent) were overwhelming threats to the future of the reserve and the community of Las Marias. They felt that mass tourism would destroy the aesthetic value of the place and its people. This perception of tourists should be taken into consideration when considering future marketing campaigns that might bring a new niche market and yet risk the existing market that is highly satisfied with the current ecotourism product.

Strategies and Mechanisms for Sustainable Ecotourism

Working towards sustainable ecotourism and its conservation, economic and socio-cultural goals required the collaborative planning and implementation of unique strategies and mechanisms that reflect the distinct realities of Las Marias, Raista and Plaplaya. This discussion of the strategies and mechanisms for sustainable ecotourism development focuses primarily on the experiences in Las Marias because their initiative directly addressed issues related with ecotourism while the experiences in Raista and Plaplaya were sustainable economic development and species protection projects respectively with ecotourism components.

The impetus for the participatory planning process emerged from the results of a participatory evaluation (1990-1994) conducted by MOPAWI personnel in early 1994 whereby the communities in the reserve requested a greater role in the design and formulation of projects. The strategies and mechanisms developed to manage community-based ecotourism in Las Marias

emerged from the resulting 12-week participatory planning process implemented by the community with facilitation of MOPAWI and Peace Corps personnel (Nielsen 1995). This process was part of a larger MOPAWI effort to develop a strategic plan for the RPBR from 1995-2000. Thus, it was not designed to focus specifically on ecotourism rather to identify issues of concern to the community and plan alternatives to address these issues. The process involved all actors in the community

The participatory planning process was designed to invest all members of the local community with the analytical skills needed to address pressing issues within the community and define the respective roles of MOPAWI and the community in this effort. The planning process attempted to establish that the concerns of the community were important to MOPAWI and that all members of the community had a stake in the process and the outcomes, not just the most vocal leaders or the employees of MOPAWI.

The process consisted of an interactive dialogue where MOPAWI and community developed a shared understanding of the situation and the potential alternatives (figure 18). In this process, neither entity was dominant and both shared the burden and results of the process. MOPAWI could have developed goals, objectives and activities needed to manage ecotourism from its offices by drawing on the resources of their community promoters. Instead, the approach was to support the decisions of the community through an active facilitation raising critical issues, educating the participants, and developing consensus throughout the planning and implementation process.

The initial steps of the process involved the following: 1) Creating stakeholders from the distinct segments of the community in the process; 2) Training MOPAWI personnel in participatory planning techniques; 3) Conducting interactive focus groups with these segments to identify community values, problems and their causes; 4) bringing these varied perspectives together in a general assembly, prioritizing problems and developing action plans within the constraints of the organizational capacity of the community and the resources of MOPAWI.

To initiate ecotourism specific planning, the community assembly, working in small groups was asked to elaborate a list of goals in response to the questions: 1) “What do you hope to accomplish by planning for ecotourism?” and 2) “What would be a desirable situation in five-years in regards to tourism?” The following outputs depict the community’s vision of ecotourism.

- To share the profits and opportunities from ecotourism in an equitable manner throughout the community.
- To minimize the cultural, social and environmental impacts of tourism.
- To improve and control services provided to ecotourists.

These goals provide the foundation for the economic, conservation and socio-cultural strategies and mechanisms discussed below. As a result of the planning process, two new groups formed; the Ecotourism Committee and the United Women of Las Marias organization. They developed action plans to address issues associated with ecotourism development and management by working with a broad range of community interests to identified priority concerns, weigh alternative solutions and implement activities to achieve their goals. The resulting strategies and mechanisms in Las Marias were then developed by these organizations, with the support of MOPAWI and its partners, to address community concerns and values regarding ecotourism.

Conservation Strategies and Mechanisms

The distinct conservation strategies and mechanisms for each of the three projects are presented in figure 19. Guide training emerged as one mechanism common to all three communities. Community participants identified the need for guide training as a mechanism to improve service to visitors. They requested and received guide training from MOPAWI through its Partnership for Biodiversity Program (DOI, Peace Corps, USAID and MOPAWI). The training promoted conservation goals by emphasizing an understanding of ecotourism, the concept of the Rio Platano Biosphere Reserve, tropical ecology, conservation and endangered

species. Over 100 guides from throughout the cultural zone of the RPBR have received one or two guide training workshops. These workshops involved hands on learning to strengthen ecological knowledge and served as forums for environmental education.

Las Marias

The primary mechanism to achieve conservation objectives in Las Marias has been the formation of the Ecotourism Committee. The committee leads the community's efforts to minimize negative environmental impacts of tourism and maximize the experiences desired by tourists to see wildlife and learn about the forest. Key accomplishments to date include the drafting, presentation and approval of rules and regulations for both tourists and guides (see Annex 2), continually educating the guides about the link between healthy ecotourism and a healthy ecosystem, and the preliminary zoning of forest around the community for strict protection and exclusive use for tourists. To date, the most important mechanisms have been the institutionalization of norms for guides behavior that directly addressed the excessive hunting and fishing while guiding tourists, the clear communication of regulations to visitors and overseeing compliance with the regulations by commercial tour operators. The Honduran Institute of Tourism now recognizes these norms and regulations as official for the community although initially they resisted this community strategy.

