An Economic and Social Analysis of

Tourism in the Galapagos Islands

Prepared by

Bruce Epler
Coastal Resources Center
University of Rhode Island

Funded by

Tinker Foundation Incorporated

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PLEASE NOTE:
The Coastal Resources Center at the University of Rhode Island has changed its phone number to (401) 874-6224 as of January 15, 1996.

The four major goals of the International Coastal Resources management Project (CRMP) are to: 1) apply, as appropriate, existing experience in coastal resources management to low-income countries; 2) assist these low-income nations in the design and implementation of integrated coastal resources management programs; 3) advance the state of the art of coastal resources management; and 4) build the University of Rhode Island's capability to assist nations with coastal resources management.

The CRMP works with the cooperating countries to:

- formulate and implement integrated coastal resource management strategies
- develop procedures for the assessment of the impacts of coastal development proposals
- develop institutional and technical solutions for resource-use conflicts
- support research to better understand the issues that affect the condition and use of coastal ecosystems
- improve the capabilities of in-country professional staff to plan for and manage coastal development

The International Coastal Resources Management Project is funded by the Office of Research and Development, Environment and Natural Resources, U.S. Agency for International Development through a cooperative agreement with the University of Rhode Island. Additional funds for this project were provided by the Tinker Foundation, Inc.

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PREFACE

In 1986, the University of Rhode Island's Coastal Resources Center began a 10-year collaboration with the Government of Ecuador to design and launch a national coastal management program. The principal objective was reached early in 1989, when the then newly-elected President, Rodrigo Borja, signed Executive Decree 375 that created the Programa de Manejo de Recursos Costeros, which is administered by the Office of the President. The decree set in motion a novel set of initiatives in the formulation and implementation of new natural resource management efforts along Ecuador's mainland coast. The program is based on the principle that effective implementation of new resource management initiatives can occur only if sufficient constituencies that actively support such initiatives exist both at the community level and within central government. The program, therefore, has been designed around a "two-track approach" that has focused initially upon creating a highly participatory process of issue analysis, policy formulation, and planning in five Zonas Especiales de Manejo (ZEMs) selected as microcosms of the major resource management issues affecting the entire coastline. In 1992, detailed ZEM plans were formally adopted at the community level for five of the sites identified in the Executive Decree. These plans were subsequently approved by the National Interministerial Commission and formally incorporated within the National Development Plan. In 1991, the Government of Ecuador identified the full implementation of the Coastal Management Program and the ZEM plans as a national priority to the Inter-American Development Bank. The process of designing a five-year loan program is now nearing completion and will, if approved, provide the funding required for the initial implementation phase of the program. The initial planning and policy development phase has been funded primarily by the U.S. Agency for International Development (USAID) through its Cooperative Agreement with the University of Rhode Island.

Executive Decree 375 includes, as the sixth ZEM, Galapagos province. Although the USAID-sponsored project had focused on the mainland coast, the Borja administration felt that the community-based approach to addressing and resolving complex resource management issues was urgently needed in the Galapagos. The Tinker Foundation generously sponsored an initial phase of issue definition and priority establishment. The same process of involving stakeholders and governmental agencies at the local level that had proved so successful along the mainland was used in the Galapagos.

The situation in the Galapagos is very different from the one that exists along the mainland. The Galapagos is universally recognized as one of the most remarkable and precious ecosystems on the planet. Ecuadorian law, the islands' residents, and the world community of conservationists recognize that the unique features of the province dictate that protection and preservation of the natural environment is the primary management objective. Ninety-seven percent of the land mass of the province lies within the boundaries of a national park, and an area of ocean extending out 15 miles from a baseline connecting the outermost features of the archipelago is designated as a marine reserve. It has become clear, however, that the long-term condition of the National Park and the Marine Reserve will be determined largely by the activities and political processes that occur in the three percent of the land area outside the boundaries of the park.

During the 1980s, constraints to development that had maintained non-park areas of the Galapagos as a number of isolated, sparsely inhabited, and economically depressed rural communities were removed. The isolation of the islands has been diminished by the construction of airports and the increase in flights between the mainland and the islands. The province now contains airports on both Baltra and San Cristobal that are capable of

accommodating large jets. A smaller "commuter" airport on Isabela is nearing completion. A building program has been undertaken which has vastly improved access along major arteries on San Cristobal and Santa Cruz. Other forms of infrastructure, including direct telephone links to the mainland, television, and improved transportation among the islands, are now being put in place. Public services, including schools, medical facilities, and a variety of training programs, as well as food, energy, and agriculture subsidies, are all being provided. The result is that the Galapagos is becoming a more attractive place to live than other rural provinces in Ecuador. Furthermore, migrants realize that there is a major opportunity for economic growth based upon the rapidly increasing number of tourists. Not surprisingly, the resident population increased at 7 percent annually during the 1980s, and the number of visits by tourists increased at a greater rate. Many of the actions taken have the promise of improving the quality of life for the resident population and of increasing the flow of foreign revenues that Ecuador's struggling economy so urgently needs. This is praiseworthy and positive. However, since these advances have not been balanced by a set of controlling mechanisms, they now threaten to attract a flood of immigrants that could overwhelm the ecosystem's ability to provide a good and sustainable quality of life for Galapagos residents that also is in harmony with the unique natural attributes of the islands.

Beginning in 1990, a series of workshops and discussions with agencies of municipal and central government, and non-governmental organizations produced a remarkable consensus on the nature of the most pressing resource management issues affecting the province and the steps that should be taken to initiate and sustain a meaningful governance process in the islands. An immediate priority, strongly supported by all participants in the process, was the need for an assessment of the Galapagos economy. Although there are thousands of studies and public documents on various aspects of the natural history of the province, there are only a handful that address the social and economic factors that determine the use and development of this important ecosystem. This report is a first step towards filling that void, as it documents the forces that are shaping the economy of the Galapagos. It reveals, all too clearly, that the current structure of economic incentives provides inadequate returns for measures badly needed to sustain the qualities of the park and the Marine Reserve, or to provide benefits to island residents.

The urgent need for an improved management framework in the Galapagos was dramatically underscored while this project was underway by a proposal to build a self-contained, five-star hotel on San Cristobal. The resulting fervor was reported widely in the international press and was settled only when President Borja interceded and declared the proposal inappropriate. This incident once again emphasized the need to put in place the policies and the decision-making procedures by which such proposals can be subjected to a formal and open review and assessment process based on predetermined decision-making criteria. The incident led to the creation of a Presidential Commission on tourism in the Galapagos and the formulation of a plan that was released late in 1991. This plan and a revised set of policies can provide the process whereby an effective governance system for Galapagos province, incorporating the views of the islands' residents, can be made a reality. The ZEM planning and community governance process was suspended in 1992, but it is hoped that it will be resumed through the planning and policy process now being designed for implementation through the Global Environmental Facility of the World Bank and United Nations Development Program (UNDP).

