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**Economic Consideration in Nature-Oriented Tourism:
The Case of Tropical Forest Tourism**

By

Robert G. Healy

Working Paper No. 39



School of Forest Resources
North Carolina State University



School of Forestry and Environmental Studies
Duke University



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Box 12254, Research Triangle Park, N.C. 27709 Telephone (919) 541-4221

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About the Authors

Robert G. Healy is an Associate Professor at Duke University, Durham, North Carolina.

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Economic Considerations in Nature-Oriented Tourism:

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Robert G. Healy
School of Forestry and Environmental Studies
Duke University
Durham, NC 27706

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ECONOMIC CONSIDERATIONS IN NATURE-ORIENTED TOURISM

Nature-oriented tourism (also called natural history tourism or ecotourism) is an apparently growing phenomenon in a number of developing countries. (McCloskey, 1984; Laarman and Durst, 1987) It ranges from visitation for purposes of scientific investigation or formal education to purely recreational tourism that utilizes the esthetic values of natural resources, often combined with elements of real or synthetic adventure.

Nature-oriented tourism is easy to characterize--"tourism based directly on the use of natural resources in a relatively undeveloped state, including scenery, topography, water features, vegetation and wildlife." It is much more difficult to contain within definitional bounds. Part of the definitional problem is that nearly all non-urban tourism uses natural resources in some way, whether the quality of scenic vistas for the automobile traveler, the sun and water enjoyed by the beach-goer, or the simple opportunity for fresh air and quiet surroundings. One can to some extent resolve this problem by defining nature-oriented tourism as that which uses specific natural resources, for example the birds of a tropical forest or the great animal herds of Africa's Serengeti Plain. Unfortunately, tourists tend to combine a variety of motivations and a variety of activities in a single trip. For example, tourists who visit Mexico's Yucatan Peninsula frequently combine an interest in tropical forest scenery, a desire to watch birds and other forms of wildlife, interest in the archeology of Mayan ruins, enjoyment of sun and sand on the beaches, and a desire to shop for handicrafts and other souvenir items.

There are several aspects of nature-oriented tourism which seem worthy of investigation, including the extent of the present and potential market, impacts on the natural resources and impacts on the people living in the often remote areas where the resources are located. The present study focuses on the economic considerations in nature-oriented tourism. It seeks to answer the following questions: Who benefits economically from such tourism? What are the magnitudes of impacts and how are they distributed geographically and by size and type of firm? How does economic impact translate into job creation? To what extent can revenues derived from nature tourism be used to support conservation of natural resources?

The study is based on investigation of tropical forest tourism in specific locations in four countries in Latin America and the Caribbean: Costa Rica, Guatemala, Ecuador and Dominica. Tropical forest tourism was chosen for several reasons. First, it is among the most popular forms of nature-oriented tourism, in part because of tropical forests' abundant wildlife. Second, tropical forest tourism usually occurs in remote areas, whose relatively simple economies make the economic effects of tourist visitation more apparent than they would be in more complex regions. Third, and perhaps most important,

nature-oriented tourism may play a role in improving the management of Third World forests. Nonconsumptive use of tropical forests, through tourism, may represent a potentially very important component of the future economic return from forest management.

In a prescient speech delivered in New Zealand in 1969, Jack C. Westoby, of the United Nations Food and Agriculture Organization, observed that: "all the indications are that some of the greatest changes in store for forestry over the next fifty years will spring precisely from the rapidly rising movement of persons...forest management for tourism, in all its manifold aspects, is neither a sideshow nor an incubus. For many forest areas and most marginal lands under the control of the forest services, it is becoming the major management objective. The Americans and Canadians have discovered this. So have the British. Several European countries learned it some time ago." (Westoby, 1987, pp. 173-75). If the economic contribution of tourism is so great in temperate forests, even in comparison with their highly developed wood production capacity, how much more significant might it be in the tropics, where long term wood production seems more fraught with difficulties? This paper is an attempt to further our understanding of those economic prospects.

Economic Concepts

Multipliers

Undoubtedly the economic tool used most frequently in analyzing tourism is the "multiplier." The multiplier concept derives from the fact that tourism expenditures generate not only direct (primary) flows of money through purchases of goods and services by the tourist, but also indirect (secondary) flows when the initial income recipient respends the funds received. Secondary income flows may occur, for example, when a taxi driver buys gasoline or when he spends his net receipts on food or housing for his family. These expenditures induce still more economic activity and create additional rounds of income flows. The economic activity induced by the initial primary income flow is "multiplied" by the activity created in succeeding rounds.

Central to the multiplier idea is the idea of leakages. In each round, not all the income created is respent. Some "leaks" into saving or is taken by taxes, and is unavailable to create new rounds of purchases. There are also leakages out of whatever geographically bounded impact area may be defined--for example, some of the money spent by a jungle tourist in rural Costa Rica may flow to a travel agency in the capital city, San Jose, or be used to purchase canned goods made in Guatemala or the United States. It is thus unavailable to stimulate further rounds of local economic activity. In general, the smaller and the less developed is the area analyzed, the greater

will be the leakages during each round of spending. (For more on multipliers, see Mathieson and Wall (1982) and World Tourism Organization (1981).

Structural and Distributional Impacts

The multiplier concept emphasizes the geographic distribution of economic impacts. Another useful way of categorizing impacts is by their distribution among various types of economic actors. Perhaps the most basic distinction is the type of good or service provided to the tourist. In the primary round of expenditures, we might distinguish the following expenditure categories:

Travel Arrangements (travel agent, ticket broker, airline charterer)

International Transportation

Domestic Transportation (air, taxi, boat, bus, minivan, car rental)

Accommodation (hotel, guesthouse, private home, dormitory, house rental)

Food and Beverages (restaurant, hotel, market, street vendors)

Clothing and Incidentals (film, camping equipment, photo services)

Guide Service

Souvenirs (manufactured souvenirs, handicrafts, antiques)

Nature Reserve Admissions (charges, contributions, memberships, delayed contributions)

Taxes (sales and value added, hotel room tax, airport and exit taxes)

In secondary and subsequent rounds of income flows originating in tourism expenditures, virtually any sector of the economy may participate. Particular areas of impact that might be of interest include: imported goods, foodstuffs, government revenues (taxes and profits of government enterprises), energy, banking. In some cases, tourism expenditures may have particularly desirable secondary impacts (e.g. increased demand for shrimp produced by a local aquaculture industry or increased demand for handicrafts made by poor indigenous groups). In other cases, some secondary impacts may be particularly undesirable (high transport fuel demand in a country that is an oil importer).

Within these various expenditure categories, goods and services may be provided by large firms or small ones. Within the latter category, particular attention might be paid to the relative role of small and micro-enterprises (SMEs), a category which we will define as firms having fewer than 50 employees (small enterprise) and fewer than 5 employees (micro-enterprise).

Another distinction would be between domestic and foreign owned firms. Do the economic gains from tourism, particularly in the first round of spending, go primarily to international airlines, tour operators, and hotels owned by multinational corporations or chains? Or do they go to enterprises owned by local entrepreneurs? Ideally, much finer distinctions might usefully be made. For example, a multinational chain hotel might have greater developmental benefits than a locally owned hotel if it employs local people as managers, provides better training, and tries to purchase supplies locally rather than importing them.

An important consideration in the distribution of benefits is the skill level of workers employed in a tourism enterprise. If the skills are too rarified (e.g. guides with sophisticated scientific knowledge) they may in the short-run have to be imported. However, it is likely that there would eventually be an attempt to train local people, creating new job opportunities at a relatively high level of pay. Many tourist sector jobs, of course, including cooks, maids and maintenance workers, are relatively low-skilled. They may provide welcome employment for available unskilled workers, but, unlike industrial and mining jobs, they offer little opportunity for advancement. It should be pointed out that skill level must be considered relative to the local population. In a remote tropical forest area, a job as a maintenance worker in a jungle lodge or as the "driver" of a motorized canoe would be considered a superior position, and would generally pay more than the alternatives, probably in low-level agriculture. Such jobs might also teach rural people new skills, or even introduce minority peoples into the national majority culture.¹ In Ecuador's Amazonian region, for example, employment in the growing tourist industry gives local indians an incentive to learn Spanish--and Spanish-speakers an incentive to learn English or German!

¹ It should be noted that acculturation of minority peoples is associated with many problems, and is not necessarily an objective to be sought. In most cases, however, tourism is not the only source of cultural impact operating on a traditional society, and acculturation through tourism sector employment may be the best of a set of generally unattractive options. Although tourism has brought great injury to some cultures (e.g. some Polynesian islands) there are cases where indigenous peoples have taken advantage of new economic options without losing their identity (e.g. Panama's Kuna Indians and the Indian craftsmen of Otavalo in Ecuador.) On the latter, see Carpenter (1985).

Another consideration is the income group of those receiving the economic benefits from tourism. For wage workers, income group is almost identical to skill level--activities using low skills tend to benefit low income people and vice-versa. But a significant part of the income streams originating in tourism go to small entrepreneurs (e.g. guides, taxi owners) or goods providers (e.g. farmers, handicraft makers). Local economic arrangements can be very important in determining whether new income streams benefit the poor or merely reinforce longstanding inequalities. For example, licensing arrangements can determine which food or handicraft vendors can sell to tourists at a given location and there may be legal or extralegal obstacles to entry into some businesses. In one location in Ecuador, for example, it is said that one Indian family has monopolized the canoe rental business, forcibly preventing other entrants into what has become a lucrative enterprise.

Developmental Linkages

Andre and Hoy (1975) observe that tourism is related to development in two ways. "First," they write, "the industry offers immediate economic return to the economy through receipt of external funds, increased employment, and alternative opportunity to the labor force. Second, and perhaps most important, tourism offers a long-term means of creating a more diversified and stable economy. Many infrastructural components needed to support tourism, once developed, become resources for other activities as, for example, power supply, transport facilities, available capital and managerial skills." The tourism multiplier tends to capture the first set of impacts, but not the second.

These long term impacts might be interpreted within the framework of development economist Albert O. Hirschman's well-known theory of backward and forward linkages between sectors. (See Hirschman 1958 and 1984). The process of development, theorized Hirschman, does not take place through the smooth and simultaneous expansion of all sectors of the economy, but by investments induced by demands and bottlenecks originating at discrete points throughout the economy. Applying this theory to tourism, one might find, for example, that the development of several forest-based tourism enterprises in a remote area will induce road improvements, more frequent air service, perhaps even government investments in sanitation or public health (e.g. a malaria control program).

Tourism might also help create an indigenous group of entrepreneurs who later may expand their activities to other types of production. For example, several years ago, the owner of a major travel agency in Ecuador lent money to one of his former guides for the purpose of setting up a hotel in the Amazon region. Both the entrepreneurial urge (on the part of the guide) and the financing (from the agency owner) were the indirect result of the previous success of the travel agency. On the island of Dominica, the operator of a small

guide service who takes tourists to natural attractions in minivans is reinvesting some of his profits in a combination hot springs spa/restaurant/tropical garden.

Externalities and Public Goods

Another economic concept useful in analyzing tourism impacts is the idea of "externalities." An externality is an impact, positive or negative, which results from the decision of an economic actor, but which does not enter into the decisionmaker's own utility function. As a result, the impact, regardless of type of magnitude, does not affect the decision. For example, the deposit of a piece of litter by a tourist while walking along a popular forest trail (e.g. the path to Trafalgar Falls on the island of Dominica) is a convenience to the tourist, but produces a negative impact on subsequent visitors.² Economists call this a "negative physical externality". Tourism may also produce "pecuniary externalities," that is, a change in prices that affects someone not involved in a transaction. This occurs when, for example, the tourist's willingness to pay high prices for something in locally limited supply (e.g. beachside properties, foodstuffs) raises the price to local non-tourist consumers. Development of tourism along a jungle river may improve transportation for local people, or it may result in higher wages for boat drivers and hence higher fares for the local residents.

Edington and Edington (1986) have documented a number of negative impacts that tourists can have on the environment, including disruption of wildlife migrations, excessive algal growths when inland waters are enriched by sewage effluents, and creation of health hazards through refuse dumping.³ Some of these externalities have measurable economic consequences--for example reduced value of a fishery as a result of pollution or higher health costs as a result of poor sanitation. Ironically, many tourism externalities are external to the individual tourist or tour operator but internal to the tourism industry generally. This phenomenon occurs when tourist destinations become overcrowded--each additional tourist pays his or her own way, but adds so much to the (external) costs of crowding that the net effect on the tourism economy is negative.

The classic negative externality resulting from tropical forest tourism is the impact of tourist-associated hunting and plant collecting. From the standpoint of the individual tourist, the chance

² The owner of a hotel adjoining Trafalgar Falls makes it a practice to pick up litter whenever she walks along the trail. Although certainly motivated by general interest in the environment, this can also be interpreted as economically motivated behavior--removing trash increases the desirability of the falls for tourists and hence aids her business.

³ See also Mathieson and Wall (1982) pp. 93-132.

to eat a wild pig or take home a rare plant produces a distinct benefit. For the guide, the possibility of a contented customer--and perhaps a tip--is attractive. Yet each animal or plant taken reduces the value of the experience to subsequent tourists and subsequent guides.

When properly managed, however, forest tourism can produce some positive benefits for society as a whole. For example, if governments believe that tourism brings in valuable foreign exchange, they may be persuaded to create new national parks in tropical forest areas and to better protect existing ones. This creates new benefits for tourists, of course, but it also benefits the many people, in country and outside, who care deeply about wildlife survival, protection of biological diversity, or the relationship--not yet proved--between tropical forests and world climate. In this case, the park becomes both a private and a "public" good--it benefits tourists who visit it, as well as a potentially much larger and more dispersed group who benefit only indirectly or vicariously.

Case Studies

Dominica: "Nature Island of the Caribbean"

Dominica (population 80,000) is one of the larger islands in the Leeward group in the southeastern Caribbean. A colony of France, and later of Great Britain, it has been independent since 1978. The author of a Caribbean tourist guidebook, intent on distinguishing Dominica from other tourist destinations in the region, writes:

"A verdant, lush island with tropical jungle and groves of limes, palms and other crops, Dominica is different from all the other Caribbean countries...Most of the island seems like a national park, and some of it is. Jungle-like growth parts for dramatic waterfalls that plunge into pools where you can swim; the Sisserou parrot (the national bird) still lives in the forest in the company of many other unusual birds...You'll like it if...you are interested in flora and fauna and want to visit the Carib [Indian] reservation. Don't come here expecting 'typical' Caribbean beaches."
(Zellers, 1986)

Perhaps the most distinguishing physical characteristic of Dominica is the extent of its forests--trees cover more than 50 percent of its surface area. To a large extent this is due to the island's unusually rugged topography, which until recently hampered agricultural expansion, and to poor roads, which limited timber cutting. This forest cover is reflected in the island's tourism slogans--it is "The Uncut Emerald of the Caribbean" and "The Nature Island of the

Caribbean." A newspaper advertisement aimed at attracting international tourists described Dominica as "one of the last places on earth where people who love nature can still find paradise."

The island's official tourism policy (Commonwealth of Dominica, c. 1986) proposes that marketing and promotion of tourism for Dominica be "based on its somewhat unique attractions--lush vegetation, rivers, forests, mountains, hot-springs as well as its historical assets." This is repeated by Dr. Kunwar Singh, a tourism advisor assigned to Dominica by the British Commonwealth, "Our goal on Dominica is to have nature-oriented tourism--[visitors] who want clean water, forests and birds and [to see] simple, proud, self-respecting people."