Raista

Raista and the butterfly farm have utilized two basic strategies to promote the conservation of the reserve. The farm serves as non-formal environmental education center to educate visitors, school children and community members about the value of conserving the forest resources. Although not as direct an effect as the regulations issued in Las Marias, the farm has attended to over 600 local residents and school children. Another strategy used by the butterfly farm has been the conservation of diverse habitats to use for the capture and release of butterflies. . With the added revenue from tourist visits (the farm charges a \$2.00 dollar entry fee for foreign visitors), the farm remains a viable conservation mechanism for the habitat it depends upon. Finally, the community of Raista is perhaps one of the cleanest in the cultural zone of the reserve and one of the most active in mangrove restoration along the edge of the lagoon. This "clean community" strategy is a direct response to tourist wishes and keeps additional garbage out of the lagoon ecosystem. The mangrove restoration and hardwood reforestation efforts are indirectly related to working towards locally important conservation goals.

Plaplaya:

The Plaplaya Turtle Committee developed a conservation strategy to addresses the role of ecotourists within the day-to-day operations of the turtle project. The committee views tourists as a valuable asset for a project that functions with limited funding. Tourists are asked to pay a \$1.00 fee to accompany the beach guards on night patrols and are asked to make donations to help support the environmental education and protection components of the project (see annex 3). When accompanying the beach guards on nighttime patrols, tourists must follow explicit rules developed by the turtle committee. Tourists are allowed to participate in the patrols if they agree to follow the instructions of the guards and not disturb the nesting behavior of the turtles. The committee also uses tourists to supplement patrol routes when they do not have sufficient resources or guards to cover one of the planned patrols. In this case, a group of tourists is divided in two and one guard accompanies each group. Finally, the turtle project focuses on educating foreign and local visitors about the plight of the world's sea turtles. Over 3,500 adults and school groups have participated in the project's formal and non-formal environmental education activities.

Economic Strategies and Mechanisms

Four basic strategies designed to capture the greatest portion of tourist spending in the community are common to all three community-based ecotourism sites. The communities have pursued the strategy of a supply-side management in the provision of ecotourism infrastructure and services. Instead of responding to tourist demands or a broader market segment, they have supplied what can be obtained and managed locally. A result is the strategy to develop and maintain local ownership of all guide, transportation, lodging and food services. The second strategy has been the use of local materials wherever possible for construction, food and transportation. The third strategy is the development of local arts, crafts, dances, and souvenirs for sale to visitors. Finally, the communities have use entry fees or donations from tourists to directly support community or conservation projects. These strategies explicitly recognize that ecotourists are willing to pay to support local conservation or community development projects and capitalize on the materials locally available to provide for tourism services. The actual mechanisms used in each community are highlighted in Figure 20.

As a result of the participatory planning process, Las Marias developed some additional strategies and mechanisms to maximize the economic benefits of ecotourism. The community decided that the benefits should be shared equally with all the families. The Ecotourism Committee developed a mechanism whereby all heads of households, single women, widows, or grandparents would be eligible to guide tourists. The committee manages this alphabetical list of all eligible guides and works on a rotational system. To ensure a high quality of the tours, the committee divided the guides into primary and secondary guides. Primary guides (16 total) have significant experience and training and provide the majority of the nature interpretation. The secondary guides (70 total) serve as helpers to guide the boat or bring up the tail of a forest walk. The guides receive equal pay but the primary guides have the opportunity to work more days with tourists. The ecotourism committee also requires any visitor or commercial tour guide to be accompanied by an official local guide for all hikes into the forest or up-river. Tourists are free to explore around the community on their own.

The community entertained the idea of managing the motorized transportation from the coast and the lodges on a similar rotational basis but due to logistical difficulties and competition between these service providers this plan has not been implemented. The continued competition between these service providers makes it extremely unlikely that an equitable rotational system will be implemented in the near future.

Socio-Cultural Strategies and Mechanisms

To achieve the social and cultural goals of ecotourism development the three communities have developed two common strategies (Figure 21). The local ownership of guide, food, lodging and transportation services highlights the first strategy. By maintaining the local ownership of services, the service providers must work within the cultural norms of the community and maintain these norms as good neighbors. Additionally the selection, training and practice of local guides take advantage of indigenous knowledge of medicinal plants, wildlife behavior, and forest management practices and reinforces the value of this knowledge. The second strategy has been the maintenance of traditional architecture for the construction of lodges, food facilities and transportation. Although these traditions are changing rapidly, the communities, commercial tour operators, and MOPAWI's partners are promoting the conservation of these designs. Both of these strategies were challenged by early tour companies and some local service providers but fortunately they were held in check by the communities commitment to conserve unique cultural traits.

Las Marias

The participatory planning process in Las Marias produced additional specific mechanisms to achieve the social and cultural goals of ecotourism development. The women's organization formed with the purpose of renewing traditional Pech crafts, music and dance and

providing an alternative source of income to the families of the community through the sale of crafts, baked goods and cacao products. They organized and requested training in traditional crafts that had been lost to the younger generations. After receiving this training, the women opened a store to sell local artwork, baked goods and locally produced chocolate.