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I. INTRODUCTION

Since man first visited the remote Galapagos archipelago (Figure 1), there have been glowing accounts of its unusual landscape and fascinating ecosystems. Darwin's epic visit in 1835 and publication of *The Origin of Species* in 1859 focused world attention on the unique assemblage of flora and fauna in the islands. All of the reptiles, 50 percent of the resident birds, 32 percent of the plants, and 24 percent of the coastal fishes are endemic to the archipelago (Villa and Ponce, 1986).

Recognition of the unique value of these insular terrestrial ecosystems culminated in laws to protect them in 1934, 1936 and 1959. The Charles Darwin Foundation, an international organization dedicated to conserving the rich ecosystems of the islands and promoting scientific research, was founded in 1959, the centenary year of Darwin's publication of *The Origin of Species*. The Galapagos National Park Service became a functional entity in 1968. Currently, 97 percent of the land mass, approximately 7,500 square kilometers, has been declared a national park and 3 percent is reserved for human settlements and military bases. The global importance of the archipelago and concern for its protection is highlighted by the fact that the Galapagos was one of the first areas declared both a "World Heritage Site" and a "Natural Patrimony of Mankind" by the United Nations. Realization that underwater life and habitats rival their terrestrial cousins in biological diversity and "offer opportunities equal to those of terrestrial areas to observe and understand the structure and function of insular ecosystems and to learn about the processes of evolution" (Wellington, 1975), prompted the government to extend protection to the seas surrounding the archipelago by designating the area a Marine Resources Reserve in 1986.

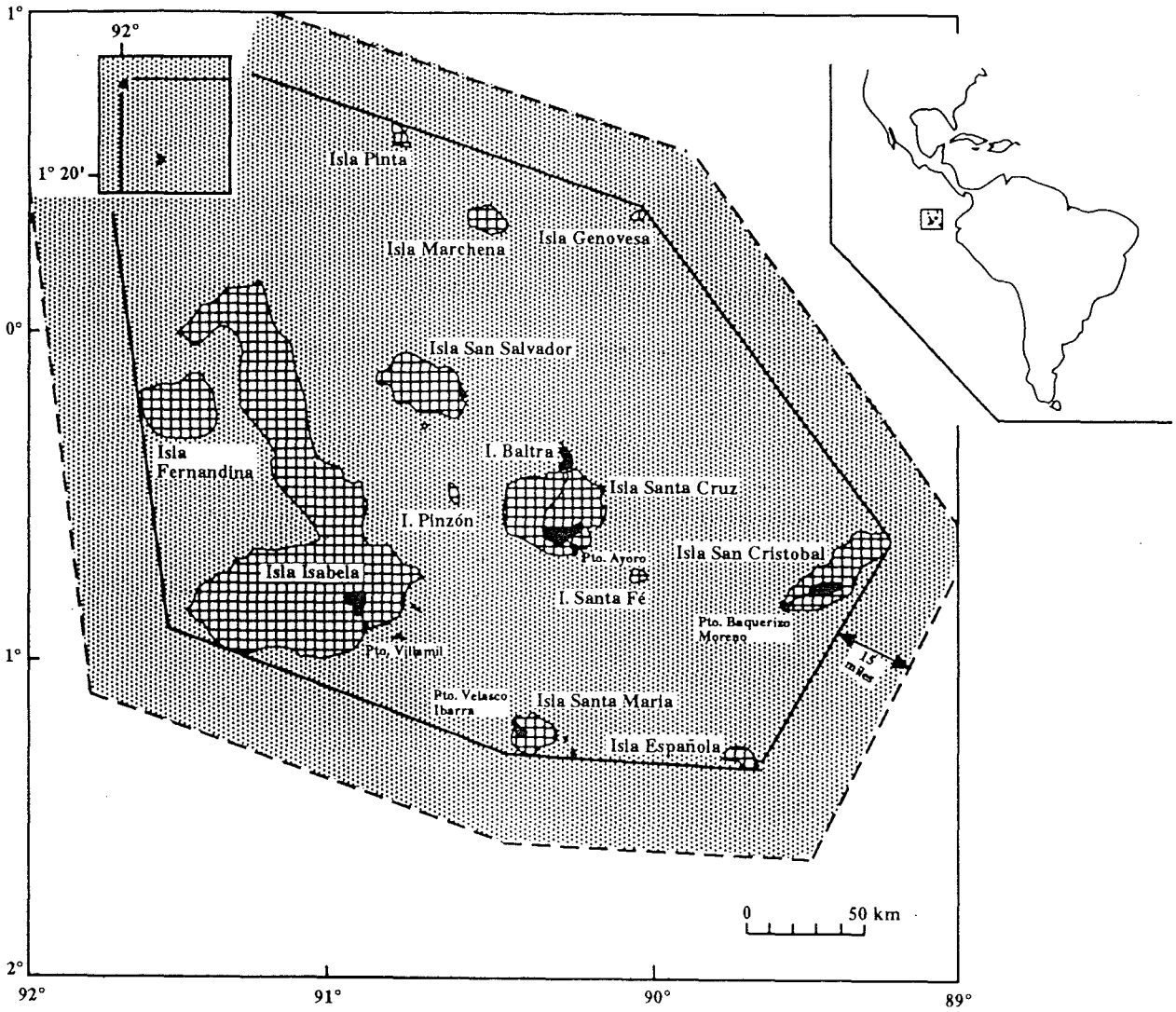
Despite a series of Master Plans intended to balance economic development and conservation, human presence and activities have increased at an alarming rate. The isolation of the Galapagos has been broken. There are now two airports that receive jets daily, a third is under construction, and television and, more recently, telephones link the islands and their residents to the rest of the world. Ecuadorians, who for over 130 years associated living in the Galapagos with being banished to one of the cruel penal colonies, now perceive the islands as the land of economic opportunity. The resident population jumped from 6,200 in 1982 to 9,800 in 1990, and is growing at the unprecedented rate of 6.3 percent per annum. If this rate of increase is sustained, the population will double every 11 years. Recommended quotas on the number of tourists that should be allowed to visit the islands each year, 12,000 in 1973 and 25,000 in 1981, have been repeatedly surpassed. Tourism has increased tenfold over the last twenty years to 42,000 visitors per year (Figure 2), and is the driving force which, directly and indirectly, dictates the pace and types of changes that are occurring in the islands.

The objective of this study is to provide an economic characterization of tourism in the Galapagos by tracing the industry's development, and identifying the economic and social implications of tourism. To do so, the analysis focuses on identifying characteristics of the participants that comprise the industry, and the magnitude and distribution of economic benefits. The information presented should provide useful insights for the new, high-level commission charged with overseeing tourism on the islands and will serve to fuel the process of public dialogue on issues.

The analysis reveals that:

- tourists and tour operations can be divided into classes or categories, each of which produces a unique flow of economic, social, and environmental impacts.