In part, Dominica's emphasis on nature-oriented tourism is the result of making a virtue of necessity. Unlike most other Caribbean islands, Dominica's beaches are few in number and of indifferent quality. The island has 241 hotel rooms (the largest hotel has 76 rooms) and another 159 rooms in guest houses and cottages. The latter average 8 rooms per establishment, with the range between 1 and 21 rooms. There are no chain hotels on Dominica. Several of the larger hotels cater mainly to business visitors, as well as development experts working for the United Nations and other official agencies. Indeed, of the 24,410 visitors spending one or more nights on the island in 1986, 36 percent gave their purpose as "business." Another 10+ percent listed their motivation as "other" (mainly visiting friends or family), leaving slightly more than half the visitation as "vacation" oriented. (Caribbean Tourism Research and Development Centre, 1986).

In addition, the island was visited in 1986 by 11,454 cruise passengers and 655 other excursionists (including those coming on yachts). These visitors stayed for less than one day and had only a minor economic impact, with estimated per capita spending on the island of only US \$16.

Overall, international visitation to Dominica in 1986 was estimated to result in direct expenditures of US \$10.3 million. (Caribbean Tourism Research and Development Centre, 1986) However, subtracting estimated expenditures by business travelers and other non-tourist visitors, it is possible to estimate tourism expenditures at approximately US \$3.8 million. Interestingly, approximately 55 percent of the tourist expenditures occur in the summer, not in the winter season in which tourism to other Caribbean islands is concentrated. The relatively even spread of tourism throughout the year is confirmed by interviews with hotel owners, as well as by the fact that hotel rates on Dominica tend to be the same year-round.

In a sense nearly all tourism on Dominica is nature-oriented--there simply are few tourist attractions other than the island's mountains, forests and waterfalls. Of the dozen or so principal spots visited by the typical tourist, most are natural attractions. They

include Trafalgar Falls (a high waterfall in a forested setting); Emerald Pool (waterfall and natural swimming pool); Freshwater and Boeri Lakes (scenic mountain lakes); Boiling Lake (a volcanic feature at the end of a long mountain hike), Syndicate (a reserve for native parrots) and Indian River (a mangrove-bordered river on which canoe rides are offered.) Among the few non-natural attractions are Cabrits National Park (a historic fort) and the Carib Reserve (a unique native community). Even in Cabrits, natural features play an important part in the visitor's experience, from the scenic views from the fort's summit to the birds and lizards that are seen on the path up to the buildings.

"All of our visitors go to Cabrits, the Carib Reserve, Emerald Pool, Trafalgar Falls," says the proprietor of a small beach-side hotel. "It makes no sense to tell people 'Come to Dominica and lie on the beach or find a coffee shop on the beach' and they come and find something else. You must offer them what they find here [which is nature and scenery]."

Most of Dominica's natural attractions are on public conservation land, either national parks, national forest reserves, or water catchments. These account for 8.2 percent, 11.7 percent and 2.7 percent of the island's land area, for a total conservation land area of 22.6 percent. (The government also owns a large area of "unallocated" land, which can be sold.) Except for the fort at Cabrits National Park, the parks and forests are only lightly developed. There are a few trails and signs but no personnel on site to guide visitors or to collect fees. "A person collecting money," says the head of the Dominican Department of Forests and Parks, "would not collect enough to make it worthwhile." He also noted that private facilities were discouraged in the parks, pending completion of management plans.

A visit to the parrot viewing area at Syndicate illustrates the extent to which nature tourism facilities are developed. A visitor must find an unmarked turnoff from a main rural highway, proceed up a rutted dirt road for several miles, park in an undesignated spot where the road becomes impassible, then walk several hundred feet along a trail until encountering a sign designating the boundary of the national forest reserve. A walk of another few hundred feet brings the tourist to an overlook which allows unobstructed views of a deep valley where parrots can be seen flying past. There is a bench and guardrail, but no sign or interpretive pamphlet. The area would be difficult for an unaccompanied tourist to find without quite specific directions.

The Department of Forests and Parks is relatively generous in offering guidance to groups of tourists, however. During the week, forest guards will take visiting groups from the Audubon Society and other groups to some of the natural areas free of charge. The guards can also be hired privately as guides during weekends or non-working hours. During the summer of 1988, the government offered eight excursions (half- and all-day) to various natural attractions, guided

by forest guards or local naturalists. A nominal charge (US \$ 4-7) was made for transportation.

A major shortcoming in forest tourism on Dominica is the lack of long distance trails through the large Morne Trois Pitons National Park (a high mountain park) and the forest reserves. There are no camping facilities on the island. This is unfortunate, because Dominica offers an unusually welcoming jungle--there are no poisonous snakes, dangerous predatory animals or venomous insects on the island.

Despite the lack of public or private tourist facilities within the parks themselves, there are a number of types of enterprises that cater to nature-oriented tourists.

Guide Services. During the late 1970s, one of the island's principal tourism entrepreneurs (a local woman who owns two of the larger hotels) operated a thriving business which offered guided tours of the island's attractions to tourists who would fly in for the day from nearby tourist islands. Many were guests at the Club Med and other resorts on Martinique, Guadeloupe or Antigua and were recruited by arrangements with those hotels. At one time, the enterprise operated nearly 20 vehicles, driven by uniformed guides. Hundreds of people could be handled daily. The business, very large by Dominican standards, came to an abrupt halt with the very destructive hurricane which struck Dominica in 1979, destroying much of the island's infrastructure and blowing down large areas of forest.⁴ Because the hurricane had destroyed the island's main business hotel, the woman found that she could fill one of her hotels with business travelers and deemphasized tourist visitation. Recently, as a new hotel catering to business travelers is about to open, she is again promoting tourism, particularly for European visitors.

Currently she is offering a wide range of tours, accommodating individual tourists or small groups. A recently published promotional brochure offers "activity holidays in the Caribbean" and features "hiking, rambling, mountain walking, photography, bird watching, flora/fauna, marine life and water sports." The brochure describes a number of natural features that can be seen on day tours. It notes that "because of the lack of suitable facilities, camping holidays are not recommended on Dominica"--and recommends that visitors stay at the two "strategically placed" hotels operated by the company's owner. Another small brochure is specifically devoted to birding and lists more than two dozen of the 135 bird species that can be seen on Dominica. Another brochure lists more than one hundred varieties of flowers and trees that can be found in the Botanic Gardens and elsewhere on Dominica. Interestingly, these brochures make no

⁴ Another Dominican familiar with the tourist business notes that the operation charged "rock bottom prices" and lost business as a result of unsatisfactory food and service.

reference to specific tours and serve as a general form of promotion of birding and botanizing on the island.

Another tour operator is an architect (designer of the terminal at Dominica's new airport) who owns the most popular restaurant in the island's capital. He hopes to develop a "receptive tourism operation" bringing in European and American tourists for visits of 3-7 days. "I want to market Dominica as a traveler's island rather than a tourist island," he says. "Dominica can be a 3-day safari tacked onto a week-long vacation [on a sun-and-sand oriented island]." He notes that although nature is the principal attraction for tourists, they do not necessarily want to exert themselves to experience it. "Very few tourists," he says, "really want to see the forest itself. Most are willing to walk a mile to the Freshwater Lake but few would be willing to walk 8 hours to the Boiling Lake." He believes nature tourism could be aided by a system of trails and forest walks, as well as a national system of camping areas.

Much of the guiding of tourists on Dominica is provided by owners of taxis and minivans. Some devote most of their energy to tourism, but they also are available for general transport on the island. They do not publish brochures, although they may have arrangements to obtain customers from hotels or travel agencies on or off the island.

The life history of one of these operators is instructive, and shows how a small entrepreneur can enter the business. Mally Peltier, operator of "Mally's Taxi Service," started as a tailor, then became a truck driver. He eventually bought a truck of his own. At one point, he visited Trinidad and saw how the taxis there operated in the tour business. Upon returning to Dominica, he went into the travel and taxi business and started to deal with hotel operators in Antigua. He now offers one-day tours 3 or 4 times weekly for visitors from that island. The tour begins with an early morning flight to Dominica, visits the Carib Reserve, Emerald Pool, offers lunch at a beachside hotel, visits the Botanical Garden and Trafalgar Falls and departs for Antigua at 4 p.m. Peltier also offers 2 day tours, and 3-4 day visits for birdwatchers.

Mally's Taxi Service now has 3 minibuses, each holding 12-16 people, and 2 cars. The cars and one of the buses also are used as general taxis. Six or seven people are employed full time. A driver is paid about US \$56 per week. (This compares to US \$7-9 per day earned by banana pickers, physically much more demanding work and US \$5-9 earned by maids, cooks and gardeners in hotels.)

Another guide service illustrates how capacity can be expanded when demand warrants. The operator owns a single 9 passenger off-road vehicle. He offers a variety of tours, including photography, flora and fauna and visits to the waterfalls. He hires drivers as needed and additional vehicles, providing them with cassettes giving tours in

various languages. Food is prepared by him and his wife, along with a girl who works for them. Business is sufficiently good that he plans to buy a 25-30 passenger bus; he is also building a jungle restaurant and hot springs spa for locals and day visitors.

The tourist guide business is an easy one to enter and exit. For example, there are 80 buses registered by Dominica's taxi association. When a cruise ship comes to the island, 40 or 50 buses are said to show up to take people for a 3 hour tour, usually including the Emerald Pool and the Botanical Garden. There are also dozens of "jetty boys," who line the jetty at the mouth of the Indian River offering to take visiting yachtsmen on boat rides up the river. This has caused problems, as tourists have been harassed, cheated, and sold drugs. Recently the government has threatened to levy a US \$187 fine on jetty boys who race to oncoming boats before they can be reached by customs and immigration officials.

The Dominican tourist authorities and the Youth Division Skills Training Programme tried to professionalize the jetty boys not long ago, offering to train 50 as tour guides. Only eight completed training and just two still work as official guides. "Whilst the certified tour guides set in their booth awaiting tourists and tourist board organized tours," says a newspaper, "the jetty boys of the time were enjoying the spoils of free-for-all. The official tour guides were equipped with new boats and motors yet still failed to generate as much business as their untrainted colleagues. Discontent set in and the desire for more competitive business got the better of them, so they joined the race."⁵

Proprietors of organized guide services also face competition from freelancers. The proprietor of a hotel complained that unknown young men tried to charge visiting boaters for tying up at her own moorage and offered the visitors cut-rate tours in competition with her own.

The Tourist Board has recently sponsored a free Taxi Drivers Training Course, covering everything from "the ideal Taxi Driver, his qualities, courtesy, helpfulness, punctuality, appearance and deportment" to "national parks and forests, trees, herbs and flowers, animals [and] rock types."

Restaurants. Outside the capital city, Roseau, there are virtually no non-hotel restaurants on Dominica which nature tourists would be likely to visit. The proprietor of the capital's leading restaurant estimates that less than 10 percent of his clientele are tourists. Most tourists take the Modified American Plan (breakfast and dinner included) at their hotel, whether staying by the night or on an all-inclusive package. Some hotels do a significant lunch business

⁵ The New Chronicle, vol. LXXX, no. 23 (June 17, 1988) p. 11.

serving non-guests. One of these is a hotel located near Trafalgar Falls, which serves meals to busloads of cruise ship passengers making day trips to the falls.

Hotels. Although almost any hotel on Dominica has some guests who are likely to visit the island's forests and natural features⁶ one can identify six small establishments which seem to cater primarily to tourists engaged in nature-oriented tourism.⁷ They are listed in Table 1, which also gives characteristics of their ownership, number of rooms, number of employees, and single occupancy rates for European Plan (no meals) and Modified American Plan (breakfast and dinner). The hotels average 9.5 rooms and have between 7 and 18 employees. This includes the labor input of on-site managers, who in all but one case are the owners. For those hotels for which information is available, there are approximately 1.4 employees per room. Daily rates average US \$55 per night (MAP), with a range from \$25 to \$65. This is slightly below the rates charged by first class hotels in the capital and on beaches, which average US \$65.

Hotel rates on Dominica, both for the nature-oriented hotels and in general, are significantly lower than those charged in large resort hotels in the Caribbean. A 1987 survey found average rates in the Caribbean of \$81.34 per night, without meals (Horwath and Horwath International, 1987). The discrepancy is explained partly by Dominica's somewhat more stable visitation through the year (which means that rates are not unusually high in winter to make up for lack of summer visitors) and partly by the fact that Dominica's hotels are small and generally of lower quality than the typical large resort establishment.

Four of the six nature-oriented hotels were visited and their managers interviewed. Perhaps the most obviously nature-oriented establishment is Papillote Wilderness Retreat. Its promotional literature describes it as "an oasis in the rain forest." The six room hotel (four more rooms are being added) is a rambling wood and concrete structure located on a wooded hillside a 20 minute drive from Roseau, Dominica's capital. It is immediately adjacent to Trafalgar Falls and within hiking distance of several other scenic attractions. A striking feature is a stone pool of warm mineral water that is a focal point of the dining room.

⁶ It should be noted that even business travelers and those visiting relatives may take time to visit tourist destinations such as Emerald Pool or Trafalgar Falls. These attractions are also visited by local people.

⁷ The Tourist Board lists the six as "guesthouses" rather than hotels, although they differ from hotels on the island primarily in terms of size.

Papillote was begun in the early 1970s by an American couple living on Dominica. Originally it was a roadside snackbar for visitors to the Falls, later a popular nightspot with entertainment. In 1979, the owners were about to open a retreat center and health spa modeled on California's Esalen Center when Hurricane David intervened and destroyed the buildings. Upon reconstruction, the hotel concept was revised to emphasize nature tourism, and the physical facilities oriented around the mineral pool, tropical garden, and visitation to Trafalgar Falls. In addition to hotel guests, Papillote serves meals to visitors, including large groups of cruise ship passengers. The hotel is now operated by the original owner, her former husband, and her present husband, a Dominican.

Visitation to Papillote is predominately from the United States. Of 172 entries in the guest registry for 1986 (many entries represent more than one person) there were 109 from the U.S., 4 from Canada, 26 from Europe, 31 from elsewhere in the Caribbean (mainly the Virgin Islands) and 2 other. The proportion of U.S. visitors was significantly higher than the proportion (21 percent) that U.S. visitors bear to the total number of foreign visitors to Dominica. Although there is some seasonality in visitation to Papillote, there are both summer and winter peaks. In 1986, the highest number of visitors were found in April, July, February, January, March and December, and the lowest in May, September and October.

The 15 people employed in the hotel earn US \$5.60-\$7.50 daily, plus food. Six or seven employees work in the kitchen, there are two maids, and the remainder work as gardeners and maintenance men. Most of the food is procured locally--"we buy all the vegetables local farmers can produce," says the owner. The hotel has just spent US \$337 for prawns raised by an aquaculture project built on Dominica with the help of the Government of Taiwan. Construction of the buildings, which make effective use of local materials, was done by local people. The owner secured funds from a U.S. foundation to train villagers carpenters, who worked on the hotel and other hurricane recovery building projects.

Sunshine Village Hotel is a collection of beach cottages (16 rooms) next to Cabrits National Park. It was built in 1985 by a German couple who came to the island to open a business and originally bought the site to build a marina. It caters primarily to German speaking tourists and has arrangements with European yacht clubs and travel agencies. Although it is on the water, its guests spend considerable time exploring the natural areas on the island. Three taxi drivers work on contract from the hotel, picking up tourists at the airport and giving them island tours. Some of the drivers sport T-shirts and signs on their vans advertising the hotel.