The ecotourism committee's design of the guide system also intended to limit the number of residents specializing in tourism services. Their logic was that families dependent on tourism would lose traditional agricultural knowledge and with it lose their food production and security. In response to the threats of alcohol and drugs entering the community with ecotourists, the community formalized its expectation that tourists respect the fact that the community is "dry" and that the consumption of drugs or alcohol was prohibited.

Role of MOPAWI and its partners

To develop and implement these strategies and mechanisms, the three communities worked closely with MOPAWI and its partners in the areas of organizational strengthening, training in ecotourism services, development of infrastructure, information, and marketing.

Organizational Strengthening

Perhaps the most important role of MOPAWI and its partners has been the development and strengthening of local organizations to face the challenges of managing community-based ecotourism. The ecotourism committee, Las Marias women's organization, the butterfly farm and the Plaplaya Sea Turtle committee received training in meeting management, public participation techniques, leadership, strategic planning, and financial administration. These critical skills and concepts provide these organizations with some basic tools necessary to continue evolving and adapting the growing ecotourism industry.

In addition to training, MOPAWI and its partners have and continue to collaborate with the communities to facilitate dialogue and cooperation between the community and outside agencies from the public and private sectors. Bringing these sectors together to jointly implement training programs, resolve conflicts and strategically develop the ecotourism initiative would have been outside of the capacity of the local communities and thus MOPAWI has played an important catalytic role. Community members have established new contacts and developed an understanding of the political process as it relates to protected areas and ecotourism. One example has been the continued involvement of the Honduran Institute of Tourism (HIT) in the guide and service courses. Initially the HIT was opposed to local communities issuing norms and regulations of tourists but through this dialogue and cooperation, they now accept as legitimate these policies. Currently MOPAWI is working with HIT to certify the guides working in the reserve.

The interaction between the communities, MOPAWI, and its partners has increased the mutual understanding of the current and future challenges of ecotourism and the necessity of planning for tourism based on the values of the communities and the reserve. Community members and service providers have been exposed to potential risks and costs of ecotourism development that, without outside information, they would have been unable to imagine.

Services

In terms of the development of services, MOPAWI and its partners offered a series of workshops over the past 7 years to address the felt needs of the communities and local ecotourism service providers. Examples include guide training courses that reinforced and valued indigenous knowledge and stressed the understanding of the relationship between a healthy ecosystem and the continued health of the ecotourism industry. Lodging and food service providers received instruction in basic sanitation and food preparation as well as small business management. The women artisans of Las Marias received basic instruction in the management of majao and the

preparation of hot chocolate from locally produced cacao. MOPAWI's local ecotourism promoter currently monitors and promotes a high quality of local services.

Infrastructure

Developing infrastructure, even with locally available materials, is a financial challenge for most residents of the cultural zone of the Biosphere Reserve. MOPAWI's small credit and small business program has facilitated loans to service providers to improve lodging, food and transportation facilities. In addition, MOPAWI and its partners facilitated the construction of a visitors center and a series of bridges and trails in Las Marias through a creative cost sharing arrangement. The community supplied the labor and local materials while MOPAWI supplied skilled labor and non-local materials.

Information and Marketing

MOPAWI and its partners have taken a cautious approach to marketing for the following reasons: 1) the weaknesses of the nascent local organizations in charge of managing tourism; 2) the dangers of mass tourism destroying the experience that current visitors seek, and 3) limited funding. Nevertheless, they have engaged in small-scale marketing on the Internet, the production of brochures and the development of maps and other basic information to help inform and guide the existing users of the reserve. This is the one area where the communities have little experience and have not directly participated in the development and dissemination of this information outside of the reserve.

Role of the private sector

Commercial ecotourism or adventure guide companies have played an important role in the development of community-based ecotourism in the RPBR. Since the first years of the initiative, tour operators have provided economic and logistical support to the development of ecotourism services and infrastructure. Some of these guides have long histories and intimate contacts with the communities that have developed mutually beneficial relationships. In general, they have contributed positively to the initiative. For example, almost all of the lodges and kitchens in the three communities have received small loans for improvements to their facilities. The tour operators purchased the materials such as mosquito nets, mattresses, or pot and pans with the understanding that they would be repaid in services rendered. Many companies continued to pay a reduced rate for the services until the value of the loan was paid off. This arrangement allows service providers to improve their facilities with essentially no risk and not fixed payback schedule. The service providers are then free to use these improved facilities to provide services to other visitors.

Commercial tour operators have collaborated with the ecotourism initiative by: 1) participating as instructors in the guide training courses; 2) sponsoring educational field trips to visit other Honduran ecotourism destinations; 3) continually educating local community members about tourists tastes and preferences; 4) providing feedback on plans for development of trails and other facilities and 5) by monitoring and promoting a high quality of local services. Perhaps most importantly they have in general respected the norms and regulations issued in Las Marias and work to comply with general community norms.