Figure 1. The Galapagos Islands



Colonized area or airport

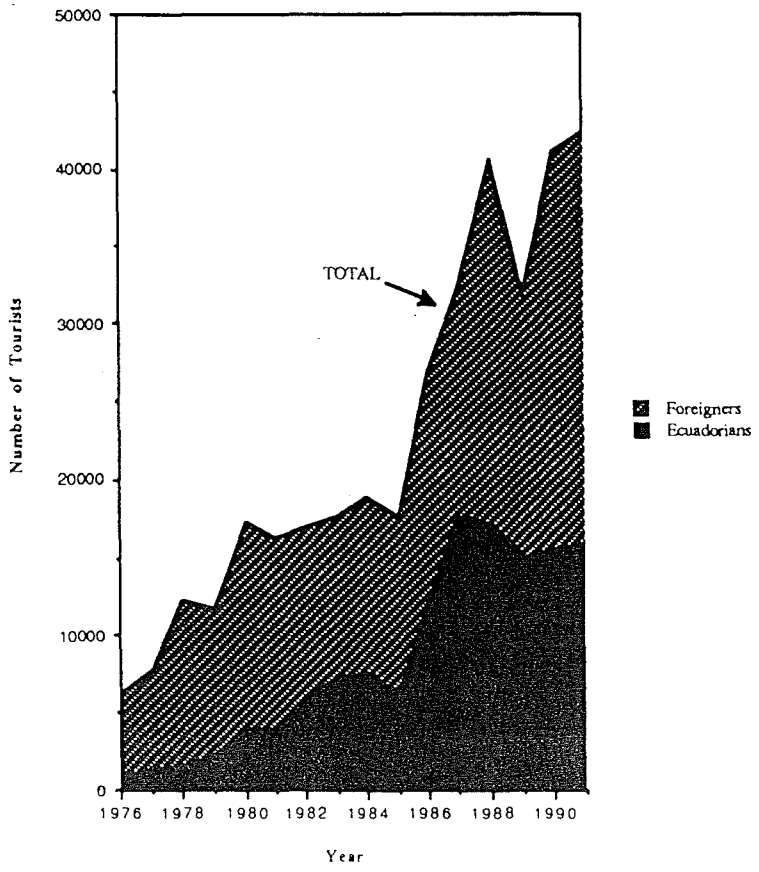
Galapagos National Park

Galapagos Marine Resources Reserve

Source: Modified from Broadus, et al., 1984

- economic incentive, not conservation, is the key variable that motivates human events in the Park, Marine Reserve, and non-park areas,
- tourism in the Galapagos has produced significant economic impacts in continental Ecuador,
- issues related to the protection of the Galapagos environment and tourism cannot be resolved unless economic, political, and social criteria are incorporated into the decision-making process,
- the government, as steward of the islands, is undervaluing the resource, and is providing economic incentives and subsidies that promote expansion of tourism and population growth, undermine efforts by regulatory bodies to exert control over the industry, and fail to promote a socially equitable distribution of the tourist dollar,
- there are ample opportunities to increase visitor satisfaction and tourist revenues by improving the social setting within which tourism occurs in the islands, and
- fiscal policy can be utilized to generate funds required to improve environmental management and the social setting (See Addendum).

Figure 2. Number of Tourists Visiting the Galapagos National Park: 1976-1991.



Source: Galapagos National Park Service, 1991

II. Evolution of the Tourism Industry

Organized tourism in the Galapagos began in the late 1960s when two Ecuadorian companies, Metropolitan Touring and Turismundial, joined forces with Lindblad Tours of New York.

The *Golden Cachalote*, a 12-passenger sailing vessel, began carrying tourists through the islands in 1969. Metropolitan Touring introduced the 60-passenger luxury vessel *Lina A* the following year. Initially, the vast majority of tourists were foreigners on three-, four- or seven-day cruises. Two flights per week shuttled tourists between mainland Ecuador and the airport on Baltra Island. Tourists, for all practical purposes, were housed on vessels. Other than a one-morning-per-week visit to the Charles Darwin Station, usually followed by a brief stroll through Puerto Ayora, tourists had only minimal impact on the local economy. During the early 1970s, the islands had the two vessels owned by Metropolitan, about five small vessels that sporadically catered to tourists, one first-class hotel, three small residencias, and a few restaurants with limited menus. Subsistence agriculture, fishing, and working for the Darwin Station or Park Services were the principal means of employment.

Growth through the early 1970s was modest. There were minimal changes in the number of hotels and tourist vessels, and in the economy, population, and employment. The tourist industry began to expand in earnest between 1974 and 1980 as the number of vessels increased from 13 to 42. The number of tourists simultaneously grew at an average annual rate of roughly 25 percent. Economic expansion was also fueled by the sudden influx of petrodollars during Ecuador's oil boom (1972-1983), and by the associated increase in government expenditures and employment.

With the exception of the two vessels owned by Metropolitan Tours, most, if not all, of the vessels in the tourist trade in the early- to mid-1970, were owned by local, and often long-term, island residents. Several had working relationships with tour agents on the mainland and overseas, but most were ill-equipped to conduct business on an international scale. The lack of capital and language skills, and the uncertainty as to whether their clientele would gain air passage to and from the Galapagos further impeded local involvement in tourism.

Much of the industry's growth in the late 1970s appears to be attributed to tour agents in mainland Ecuador who were quick to realize the economic benefits to be captured by integrating their operations. By 1982, there were about six such agents that wholly or partially owned over a dozen intermediate-sized vessels that catered to foreign tourists.

Concern over the ecological impact that tourism could have on the islands, and resulting pressure to regulate the industry appear to have slowed expansion between 1980 and 1985 when, on average, 17,500 tourists visited the Galapagos annually. The deterioration of economic conditions within Ecuador—plummeting prices for oil exports, inflation, high interest rates, and devaluation—and a recession in many developed countries may have simultaneously contributed to dampening demand and expansion.

While there was a negligible increase in the total number of tourists between 1980 and 1985, there was a marked change in the structure of the industry and composition of tourists visiting the Galapagos. During the 1970s, generally less than 15 percent of tourists were Ecuadorian. By 1980, the percentage rose to 25 and approached 40 percent by 1985. The industry entered a transitional period in which emphasis was placed on catering to diverse income groups and on the expansion of land-based versus the "floating hotels" model of tourism.

The free market policies favored by President Leon Febres Cordero produced a flurry of investments in the mid- to late-1980s, and a wide variety of new vessels, companies and hotels began catering to tourists in the Galapagos. Completion of a second airport on the island of San Cristobal in 1986, and associated expectations that its the island's previously overlooked Puerto Baquerizo Moreno would approach or surpass Puerto Ayora to emerge as the economic and tourist center of the archipelago, produced a boom in tourist-related infrastructure on that island. Recent years have witnessed controversial proposals to expand tourism by concentrating high-rise hotels and casinos on the small island of Baltra, as well as an attempt to build a five-star hotel on San Cristobal. Despite efforts to regulate the industry, expansion continues in much the same way as an open access fishery, and may similarly terminate in overexploitation of a valuable natural resource.