The hotel employs 8 people in summer, 16 in winter. They include 3 maids, 3 waitresses, 3 dishwashers, 2 cooks and a gardener. Most of them are young women from the countryside. Wages for workers range from U.S. \$5.60 per day to US \$9.37 (a female cook) and US \$11.25

Table 1: Characteristics of Forest-Based Accommodations on Dominica

Enterprise Name	Ownership Type	No. of Rooms	No. of Employees	Nightly Rate (Single)
Emerald Pool	n.a.	10	n.a.	US \$40 (EP), \$60 (MAP)
Layou Valley Inn	expatriate	7	2 owners, 5 hired	US \$30 (EP), \$55 (MAP)
Papillote Wilderness Retreat	expatriate/local	6 4 under const.	3 owners, 15 hired	US \$40 (EP), \$65 (MAP)
Roxy Mountain Lodge	n.a.	6	n.a.	US \$12 (EP), \$25 (MAP)
Springfield Plantation	expatriate	12	15 hired	US \$45 (EP), \$60-65 (MAP)
Sunshine Village	expatriate	16	2 owners, 8-16 hired	US \$35 (EP), \$62 (MAP)

(a male gardener). The husband of the owning couple does the building and heavy maintenance and the wife operates the hotel and dining room. The owners describe visitation as "rather seasonal," with a 90 percent occupancy rate in winter, much less in summer. They want to bring in a German scuba diving instructor in order to encourage more people to visit during the summer, but are delayed by the need to secure a work permit for him. They are also considering advertising in birding and diving magazines in Germany.

Food used in the hotel is bought locally. Beer, soap and canned goods are brought in from St. Vincent, Trinidad or elsewhere in the Caribbean Common Market. Much of the plumbing and electrical hardware used in the hotel was brought in from Germany, under a 5 year duty-free exemption granted by the government.

Another establishment in the Layou Valley Hotel, located in a very scenic river valley about 20 minutes' drive from the capital. The hotel is run by an American couple who originally bought 25 acres as a retirement farm, but opened the hotel in 1982 after the hurricane and subsequent labor shortage made farming impossible. A statement by one of the owners indicates the motivation that might cause an expatriate to open a hotel in a scenic spot. "I worked [for many years] as a Russian language interpreter for scientists in the U.S. I worked in 'high tech' and [eventually] decided I didn't want the 21st century."

The hotel has 7 rooms and is mainly visited by German and French tourists. The tourists come as individuals, not groups, but their visits are frequently arranged through tour companies or international yacht clubs. The owners would like to expand the hotel to 10 rooms, but find there is not sufficient business to warrant it.

Layou Valley Hotel employs five local people, in addition to the managing couple. They say that labor is difficult to find, both because local people lack interest in working steadily and because of lack of transport in such a rural area.

A fourth hotel is Springfield Plantation, a rambling frame structure located on 200 acres bordering a national forest reserve. It has 6 guest rooms, four apartments with kitchen facilities, and 2 cottages. Built about 50 years ago by a wealthy American heir to the Standard Oil fortune, it is managed by a Scottish couple on his behalf. Guests have been accommodated since 1949. The owner still maintains a residential wing of the hotel for his own use. Guests at Springfield Plantation are "Americans, Germans, some French, a few British and Canadians." Most of the guest have rented a car, which gives them mobility to go sightseeing throughout the island. They visit the Carib Reserve, the fort at Cabrits National Park, beachside hotels and scuba diving spots.

The manager reports that there are relatively few requests by guests for advice on nature touring, although many take a popular hike along a trail extending from near the hotel into the high mountain forest of Morne Trois Pitons National Park. Audubon Society groups have visited in the past, though not in the last two years. The use of the hotel as a nature-oriented facility is likely to increase, however, due to a recent arrangement with Clemson University (in South Carolina). Clemson's School of Forestry, perhaps in conjunction with other U.S. universities, will take over part of the hotel as a research station and training facility for students interested in tropical forestry and tropical biology.

The hotel employs 13 people, in addition to the managing couple. They include a housekeeper, 2 cooks, 3 waiters and guest attendants, 1 laundress, 2 maintenance men, 1 guide, 1 night watchman, a gardner and an office girl. Some of the employees work only half a day--they earn from US \$5 to US \$10 daily.

Of the four forest-area hotels visited, it appears that Papillote is the most clearly nature-oriented, followed by Layou Valley (its cable address is "Rainforest"), then Springfield and Sunshine Village. This orientation is apparent in the advertising material, in the availability of information at the hotels about nature, and in the emphasis given the subject in interviews with the owners. However, all four establishments draw visitors who spend a great deal of their time enjoying Dominica's forest resources. It is interesting to note that visitation to Papillote seems to have less seasonal variation than to the other hotels. This represents a hypothesis that may warrant further investigation in other areas--can nature tourism escape the extreme seasonality that reduces the economic attractiveness of many other types of tourism?

Souvenirs. Dominica offers only a limited range of souvenirs, mostly woven baskets and wood carvings. Many of the handicrafts are made by residents of the Carib Reserve and are sold to tourists who visit there. The proprietor of Papillote Wilderness Retreat, strategically located near Trafalgar Falls, says that she sells more than US \$3700 yearly in handicrafts to hotel guests and to cruise passengers stopping for lunch.

Costa Rica: The Monteverde Cloud Forest Reserve

Costa Rica, noted for the richness of its tropical forest wildlife and for its world-class system of national parks, is one of the world's foremost destinations for nature-oriented tourism. Our case study in Costa Rica, however, involves not a unit of the park system, but the privately operated Monteverde Cloud Forest Reserve. It has been described to me as "the best single place in Costa Rica for a nature-oriented tourist to visit."

Monteverde is a small community in northwestern Costa Rica, about 4-5 hours drive from the capital, San Jose. It was founded during the 1950s by a group of American Quakers, who bought land and went into the dairy business. Eventually they created a thriving cheese business, which sells its products throughout the country, and a stable community with its own school and a strong local identity. Many of the present inhabitants are of American ancestry, but were born in Monteverde.

Over the years, the Monteverde farmers purchased forestland on surrounding slopes in order to protect their watersheds. In 1972, desiring to permanently protect the land, they gave a 90 year lease to the Tropical Science Center, a San Jose-based non-profit organization of tropical biologists, and created the Biological Reserve of the Monteverde Cloud Forest. Originally only 100 hectares, the Reserve has grown by purchase and donation to a present area of 10,000 hectares. It is an area of unusual biological richness, providing habitat for over 100 species of mammals (including jaguar, ocelot and Baird's tapir), over 400 bird species and 2,500 varieties of plants. The present reserve straddles the Continental Divide and includes much altitudinal variation, so that an incredible variety of life-zones and microhabitats are available for flora and fauna. Two species of particular interest, both to biologists and to tourists, are the golden toad (found only in Monteverde) and the resplendent quetzal, a Central American bird of spectacular plumage that is increasingly endangered throughout its range.

Tourism activity at Monteverde includes the Reserve itself, which is financially self-supporting, various hotels and guesthouses, guide services and horse rental, and enterprises that sell handicrafts and other goods to the tourists.

The Cloud Forest Reserve. The stated purposes of the Reserve are threefold: to protect the area's flora and fauna, to protect the sources of the region's rivers (including the watershed of Costa Rica's largest hydroelectric project), and to provide a location for education and scientific studies. Visitation includes scientists--an average of 50 biologists do research there annually--student groups, international tourists, and Costa Rican tourists. The number of visitors is well monitored, because each visitor is required to register and pay a fee at the entrance station.

Visitation has grown enormously since the reserve was created:

1973-74	403 visitors
1983	6629
1984	5924
1985	6786
1986	8985
1987	12765

The area of the reserve has grown in rough proportion to the increase in the number of visitors. Thus visitation pressure per hectare has not risen, though the increasing number of visitors has put strains on the areas near the Reserve entrance and on the Monteverde community.

The physical facilities of the Reserve include the land, laced with well marked hiking trails. Approximately 96 percent of the land within the Reserve is primary tropical forest, the remainder being land that had been cleared for cultivation before being purchased for the Reserve. At the entrance is a field station with a capacity of 30 researchers or students. The facility includes a dormitory, cooking facilities, meeting rooms, herbarium, library, and work and storage areas. Scattered within the reserve are 4 field shelters, with capacities of 6, 8, 8 and 4 persons. There is also a designated camping area.

A daily entrance fee of US \$2.74 is collected from each adult visitor. The fee is US \$1.70 for students, and neighbors and small children are admitted gratis. Approximately 80 percent of visitors pay a fee (Rojas Gonzalez, 1987). The same fee is charged for Costa Rican and foreign visitors, causing some to worry that the fee is prohibitive for Costa Ricans, given the relatively poor condition of the national economy. Researchers using the field station are charged US \$9.60 per day, which includes room and meals.

The Reserve receives revenue from several sources: admission fees, sales of books and T-shirts, meals, and fees for use of the dormitories and field shelters. Substantial income is also received by leasing land on a mountaintop for antennas for Costa Rican television stations. The breakdown of revenues in 1987 (through November) is as follows:

Dormitory lodging	US \$3528
Camping and field station fees	125
Donations	1617
Entrance fees	15922
Meals	463
Sales of books and postcards	600
Rental for TV antennas	3985
Fees for researchers	4653
T shirt sales (net)	3352
Other revenue	415
Total revenue	US \$34660

Expenses are primarily (66%) for personnel, followed by utilities (21%), maintenance (9%) and other (6%). In general, revenues barely exceed expenses. In the first 11 months of 1987, expenses amounted to US \$31,966, leaving a surplus of revenues over expenses of

US \$2694. A surplus of US \$11,044 was logged in 1986, but the preceding three years saw one small deficit and two small surpluses.

The Reserve has 11 employees on site, including a forest administrator, a receptionist, 6 guards and maintenance men, 1 maid, and 2 part-time cooks. Salaries average US \$158 per month per person. In addition to the employees at the Reserve, two employees at the San Jose office of the Tropical Science Center devote part of their time to reserve administration, as does the TSC accountant. Vicente Watson, San Jose coordinator of the Reserve, remarks that the Reserve "employs about the same number of people as the land would support if it was in, for example, pasture."

In addition to the monies used to run the Reserve, substantial funds have been raised for land acquisition, particularly since 1985, when the Reserve expanded from 3600 hectares to 10,000. Much of the fundraising was done through the Monteverde Conservation League, a new non-profit organization of people from the Monteverde community. Local donations of land and money have been important, and there have been major grants from international conservation organizations for expansion of the reserve. There is some evidence that tourist visitation has helped the fundraising effort. After members of the Ontario (Canada) Field Ornithologists group visited Monteverde and logged 220 bird species in two days, they committed to raising \$3000 toward purchase of an available adjoining tract of land.

In 1986, another non-profit group, the Monteverde Institute, was formed to promote environmental education for the benefit of the local community and of visitors. It is putting on workshops and short courses and has organized a college-level tropical biology course in conjunction with the University of California (Rojas Gonzalez, 1987).

Lodging. Virtually all guests in Monteverde's two hotels and two guesthouses have been brought in by the Cloud Forest Reserve, whether as short time tourists or as researchers and students staying for weeks or months. The four lodging places have a total of 48 rooms, with a daily capacity of 152 guests. This does not count the 30 person dormitory at the Reserve, nor two very small pensions in Santa Elena, a nearby town. The lodging places are located on or near the main road in the Monteverde community, between one and three miles from the entrance to the Reserve.

Occupancy at all of the hotels and guesthouses is very seasonal. They average about 2/3 full during the December to May high season, which coincides with dry weather in Costa Rica and winter in North America and Europe. The lower priced establishments also garner substantial numbers of students and researchers during July and August. During the September-November low season, occupancy may be 10 percent or less. During October 1987, one of the two larger hotels in Monteverde had no guests for the entire month. Because of the

seasonality of visitation, employment at the hotels and guesthouses fluctuates by 50 percent or more over the course of the year.

The newest and most elaborate lodging facility in Monteverde is the Hotel Belmar, a three story wooden structure which climbs a hillside about a mile outside the center of the community. It was built in 1986 by Monteverde residents Pedro and Vera Belmar, he originally from Chile, she from San Jose. The hotel has 16 rooms, some with balconies, and can accommodate 40 persons. During the winter high season it lodges 30-35 persons per night; during the August to September low season, the average occupancy slips to only one room per night. The Belmar charges US \$35 per person per night, including 3 meals.

Employment at the Belmar fluctuates with the occupancy rate. In high season, eight employees (cooks and maids) supplement the labor of the owner-managers; in low season only two employees are hired. They earn US \$164-191 per month, slightly more than what is earned by guards at the Reserve.

The other hotel in Monteverde is the slightly larger Hotel de Montana, perhaps 20 years old. It is owned by a French businessman (not resident in Costa Rica) and a lawyer in San Jose and is managed by a Costa Rican employee. The Montana has 15 rooms, which rent for US \$29 single and \$39 double, and can house a maximum of 50 persons. During 1986, the hotel accommodated 3,598 guests; during 1987, this rose to 4,600. The average stay is two nights. Net revenues were available only for two months, October 1987 (low season, US \$1303) and December 1987 (high season, \$6,892). If one can extrapolate these figure to the entire year, revenues could be estimated at very roughly at US \$150,000+ and net revenues at about US \$45,000.

The Montana's employment also fluctuates seasonally, from 13 in winter to 9 in summer and autumn. Peak employment consists of the manager, assistant manager, bartender, driver, maintenance man, 2 cooks, 2 assistant cooks and 4 maids. They are paid an average of US \$150 monthly, although some can also earn US \$80-110 monthly in tips. Meals are available, but not included in the room rate. The hotel also has 3 rental horses (US \$2.46/hr.) and rents rubber boots (US \$0.68/day) to tourists wishing to hike in the Reserve. The hotel also provides transportation from San Jose for US \$150 roundtrip, for those not wishing to rent a car or take the bus.

The Pension Quetzal, with eight guest rooms, is run by Bob Law and Susie Newsager, both Monteverde residents. Ninety percent of the guests are foreign, mainly from the United States. The average guest stays 2-3 days, and pays US \$20 per night, including three meals. In addition to the owner-managers, the hotel employs maids and cooks, five during the high season, only two during low season. They are paid US \$0.61 per hour.

Table 2: Characteristics of Forest-Based Accommodations in Monteverde, Costa Rica

Enterprise Name	Ownership Type	No. of Rooms	No. of Employees	Nightly Rate (Single)
Hotel Belmar	expatriate/local	16	2 owners, 2-8 hired	US \$35 (AP)
Hotel de Montana	foreign individual/ San Jose lawyer	15	9-13	US \$29 (EP)
Pension Flor Mar	expatriate/local	9	2 owners, 1-6 hired	US \$18 (AP)
Pension Quetzal	expatriate	8	2 owners, 2-5 hired	US \$20 (AP)

The 9-room Pension Flor Mar is owned and operated by Marvin Rockwell, one of the Quakers who moved to Monteverde in 1950, and his Costa Rican wife Flory. Guests are about 75% foreign, 25% Costa Rican, and are charged US \$17-18 per night, including meals. In addition to the owner-managers, the hotel employs an average of 4 full-time maids and cooks, but employment varies from 1 to 6 persons depending on the season. Employees are paid US \$0.54 per hour. The Flor Mar's advertising flyer notes the birds that can be seen at the Reserve and in the immediate environs of the pension, and points out that an agouti frequently visits the fruit orchard behind the pension and white-faced Capuchin monkeys are sometimes seen in a nearby ficus tree.