Additionally, the continued growth in visitation to the reserve may be attributed in part to the marketing and promotional efforts of the private sector. It is certain that many independent travelers hear about the attractions in the Rio Platano through the promotional videos, Internet sites, newspaper and magazine advertisements and other marketing materials in Spanish, English and German produced by the private sector. Because most of these companies are small and locally owned, their marketing contribution appears to have been an appropriate scale. The marketing has not produced excessive visitation that might strain the communities existing infrastructure capacity.

Benefits and costs

Overall, the community-based ecotourism projects have produced conservation, economic and socio-cultural benefits in the three communities. However, some of these benefits are difficult to objectively verify. There are also costs associated with these benefits and these need to be analyzed to develop further mitigation measures. To assess the benefits and costs of ecotourism in the three communities of the Rio Platano, this case study used existing information from the authors 1994-1995 study of ecotourism in Las Marias (Nielsen 1995), a participatory assessment conducted as part of this study and a 2000 case study of Las Marias commissioned by the MOPAWI partner Tearfund (Gordon 2000). The discussion of benefits and costs focuses on Las Marias because of the specific planning in the community, the availability of baseline data and the broad scale of impacts throughout the entire community.

Participation

The strategies and mechanisms to maximize the conservation, economic and socio-cultural benefits of ecotourism involved a wide range of participants in each community. Participants include all ethnic groups in the communities, high participation by women and participation across all age groups. The following data highlight the current levels of direct participation in each community:

Las Marias (124 participants)Guides: Lodging:

Food and

57% Miskito, 43 % Pech;
23% Women, 77% Men;
66% aged 18-37, 34% aged 38-78

50% Miskito, 50% Pech
75% Women, 25% Pech

Artisan products, baked goods, chocolate products:

48% Miskito, 52% Pech
85% Women, 15% Men

Raista (8 participants)

100% Miskito
50% Women, 50% Men
50% age 18-37, 50% age 37-58

Plaplaya (32 Participants)

91% Garifuna, 9% Miskito
37% Women, 63% Men
74% ages 18-37, 26% ages 38-56

Conservation Benefits

No clear objective measures exist to demonstrate that ecotourism provides a direct benefit for the conservation of species or habitats. Nevertheless, there are some signs that the presence of environmentally conscientious ecotourists has positively affected conservation goals in the cultural zone of the RPBR. The most significant benefit observed in the three communities has been the constant stream of positive reinforcement to community members from ecotourists about the value of their conservation efforts. This constant affirmation of the turtle and butterfly conservation efforts, as well as the stewardship of the natural resources surrounding the communities by tourists, provides motivation for some community members to continue with this challenging work. It appears that there is an increase in community pride about their role in the conservation of sea turtles, butterflies and their overall knowledge, awareness, and stewardship of

natural resources. Long-term conservation goals may also be furthered by the continual sharing of traditional knowledge about natural resources and the ecology of the tropical rainforest with conservation minded ecotourists. Guides in particular have expanded their knowledge of the reserve and its threatened ecosystems. Another benefit is that the increased number of ecotourists and the income generated directly for the turtle protection project and the butterfly farm enhances the long-term financial viability of these projects thus furthering their conservation potential.

In Las Marias, compliance with the rules and regulations created by the community have eliminated the hunting and fishing associated with tours prior to the initiation of the ecotourism planning process. This compliance directly reduced the pressure on wildlife resources in the core zone of the reserve. In addition, guides now have a new awareness about the value of wildlife as they report larger tips if tourists see wildlife during a tour. Guides in Raista and Plaplaya reported the same awareness and desire by visitors to view wildlife during tours.

In theory, ecotourism should provide this direct link between economic benefits and the reduction in pressure on the wildlife resources. Las Marias in fact has seen a decrease in the number of men dedicated to hunting (8 in 1994 and 4 in 2001). According to community groups, the local wildlife officer, and the hunters themselves, hunting pressure overall has decreased since 1994. Unfortunately, no data on wildlife populations exists to substantiate these claims and other indicators discussed below appear to provide contradictory information. Nevertheless, with more hours per week dedicated to tourism services, there is a reduction in time available for hunting and fishing activities.

Another conservation benefit is that community members may be substituting domestic meat for wild game. There has been a small increase in ownership of pigs throughout the community from 1994 to 2001. This substitution from wild game to domestic meat consumption supports the observation by Honduran wildlife biologist Gustavo Cruz that poor families in the RPBR have a greater impact on wild game populations than do families with greater income (Cruz 1994).

Finally, conservation goals may become directly linked to ecotourism if the ecotourism committee implements its current plan to zone areas around Las Marias for tourism and eliminate hunting and most extractive activities from these zones. The explicit protection of habitat and species for ecotourism provides a test for the value of ecotourism and the ability of the community to comply with the zoning regulations.

Other factors that indicate positive benefits for conservation from ecotourism include the relative stability of the population, the use of money for family planning activities and the lack of expansion of cattle ownership. Some women have used the additional income from tourism to engage in family planning to achieve the optimal or desired family size that is significantly smaller than current family size (Dodds 1998). Surprisingly, the economic benefits of tourism have not increased immigration into Las Marias. The population has decreased by five people since 1994. Comparing the census names and households from the 1994 census to the 2001 census reveals that five large households relocated to the coast. Thus, migration has outweighed immigration and natural growth rates. This finding challenges many critics of ecotourism and integrated and development programs that these programs will create growth poles that lead to increasing populations and its corresponding pressure on local ecosystems.