III. The Existing Industry Structure

One of the prerequisites for the formulation of an acceptable, and thus enforceable, management plan is the capacity to tailor the plan to reflect the existing structure of the industry, since this has a direct bearing on the character and intensity of competition and the distribution of power and benefits. The complexities of corporate structure, vessel ownership, vertical integration, and/or affiliation with other tourist companies, etc. are not examined in this study. It is, however, public knowledge that the industry is dominated by two mainland-based, vertically-integrated companies that own several vessels, a portion of the airlines that service the islands, and marketing operations that offer a wide variety of tours to other regions of Ecuador (i.e., Quito, the Sierra, and upper Amazon), as well as the Galapagos. Their dominance appears to be eroding, but their ability to exert control over the flow of tourists through superior marketing operations and influence with domestic airlines has guaranteed that they remain powerful players. If changes in such factors as the number and types of tourists that visit the islands each year, user fees, linkages to the local economy, economic diversification, and patterns of employment are deemed desirable, industry structure and behavior will have to be considered in formulating policies to promote these goals.

The analyses of industry structure and total revenues presented in this paper are based on the following data sets:

- a survey of tourists on vessels, at the bus stop in Puerto Ayora, and waiting in airports to depart the Galapagos, conducted by the author with two assistants during August and September, 1991. Of the approximately 425 tourist surveys, 380 were thorough enough to be used in this study;
- standardized forms submitted by guides to the Galapagos National Park Service after each voyage during 1990 that document the dates of the voyage for each vessel, as well as the number of total passengers and Ecuadorians on board;
- information on tours and prices compiled from pamphlets, brochures, guidebooks, and personal interviews with more than 50 vessel owners or captains, hotel operators, and tour agents in the Galapagos, Guayaquil, Quito and North America;
- hotel prices during 1991 provided by CETUR (Centro Ecuatoriano del Turismo); and
- a monthly and yearly listing of the number of Ecuadorian and foreign tourists that entered the Galapagos National Park during 1991 and 1992.

It was not possible to compile all these data during the same time period. For example, data on vessel movement (i.e., number of days at sea, number of trips per year, visitors per occupancy day, etc.) were only available for 1990, but corresponding information on tour prices was not compiled until August/September 1991. Similarly, information on hotel occupancy rates and prices were only available for the first half of 1991. There, was.

fortunately, little variation in the number and composition of tourists that visited the islands in each of these years. The Galapagos National Park Service reports 41,192 tourists (15,549 Ecuadorians) in 1990, and approximately 42,000 in 1991. Thus, estimates presented can be assumed to be reasonable approximations of industry revenues.

Classification of Tour Operators and Tourists

All tour operators are selling the same thing: the unique natural features of the Galapagos. Visitor sites in the national park are the same regardless of how much one pays to see them. It is the associated services, however, that add value, differentiate tours, contribute to a "Galapagos experience," and establish the price paid for the experience.

There is a large variety of options available to tourists who desire to visit the islands. At one end of the spectrum are companies that specialize in "first-class" group tours and target affluent, often retired, foreigners. At the other end of the spectrum are tour operators that cater to nationals and/or more adventurous young foreigners who spend less, at least on a daily basis, demand fewer services, and are more apt to immerse themselves in the local culture. Tour operators and tourists can consequently be differentiated according to the services and accommodations associated with a given tour. The first grouping separates hotels and vessels. Vessels (Table 1) are further classified according to the type of itinerary (fixed versus flexible) and the duration of cruise (multiple-day versus day boats).

Fixed-Itinerary Vessels

During 1990, nine vessels[1] transported tourists through the islands on fixed-itinerary cruises, visiting the same sites on the same days of the week throughout the year. The durations of these cruises were three, four, or seven days. These vessels tend to be larger, capable of accommodating between 16 and 90 passengers, luxurious, and more expensive than those in other categories.

The capacity, or total number of berths available to tourists on fixed-itinerary vessels (in 1990) was 342 passengers[2], which was nearly one-third of the total fleet capacity. The two largest vessels dominate the industry, accounting for 20 percent of all visitor days, 30 percent of visitor days on vessels, and nearly two-thirds of all visitor days on fixed-itinerary vessels. Each of these 90-passenger cruise ships spends about 340 days per year touring the islands, returning twice a year to Guayaquil for maintenance. On average, vessels in this category ran 42 cruises per year and spent 218 days at sea in 1990. The occupancy rate per cruise (Table 2) was 78 percent. With the exception of one vessel that had a recorded occupancy rate of only 38 percent, the remaining vessels averaged 84 percent occupancy per cruise during 1990.

Flexible-Itinerary Vessels

During 1990, there were approximately 41 vessels operated on flexible itineraries. The number varied by one or two at any given time, as vessels continuously entered and left the fleet. The capacity of vessels in this category ranged from six to 18, averaging 10. Their combined capacity approached 400 passengers, or 46 percent of the total for the tourist fleet.

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[1] A 10th vessel, the 90-passenger *Bucanero*, left the fleet in February, 1991. It could not be confirmed if a replacement is under construction.

[2] Excludes the 90-passenger vessel *Bucanero* of the fleet. A little over 50 percent of this is attributed to the two 90-passenger vessels.

Table 1. Structure of the Galapagos Tourist Fleet: 1990/91.

Name	Passenger Capacity	Class	Name	Passenger Capacity	Class
Fixed Itinerary			*Continued*		
Bucanero	90		Tip Top II	12	Tourist
Santa Cruz	90	Luxury	Valiant	8	Economy
Galapagos Explorer	90	Luxury	Wind Shadow	4	
Isabela II	38	Luxury	Xavier I	10	Tourist
Bartolome II	20		Yolita	12	Tourist
Dorado	16	Luxury	Amigo I	14	Tourist
Samoa I	16	Tourist	Pato Feo	8	Tourist
Delfin II	40		San Antonio	8	
Cruz Del Sur	16	Luxury	Islas Galapagos	6	Economy
Reina Silvia	16	Luxury	San Jacinto	12	Tourist
			Gaby	12	Tourist
Subtotal	**432**				
			Subtotal	**394**	
Flexible Itinerary			**Day Boats**		
Aida Maria	8	Economy	Fernandina II	18	
Albacora	8		Ninfa	20	
Albatros	8	Economy	Esmeraldas	10	
Andando	12	Tourist	Santa Fe II	20	
Angelito	8	Economy	Mabel III	10	
Beagle III	10	Tourist	Wahoo	10	
Cachalote	10	Tourist	Vicking	20	
Cormorant	12	Economy	Moby Dick	10	
Daphne	8	Economy	Ana Christina	12	
Darwin	12	Economy	Antuco II	10	
Elizabeth	12	Economy	Magito	10	
Encantada	10	Tourist	Mar Azul I	10	
Espanola	8	Economy	Gitana	10	
Fenix	8	Economy	Panchita	10	
Flamingo	8		Caracha	10	
Golondrina	8	Economy	Chatam	10	
Jesus Del Gran Poder	8				
Lobo de Mar	10	Economy	**Subtotal**	**200**	
Marigo	12	Luxury			
Mistral II	12	Luxury	**Other**		
Nortada	12	Luxury	Not named		
Orca	8	Tourist	Mercedes	10	
Poseidon	10	Tourist	Patricia	12	
Resting Cloud	12	Luxury			
San Antonio II	12		**Subtotal**	**22**	
San Juan	8	Economy			
Estrella De Mar	12	Luxury			
Symbol	6				
Sulidae	10	Luxury			
Tigress	6	Tourist	GRAND TOTAL	1048	

Source: Galapagos National Park Service, 1991.