Monteverde's natural attractions may also have brought in permanent residents who might otherwise not have located there. Of the 66 houses in the community, at least 11 are owned by biologists. Twenty-four houses in Monteverde are rented for varying lengths of time to tourists, researchers or other visitors. Rental charges range from US \$75-335 per month. A local man involved in the house rental business estimated that a very conservative estimate of revenue generated would be \$100 per month for an average of 6 months per house, or a yearly total of US \$14,400 for the 24 houses.

Other Tourist-Related Businesses. In addition to the Reserve itself and the hotels and guesthouses, there are a number of small businesses in Monteverde that depend on tourism. Two Monteverde residents make their primary income as trail guides. One charges US \$65 for a half-day trip for 4-6 persons; the other charges \$6 per person for a half-day trip and \$8 per person for all-day. In addition temporary residents such as U.S. biology graduate students frequently provide trail guide service for visitors. Total revenues in the guide business are not known.

Monteverde also has a stable for horse rental, which has been in business about 2 years. Sixteen horses are available for trail rides in the reserve. A full-time stable hand (paid US \$137 monthly) and two part-time guides are employed.

Perhaps the most interesting small tourist-dependent enterprise is the Artisan Cooperative of Santa Elena and Monteverde. It is a community cooperative composed mainly of housewives and other women who produce and sell handicrafts to tourists in Monteverde. Founded in 1982 by eight women, it has grown in six years to 66 women and 2 men. In 1987, members received over US \$13,700 from sales of goods they produced. One of the members pointed out that "this represents a very important source of income for these families, because it is primarily women who have no other job opportunities." In addition to the income for producers, the cooperative also supplies jobs to 5 employees, including a business manager (1/4 time), bookkeeper (part time), 2 full time sales clerks, and 1 full time store manager. The cooperative has a beautiful modern store built with

contributions from a charitable organization, in which are sold a variety of items made by the members--painted T-shirts, baskets, drawings, wood sculptures, stationery, even a childrens' coloring book featuring local wildlife.

Another handicraft business is the production of hand painted postcards and stationery, which has been organized by two different local individuals. In both cases, the cards and stationery are printed at a print shop in San Jose and high school students are hired to color the cards. One of the enterprises employs 4 people, the other 8-16. The students work after school and are paid by the piece. Although total earnings are not high--employees of one of the businesses earned an average of US \$110 each in all of 1987--they represent an important source of supplemental income for the students. Their earnings may allow them to continue in high school (education is only mandatory through sixth grade) and to pay school fees, which are quite high relative to local incomes. In some cases, the students earn more per hour painting postcards than their parents earn in other jobs.

Another small enterprise is operated by a dairy-farming couple who sell peanut butter and small bags of raisins, peanuts and dried bananas to tourists and local residents through the Cheese Factory store. Bananas are grown and dried on their farm, peanuts and raisins are purchased in San Jose. Net revenue makes up about one third of the family net income. There is one employee, paid US \$22 per week. According to the farmer, with milk prices down and production costs up, only three Monteverde families still produce milk. He regards nature tourism as the saving grace economically for many members of the Monteverde Community.

The Cheese Factory Store itself retails cheese, milk and caramel to the public. No information was available on the proportion of sales that are made to tourists. The cheese factory itself is a minor tourist attraction and may bring in a few tourists who do not come to visit the Cloud Forest Reserve.

The hotels and guesthouses in Monteverde derive about 1 percent of their revenues from souvenir sales.

Three biologists residing in Monteverde have found various ways to make income from the tropical forest. One, an expert on bats, derives a modest income from slide shows at local hotels, sales of duplicate slides and as a caretaker for rental houses. He also works as a tour guide for Costa Rica Expeditions, a San Jose-based tour company, and brings some of his tours to Monteverde, among other destinations. (His wife runs the stable and one of the postcard businesses). A married couple, also biologists, are now full time nature photographers, with photographs published in such magazines as National Geographic, Smithsonian, and Natural History. They derive some income from photo and slide sales in Monteverde.

The Future of Monteverde. The Monteverde community appears to be in the midst of major changes. The Reserve provides a way to hold back some forms of change, while creating new changes of its own.

In the mountains around Monteverde, as in the rest of Costa Rica, the tropical forest is under great conversion pressure. "Monteverde," says one report, "is in danger of being converted into an ecological island...the surrounding forest [about 40,000 hectares], which forms an integral part of the natural community, is today subject to increasing rates of damage by negative and irrational development." (Rojas Gonzales, 1987). Although deforestation around Monteverde has been limited by relatively poor agricultural prospects, the expansion of timbering and the general hunger for land are threatening parcels throughout the surrounding area. The recent campaign by the Monteverde Conservation League and the Tropical Science Center to greatly enlarge the Reserve is a direct result of the conversion pressure. The success in fundraising thus far has protected a great deal of land and has convinced some private landowners who have not yet sold that it could be more profitable to sell land to the Reserve than to exploit it for timber and farming.

A proposal has been made to the Costa Rican government to create Tilaran National Park, a mountain park wrapping around the Monteverde Reserve (and expanding its size several times). The park would protect the integrity of Monteverde and would give much needed protection to the watershed of the Arenal Reservoir. The Monteverde Conservation League is attempting to repair past damage to wildlife and watersheds by promoting reforestation. It has taken a survey of local landowners' tree-planting practices and needs and is joining with other organizations in operating a tree nursery.

But tourism itself is changing Monteverde. Visitation to the Reserve in 1987 was up over 40 percent from the previous year, and had doubled since 1984. In addition to the facilities already described, others are planned. Among them are a botanical garden with shops, which was to be opened in 1988 by two American biologists, and a tea and pastry shop. Two more hotels are expected to open within the next couple of years. The Costa Rican government is considering paving the road that connects Monteverde to the regional capital of Puntarenas. Many feel that the unpaved road is the only thing that keeps the community from being overrun with tourists. There are even rumors that luxury hotels complete with golf courses are planned for the nearby town of Santa Elena, a prospect which may at present be held back by the unpaved road.

Most Monteverde residents want to keep their community's traditional ambience--they came to Monteverde because it is isolated, quiet, peaceable, and noncommercial. But they also understand the importance of tourism to the local economy, especially with the decline in the dairy industry. A prime problem is that the community has no way to plan for or regulate development, having no legal authority to

zone or collect taxes for public works. The community operates under the authority of the city of Puntarenas, 40 miles away. However the community did use its influence over the Reserve to block construction of a large hotel in the heart of the settlement by threatening to limit access to the Reserve. The land was later purchased by the Monteverde Conservation League.

Ecuador: Tourism Along the Rio Napo

The theme of Ecuador's latest international tourism promotion campaign is "Ecuador Offers More." "More than just the Galapagos," explains a tourism official, referring to the islands several hundred miles offshore which are visited by over 30,000 tourists annually and are by far Ecuador's best known tourist attraction. One of the alternative destinations which Ecuador is anxious to promote is its Oriente ("Eastern") region, the vast and until recently lightly populated territory stretching down the eastern slope of the Andes into a basin drained by tributaries of the Amazon. The region is heavily forested, with a complex mixture of tropical trees and other vegetation.

In recent years, oil has been discovered in the Oriente, stimulating drilling and production and opening up roads which have brought loggers and settlers into the area. The new accessibility has encouraged the creation of a forest-based tourism industry. It has also stimulated rapid land use changes which may eventually threaten the resource on which tourism depends. Because of the size and diversity of the Oriente region, the research conducted for the present study concentrated on the Rio Napo, the portion of the Oriente where nature-oriented tourism is now most highly developed.

Although the actual destinations of tourism are scattered along the Rio Napo and its tributaries, the jumping off places for most tourists are the towns of Misahualli, six hours by bus or car from Quito, and Coca, 13 hours by road, but reachable by a short plane ride from Quito. Tourists can visit both towns by taking a bus to Misahualli, then going down river by dugout canoe to Coca.

There are three major destination areas for tourists: the stretch of the Rio Napo below Misahualli, the stretch below Coca, and the vast jungles penetrated by the Rio Aguarico, Rio Cuyabeno and Rio Yasuni, tributaries of the Napo. The last area is visited by trips led by guides from Misahualli or Coca or by groups coming directly from Quito or abroad.

National Parks and Reserves. The Rio Napo region contains three of Ecuador's 15 national parks and reserves: Yasuni National Park, Limoncocha Biological Reserve, and the Cuyabeno Faunal Production Reserve. The parks are managed by a small staff in Quito and have very few personnel and facilities on site. Although a fee is theoretically

charged for entry, the lack of personnel means that enforcement is spotty or non-existent.

Yasuni is the largest of Ecuador's Amazon parks, with an area of 680,000 hectares. It is accessible only by canoe and has no facilities for visitors, although a descriptive pamphlet is available. Official government figures show no visitation during 1987, although it was clear from interviews that some tour groups do enter the park. For example, it is one of the places where a week-long jungle tour from Misahualli or Coca might visit, with the group arriving by dugout and carrying camping equipment.

Cuyabeno, more frequently visited than Yasuni, is perhaps best described by an excerpt from a Nature Conservancy tour itinerary:

"Two full days will be spent exploring the Cuyabeno Reserve, one of the most unique and unspoiled wilderness areas on earth...From our base camp at Laguna Grande we will examine lakes, streams and surrounding forests and jungles with the aid of personal inflatable canoes as well as motor dugouts. This is a paradise for bird observation, where over 400 species have been recorded. As an added feature, nocturnal searches for caimans and other mammals will be made. This fabulous habitat is the home of freshwater dolphins, giant paiche (arapaima), jaguar, tapir and a wide variety of monkeys. Colorful Siona natives will aid us in the discovery of this 'Lost World'."

Although there are no official facilities in the park, there is a guardhouse along the road which visitors must pass, increasing the likelihood that the required fee will be paid. Officially recorded visitation was 365 persons in 1986 and 185 in 1987. The falloff is undoubtedly the result of the destructive earthquake which struck the Oriente in March 1987, cutting off road access for a time. Visitors to Cuyabeno are primarily international--in 1987, Ecuadorean nationals made up 43 of 185 total visitors. Since 1984, Americans have accounted for less than 20 percent of visitation, with the largest number of tourists coming from such countries as Germany, Austria, Switzerland, France and Great Britain.

Because of the lack of facilities, visitors to Cuyabeno must camp. Four tour operators have established campsites within the reserve, sometimes improved with thatched huts in which hammocks can be hung. Because there are no developed facilities and food is carried with the tour group, the primary local economic impact is through the hire of dugout canoes from local Indians. It is rumored that one family has monopolized the canoe business in the park, threatening other Indians who might like to compete.

The third national reserve is Limoncocha. Located down river from Coca, it is a relatively small area comprising a lagoon with a dense concentration of birds. Over 400 species have been recorded. The lagoon also has one of the world's largest populations of caimans. Considerably more accessible than the other reserves in the Oriente, Limoncocha recorded 3052 visitors in 1986 and 2676 in 1987. Nearly half the visitors were Ecuadorean nationals. Limoncocha Lodge, a simple sleeping accommodation housing up to 50 visitors in dormitory style rooms, lies at the edge of the lagoon. The Lodge is operated by Metropolitan Touring, Ecuador's largest travel agency. Overnight visitors often visit in conjunction with a stay at Metropolitan's Flotel Francisco de Orellana, a floating hotel plying the Rio Napo (see below.)

Regulations promulgated under the 1983 Forestry Law require that visitors to Ecuador's parks and reserves pay an admission fee of US \$10 for foreigners and US \$1 for nationals. Admission to the Galapagos is US \$30 for foreigners. At present, by far the largest part of the system's revenues come from the Galapagos, both because of the size of the charge and because it is relatively easy to enforce payment to an area where most visitors arrive by air. Collection of fees is much more difficult in the parks of the Oriente, where low park budgets and low salaries make it very difficult to find people who can collect money on site. At present, fees for parks in the Oriente are collected in Quito, in a complex system that requires visitors (or tour guides) to visit several government offices sequentially, picking up permits and receipts. One tour guide complained that it took the better part of a day just to pay the entry fee for a trip he was guiding.

In addition to the parks and reserves of the Rio Napo region, there are huge expanses of forest under the jurisdiction of IERAC, Ecuador's Agrarian Reform and Colonization Institute. These are open to settlement under certain conditions; they are also subject to illegal settlement and timber harvest. These lands, as well as a limited area of private land, are part of the resource base for tourism. Because of the admixture of public and private land, often with unmarked boundaries, it is not possible to precisely identify the "destination" of many tourist activities. For example, tour companies based in Misahualli may utilize privately owned forest for one trip, IERAC forest for another, and visit Limoncocha or Yasuni on a third. In consequence, the discussion that follows will be organized by type of activity, rather than by specific destination.

Guide Services and Tour Operators. Two types of tour operators gain income from Rio Napo tourism. The first are the Quito-based travel agencies which offer escorted trips to the Rio Napo region. These may be trips specifically to the Rio Napo, or may be portions of comprehensive Ecuador tours which include the Highlands, Galapagos and other destinations. Some of these trips are specifically intended for nature-oriented tourists; sometimes these are done in cooperation with foreign travel agencies or nature groups. For example, during the

summer of 1988, a 17 day tour sponsored by the Nature Conservancy included (in addition to the Galapagos and Cotopaxi volcano) four days in the Ecuadorian Amazon.

Quito-based tour operators may use local hotels and guides, may use local hotels and provide their own guides (supplemented, as in the case of the Nature Conservancy trip, by foreign specialists), or may bring Quito-based guides and camping equipment with them. Metropolitan Touring, a very large tour operator based in Quito, operates its own floating hotel (Flotel Francisco de Orellana, see below).

The second major type of tour operators are those based in the Rio Napo region. The center for such activity is the river port of Misahualli. Government economic census statistics indicate that there were 12 tourist guide enterprises in Misahualli in 1988, with a total of 34 employees. The largest, and perhaps the oldest, guide service is that of Douglas Clarke. Despite his English name, Clarke is a native of the region, and speaks little English. He has been a guide for 14 years, and has built his business to the extent that he can employ others to conduct some of the trips. He also operates a popular restaurant, which also offers some rooms for overnight stays.

Clarke works only with groups, mainly put together by travel agencies. The basic tour is a 3-4 day excursion in the environs of Misahualli, with the tourists lodged at Clarke's own permanent campsite in the jungle. Clarke readily admits that most of the larger wildlife has been hunted out near Misahualli and recommends that the adventuresome tourist take an 8 day tour that canoes up a tributary of the Napo into much wilder jungle. Agencies booking Clarke's tours charge about US \$20 per day for the 3-4 day excursion; \$35 per day for the longer trip. Clarke owns only a single canoe, but rents others to accommodate larger groups (the campsite holds 30). For a medium-sized group of 20 tourists, he will use 10 employees, including a guide and assistant, cook and assistant cook, and 6 "canoe drivers." The latter are paid US \$4 daily, apparently above average pay for a country in which the national minimum wage is only US \$19 per month.⁸

Several other guide services have offices around the main square in Misahualli. Many will help individual tourists put together their own ad hoc group. There appears to be a wide range in quality. As one observer put it, "there are 5 or 6 professional guides in Misahualli, and 30 opportunists." A Quito-based guide active in the national tour guides association observes that "there are two types of jungle guides--those who know nature and those who just know their way through the jungle." He observes that a really professional guide can make US \$20 per day, while an Indian who can point out medicinal plants can earn US

⁸ At the time of writing, legislation was pending to raise the minimum wage to US \$38 monthly. The extremely low wages in Ecuador (when expressed in US dollars) are offset by extremely low prices for many items.