Conservation Costs

Technological changes provide opportunities to exploit resources more rapidly than possible with traditional technology. The technological indicators examined in this study include the number of chainsaws, the number of rifles and the availability of ammunition. In Las Marias, the number of chainsaws has increased from one in 1994 to 7 in 2001 and potentially has increased the pressure on the timber resource and the ease of clearing primary forest for agricultural activities. The number of rifles in the community increased from 28 in 1994 to 32 in 2001, as did the availability of relatively expensive ammunition at the local stores. These

indicators demonstrate potentially negative effects on wildlife populations and habitat from ecotourism development and raise some questions about the use of increased income derived from ecotourism. It should be noted though that the elimination of hunting or traditional agricultural activities was never contemplated as a conservation goal. Finally, these findings raise the question about the accuracy of self-assessment of hunting and general conservation activities. Thus in Las Marias it is unclear whether ecotourism has directly supported the conservation of biodiversity.

Economic Benefits

Ecotourism as a sustainable development alternative has produced significant economic benefits throughout the northern zone of the RPBR and in the three communities. Local control and ownership of ecotourism services and the use of local materials to attend to tourists has allowed for an extremely high rate of capture and a minimization of leakage of tourism revenues. The total value of the ecotourism resource in the northern zone of the reserve is estimated at approximately \$170,000 USD annually by the travel cost method (range of \$140,000 to \$200,000). In the cultural zone, tourism related income has increased from \$27,000 (216,000 Lempiras) in 1994 to \$96,000 (1,431,000 Lempiras) in 2000. This represents approximately 28 direct full-time equivalent jobs. Given the low economic leakage and high capture of tourism spending it is possible that tourism spending generates between 55 and 70 direct, indirect and induced full-time equivalent jobs (figure 22). Las Marias receives approximately \$49,689 USD annually in tourism related spending, while the costal communities (Palacios, Raista, Plaplaya, Cocobilia, Nuevo Jerusalem, Kuri, and Barra Platano) receive approximately \$47,000 USD annually.

Prior to the formation of the ecotourism committee only 23% of the families in the community received any income from tourism. Currently 100% of the families in Las Marias are benefiting from ecotourism in guide services, food, lodging, transportation or sale of other goods. The average annual income from providing guide services is approximately \$239 USD per family as compared to \$102 per year in 1994. This is a significant amount of income considering the per capita income in Honduras is approximately \$650 USD per year and 80 percent of the population lives below the poverty line. Tourism related income represents approximately 30 percent of the average families annual income and is the largest economic sector in the community (figure 23).

Of the revenue generated by tourism spending in Las Marias, almost 90 percent is available for spending in other economic sectors due to very small leakage from the local economy. Since goods and services are produced locally and there is no need to import products. Las Marias then directly captures a very high percentage of local tourism spending. The increased economic activity in Las Marias can be seen in the number of small stores, which increased from 2 in 1994 to 10 in 2001. These stores maintain an increased inventory and variety from observations made in 1994. One storeowner acknowledged that his sales doubled during weeks when tourists were in town from sales directly to kitchens and tourists.

In the costal communities, including Raista and Plaplaya, the \$47,000 USD annual revenue has a higher leakage due to the purchase of fuel, motors and other imports. It is estimated that approximately 45 percent of total spending leaks out of the costal economy. Since neither Plaplaya nor Raista provide transportation services the leakage is considerably less or approximately 15%. In Plaplaya and Raista, entry fees and donations generated approximately \$500 to each of the community conservation projects. In the case of the Turtle conservation project, this represents approximately 8 percent of the average annual operating budget for the project.

Overall, of the total tourist expenditures to visit the Rio Platano Biosphere reserve, the communities capture approximately 40 percent or 40 cents on the dollar. This demonstrates that community based ecotourism in the northern zone of the RPBR, due in part to its geographical isolation and indigenous ownership and management of services, achieves a much higher rate of

capture than other ecotourism destinations throughout Central America. Lindberg (1994) notes that “more than 90 percent of tourism spending is thought to leak away from communities near most ecotourism sites” while citing one study estimate that “...less than 6 percent of income generated by tourism in Tortuguero National Park in Costa Rica accrues to the local communities.”

Economic Costs

The economic costs of ecotourism development are difficult to discern in Raista and Plaplaya due to the nature of the coastal economy and the lower numbers of visitation. In Las Marias, the relatively rapid entry of a new economic industry has caused minor inflationary pressures primarily in the cost of wage labor. Community members complained that now everyone wants to earn what a tour guide earns for a days work. The inflationary pressures observed by the author in 1994-1995 appear to have eased and the prices for local good reflect the change in prices along the coast of the reserve

With over 30 percent of the community income dependent on tourism arrivals there is a risk of creating a dependency on this sector. In Raista as well, tourism income may be creating a dependency by some of the families but they have worked to diversify their economic base. It must be kept in mind though that Las Marias is still primarily a subsistence community and the majority of time is allocated to agricultural production. The system of rotating guides helps to mitigate an over reliance on the tourism sector. With continued growth, it would be expected that tourism would form a larger part of the economy in all three communities and this brings with it the inherent risks of dependency and instability. The case of Mitch illustrates the sensitivity of tourism visitation to exogenous events and the dangers of relying on tourism as the only source of income.