Table 2. Summary Data on the Operations of the Galapagos Tourist Fleet (by Vessel Category): 1990; and Hotels: 1991.

	Vessel Category					
	Fixed Itinerary (1)	Flexible Itinerary (2)	Day Boats (3)	Fleet Total	Hotels (4)	Total
Number of Vessels/Hotels	9	41	16	66	33	99
Passenger/Visitor Capacity	342	394	220	956	880	1,836
Total No. of Visitor Days per Year	68,694	57,721	18,993	145,408	77,400	222,808 (5)
Percentage of Total Visitor Days	31	26	8	65	35	100
Average No. of Cruises per Vessel	42	24	43	31		
Average Duration of Cruise (days)	5.8	6.9	2.6	5.6		
Average No. of Days at Sea	218	162	101	153		
Occupancy Rate per Cruise (%)	78	86	84	83	24 (6)	
Percentage of Ecuadorian Tourists	14	4	78	30	60	38
Percentage of Foreign Tourists	86	96	22	70	40	62

(1) Excludes the 90-passenger *Bucanero* that left the fleet in February 1990.
(2) Excludes vessels with permits that did not report passengers in 1990.
(3) Excludes the vessels *Mercedes* and *Patricia* and two unnamed vessels that registered 1326 occupancy days (0.9 percent of the total), as their vessel category and prices are not known.
(4) Hotel data are for 1991.
(5) This is slightly overestimated, as tourists that travel on day boats often spend the night in hotels.
(6) Occupancy rate per year.

Sources: Galapagos National Park Service, raw data on vessel movement; 1990 CETUR, list of hotels, number of beds and prices, and surveys of 380 tourists.

As the name implies, these vessels feature a wide range of innovative, Park Service approved tours to a mix of visitor sites. Trips vary in length from several days to two weeks, but generally last seven days. The average number of cruises per vessel was 20 per year but showed wide variation as several reported making nine or fewer cruises whereas others made between 30 and 40 trips. The average occupancy rate was 87 percent per cruise. These operators catered almost exclusively to foreign tourists, who comprised 96 percent of their passengers. Ecuadorians generally pay a reduced price and are often taken to fill vacancies. The high percentage of foreigners is an indication that this sector is well-organized, is represented by tour agencies on both the continent and overseas, and has arrangements with airlines ("cupos") that guarantee passage for their clientele. Flexible-itinerary cruises accounted for 26 percent of total visitor days and 40 percent of vessel visitor days. No vessel carried more than 6 percent of the passengers touring on flexible-itinerary vessels, or more than 1.5 percent of the total number of tourists who traveled on vessels in the Galapagos during 1990.

Day Boats

Day boats are almost always locally constructed of wood, locally-owned, and crewed by island residents. Cruises are usually restricted to the central and southern islands, as these vessels are obligated to pass nights in one of the populated ports where passengers stay in hotels. Day boats and hotels are consequently closely linked, so it is quite common for a tour operator to own both a day boat and a hotel.

During 1990, there were 16 day boats capable of accommodating 220 passengers, 21 percent of total fleet capacity. Smaller day boats carried 10 passengers, and larger vessels, 20 passengers. The mean size was 13 passengers. Day boats spent substantially less time at sea—approximately 101 days per year—than the rest of the fleet, and the number of cruises per vessel per year, which averaged 43, fluctuated greatly between vessels. Given that these vessels travel between inhabited islands, the duration of a cruise ranged between one and four days, with an overall average of 2.3 days. The occupancy rate per trip is high, a little above 80 percent, because captains/owners often delay a cruise until a sufficient number of passengers are available to economically justify leaving port.

Nearly 80 percent of all tourists traveling on these vessels were Ecuadorian. Overall, day boats accounted for 8 percent of all visitor days and 13 percent of visitor days on vessels. Fifty percent of all tourists using these vessels traveled on one of three vessels, so there are many marginal operators in this category.

The low number of days at sea provides an indication that this sector is poorly organized. Several vessel and/or hotel owners are represented by tour agents in the Galapagos and/or on mainland Ecuador, but very few have representation outside of Ecuador. Day boat operators, and some flexible-itinerary vessels, have formed an association with an office in Puerto Ayora to assist in organizing clientele. Tour companies, such as Coltur, represent many of these vessels, but marketing efforts are restricted to mainland Ecuador and Puerto Ayora. Day boat operators on San Cristobal are poorly organized and often find it easier to operate out of Puerto Ayora.

Hotels

As mentioned previously, the industry has made a transition from the original model of "floating hotels" to land-based tourism. In the early 1970s, there were perhaps four hotels capable of accommodating a total of 50 or 60 guests and a few basic restaurants. By 1982, the number of hotels had swollen to 18, with accommodations for 414 guests, and there were 20 restaurants. Hotel capacity, measured by the number of beds available, increased by 400 percent (82 to 315) on San Cristobal versus 490 percent (86 to 492) on Santa Cruz between 1982 and 1991 (Table 3). As of June 1991, there were 33 hotels capable of housing 880 guests, at least two others under construction, and 31 restaurants, cafeterias or bars. Prices vary between hotels reflecting the quality of services and accommodations. Sixteen of the hotels and 16 restaurants are located on Santa Cruz while San Cristobal has 13 hotels and 10 restaurants. The emerging trend appears to be catering to higher-income foreign tourists by bringing in large, fast day boats which facilitate quick passage to sites within the park by day, and return to hotels in late afternoon (Personal Communication, R. Sievers and J. Perez, 1991). The proliferation of land-based facilities and services such as hotels, discos, restaurants, T-shirt shops, museums, snorkeling tours of Academy Bay, the construction of a path to Tortuga Bay, etc., are an indication that towns are in the process of establishing themselves as tourist attractions.

Data required to provide accurate estimates of hotel occupancy are lacking. CETUR compiles information on the number of hotels and restaurants along with the number of people that each can accommodate, and solicits data on the number of guests entering hotels each month on Santa Cruz. These latter data are incomplete, and slightly inconsistent with information compiled by the author from surveys of tourists and hotel managers. Unfortunately, they are the most comprehensive data available and are consequently used in this study. Similar information is not collected on the other islands.

Table 3. Changes in Land-Based Tourist Infrastructure: 1982, 1985 and 1991.