\$10 daily. The owner of a hotel along the Rio Napo charges that some guides in Misahualli exploit the tourist and do things that damage the environment. For example, some raise their prices at the last minute, allow drinking in the jungle, take tourists into jungle areas owned by others, collect plants, and carelessly cut vegetation with their machetes.

Ecuador's national tourist agency, DITURIS, has taken some steps to improve the quality of guides along the Rio Napo. Recently, guides have been required to register and carry identification. And DITURIS has sponsored training courses for guides--Douglas Clarke, for example, has two framed certificates from guide-training courses prominently displayed on his office walls.

In addition, the guides themselves have organized a national guides association to better compete against untrained "pirate guides." The association is asking the government to license guides, as is now done in the Galapagos. The association has about 120 members nationwide, of whom about 20 are in the Oriente region. A regional chapter of "jungle" guides was formed in 1988. In addition to trying to raise standards, the association is concerned about foreign tour groups who bring their own guides with them. There is no objection to foreign scientific guides, says an association leader, as long as the group employs an Ecuadorean tour guide as well.

Hotels. There are a number of "jungle lodges" along the Rio Napo which offer the tourist a chance to experience Ecuador's Amazon region in relative comfort. All are located close to the river's edge and are reached by motorized dugout canoe. Although built in various rustic styles, they offer running water and (through generators or solar power) electricity. The oldest hotel is the Hotel Jaguar, located about an hour by boat down river from Misahualli. It was begun in 1969 by a man who had been a lawyer for the petroleum companies during the period of early exploration. Observing what an adventure it was to go down the river in a canoe and that a new road from Quito was opening up the region, he bought 250 hectares from the national government and built what was intended to be a luxury hotel. Now reportedly somewhat run-down, it is owned by the daughter of the original owner and operated by an on-site manager.

The hotel consists of 10 rooms and 2 cabanas for a total of 40 rooms. Employment depends on the season, but at its maximum consists of the owner and an employee, who take reservations in Quito, an on-site manager, two cooks, and 3-7 young men who serve as waiters, make up rooms and guide tourists. Although the hotel lies across the river from an Indian village, only the assistant cook is a local Indian. The Indians are very poor, says the hotel owner, but "although they know the value of money, they do not know the value of work." In fact, she says, the assistant cook is held in some disdain by other villagers.

Supplies for the hotel come from a variety of sources: some foodstuffs are bought from the Indians; meat and fish come from Tena, a town up river; beer, cheese and butter come from Quito. Because the hotel can be reached only by water, some jobs are created for boat drivers, who bring in tourists in long dugouts powered by outboard motors.

Another older jungle hotel is the Hotel Anaconda, built about 15 years ago by a man who worked for Metropolitan Touring. Originally, he had a hacienda along the river and put up guests for Metropolitan. (He was also for a time manager of Hotel Jaguar.) The Anaconda has 24 rooms, with a capacity of 52 guests. The accommodations consist of duplex cabanas raised on stilts, with a single central dining hall. Rooms are simple but comfortably furnished, constructed of wood framing with thatched walls and roof. Virtually all the materials seem to be of local origin--for example, the stairs to each cabana are carved from a single trunk of balsa wood. The single rate is US \$53 for three nights, including meals and transportation to the hotel by dugout.

The Anaconda is located on a large island in the Rio Napo. The owner obtained use rights for tourism purposes from the Institute of Agrarian Reform and Colonization. Although the hotel has constructed jungle hiking trails, it is unclear how far its effective control extends. At some spots along the trail there is recent agricultural clearing. The hotel owner observed that many Indians live on the island and are planting yucca and other crops. The hotel itself has 9 employees on site, of whom 3 are local Indians.

About half the visitation to the Anaconda is by groups. Until recently, the clientele was almost entirely foreign, but lately more Ecuadoreans have begun to come. This may be because the attractions of the Oriente are becoming better known in Ecuador or simply because the fall of the sucre relative to foreign currencies has made it too expensive for Ecuadorean vacationers to go abroad.

The most distinctive of the older lodging establishments on the Rio Napo is the Flotel Francisco de Orellana, a three story, flat-bottomed riverboat which operates as a floating hotel. Its 23 cabins accommodate 50 guests for an average tariff of about US \$100 per night, meals and tours included. The Flotel, built in 1976, is owned and operated by Metropolitan Touring, Ecuador's largest tour operator. About 40 percent of its clientele are groups. Unlike the other jungle hotels along the Rio Napo, the Flotel has more Ecuadorean nationals than foreigners as guests. "They want an adventure," explains a Metropolitan executive.

Anchored in the Napo below Coca, the Flotel offers visitors a convenient and comfortable base for excursions into the jungle. Because there is air service from Quito to Coca, visitors can easily come for a weekend. Excursions from the Flotel include a visit to Limoncocha Reserve, to Indian villages, and jungle walks. Some trips

involve overnights at Limoncocha Lodge, which is also operated by Metropolitan.

One of the newest hotels along the Rio Napo, and certainly the most ambitious, is La Selva, a 16 room establishment which opened in 1987. The hotel is perhaps best described by a few lines from its promotional brochure:

"We think we have found the perfect place to experience the jungle. It is unbelievably beautiful, unaccountably rich and necessarily remote. We have brought to this paradise with great care and respect--with canoes, with horses, and with brute manual labor--as much luxury as possible. Sixteen double bed cabins, each with their own toilets and showers, perch on a hill overlooking a lake named Garzacochoa, Heron Lake. The bar and restaurant hug the shore, ready for whatever magic tricks the sun cares to offer when it rises and falls. Everything has been built in the traditional style of the region...Our culinary background is French and we have applied these skills to local ingredients and dishes."

La Selva was started by a young American couple--the wife was born in Ecuador, but raised in the U.S.--who had themselves come to Ecuador as tourists. During a stay at the Flotel, "we fell in love with the jungle," says the wife. They noted that the Flotel was not showing its guests untouched primary forest and thought that by finding a more remote spot they could establish a hotel that provided a really authentic jungle experience. As part of their research they went to Peru to talk with an operator of jungle lodges, one of the few examples to date of international cross-fertilization in the nature tourism business.

The couple spent 6 months looking for a "paradise plot" along the Rio Napo between Coca and the Peruvian border. Several promising spots were rejected after the local Indian communities would not accept them. Finally, they settled on Garzacochoa, an Indian village near a heron-filled lake. The local people were induced to support the development by provision of a school and a teacher's salary and the promise of jobs and a market for their crops and handicrafts. In return, they agreed not to hunt or to fish commercially in the lake. The hotel owners originally sought to buy 1000 hectares from the agrarian reform agency, but were able to purchase only 20.

The physical facility consists of 16 cabanas, each with two single beds, a dining room and a bar. They are located beside the lake, and reached by a boat trip down river from Coca, followed by a 20-minute walk on a wooden boardwalk, and a canoe ride across the lake. The buildings were built of local materials, some of them collected where the forest was cut for petroleum activities. The hotel currently employs 34 people, of whom 19 are from Indian communities. Employment

Table 3: Characteristics of Forest-Based Accommodations in Rio Napo Region, Ecuador

Enterprise Name	Ownership Type	No. of Rooms	No. of Employees	Nightly Rate (Single)
Hotel Anaconda	national	24	2 in Quito/ 9 onsite	US \$18 (AP)
Flotel Francisco de Orellana	national corporation	21	40	US \$465 (4-night package, incl. airfare from Quito, meals, tours)
Centro Turistico Alinahui	expatriate	6		US \$8 (AP)
Jatun Sacha Biological Station	non-profit	30-person dormitory	1 caretaker	n.a.
Hotel Jaguar	national	12	1 in Quito/ 6-10 onsite	n.a.
Hotel La Selva	expatriate	16	4 in Quito/ 29 onsite	US \$100 (AP) (includes tours) lower for nationals

consists of the owners, a Belgian biologist and administrator, a naturalist, 3 sales and management employees in Quito, 4 canoe drivers, 2 guides, 7 kitchen employees, and 14 construction and maintenance employees.

In comparison with other "jungle hotels" in the region, La Selva explicitly aims at providing visitors with a higher quality experience with nature (e.g. its location in primary forest, away from the river) and a higher level of comfort (e.g. French food). Rates are correspondingly lofty--tour packages average US \$100 per person per day, including food. La Selva has made considerable efforts to promote itself in the foreign market. For example, the owners started circulating a newsletter to 150 travel editors even before the hotel opened. A sales office is maintained in Florida and an agent in Beverly Hills. La Selva offers special rates for Ecuadoreans, which are considerably below the usual tariff. One 4-day package costing US \$430 was offered for only \$70. Nevertheless, only 6 Ecuadoreans visited the hotel last year. "Ecuadoreans," says one of La Selva's owners, "go to the Flotel for dancing, not realizing what there is to see in the jungle."

Another new hotel is the Centro Turistico Alinahui, which opened in spring of 1988. It is located on a 50 hectare tract of rain forest about 20 minutes downriver from Misahualli. As a result of a newly completed road, the Alinahui is the only hotel along the Rio Napo that may be reached by automobile as well as by boat. The hotel consists of six attractive wooden bungalows (accommodating a total of 24-30 people) and a central dining facility. Solar panels on the rooftops provide electricity to the compound, obviating the need for noisy generators.

The owner of the Alinahui is a political scientist from Germany, who has worked in Quito for 14 years as representative of a West German foundation. Nearing retirement, he plans to move to the Napo region soon; for the moment the hotel is run by his Cuban-born wife and he visits on weekends. Thus far, many of the visitors have been Germans resident in Quito who have heard about the hotel through word of mouth. Rates are very reasonable: about US \$8 per day, meals included.

Unique among the tourist destinations on the Rio Napo is the Jatun Sacha ("Big Forest" in the Quechua language) Biological Station. Located not far from Alinahui, and accessible to Misahualli by road or river, the station was created by an American botanist doing a floristic inventory of the Napo region for the Missouri Botanical Garden. The site consists of open buildings with raised wood floors that can house 30 persons. It is used as a research and environmental education center, and has served groups from Catholic and Central Universities in Quito and from the School for Field Studies in the U.S. The administrator reports that there have been inquiries from graduate students in biology about leading tours there. The research station controls 200 hectares of forest and is operated as a non-profit

Ecuadorean foundation. Although small, Jatun Sacha represents the only tract of officially protected land along the main stem of the Rio Napo.

In addition to the "jungle lodges" directly along the river, tourist hotels and other facilities have also sprung up in Misahualli, Tena, Lago Agrio, Coca and other towns in Napo Province. A recent tourist advertising directory listed 6 hotels, 5 guesthouses and 4 restaurants in the province (TEIBE Asociados, 1987). A 1988 census of tourist establishments listed 12 hotels and guesthouses in Coca and Misahualli alone, with 171 rooms and 40 employees (DITURIS, 1988a).⁹ Most of these establishments also have restaurants attached.

Souvenirs. Although Ecuador is justly famous for its diverse handicrafts, which tourists buy in large quantities, few of them originate in the Rio Napo area. The most commonly purchased handicraft in the Misahualli area is probably the relatively crude ceramics sold to tourists who visit Indian settlement on tours. One hotel owner noted that the Indians formerly made hammocks, nets for fishing, and garments decorated with feathers but no longer do so because deforestation has made the raw materials harder to find and because they think it doesn't pay enough for the amount of work involved. Despite the fact that the Rio Napo offers few products, it is likely that visitors who come to see the jungle will purchase articles in Quito or elsewhere along the way, making a contribution to the national economy, if not the local one.

Napo River Tourism in National Perspective. Tourism is a very important economic activity in Ecuador, producing 2.7 percent of Gross National Product, 2.5 percent of employment and 10 percent of non-petroleum exports (United Nations Development Programme, 1987). In 1986, tourism generated US \$180 million in foreign exchange, compared with \$300 million for coffee, \$288 million for shrimp, and \$263 million for bananas. It is estimated that the average foreign tourist stays 8 days and spends US \$600, which generates a global economic impact of US \$950, government revenues of US \$175, private investment of US \$54 and public investment of US \$16 (United Nations Development Programme, 1987).

Napo River tourism, however, is only a tiny part of Ecuador's tourist industry, which is based mainly on the Galapagos and on visitation to the cities and cultural sites of the central mountains.¹⁰

⁹ There are many other hotels and restaurants in Tena and Lago Agrio, but these probably serve mainly oil workers and other non-tourist visitors.

¹⁰ In all of Napo Province, there are only 233 rooms in hotels, hostels and pensions, or 1.6 percent of the nationwide total in these categories (DITURIS, 1988). It is interesting to note that there are only 172 such rooms in the Galapagos, although this is probably due to the fact that tourists spend much of their time on boats or camping.

A recent report on tourism development put most emphasis on the potential of Ecuador's beaches, although it did suggest promotion of birdwatching, trekking and scientific tourism and development of more "lodges" in the Oriente (United Nations Development Programme, 1987). Another report, prepared for the U.S. Agency for International Development, noted that "today, the Amazon regions of Peru and Brazil are attracting an important number of tourists in search of adventure." Noting the relatively small size of tourist-serving facilities, and some inadequacies in what they had to offer, the consultant called for better training of naturalist guides, expansion of hotel facilities, and a centralized information office to give advice to tourists and travel agents (Coe and Gee, 1986).

Despite the widespread interest in the Galapagos and the increasing popularity of the Oriente, Ecuador's overall international tourism has been stagnant for some time. Between 1976 and 1986, the total number of foreign visitors to Ecuador grew from 171,841 yearly to 266,761. But nearly three quarters of this growth came from visitors from nearby Colombia. Tourism from Europe and the U.S. showed only modest growth or even declined, particularly since 1979. Further development of tourism to the Ecuadorean Oriente would most likely have only a modest impact on overall tourist visitation, but it would help bring in more long-distance tourists, who presumably would stay longer and would spend relatively more money per day.

Threats to Rio Napo Tourism. The entire Rio Napo area is experiencing very rapid land use change, partly because of oil exploration and development, partly because of population growth and immigration. "Anyone who fails anywhere else in Ecuador," says one observer, "comes to the Napo, where there is land. Nobody gets rich there, but nobody starves. You can cut a few poles and some thatch and make a house almost for free." Although the Oriente is enormous, the impact of colonizers is quite evident along the main stem of the Napo. Timber is being harvested commercially, and frequent clearings are being made for agricultural purposes. Already, the larger wildlife species have been almost wiped out in the more accessible areas. During a recent trip, a biologist reported seeing not a single mammal and only a few of the more spectacular birds, such as macaws and hoatzins. Another naturalist notes that "the large mammals are already gone" but that the area still offers a great variety of plants and small birds.

Naturalists and tour operators agree that if a tourist is really to see wild animals, it is necessary to take a trip far into the jungle, probably spending a week or more. There seems to be a divergence of opinion as to how the declining wildlife will affect tourism. Some observers believe that tourists, particularly Ecuadoreans, are interested more in the adventure aspects of visiting the jungle. "Just walking through the forest is a powerful experience for any tourist," says one biologist. They will be satisfied, he

thinks, with secondary forest and with seeing common birds and butterflies. Even now, tourists seem to enjoy the caged animals and birds on the grounds of two of the jungle lodges; the Hotel Anaconda even offers a troupe of free-roaming monkeys.