Socio-cultural Benefits

The socio-cultural effects of the community development and management of ecotourism are diverse and, in general, positive. It is difficult to evaluate the social and cultural impacts of the changes described below due to their complexity and the non-observable effects of social and cultural change across time within complex systems. Cultures continually evolve and it is difficult to know at what point culture loses its ability to adapt to change on its own terms or is assimilated into other cultures. Many of the benefits observed in Las Marias, Raista, and Plaplaya relate to basic needs such as health, education, communication, material well-being, the status of women and cultural pride. In the 2001 census of Las Marias' residents, respondents noted that increased income from tourism primarily assisted to provide food (66%), medicine (55%), school supplies (20%) and church offerings (12%). The negative impacts of ecotourism are conflicts over social and cultural values primarily related to money and the further development of a cash economy. Overall, though it appears that residents enjoy the presence of and interactions with international travelers.

Health

All participants in the three communities noted improvement in access to health care and medicines. Residents have disposable income to pay the nominal fee for health center consultations, purchase medicines individually or in bulk, and if necessary, many residents have sufficient resources from tourism to travel outside of the reserve for medical care. Additionally many participants spoke of using the money to practice family planning, something that requires a significant journey to reach medical facilities where operations are performed.

It appears that overall child and community health have improved particularly in Las Marias. Although there appears to be a consensus on this benefit, the health records in Las Marias do not indicate a decrease in per capita cases of diarrhea or respiratory infections. The

nurse in charge indicated that the record keeping and protocols have changed over the past few years and thus more cases are reported. Nevertheless, tourists demand the basic conditions of clean water and satisfactory bathroom facilities and this demand have promoted improved health within the community. Service providers received training on basic sanitation practices and currently implement these practices in their households. . One indicator of improved health and sanitation is that in 1994, only 7 latrines existed in Las Marias and today there are approximately 40. In Plaplaya, traditional latrines over the lagoon have been replaced by flush toilets with septic systems.

Education

Evidence exists to indicate that educational opportunities and advancement have increased through ecotourism income. In Plaplaya, Raista and Las Marias, those most involved in tourism have used this additional income to send their children to Jr. High or High schools outside of their communities or the region. For example in Las Marias, there are currently 13 students in Jr. High school outside the community while in 1994 not one was attending Jr. High. In addition, the teacher in Las Marias noted that now all children arrive to school with pencils, notebooks and in uniform. The parents contribute financially more frequently to school activities and they show more interest in the achievements of their children.

Material well-being

Increased income in Las Marias has been used primarily (66%) to purchase foodstuffs and various in sundry goods. Other purchases include radios, outboard motors, and investments in food and lodging facilities. For example in Las Marias the number of outboard motors has increased from 1 in 1994 to 7 in 2001 and the number of radios from 1 in 1994 to 3 in 2001 thus facilitating contact with the outside world and saving time on transactions that earlier would have taken days to complete. These changes cannot be attributed primarily to tourism but it is clear that tourism is the fastest growing source of income in this community and has directly or indirectly effected the material well-being in Las Marias. In Raista, Plaplaya, and Las Marias, tourism income has also been reinvested to improve food and lodging facilities.

Cultural Valuation

In general, the increased contact of these indigenous groups with outsiders has increased awareness and pride in their culture. There has been an increased pride in sharing their culture through music, dance, food, crafts and traditional knowledge . For example, in 1994-1995, I once heard Pech being spoken by older residents of Las Marias. In 2001, I observed two presentations of traditional Pech songs and dance with a wide range of generations participating. The intimate exchange between visitors living essentially in a home has proved to be a fascinating experience for the indigenous residents of the three communities and something that community members have come to value.

In Las Marias, the women's group, working with indigenous arts and crafts and the management of a craft store, has provided the women with new confidence and an increased status in the community. Just seven years ago the men in the community raised serious questions about the first gathering of women to analyze issues of concern to them while today the women meet regularly in a leadership role. Today the women's organization, although struggling to define its role without a community store, is one of the strongest organizations in the community.

Community Organizational Capacity

Developing and managing ecotourism requires new skills, increased organizational capacity, and provides the opportunity to see the benefits of collective community action. These experiences empowered community organizations to address other important community issues such as community centers, cultural centers and reforestation projects. Additionally the

international and national recognition of the efforts being made in these communities contributes to community pride and has presented opportunities to work with other public and private development agencies.

Socio-Cultural Costs

Social Values

Increased income may provide significant material benefits to small subsistence economies but it may also cause conflicts between people that are not accustomed to living in a competitive cash economy. Envy, greed, fraud and corruption have been noted in each community as money moves through the economy and some community members benefit more than others do. In Las Marias, the community consistently mispends the voluntary donation collected from tourists and serves as a constant source of conflict within the community. The community has also experienced theft from the women's artesian shop and directly from tourists by young members of the community. Children begging for money and goods have always been a concern in tourism destinations and unfortunately, in Las Marias and Plaplaya begging exists on a small scale.