	1982	1985	1991
Santa Cruz			
Number of Hotels	12	14	16
Hotel Capacity	86	335	492
Number of Restaurants* & Bars	8	8	16
San Cristobal			
Number of Hotels	4	6	13
Hotel Capacity	82	110	315
Number of Restaurants* & Bars	9	9	10
Floreana			
Number of Hotels	1	1	1
Hotel Capacity	24	12	21
Number of Restaurants* & Bars	1	0	3
Isabela			
Number of Hotels	1	1	3
Hotel Capacity	22	36	52
Number of Restaurants* & Bars	2	2	2
Total			
Number of Hotels	18	22	33
Hotel Capacity	414	493	880
Number of Restaurants* & Bars	20	19	31

*Includes Cafeterias

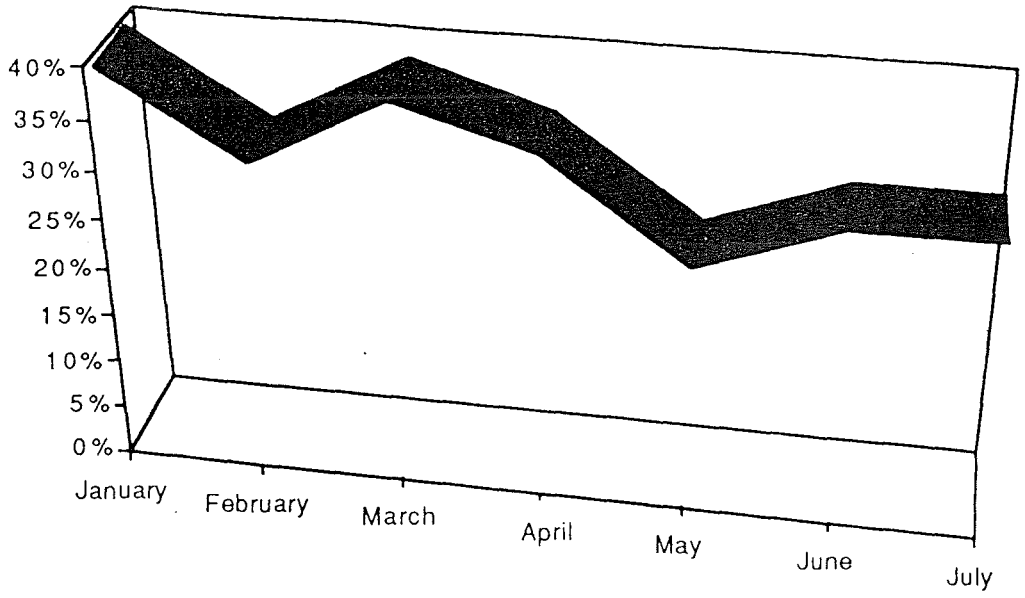
Sources: Plan Maestro De Desarrollo Conservacionista de La Provincia De Galapagos, 1988; INGALA, 1987, And CETUR, 1991.

Figure 3 summarizes CETUR's data on the occupancy rates for hotels on Santa Cruz between January and July, 1991. On average, hotels accommodated 1018 guests each month; January is the busiest month and May the least busy. Extrapolation of these data indicate that approximately 12,200 guests entered hotels on Santa Cruz during 1991. Given the average stay of five days reported by tourists surveyed on Santa Cruz, the total annual number of hotel visitor days (the number of guests entering hotels per year multiplied by their average length of stay, five days) was 61,100[1] (1991). Overall, the occupancy rate on Santa Cruz was 33 percent. Fifty-five to 65 percent of hotel users were Ecuadorian.

The survey of hotels conducted by the author on San Cristobal produced questionable information, as hotel registers and records were not available and managers found it difficult to estimate the number of tourists that entered their hotels monthly. Approximately 680 tourists were estimated to check into hotels each month; the average length of stay was two days, versus five on Santa Cruz. The number of hotel visitor days per month on San Cristobal was consequently 1,360, or 16,320 per year, and the hotel occupancy rate was

[1] This number may be inflated, as it is not uncommon for tourists to change hotels.

Figure 3. Hotel Occupancy Rates on Santa Cruz: January - July, 1991.



Based on an average length of stay per visitor per hotel of five days, and the availability of 492 beds on Santa Cruz on any given night.

Source: CETUR, 1991.

was 20 percent or less. At the time of the survey, nearly one quarter of the hotels (three of 13) were closed.

The total number of hotel visitor days in the Galapagos during 1991 was roughly 77,400. Eighty percent of these days were on Santa Cruz. It was not possible to estimate the distribution of time spent by tourists on vessels and hotels, as a given tourist may spend the daylight hours on a day boat and nights in a hotel. It is interesting to note that 11 percent of the tourists surveyed indicated that they did not take a tour on a vessel.

Summary

The total number of annual visitor days for vessels and hotels was in the vicinity of 220,000, of which two-thirds, or 145,400, were on vessels (i.e., not in hotels). The industry is dominated by fixed itinerary vessels that accounted for nearly 50 percent of fleet occupancy and 31 percent of all visitor days. Foreigners, who comprised about two-thirds of all tourists, most often frequented fixed- and flexible-itinerary vessels. Hotels accounted for 35 percent of visitor days, but their low occupancy rate indicates that this sector may be overcapitalized. Flexible-itinerary vessels captured 26 percent of the total number of visitor days, and day boats captured less than 9 percent.

Physical capacity, measured by the number of berths on vessels and beds in hotels, was nearly 2,000, with vessels having approximately 55 percent of the total. Given the rate of expansion experienced in the 1980s, total capacity is doubling every nine years and hotel capacity is keeping pace with growth of the fleet (Figure 4).

IV. Revenues Attributed to Galapagos Tourism

Government statistics on tourism in the Galapagos are restricted to tables which list the numbers of Ecuadorians and foreigners that enter the park each month and year, and the names and capacities of tourist vessels and hotels. With the exception of studies conducted by Boo (1990), Edwards (1991), and Machlis et al. (1990), there appear to be no other attempts to assess the demand to visit the Galapagos, visitor characteristics, or the revenues attributed to tourism in the Galapagos.

The analysis presented below is divided into two components: 1) estimation of total revenues received by vessels, hotels, the Galapagos National Park Service, and Ecuadorian airlines that serve the Galapagos; and 2) an assessment of the total revenues attributed to tourism in the Galapagos but spent to visit other areas within Ecuador. The supporting argument for the second series of calculations is that foreign tourists spend money on mainland Ecuador, as well as in other countries, that they would not have spent had they not visited the Galapagos. The proceeding is not an analysis of demand but merely an attempt to identify the magnitude and distribution of revenues within Ecuador that are attributed to tourism in the Galapagos. International air fares are not addressed in this analysis.

The reader should be aware that prices used are usually those paid to a travel or tour agent, and exceed those received by vessels and hotels by as much as 20 to 30 percent. There is, however, evidence that data on the number of cruises, and consequently total passenger/ occupancy days for vessels and hotels, are understated by 15 to 20 percent, so estimates of total revenues can be argued to be reasonably accurate.