Some of the tourists, however, come with considerable knowledge of flora and fauna and are unwilling to settle for caged wildlife and artificial "adventure." If the Rio Napo does not offer the resources they seek, they will go to more remote areas of Ecuador or to Peru or Brazil. The Hotel La Selva, which charges much more than competing establishments in the region, is banking on the expectation that there exists a group of discriminating tourists who willing to pay for a high quality and authentic wildlife experience.

Many persons seeking to protect wildlife habitat for its own sake see tourism as a force that can be harnessed to justify the creation of public (and possibly private) parks and preserves. "We need to show the connection between money and the forest," says an ecologist who works in the Oriente. "One problem in the Oriente," he says, "is that you can't see the gradual degradation--the hoatzins go, but there are still oropendulas [both are forest bird species]. We need to create a constituency for conservation. The people who clean the rooms and prepare the food and drive the canoes are the beneficiaries [of tourism] and may one day realize that they will lose their jobs if the forest is cut."

Guatemala: "Where Archeology and Nature Come Together"

There are two salient features of Guatemala which give a very special character to the present development of its nature tourism industry, and which are likely to continue to affect it in the future. The first feature is the variety of the country's touristic resources. Within an area about equal to that of Pennsylvania, Guatemala offers not only natural attractions, including volcanic cones, mountain lakes, high and low tropical hardwood forests, mangrove wetlands, and Pacific and Caribbean beaches and islets, but also some of the world's largest, best preserved and most impressive archeological sites. In addition, Guatemala offers the tourist a chance to travel amidst a set of living Indian cultures, distinct from the dominant Spanish culture in dress, language, customs and handicrafts. One major tour operator in Guatemala's Peten region describes the area in an advertising slogan as a place "Where Archeology and Nature Come Together" ("Donde la archeologia y la naturaleza se unian.") The same is true for Guatemala as a whole.

A second salient feature of Guatemala is that its tourist industry is just beginning to recover after a seven year period of bloody civil conflict that had virtually dried up international tourism to the country's rural areas. Although Guatemala has had several periods of political unrest in the 20th century, perhaps the worst began in the

late 1970s. Popular unrest and guerrilla activity related to Guatemala's extremely unequal distribution of wealth and land was met by brutal repression, both by the armed forces and by rightist death squads. During the period 1978-85, perhaps 30,000 Guatemalans were killed in fighting, by assassination, or massacre. Widespread international publicity led to a cut-off of most foreign aid and to a perception by many tourists that even Guatemala's traditional "tourist circuit" (Antigua-Lake Atitlan-Chichicastenango) was unsafe to visit.¹¹

Tourism statistics collected by Guatemala's National Tourism Institute show the extent to which the perception of insecurity affected the industry. During the 1970s, international tourism averaged over 400,000 visitors annually, peaking at 503,908 in 1979. By 1982, visitation had fallen to 233,881, falling further to 191,934 in 1984. Since then there has been a significant recovery: 251,946 in 1985; 287,460 in 1986 and 352,741 in 1987. The recovery of tourism is closely related to the reduction of political violence in Guatemala, and to the favorable world attention given the return to elected civilian government in January 1986, after more than thirty years of military rule.

The recovery of demand for Guatemalan tourism promises a revival of investment in an industry that was once of considerable economic importance. During the 1970s, tourism was Guatemala's third highest foreign exchange earner, after coffee and cotton, and far ahead of beef, sugar and bananas (Escobar Ovando de Gomez, 1981). In 1980, tourism brought in US \$200.6 million in foreign exchange. By 1985, however, tourism accounted for only US \$56.6 million. By 1987, this had risen to US \$102.9 million.¹²

Although Guatemala is a marvelously diverse country, international tourism to Guatemala has traditionally involved a limited number of destinations. The first of these is the capital, Guatemala City, where virtually all international flights land and which was visited in 1987 by 89.6 percent of international tourists (Rose, 1988). Second in popularity are some scenic spots in the western highlands: the colonial capital of Antigua (visited by 41 percent of tourists), the high mountain lake, Atitlan (visited by 27.9 percent) and the market town of Chichicastenango (14.6 percent). Many tourists visit these three spots in a sort of circuit, and many package tours are available. Another popular place is Tikal, a huge Mayan city in Guatemala's northern Peten province. In 1987 it was visited by 11.3 percent of tourists. All

¹¹ It is unclear how correct that perception was. I have uncovered no case in which international tourists were attacked for political reasons, even during the most violent period.

¹² The relation between yearly number of visitors and yearly foreign exchange receipts is not exact, and depends on length of stay, origin of visitors, and the relation of the Guatemalan quetzal to the dollar.

other destinations were visited by less than 10 percent of all tourists (Rose, 1988).

Nature-oriented tourism is still in its infancy in Guatemala. There are a large number of possible destinations, but most are only partially developed, if at all.

The Biotopes (Protected Ecosystems). Guatemala has 27 national parks, but by all accounts they are ill-managed and not widely visited. (Tikal, officially a national park, but administered by the Museum of Archeology, is an exception--see below.) The sites in Guatemala most similar to national parks in other countries are the four "biotopes" administered by the Center for Conservation Studies of the University of San Carlos. The biotopes are protected ecosystems, created primarily for conservation and research purposes, but open to visitation by the public. Although staffed by the university, they are given financial help by INGUAT, the national tourism institute.

No admission is charged for visiting the biotopes. The funds needed to administer them come from the university, from INGUAT and from donations by international organizations, such as World Wildlife Fund. A university staff member notes that "the tourists are asking for fees, as long as they would go to support the reserve." But he points out that under current rules of the university, any money collected must be paid into the university's general fund. It appears that a per visitor fee of about US \$1.00 would be sufficient to cover the biotopes' present budgets.

The Center for Conservation Studies devotes 34 employees to running the biotope system, four of whom are in the Guatemala City office, the rest (mainly guards) in the reserves.

The most popular biotope with tourists is the Biotopo del Quetzal, which provides a forested habitat for Guatemala's endangered national bird, the resplendant quetzal. Located about three hours from the capital, the reserve is visited by 35-40,000 persons annually. About 30 percent are foreigners; the rest are students, family groups, or people visiting the important town of Coban, which lies about 35 miles farther down the road. The reserve offers marked trails, an educational leaflet and a small visitor center. Volunteer guides--students from the local community--are available at times. Starting in August 1988, there was to be a full-time guide under contract to the university. He is a person from the capital, trained in tourism.

A few miles down the road from the Biotopo del Quetzal is perhaps Guatemala's best example of a nature-dependent private tourist facility, the Posada Montana del Quetzal (Quetzal Mountain Inn). This 18 room hotel was built in 1981 by a friend of Mario Dary, the late university rector who had created the biotope system. The friend had had a farm along the road to the reserve, and decided to build the hotel to accommodate visitors. The majority of guests are reserve

visitors; rooms cost US \$6.85, without meals. The hotel has a dining room for guests and a cafeteria for non-guests. There are 60 employees.

Occupancy at the hotel is reported to be rather seasonal, with full occupancy in March, April and June-August, very few visitors in January and February. Interestingly, although most hotel guests visit the quetzal reserve, the hotel's occupancy is less closely correlated with the best time to observe the quetzal than with the occurrence of festivals in Coban.

More recently, a collection of 5 or so bungalows and a small dining room (Cabana Los Ranchitos) has been built along the roadside very near the entrance to the reserve.

A second biotope is the 7,200 hectare Chocon-Machacas reserve on the northeast bank of the Rio Dulce (see below) in Izabal province, bordering the Caribbean. This area of mangroves and tropical forest was created to protect the manatee or sea-cow. It is reachable only by water and has only minimal facilities on-site. It is visited by about 6,000 visitors annually, about 40 percent foreigners. Most people stay at hotels at Rio Dulce bridge or the coastal town of Livingston and come to the reserve in rented dug-out canoes, small boats, or, in some cases, the ocean-going yachts in which they arrived.

Monterrico, created in 1977 but only recently under the management of the university, is a 2,800 hectare area on the Pacific Coast, created to protect the habitat of the sea turtle. It also offers iguanas, birds and mangroves. Monterrico is notable for the fact that there are large numbers of people living near and even within it, who use the designated "multiple use reserve" for fishing, firewood gathering, and salt production. The reserve also contains a swimming beach popular with visitors from the capital--during the four summer months perhaps 40,000 people use the beach. "Most of them," says a university staffer, "do not know about the other possibilities of the reserve." But he points out that there is increasing public interest in the turtles and in the university's nearby iguana-breeding project.

The fourth biotope is Cerro Cahui, a 651 hectare reserve near Lake Peten Itza in Guatemala's most remote region, the Peten (see below). Cerro Cahui was created to protect the ocellated turkey, but the subtropical forest habitat also shelters parrots, toucans, woodpeckers, more than 50 species of butterflies, and the Peten crocodile. It is very little developed, although there is an interpretive trail and an information center is being constructed. Last year there were only 400 visitors, most of them people visiting the nearby ruins at Tikal. One kilometer from the reserve is a campsite and bungalow hotel, with restaurant, called El Gringo Perdido ("The Lost American").

Legislation now on the desk of the president of Guatemala would give the university three new biotopes, all very large and all located in the Peten. The proposed biotopes would include large areas of relatively untouched forest, as well as archeological sites.

The Peten Region. The Peten is Guatemala's largest and most remote region, until the mid-1970s accessible from the rest of the country only by air. Because of this difficult transport, it has until recently remained largely forested. Even after rapid population growth, and extensive deforestation, the Peten contains most of Guatemala's remaining primary forests and much of its remaining wildlife. The Peten is also rich in Mayan archeological sites, most still unexcavated.

The prime tourist attraction in the Peten is Tikal, a large city dating from the 4th to 10th centuries A.D. Only six of an estimated 25 square miles of structures have been excavated. Tikal is officially a national park, but it is administered by the National Museum of Archeology. Unlike the biotopes, an admission is charged at Tikal, US \$1.85 for foreigners, US \$0.74 for nationals.

Although Tikal is primarily an archeological site, it is surrounded by tropical forest. As one INGUAT pamphlet puts it, "Tikal's location makes it a popular attraction for visitors with special interests in ornithology, entomology and botany." Unfortunately, the most popular way for tourists to visit Tikal is on a 1 day trip, flying to Tikal in the morning and returning to Guatemala City in the evening. These day visitors not only do not have time to see the Peten's natural attractions; they also have little local economic impact. "The day visitors do not leave any money at Tikal," says a Guatemalan environmentalist, "they bring their sandwich with them." It is notable that a longer stay would not cost the tourist very much additional. One tour operator offers a day trip for US \$135, an overnight with boat cruise and lunch for US \$145 and a two night stay with boat trip and visit to the Actun-Kan cavern for US \$165.

The development of more comfortable tourist accommodations and the promotion of more tourist attractions may increase Tikal's draw as a nature-oriented destination. Recently, the owner of one of the larger hotels serving Tikal has begun to promote "jungle adventure vacations" which combine sightseeing at Tikal with visits to the tropical forest, the lakes and lesser known ruins. Consider this five day trip:

Day 1: Flight to Peten, boat trip on Petexbatun River to lagoon where turtles, ducks, parrots, enormous fish may be seen. Camp on riverbank.

Day 2: Up Aguateca Creek to ruins and caves; swimming in river; camping.

Day 3: Ruins of Ceibal, illuminated caves at Actun-Kan; night in hotel.

Day 4: Standard visit to Tikal. Night in hotel.

Day 5: Trip to overlook for panorama of Lake Peten Itza; visit to "mini zoological park"; swimming and natural waterslide. Return to Guatemala city.

Perhaps the most interesting nature-oriented tourism enterprise in the Peten is Maya Expeditions, specialists in whitewater rafting. The business was founded in 1986 by a young Guatemalan whitewater canoe enthusiast and two Americans who were running whitewater rafting trips in Colorado. The enterprise had 200 customers in its first year of business, 400 in its second, and expects 6-700 in 1988. It now employs an average of 20 persons over the course of the year. Maya Expeditions offers trips that typically combine whitewater rafting (exciting, but no previous experience required), camping, and visitation to archeological sites. Most of the trips are in the Peten. Among the most popular is an expedition along the Usumacinta River, which separates Guatemala and Mexico, and which allows visits to important Mayan sites on both sides of the border. "We don't do just wildlife trips," says one of the owners, "we offer a mix of wildlife and archeology." Trips are kept small at 6 to 20 people ("so as to avoid impacting the local people") and cost about US \$125 per day.

Lake Izabal and Rio Dulce. Another major destination for nature-oriented tourists is on Guatemala's Caribbean side. Lake Izabal, Guatemala's largest, overflows into the 20 mile-long Rio Dulce, which flows into the Caribbean. The area between the lake and the sea is bordered by marshes and mangroves, and is rich in wildlife. Along its course is found one of the biotopes, the Chacon Machacas reserve for the manatee. As in the Peten, it is difficult to disentangle natural and historical attractions. In the case of Lake Izabal and Rio Dulce, there is a history of pirate depredation and Spanish colonial defense, best marked by the ruins of Castillo de San Felipe, a 17th century Spanish fortress. The region also offers abundant water sports, both along the lake and river and in the nearby offshore islands ("cays") of Guatemala and neighboring Belize.

The tour offered by one Guatemala City tour company illustrates the mixture of attractions to be found in the area: it combines boat trips around the lake and to the cays with a visit to Castillo San Felipe and the Mayan ruins at Quirigua (see below), then throws in "visits to discoteques in Puerto Barrios and nightly dancing."

Several hotels along the Rio Dulce, ranging in size from 11 to 20 rooms, serve visitors to the area. Most are of "tropical" architecture, using thatch roofs on some or all of their structures. One is on its own island. There are also restaurants along the river or at beachside. Accommodations are also available in the large towns

of Livingston and Puerto Barrios, where the Rio Dulce joins the Caribbean.

One of the more explicitly nature-oriented enterprises in the Lake Izabal-Rio Dulce area is Izabal Adventure Tours. The enterprise was founded in 1987 by a Guatemalan marine engineer who had long had a boatbuilding and marine engineering business at Puerto Barrios. Seeking a market for the 25-foot boats he manufactured and a way to get more use from his diving equipment, he has begun to offer 3-4 day trips which combine sightseeing on the lake with diving in the cays. Among his clients have been groups of biology students from Canada, although he finds that there is more tourist interest in the marine environment than in the mangrove swamps of the biotope. He worries about degradation of the land around the lake: "Even the biotope is secondary forest. There is much harvest of the mangroves for firewood and use of land for shifting agriculture."

Other Destinations. Several other destinations receive some nature-oriented visitation, although the total economic activity generated is to-date relatively small. One is the Rio Cahabon, a scenic river in Alta Verapaz province which is utilized by one of Maya Expeditions' week-long whitewater rafting trip. The three days spent on the river allow the tourist to experience "challenging and exciting rapids, placid pools perfect for swimming, pristine side creeks, colorful tropical birdlife, and the beautiful scenery of this extremely remote and seldom seen region of Guatemala."