The community of Las Marias attempted to maintain the community prohibition on alcohol and drugs through the tourist regulations but with little success. Some guides and tourists have not respected the community norm and do abuse alcohol and drugs while visiting the community. Currently the accepted, unarticulated norm is that drinking is acceptable but drunken behavior is not. Unfortunately one lodge owner is selling cold beer to tourists and the community is divided on what should be done. The lodge owners insist that it is just for tourists and they will not sell alcohol to local residents.

The final social cost noted during this study is the conflict between traditional community organizations and their leaders and those organizations developed to manage the community-based ecotourism projects. With the growing prestige, income and profile of these projects, traditional community leaders appear frustrated with their limited role in these projects and their loss of legitimacy as community leaders.

Lessons Learned

Examining the history of these initiatives, the strategies they have used to manage ecotourism, and their conservation, economic and socio-cultural benefits and costs, we can begin to draw some lessons about community-based tourism in the RPBR. Developing and managing the tourism attractions and services in this context is primarily an organizational task. The case of Las Marias illustrates a process of developing community organizational capacity through the identification of a vision of the desired state of ecotourism, the needs and values of the community, the design of organizations and strategies prior to investing in the development and improvement of infrastructure, marketing and services. This has been, and continues to be, a lengthy process that requires perseverance, patience and determination to work within the cultural norms of the communities on the part of all involved.

The most significant strategy to achieve conservation, economic and socio-cultural benefits has been the interactive participatory planning process to create the locally acceptable vision of sustainable ecotourism. The most significant strategy to achieve the economic benefits of ecotourism has been the local ownership of infrastructure and services and the supply-side management that does not cater to the demands of the market place but supplies what is within the capacity of local communities.

The development of a new economic sector has challenged traditional leadership structures and organizations through the creation of new organizations. In both the Las Marias and Plaplaya projects, initial efforts utilized existing community organizations, the Pech tribal council and the Plaplaya fishing committee, but neither organization demonstrated the will to

follow through with the goals of the projects. The organizations involved today represent those individuals committed to the projects and willing to devote significant amounts of voluntary time to making ecotourism work.

Finally, MOPAWI and its partners did not rush into marketing efforts to “develop” ecotourism but let the word of mouth, tour operators and travel books do the marketing. Steady growth over time has allowed local communities to adapt to this new economic opportunity and develop the organizational structures, services and infrastructures necessary to attend to ecotourists needs now and in the near future.

Recommendations for improving the initiatives

The following recommendations are based on this analysis, the current work by the US Department of the Interior ecotourism specialist, and the proposed UNESCO/RARE World Heritage Site Ecotourism pilot project (RARE 2000) .

1. Biosphere-wide ecotourism planning

The different actors in the reserve should engage in a participatory planning process to develop a strategic public use plan for the reserve. The planning approach should be based on the Limits of Acceptable Change planning methodology that would incorporate cultural and social parameters into the monitoring and management process (see Anderson 2000 for a more detailed description of the LAC methodology). Throughout this planning process, a prominent role should be reserved for the communities and leaders that have been involved in community-based ecotourism development and have significant experiences with tourists. These actors understand the potential benefits and costs that may accrue at the community level from this economic development alternative. Community members in fact should be the primary stakeholders in the process and they should be involved throughout this process as designers and facilitators so that the final product is owned by them. The public use plan should not focus on the carrying capacity concept because it tends to minimize the qualities of tourists and fails to take into account the cultural capacity to adapt to and plan for changes the cultural and social impacts of increasing visitation.

2. Community-base zoning and regulations of tourism land-use

Each area planned for tourism attractions should zone these areas as public use and specifically link conservation goals to these zones through an interdisciplinary dialogue including ecologists, wildlife biologists, local community members, park managers, NGOs and municipalities.. These zones could be selected for their ecological and tourism values. The zones should integrate specific restrictions that are acceptable to the local residents and provide a reasonable measure of protection for the long-term viability of the tourism attraction.

3. Address foreign ownership and investment

Although communities have pursued the strategy of local ownership of tourism infrastructure and services, it is important to develop clear guidelines and land use policies for tourism development to avoid any future problems with outside investors or speculators. As tourism develops, the natural tendency is to expand the market base through improvements to facilities and services. These improvements may be locally viable or require infusions of outside capital. If outside capital is involved, care must be taken to minimize excessive cultural impacts and economic leakage.

4. Initiate community-based wildlife management projects.

The issue of hunting poses difficult trade-offs between cultural conservation and species conservation. Hunting is a part of the culture and the knowledge of the forest and the species that it brings form a distinctive core of the cultures in the reserve. The zoning concept of the

biosphere reserve strives to protect and develop sustainable systems to preserve biodiversity and cultural diversity. Presently no formal wildlife management practices or regulations exist in the RPBR. As part of the tourism development, hunters should be integrated as guides and community based strategies for managing and regulating hunting should be developed that maintain or improve wildlife populations and this important element of indigenous culture.

5. Community tourism plans

MOPAWI and its partners should work with each of the three community projects to define or redefine community visions of tourism. Based on a vision the communities should develop annual community tourism work plans for infrastructure, services and training that could be potentially supported by MOPAWI and its partners.