Vessel Revenues

The total revenue for the Galapagos' Tourist Fleet (TRF) is calculated by:

$$TRF = \sum_{i=1}^{67} TR_i$$

Where i is a specific vessel catering to tourists and TR_i, the total revenue earned by the i^{th} vessel, is estimated by:

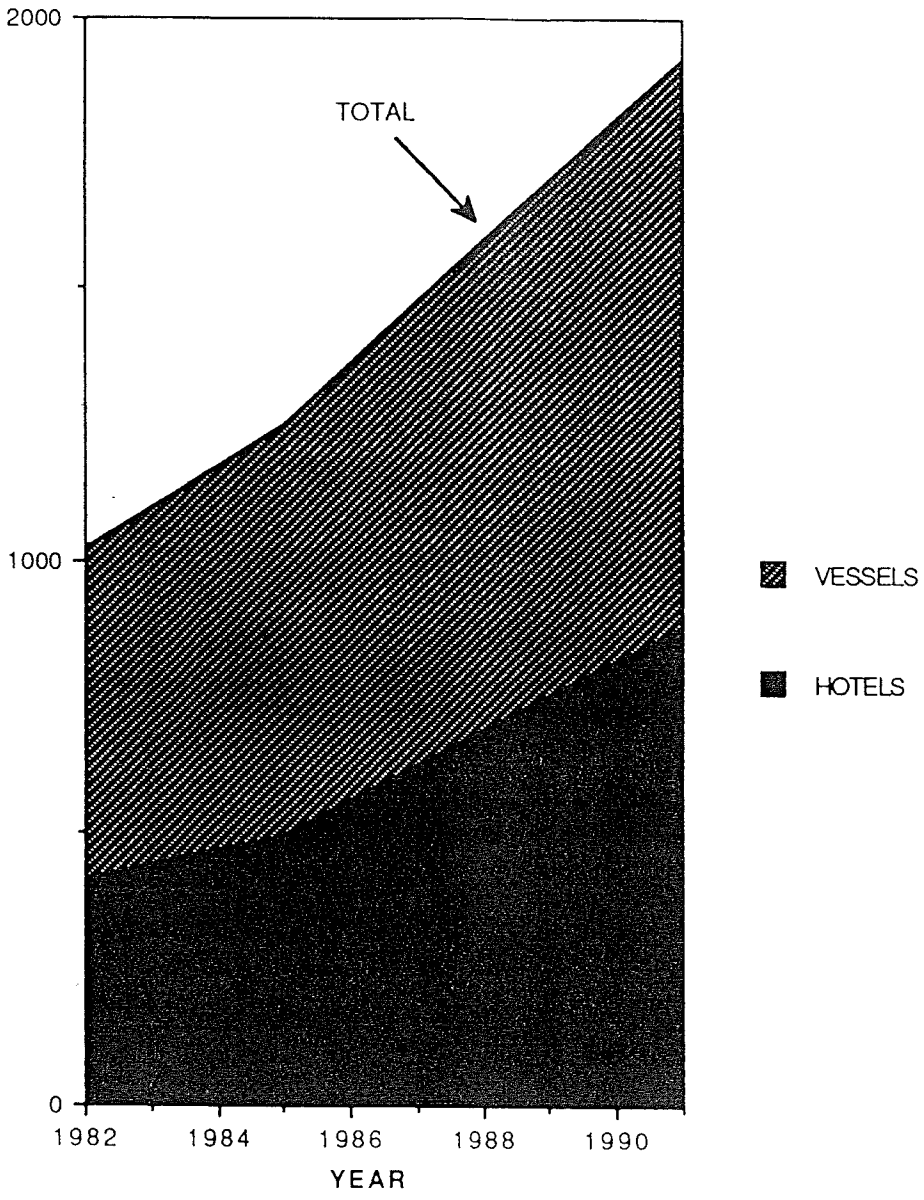
$$TR_i = \bar{P}_i \times OD_i$$

Where $\bar{P}_i$ is the average weighted price (reflects differences in the prices of accommodations for Ecuadorians and foreigners on cruises of various durations) per visitor day received by vessel i, and OD_i, the number of visitor days, is estimated by:

$$OD_i = \sum_{j=1}^{N} (T_{ij} \times D_{ij})$$

Where T is the total number of passengers on the j^{th} cruise of vessel i, and D is the duration (in days) of that cruise.

Figure 4. Changes in Vessel and Hotel Tourist Capacity: 1982-1991.



Source: Galapagos National Park Service, 1991; CETUR, 1991.

Based on these calculations, total revenue earned by the tourist fleet in the Galapagos during 1990 was approximately U.S. $19,700,000 (Table 4). The greatest amount, US $12.3 million, was generated by nine fixed-itinerary vessels. U.S. $6.7 million was attributed to 41 flexible-itinerary vessels, and U.S. $614,000 went to the 16 day boats. There was substantial disparity in the distribution of revenues, as fixed-itinerary vessels that accounted for 36 percent of the fleet's capacity brought in 59 percent of the vessel revenues; flexible-itinerary vessels, with 41 percent of the fleet's tourist capacity, captured 32 percent of these revenues; and day boats, with the remaining 23 percent of capacity, accounted for a mere 3 percent of total fleet revenues.

Fixed-itinerary vessels accounted for 68,700 visitor days, 47 percent of the fleet total, and 31 percent of all visitor days. Their ability to capture such a large percentage of the market can be attributed to a superior market position built by aggressive and efficient management and logistical support, which enable vessels to attract customers from throughout the world and to spend more days at sea. Fixed-itinerary vessels spent an average of 218 days at sea, while day boats averaged 101. The ability to differentiate the market by providing services that draw higher-paying clientele is another obvious determinant of revenues. For example, the average weighted price per day received by fixed-itinerary vessels was approximately five times greater than that received by day boats. The weighted average daily price received by flexible-itinerary vessels was 3.6 times higher than for day boats.

Table 4. Total Revenues of the Galapagos Tourist Fleet (by Vessel Category): 1990; and Hotels: 1991.

	Vessel Category			Fleet Total	Hotels (4)	Total
	Fixed Itinerary (1)	Flexible Itinerary (2)	Day Boats (3)			
Total No. of Visitor Days	68,694	57,721	18,993	145,408	77,400	222,808 (5)
Price						
Average Weighted Price/ Day for Ecuadorians (U.S.$)	131	59	26	60	15	
Average Weighted Price/ Day for Foreign (U.S.$)	184	118	44	108	15	
Avg. Weighted Price/Day for All Tourists (U.S.$)	180	117	32	134	15	
Total Revenues (000s of U.S.$)	12,348	6,734	614	19,696	1,161	20,857
Percentage of Total Revenues	59	32	3	95	6	100

(1) Excludes the 90-passenger *Bucanero* that left the fleet in February 1990.
(2) Excludes vessels with permits that did not report passengers in 1990.
(3) Excludes the vessels *Mercedes* and *Patricia*, and two unnamed vessels that registered 1326 visitor days (0.9 percent of the total), as their vessel category and tour prices are not known.
(4) Hotel data are for 1991.
(5) This is slightly overestimated, as tourists that travel on day boats often spend the night in hotels.

Sources: Galapagos National Park Service, raw data on vessel movement during 1990; CETUR, list of hotels, number of beds and prices, and surveys of 380 tourists.

Hotel Revenues

Based on the information presented above, the total number of hotel visitor days for the Galapagos is approximately 77,400 per year.[1] Given the average daily price of U.S. $15[2] reported by tourists surveyed, gross revenues for hotels were approximately $1.16 million per year, nearly 80 percent of which is spent on Santa Cruz.