Another destination is Quirigua, in Izabal province. Although it is primarily an archeological site and is only 75 hectares in area, Quirigua has some important attractions for the nature traveler. According to one tourist guidebook: "A kind of jungle island amid a sea of cultivated fields, Quirigua is also remarkable for the variety of its birds--toucans, parrots, parakeets, motmots, woodpeckers, kiskadees, hawks, sparrows, and many other species flourish among the great trees and ruins, making this a point of interest to bird-watchers as well as students of Maya culture." (Fodor Travel Publications, 1987, p. 31) Because it lies on the main road between Guatemala City and Lake Izabal, Quirigua is often visited as part of tours to the lake. A Guatemala City tour operator, Turismo Kim'Arrin, offers a four-day tour which includes Quirigua, the Biotopo del Quetzal, and the Rio Dulce.

The Future of Nature-Oriented Tourism in Guatemala. The rapid revival of demand by tourists to visit Guatemala has caused a significant revival of investment in facilities and of new business plans. In June 1988, the head of Guatemala's National Tourism Institute told the nation's cabinet that the country was receiving as many tourists as its lodging facilities could accommodate and that new investment was needed (INGUAT Turismo, No. 27, 1988). There appears to be considerable enthusiasm within government, within the tourism industry and within non-governmental environmental groups, for nature-

oriented tourism. On the governmental side, INGUAT is working with the University of San Carlos and with U.S. Peace Corps volunteers to improve interpretation at the biotopes, including the writing of pamphlets describing various natural values. INGUAT has also issued a pamphlet ("Guatemala the Natural") specifically emphasizing the country's forests, lakes, volcanoes, and wildlife and mentioning many of the locations described above. The National Commission on the Environment, created in 1986 by the president to produce a national plan for sustainable development, is very interested in tourism in general, and in nature tourism in particular. "This government," says one major tour operator, "is very interested in the development of tourism."

Activity in the private sector is best summarized by noting the extreme recency of most of the nature-dependent enterprises described above, and the fact that many of them are contemplating future growth and expansion of facilities. In the Peten, the owner of two hotels has just broken ground on a 30 room hotel intended to house tourists visiting Tikal; expansion to 100 rooms is intended, which would make it the largest in the Peten. The owner of Guatemala City's most expensive hotel is contemplating a new luxury hotel close to Tikal. "The volume of tourism specialized in nature [in Guatemala] is low," says one tour operator, "not because of lack of demand, but because of lack of supply."

An exciting idea that is receiving attention both by the public and private sectors is the idea of a Mayan Circuit ("Ruta Maya") that would allow tourists to visit the archeological and natural areas associated with the Mayan civilization and which stretch from southern Mexico and Belize to Guatemala and northern Honduras. The idea has been promoted by Wilbur Garrett, editor of National Geographic magazine, who has prepared a stunning map of the sites that might be visited in such a tourist circuit. Already some tourism enterprises are offering trips that cross from Mexico to the Guatemalan Peten and vice-versa, and which include both archeological and natural attractions.

A potentially important meeting was held July 8-10, 1988 at Tikal - the "First Seminar/Workshop on Integrated Management of the Natural and Cultural Patrimony and Ecodevelopment." (Amigos del Bosque, 1988) The meeting was sponsored by a diverse set of groups, including an environmental NGO (Amigos del Bosque), the Center for Conservation Studies, the National Environmental Commission, the Ebert Foundation (of West Germany), and INGUAT. The 40 persons attending paid particular attention to the future development of the Peten. Although tourism was not the only focus of the meeting, there was considerable sentiment expressed that "ecotourism" was an important tool of both conservation and development.

The seminar identified several forces encouraging ecotourism in Guatemala, including the existence of a diverse and high quality resource, the country's favorable location relative to international markets, increasing political stability, the support of INGUAT and the environmental organizations, the interest of the Interamerican Development Bank and World Bank, and the fact that the costs of infrastructure and maintenance were "4 to 5 times less than those for traditional tourism, despite the fact that ecotourists are disposed to pay the same as a traditional tourist." The seminar also identified obstacles to ecotourism, including lack of knowledge of the resources, lack of clarity about the concept of what ecotourism is, lack of promotion, limitations of infrastructure and finance, and lack of protection and management of the natural and cultural patrimony.

Among the seminar's many recommendations were suggestions to do more resource inventories, to extend the system of protected areas, to improve infrastructure and to broaden the distribution of benefits from tourism regionally and within localities. The seminar also suggested the organization and development of "ecotourism, adventure tourism, scientific tourism and/or inspirational tourism to complement traditional tourism in Guatemala, not only to permit the improvement of conservation of natural and cultural resources, but also to improve the quality of life for Guatemalans of today and of the future." (Amigos del Bosque, 1988).

Application of Economic Concepts

Impacts and Multipliers

Data collected in this study are not sufficient to permit the calculation of multipliers. To do would require not only a survey of enterprises, but also a tourist expenditure survey for each of the four case study sites.¹³ However, some observations can still be offered on the role of the multiplier concept in evaluating forest-based tourism.

First, it can be noted that the areas where such tourism occurs tend to be remote, both from capital cities and even from regional centers. This is almost inevitable, due to the fact that remaining forests are found where topography, poor soils or lack of transport access have historically hindered settlement. (An exception would be some mountain forest reserves--e.g. La Tigra National Park, near Tegucigalpa, Honduras--which may be close enough to capital cities to permit day trips). Moreover, forest-based tourism generally occurs at relatively small scale. The total number of enterprises is usually

¹³ I would estimate that multiplier calculation would require approximately 2 person-months of effort per site.

small, and, in any case they are often scattered through the forest, rather than concentrated in a destination community. As a result, the range of economic activity within the defined impact area will be small and even relatively simple goods and services may have to be brought in from outside. This will result in high "leakages" and correspondingly low multipliers.

A second feature of forest-based tourism, however, may offset the first. The goods and services consumed by nature-oriented tourists tend to be relatively simple and favor those locally available. This can be seen in the architecture of hotels serving such tourists, which frequently (not invariably) leans toward use of local materials such as wood and thatch and furnishing with locally made furniture and handicrafts. Menus at such establishments are typically rather simple, and often emphasize locally available foodstuffs. The sort of labor employed in hotels, restaurants, guide services, and transport is often (again, not invariably) of average or lower skill level, and hence can be obtained locally. This factor will lead to a relatively high propensity to consume locally, and hence to a fairly high multiplier. Moreover, income from forest-based enterprises tends to go to owners who live on-site (though they may be expatriates--see below) and to low-income workers who spend a high proportion of their earnings on locally-made food and shelter. These factors would tend to inflate the local proportion of second and third round purchases by income recipients and thus raise the multiplier.

Calculation of forest-tourism multipliers for their own sake is probably not a high-priority research objective. Numerous estimates of general tourism multipliers exist from around the world (see Mathieson and Wall, 1982) which demonstrates that tourism can have significant positive economic impacts. Moreover, the absolute size of the multiplier depends critically on the size of the impact area which is defined, and one can inflate or reduce the multiplier simply by defining a large or small impact area. Far more useful would be studies that compare multipliers for forest tourism and for other activities within the same impact area. For example, how does the multiplier for a large hotel in Guatemala City or in Ecuador's beach resorts compare with the multiplier for a small lodge at Tikal or along the Rio Napo? Which enterprise has a higher propensity of import, both from out of its immediate region and from outside the country? Which creates more jobs per dollar of tourist expenditure? How does a dollar of export sales of Dominica's banana industry compare with a dollar's export revenue from nature-oriented tourism in terms of local sales and employment multipliers. These comparisons of paired establishments or paired sectors would offer information much more useful to public policy than would traditional calculation of tourism multipliers.

Tourism and Small-and-Micro-Enterprises

Of the many establishments encountered in the four case study countries, nearly all could be described as locally-owned, small or

micro enterprises. By far the largest enterprise directly engaged in forest-based nature tourism was Ecuador's Metropolitan Touring, which employs a total of 240 persons. However, Metropolitan is heavily involved with tourism in the Galapagos and in the Ecuadorean highlands, so that employees directly attributable to its operations in the Oriente are the 40 employees of the Flotel and a few guides and administrators in the Quito office. The next largest enterprise encountered in the case studies was a travel agency and hotel operator in Guatemala's Peten, which employs a total of 60 persons.

More typically, enterprises engaged in forest-based nature tourism are tour operators averaging 1-8 employees, hotels averaging 5-20 and miscellaneous small service enterprises ranging from a single person (e.g. boat operators on the Rio Napo, makers of handicrafts) to half a dozen. Naturally, some of the nature tourist's expenditure is captured by large businesses, for example the international airline that brings him or her to the country or the luxury hotel in the capital where the tourist may spend the first and last night of a stay.

Virtually all of the establishments noted in the case studies, whether large or small, were owned by full-time residents of the country where they are located.¹⁴ There was also no evidence that capital borrowed from foreign sources was involved. Nevertheless, a notable amount of entrepreneurial activity in nature tourism in Dominica, Ecuador and Costa Rica appeared due to the activities of "expatriates," that is persons who, although full-time residents, had initially come from another country. In a few cases, these were people who had emigrated specifically to open a business--for example, the German operators of Sunshine Village Hotel in Dominica. In others, they were long-time residents of the country, for example the American Quakers at Monteverde or the proprietors of Centro Turistico Alinhui in Ecuador, a foreigner who had lived in Ecuador for 14 years. In other cases, the expatriates' tourism business evolved from some other activity, for example Papillote Wilderness Retreat on Dominica (originally a roadside restaurant and nightclub) or Layou Valley Hotel (originally planned as the owners' retirement farm.)

Almost all the entrepreneurial activity in the hotel sector represented effort by persons who were not initially residents of the region where the hotel was built (exceptions are the Monteverde Quakers and the initial builder of the Hotel Anaconda in Ecuador). This is probably due to the fact that substantial capital is needed to construct even a modest hotel. However, the same is true of most entrepreneurs in the non-hotel sector. For example, the operator of raft trips to Guatemala's Peten is a resident of Guatemala City; the tour and taxi operators on Dominica live in the capital, Roseau; many,

¹⁴ The sole exceptions were the Hotel Montana at Monteverde, half-owned by a French businessman, and Springfield Plantation, built as a private vacation residence by a wealthy American and many years ago converted to a hotel.

though not all, of the tour guides operating in Ecuador's Oriente live in Quito.

The non-entrepreneurial jobs created by jungle tourism are occupied in part by locals, in part by people who have come from outside the jungle region. In many cases people are brought from outside the region because they have special skills not obtainable locally. For example, Hotel La Selva, wishing to offer fine French cuisine in a remote region of Ecuador, had to bring in a chef and sous chef from Quito. On the other hand, most of the cleaners, waiters and maintenance personnel in jungle lodges are local hires.

A frequent criticism of tourism as a tool of economic development is that it creates mainly menial, low paid jobs. This is true of jungle tourism, although the small size of establishments means that there is a relatively high proportion of entrepreneurial activity relative to total employment. One might argue, however, that the menial jobs are precisely those most suited to the local labor force. Moreover some of those menial jobs represent a step up relative to existing local employment, for example, when a subsistence farmer becomes a canoe driver or a banana picker learns to drive a taxi.

In addition to providing opportunities for entrepreneurs, nature-oriented tourism does offer some possibilities for professional employment. One type of employment is for tour guides with a high level of knowledge of wildlife and forest ecology. In Ecuador, for example, there are at least a half-dozen university-trained biologists who are available to lead trips to the Oriente. They can earn as much as US \$50 per day, an extremely high wage relative to the national economy. Because the work is part-time and relatively highly paid, it can be an ideal occupation for college and secondary school teachers or for graduate students in the natural sciences. Such employment is particularly desirable at present because of the extremely low salaries paid to teachers in Latin America. Another opportunity for professional employment is for architects. During the course of the research, I spoke with architects in Dominica and in Guatemala who were interested in designing hotels for nature tourists. Given the need to build hotels that use local materials and that relate well to the surrounding landscape, the construction of nature-oriented hotels offers an interesting challenge to an architect and the possibility of a profitable specialization.

Nature oriented tourism may also create employment and entrepreneurial opportunities in secondary industries. One area is in making equipment used by tourists. In Guatemala, where nature tourism is in its infancy, one environmentalist complains that "there is not a single place in [the country] where you can buy a backpack." In Ecuador, however, where nature tourism is more developed [including visitation to the Galapagos and Andean climbing as well as visiting the Oriente] there is a local firm that manufactures tents.

A seemingly logical secondary industry is handicrafts made from jungle materials. A demand by tourists for handicrafts clearly exists. A survey by Guatemala's Institute of Tourism found that the average tourist arriving in Guatemala by air bought US \$82 in handicrafts. (Rose, 1988) Unfortunately, the opportunities in handicrafts depend on the interest and skill of local people who might make them. None of the four case study sites investigated here could be described as rich in native handicrafts. However, there may be opportunities to create new locally made crafts. The proprietor of Papillote Wilderness Retreat on Dominica has had some success in encouraging local people to make artifacts for sale in the hotel, while the making of hand-painted postcards for sale to tourists has provided part-time employment for high school students at Monteverde. It should be noted that even though local handicrafts do not represent a major revenue source at any of the sites studied, tourists drawn to a country by natural amenities may purchase handicrafts at other than their final destination. Thus tourists visiting the Ecuadorean Oriente may purchase handicrafts in Quito, supporting Indian artisans in the highlands, rather than the Amazon region.

Among the more important economic impacts of nature tourism is the impact on government revenues. Governments have found the tourist sector relatively easy to tax. Guatemala, for example, has a 10 percent tax on hotel bills (used to fund the national tourism institute), a tax on departures from the country by ground or air, and a small charge for issuing tourist cards (Rose, 1988). It is estimated that the average foreign tourist in Ecuador generates US \$175 in government revenues (United Nations Development Programme, 1987). These tax revenues not only represent valuable foreign exchange for the country, but also will generate jobs when they are respent in the local economy.

Recommendations for Private Enterprise and Public Policy

Joint Promotion of Tropical Forest Tourism

Although the small size of nature tourism enterprises may be an advantage in some ways for national and regional economic development, it is a major problem for promotion and marketing. How does a small hotel owner in Ecuador reach U.S. or European tourists who may have an interest, say, in birdwatching, but who do not know about Ecuador's profusion of birdlife nor about the existence of that particular enterprise? One solution is to deal with foreign travel agencies specializing in nature travel, but they may prefer to package their own trips, taking most of the profits. Another tactic is to invite travel writers for free inspection visits. Even if successful, this results in only an article or two, and no guarantee of lasting impact on the target audience. Advertising in foreign magazines (e.g. Audubon,

Natural History) would reach the consumer directly, but is very expensive for a small enterprise.

The marketing problem is particularly acute when the activity being marketed and/or the location are relatively unfamiliar to the potential tourist. For example, tourists easily identify the Caribbean with beaches and snorkeling, but not with hiking or nature study. They may know of the richness of wildlife on Ecuador's Galapagos, but do not realize that Ecuador has a large Amazonian wilderness as well. A whitewater rafting tour operator in Guatemala put the dilemma quite clearly: "We are the only company doing this kind of adventure touring in Guatemala. That is good because we have no competition, but bad because we have difficulty promoting what we do."

A possible model for dealing with this marketing problem is the newly formed Fundacion Ecuatoriana de Promocion Turistica (FEPROTUR). Started in 1987 with contributions from the government's Banco Central and international airline companies, FEPROTUR is a non-profit entity dedicated to tourism planning and promotion. It is governed by a board of public and private representatives, including the heads of the travel agency association, the hotel association and the national airline, as well as government representatives from the Tourism Agency and the Ministry of Foreign Relations. Thus far, FEPROTUR has concentrated on promoting Ecuadorean tourism in general, through slick brochures and a Miami-based advertising campaign. Some of its materials feature the Oriente region, and there is one pamphlet specifically devoted to bird watching. The current executive director of FEPROTUR is very interested in nature tourism, and there is some possibility that this area may receive more attention in the future.