6. Training and accompaniment

Continued areas of training should include:

- Small business, accounting and money management
- Continued support for organizational strengthening
- Interchanges with Kuna or Maya Biosphere Reserve Communities to share ecotourism experiences and strategies with a broad participation from throughout the northern zone of the RPBR.
- Work with transport owners to maintain communication, post information, and self-regulate prices and quality of service. This is the major barrier to travel in the Rio Platano.

Training should not be a one time activity or series of workshops but rather form a part of a larger plan to work closely with communities as they put newly acquired knowledge into practice.

7. Small credit program modifications

The current small credit program cannot meet the need of local service providers interested in expanding or improving their facilities due to the high interest rates, short pay back period and lack of grace period. Therefore, it would be worthwhile to explore the possibilities of developing a small credit program appropriate for infrastructure improvements (low interest, grace period and 3-5 year duration) and develop guidelines for building design and materials. Local ownership of goods and services is the key to minimizing economic leakage and maximizing local benefits from ecotourism development. Maintaining the community or Biosphere wide norm of local ownership and investment may only be possible if local residents have access to a reasonable of credit program.

8. Marketing and promotion

The issue of marketing very sensitive and any attempts should be taken with great caution. No new major marketing efforts should take place without the comprehensive public use plan and Limits of Acceptable Change monitoring system in place. Great care should be taken with large-scale marketing efforts to grow visitation or to “make tourism pay.” For example, collecting a \$10.00 entry fee from the 700 tourists would produce enough income to manage the turtle conservation project. If marketing could increase this number of visitors to 10,000, the entry fee or tax on services would not cover the operating costs of one of the NGOs working in the reserve.

The danger with pursuing growth to finance the park’s management is that we know that less than 1000 tourists have a significant impact on these communities and without some limits of acceptable change, any significant increase could be extremely detrimental. Future marketing should take care not to oversell the attractions that depend on the tranquility and isolation of the area

One alternative to accommodate growth would be to develop other sites and attractions in the reserve to spread out potential visitors. The existing market niche may be grown by targeting other Honduran destinations such as Copan, La Ceiba and the Bay islands.

9. Monitoring existing services:

MOPAWI, its partners and the communities should continue to monitor and improve food and lodging services. Minor changes to facilities could include individual cabanas for privacy, improved “sweet smelling” latrines, towels, added variety of menu using locally produced foods, increased production and availability of traditional fruits and vegetables.

Site Specific Recommendations

Las Marias

- Monitor and strengthen the capacity of community groups and service providers in household and organizational money management through targeted workshops, supervision, and accompaniment.
- Focus on monitoring wildlife species in terms of ecological, tourism and cultural importance. Currently there is a lack of information about wildlife population dynamics around Las Marias. A long-term, technologically appropriate monitoring program of two or three indicator species would help to understand the impact local hunting and tourism on wildlife populations.
- Incorporate, train and supervise the four individuals who currently hunt for economic gain as primary guides. With their forest and wildlife knowledge, they would be excellent candidates as primary guides and this work could provide a direct economic incentive for them to protect species of concern around the community (none of these individuals presently serve as primary guides).
- Work with ecotourism committee and Pech Tribal Council to explore mechanisms to provide economic incentives to land owners to protect, instead of kill, charismatic wildlife that destroy their crops. These animals could be promoted as attractions that landowners could directly sell to tourists. One commercial tour operator recommended building a blind and advising his groups when a Tapir or Collared Peccary was browsing on crops in near the community. He would gladly pay extra to give his clients the opportunity to experience rare and difficult to view animals.

Raista

- Work with community members to explore the possibilities of expanding lodging facilities in and around Raista. Housing shortages occurred this year on numerous occasions and it appears that the community could profit from expanded facilities.
- Involve the community members in a participatory planning process to define their vision for the future of ecotourism, the development of nearby attractions and the marketing of the community and the butterfly farm as a primary destination.
- Explore the role of Raista as a center for information, prices, and travel logistics for visitors to the RPBR. Additionally analyze the financial and logistical mechanisms to produce, maintain and update printed materials for visitors.

Plaplaya

- Work with the village council and the sea turtle committee to develop a participatory ecotourism plan. This plan should explore the possibilities of creating Plaplaya as a destination within the reserve, developing existing attractions in and around the community and to capturing a larger share of current visitors to the reserve.
- This plan or the ecotourism committee should elaborate well-defined rules and regulations for turtle experiences and mechanisms to ensure that tourists and guides comply with these rules. The regulations should be posted in the turtle nursery and in local lodges.

Conclusion (Andy Drumm)

Las Marias actually halted the construction of a lodge by a German tour company.

About the Contributors

Erik A. Nielsen is a doctoral candidate in the Department of Resource Recreation and Tourism, College of Natural Resources, University of Idaho. He served as a Peace Corps Volunteer in Las Marias from 1994-1995 and facilitated the initial planning process for the development and management of sustainable ecotourism in the community. His current doctoral research focuses on public participation in community-based conservation and development projects in the Rio Platano, Bosawas and Maya Biosphere Reserves.

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