In addition to general promotion of a country's natural attractions, there is a need for promotion of individual small enterprises. One possibility is through joint advertising. Although the cost of a single page in a foreign magazine is beyond the reach of a small hotel or tour agency, it might be attainable if a dozen or more were to pool their resources. Interestingly, such a joint campaign might be particularly effective if enterprises from several countries were to join together. Although nominally in competition for nature tourists, countries are actually selling complementary products. If a birder visits Ecuador, it is likely that the experience will raise, rather than reduce, his or her interest in a later birding trip to Costa Rica or Guatemala. Joint advertising would allow tourists to send away for brochures from a variety of destinations (sent from a common mail drop in the U.S. or Europe) and would allow lesser known nature tourism destinations, such as Dominica, to benefit from the publicity already received by others, such as Costa Rica or Brazil.

Government as Promotor; Government as Obstacle

Government actions, mainly at the national level, can do a great deal to promote nature-oriented tourism. They can also create significant obstacles, particularly for small and micro-enterprises.

On the positive side, government tourist boards can promote international tourism and can include natural attractions in their promotional materials. By building roads, airports and other infrastructure, governments can increase the accessibility of otherwise remote potential tourism destinations. They can grant financial concessions to tourism enterprises, including exemptions from import duties, tax holidays, and access to government controlled land for building sites. Perhaps most important, governments can protect (or in some cases even create) resources for nature-oriented tourism by establishing parks and reserves and by regulating activities that would damage natural areas.

On the negative side, governments can penalize tourism by denying it financial concessions available to other export industries or by denying such concessions to small firms. Governments may actively damage natural resources by their own actions (e.g. allowing a government-owned petroleum industry to pollute wetlands) or by encouraging agricultural settlement or timber cutting within tourism destination areas.

Evidence from the four case study countries reveals a mixed pattern of government promotion of tourism and government hindrance. In general, government simply pays less attention to tourism than its economic importance warrants. And within the tourism sector, small enterprises tend to get few favors from government.

Owners of several tourism enterprises on Dominica believed that the government Tourist Board could be doing more to promote international visitation. For example, they cited the difficulty in obtaining adequate supplies of posters and pamphlets from the Board. There is also some indication that small enterprises are at a relative disadvantage. The operator of one small tourism business complained vehemently that he had to pay full import tax on vehicles, while large hotels and LIAT (the major airline) could bring in vehicles tax-exempt. Tying import duty exemptions to enterprise size may have some impact on investment behavior. One Dominican hotel is expanding from 6 to 10 rooms, in part because the latter size will qualify it for duty-free import of equipment.

Government policies toward agriculture and forestry on Dominica have probably not injured tourism thus far, but threaten to do so in the future. In the agricultural sector, the government has acceded in the clearing of large forest areas for banana cultivation. Banana production requires frequent and heavy pesticide application, raising the potential for serious water pollution. Clearing has steadily climbed onto slopes. As of yet the most important forest areas have been spared and the esthetic and erosion problems seem only temporary,

since banana is a perennial tree crop. But at some point, expansion of cultivation may threaten parrot habitats and change runoff patterns of major rivers. The government's promotion of forestry on Dominica has increased in the last two decades and there is evidence that the Gommier, the island's most valuable timber species, is not regenerating well (New Forester, 1988).

Government threatens resources in more direct ways as well. The Dominica Electricity Board has put up transmission poles in the middle of a bus parking lot at the base of the trail to Trafalgar Falls. This makes it difficult for tourist buses to park there. The Electricity Board is also threatening the falls themselves, because of a planned expansion of a hydroelectric project that would lower by several feet the water level of a major scenic lake above the falls.

Most operators of nature tourism enterprises on Dominica seem proud of the country's national parks and forest reserves, but many pointed out the lack of facilities for visitors. At Trafalgar Falls, for example, it was pointed out that while the Forests and Parks Department maintains the trail to the falls, it does not pick up the trash that accumulates along it. Also mentioned was the lack of long-distance trails and camping sites.

In Ecuador, enterprise operators indicated that government had little role in the success or failure of their enterprises. Two hotel owners complained that employees of DITURIS, the government tourism agency, had sought bribes for needed licenses. One paid and received the permission promptly; the other resisted and faced long delays. An operator building a new hotel complained that some needed items, such as kitchen equipment and generators, could not be imported if it is manufactured in Ecuador. Another hotelier complained that military authorities in Misahualli have ordered guides not to take tourists to some sites, including Limoncocha, because they are considered of strategic significance.¹⁵

Costa Rica's government has done a great deal to promote nature-oriented tourism by creating an extensive system of national parks. Although the government does relatively little to promote park tourism, and many of the park facilities are not elaborate, their inherent high quality and the close involvement of U.S. scientists and environmental groups has resulted in considerable international publicity, particularly through magazine articles and television nature programs. The visitors drawn in by the national parks help swell visitation to Monteverde. Another important contribution to tourism of Costa Rica's government is the fact that it has fostered a peaceful social environment in its rural areas and relatively high levels of public

¹⁵ The Oriente is considered strategic by Ecuador partly because of the oil deposits, partly because of border disputes with Peru.

health, so that visitors need not fear political violence nor preventable diseases such as malaria.

In Guatemala, the government's brutality in suppressing rural peasant movements played a major role in the drying up of international tourism in the early 1980s. The return of relative peace to the country has helped tourism revive and future government actions will determine whether tourism continues to grow. The Peten, which is the premiere area for nature tourism expansion, is virtually controlled by the Army through the powerful regional agency FYDEP.

Toward a Mixture of Private Enterprises

In the countries studied, it appeared that there are not only opportunities for new private for-profit enterprises, but also market niches that might be effectively filled by private, non-profit entities. Monteverde in Costa Rica, the Quetzal Biotope in Guatemala, and Pasochoa¹⁶ and Jatun Sacha in Ecuador all represent protected areas run by locally-chartered non-profits. In each case, there is a reasonable prospect that they could become self-supporting from entrance fees, although donations or foundation grants are probably necessary to fund major expansions of land area or capital facilities.

In addition to managing their own reserves, there are at least two additional roles for non-profit organizations. One is to operate facilities or to provide services within publicly owned parks. This sort of arrangement has a long history in recreational areas in the United States, where services are provided by both profitmaking concessionaires (TW Services in Yellowstone National Park) and non-profit organizations (the camps and lodges run by the Appalachian Mountain Club on the White Mountain National Forest). This type of arrangement may be particularly suitable in developing countries, where governments do not have the resources to provide facilities or interpretation in national parks or reserves. "We need to present to the government," says one Ecuadorian environmentalist, "a program where small areas in the national parks can be managed by the private sector. The government is not at the moment capable of administering these activities. At the moment, you have to be really brave to enter these [national parks] because of the lack of services."

Although she was referring to the private sector as a whole, it seems likely that non-profits--where they are available--would be more likely to provide services in a manner sensitive to resource protection and with an emphasis on environmental education. A possible model for this sort of activity is the Monarch butterfly reserve in central Mexico, which was established by the Mexican government, but is

¹⁶ Pasochoa is a popular nature reserve not far from Quito which is operated by Fundacion Natura, an Ecuadorean environmental organization. A modest admission is charged.

operated with the help of Monarca, A.C., a Mexican non-profit which trains local guides and runs a reception center and gift shop.

Another opportunity for non-profits is in tour operation. At present, many commercial tours to tropical forests are operated under the auspices of non-profits from developed countries--for example, Nature Conservancy, World Wildlife Fund and Sierra Club. It may be feasible for environmental groups in developing countries to organize their own tours, perhaps working with local travel agencies. As in the case of the U.S. groups, fees for tours could include a tax deductible contribution for the benefit of the environmental group.

An intriguing combination of profit-making and non-profit activity is the Jamaica Alternative Tourism, Camping, and Hiking Association (JATCHA). Formed in 1982, JATCHA is an association of small-scale tourism enterprises emphasizing nature, outdoor adventure, and cultural appreciation. The organization was founded under the sponsorship of the Jamaican Tourist Board (although there have been complaints that the Board is not wildly enthusiastic about non-traditional tourism) and has received financial help from the Canadian International Development Agency. JATCHA claims that Jamaica has over 4000 beds in cottages, cabins and other "alternative tourism" accommodations, and 1100 tent sites. (JATCHA, 1988)

JATCHA's president, Peter Bentley, operates SENSE Adventures, a tour operation that offers a wide range of hiking and camping excursions, river canoeing, snorkeling, birdwatching and natural history tours. Visitors seeking to arrange customized trips can employ hiking guides at US \$20 per day and "expert" guides (e.g. ornithologists) at US \$25 to \$100. Bentley also operates Maya Lodge, a rustic hotel at the base of the Blue Mountains, which offers inexpensive accommodations and campsites. The Lodge also serves as headquarters for JATCHA. Part of the Canadian government grant has been used to improve the surrounding area for hiking by clearing trails, training guides and posting signs.

Another JATCHA officer is developing "Crystal Spring Valley," which will feature a restaurant, campsites and cabins in a landscaped tropical setting with an orchid garden and bird sanctuary.

Although JATCHA's interests extend well beyond forest tourism, it offers a model of inter-enterprise cooperation in promotion and booking. Some 60 inquiries per week are received from potential visitors, and JATCHA receives a commission when reservations are made for members (Sunday Gleaner, 1987). JATCHA also offers a way in which monies from national or international agencies or from private aid groups can be channeled to improve visitor facilities that benefit several enterprises and that would not be profitable for a single private enterprise to construct.

Sharing Experience Internationally

The worldwide rise of tourism, increased consumer interest in natural history and in outdoor activities, and the desire of many governments and environmental organizations to promote nature protection have greatly heightened interest in tropical forest tourism in a number of areas where it is not now well developed. A recent report on tourism opportunities by the American Chamber of Commerce and Industry of Panama (1986) lists birdwatchers and orchid growers as among the specialized groups of tourists that might be attracted to that country in larger numbers in the future. Also in Panama, the Kuna Indian Nation has built a lodging facility in a major new tropical forest park, in hopes of attracting nature tourists and scientists. In Madagascar, conservation biologists hope that nature-oriented tourists can be attracted by the opportunity to view 11 species of lemurs in the newly established Ranamofana National Park. Interest in promoting botanical and horticultural tourism is growing in Amazonian regions of Brazil and Peru.

It would be very useful for governments and enterprises to be able to share information about the economic possibilities--and the problems--of natural history tourism. There is a need to do this both within countries and among them. One possibility would be an international conference on natural history, perhaps organized on a regional basis (e.g. Mexico, Central America, northern South America and the Caribbean.) Such a conference could be co-sponsored by international aid and lending agencies, national tourism boards, airlines and other large enterprises, and national and international environmental groups.

Ultimately it may be desirable to organize an international association of nature-oriented tourism enterprises. This could have several functions: organization of periodic conferences and workshops, joint promotion (e.g. advertisements for jungle lodges or birdwatching sites in several nations), and interaction with environmentalists and scientists. Such an association might, for example, seek certification or endorsement by international environmental groups for enterprises that meet standards of environmental soundness and contribution to natural area protection. It might also promote visiting scientist programs, which would allow scientists to use the facilities at tourism destinations in exchange for providing guidance to tourists or leaving behind species lists or other written interpretive materials.¹⁷ Generally, an international nature-oriented tourism group could encourage the publication of regional birding guides, tourist guidebooks, and other materials that would be useful to tourists and increase their numbers.

¹⁷ One jungle hotel in Ecuador has sought such an arrangement but, without contacts in the scientific community, has been unable to find a taker.

When Should Tourism Expansion Stop?

The standard decision rule used in welfare economics is that an economic activity should be expanded as long as the marginal social benefits exceed the marginal social costs. In the case of tropical forest tourism, the social benefits would include the private economic gains captured by entrepreneurs and workers, the secondary economic gains (such as government tax revenues and multiplier effects), the stimulus to development through induced investment (backward and forward linkages), and the environmental benefits achieved if tourism supports conservation activities. Social costs include private economic costs, pecuniary externalities, governmental costs and any negative environmental or social changes that result from increased tourism.

Economic analysis indicates that activities such as tourism tend to expand beyond their socially optimal level because the individual entrepreneurs making decisions weigh only private costs and benefits, without considering externalities and other social costs. Although there is no way to quantify these, it appears probable that governmental costs, environmental externalities and negative social changes increase steadily as tourism increases. These social costs may for a time be offset by such social benefits as secondary economic gains and induced investment. But it seems likely that there is a point at which social costs are increasing faster than social benefits. Entrepreneurs, considering only private gains and costs, will have a tendency to expand the industry beyond the social optimum. In simple language, tourism development, spurred on by the profit seeking of individual entrepreneurs, has a strong tendency to overexpand.

Butler (1980) offers the interesting theory that there are a series of "stages" of tourism development: exploration, involvement, development, consolidation, stagnation and either decline or rejuvenation. The exploration stage finds small numbers of mainly non-local tourists making individual travel arrangements and following irregular patterns of visitation. No specific facilities are provided for the visitors. In the involvement phase, numbers of visitors increase and some local residents begin to provide facilities primarily or even exclusively for the visitors. In the development stage, tourism to an area begins to be heavily advertised, man-made attractions increase, and local facilities begin to be replaced by larger and more elaborate facilities provided by out-of-region organizations. At this point the number of tourists at peak seasons can exceed the number of permanent local residents. In the consolidation phase, major franchises and chains will be represented, but few additions to capacity will be made. Finally, the area will reach a stage of stagnation where visitation peaks, followed by decline or rejuvenation. The rejuvenation phase is often based on a complete change in the nature of the area's tourism, for example, Atlantic City's shift from beach tourism to gambling.

Butler likens the tourism cycle to the product cycle concept long used in marketing, and observes that "rates of growth and change may vary widely, but the final results will be the same in almost all cases." (Butler, p. 6). His concept offers a rather pessimistic view of tourism, because negative social impacts seem to increase as tourism moves through the various phases. The positive impacts tend to be greatest in the early stages, the negative impacts in the latter stages. He concludes that "tourist attractions are not infinite and timeless, but should be viewed and treated as finite and possibly non-renewable resources." (Butler, p. 11)

Jungle tourism, in the four areas covered by the present study, is currently in either the exploration stage or the involvement stage. Enterprises tend to be small, locally owned, and not heavily advertised. In each area there seems to be room for expansion, both of existing facilities and expansion into new market niches. Although there are obvious social and environmental pitfalls, even at this stage of development, it appears that if sufficient care is taken, capacity could be expanded so that social benefits would exceed social costs. Monteverde may be the exception, although even there the problems created by additional visitation might be offset by the benefit of having more funds to channel into new land protection schemes. (A more attractive alternative might be charging more to current visitors).

Given the sensitivity of the resources involved in tropical forest tourism and the limited adaptability of the social systems in the rural areas where they are located, tourism should move only gingerly, if at all, into the development and consolidation stages.

All the case study sites raise the question: By what mechanism will tourism development be stopped when its socially optimal level has been achieved? If private enterprises have a built-in capacity to overdevelop, what is to be the limiting device? The answer will probably involve some form of government control of the amount of tourism development, either directly or by the difficult process of regulating its diverse and diffuse negative impacts. Even as government and private enterprise move to promote tropical forest tourism, thought must be given to how development will be moderated or stopped once the socially optimal level has been reached.

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