Airline and National Park Revenues

In addition to the expenditures identified above, approximately U.S. $11 million were received by the two airlines that transport tourists between the mainland and the Galapagos, and U.S. $1 million in park entrance fees were received by the Galapagos National Park Service (Tables 5 and 6).

Table 5. Tourist Expenditures[3] (in 000s of U.S. dollars) on Air Travel Between Mainland Ecuador and the Galapagos: 1990.

	Ecuadorians	Foreigners	Total
Number of Tourists	15,549	25,643	41,192
Air Fare[4]	120	345	260*
Expenditures (000s of dollars)[5]	1,866	8,847	10,713

Table 6. Park Entrance Fees (in 000s of U.S. dollars) Received by the Galapagos National Park Service: 1990.

	Ecuadorians	Foreigners	Total
Number of Tourists	15,549	25,643	41,192
Park Entrance Fees[5]	0.60	40	25.13*
Expenditures (dollars)[5]	9,330	1,025,720	1,035,050

* Average fee paid per person for both Ecuadorians and foreigners.

Sources: Galapagos National Park Service, 1991; Personal communication with Tame and San Airlines.

Summary

In summary, the gross value of tourism on the islands, including air fare between Ecuador and the islands, was approximately U.S. $32.6 million per year during 1990 and 1991. Most of this, $19.7 million, was spent on vessels. Airlines were the next largest beneficiary, receiving $10.7 million (Figure 5). Hotels and park entrance fees are relatively negligible, accounting for about 3 percent each of these revenues. Roughly 85 percent, $27.5 million,

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[1] No information was available for the four hotels on Isabela and Fernandina, but very few tourists reportedly visit these islands, so their omission has little impact on the estimates above.

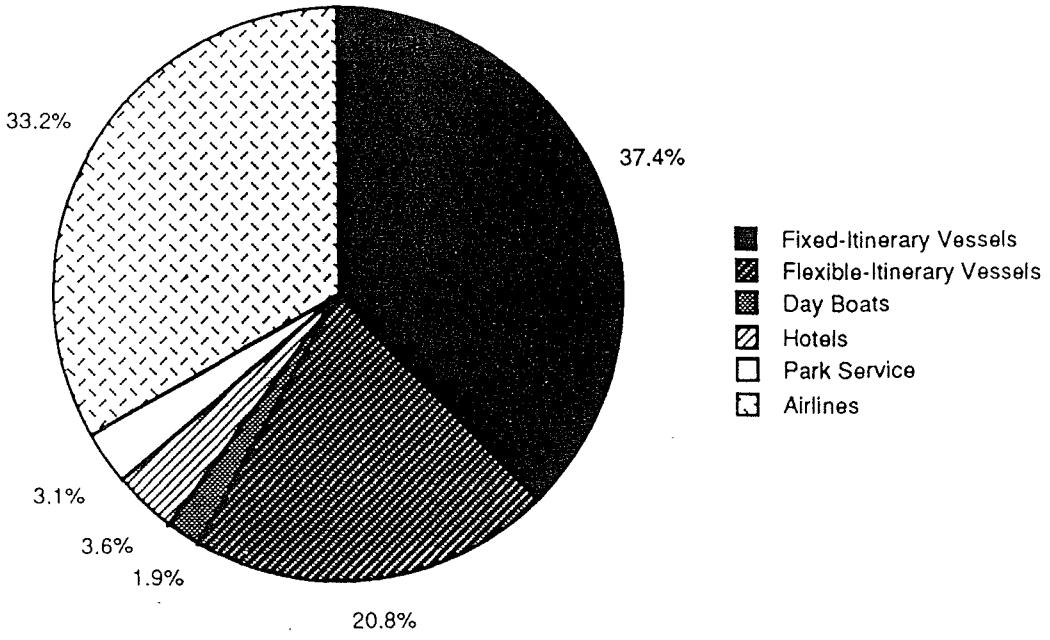
[2] In instances, this also includes the price of meals.

[3] Excludes fares paid by travelers such as residents, scientists, government employees, etc. that did not pay to enter the park.

[4] The price of air fare has been weighted to reflect differences in the number of passengers leaving Quito and Guayaquil and the corresponding price of a round trip ticket.

[5] Assumes U.S. $=1000 sucres.

Figure 5. Distribution of Tourist Revenues in the Galapagos Islands.



Gross Value U.S. $32,300,000

was in the form of badly-needed hard currency received from foreign tourists. There were significant inequalities in the distribution of revenues, as fixed- and flexible-itinerary vessels captured about 92 percent of the tourist dollars spent on vessels and hotels, while day boats and hotels received the remaining 8 percent. Overall, foreigners spent $1,085 per person (excluding the costs of international air fare and visits to other vacation destinations) to tour the Galapagos, versus $300 for Ecuadorians.

These revenues, however, are not an indication of local wealth, as probably less than $5 million, or 15 percent of the income generated by tourism, enter directly into the islands' economy, and the multiplier effect—the rate at which a new dollar is respent—is exceptionally low in the Galapagos. With the exception of a small support staff, the airlines spend little on the islands. The situation is similar for most of the fixed- and flexible-itinerary vessels whose managers report that nearly all their supplies (including foods) are imported from the mainland, as supply and quality is more consistent than on the islands. Market linkages between local farmers, cattle ranchers, fishermen, and fixed- and flexible-itinerary vessels are virtually nonexistent. In addition, many of the crew members maintain their residence and/or support families on the mainland, so only a minimal amount of their earnings are spent on the islands. Fixed- and flexible-itinerary vessels are almost always constructed outside Ecuador, so their purchase implies an outflow of hard currency from both the islands and the nation.

Day boats and hotels, in contrast, significantly impact the insular economy, as most of their crew and employees are residents, and buildings and vessels are constructed by local

craftsmen, although many are brought in from the continent. A much larger portion of their supplies are purchased from island merchants or directly from farmers and fishermen.

Overall, the islands are economically dependent on continental Ecuador, as traditional productive resources such as minerals, petroleum, fertile land, water, and a skilled labor force are absent or in short supply. Economic opportunities are further constrained by the limited purchasing power of the small population—11,000 in 1991, and by long distances between populated islands and the continent, combined with poorly developed infrastructure. Consequently, the multiplier effect is low, as the money is almost immediately spent to order goods from the continent. There are, however, many opportunities to improve this situation, primarily by adding value to existing production. Initiatives such as well-planned small-scale, environmentally-sensitive projects and infrastructure (for instance, cold stores and simple processing equipment for agriculture and fisheries products); tours to the interior of populated islands; water sports, improvement and diversification of the production of local crafts and souvenirs; and creation of a skilled labor force would all contribute to increasing the multiplier effect, while broadening the distribution of wealth.

V. A Characterization of Tourists Visiting the Galapagos

In order to assess the magnitude and distribution of economic benefits generated in areas other than the Galapagos, it is necessary to examine the characteristics of tourists visiting the islands. Such an analysis reveals that there are several distinct categories, each of which produces a different flow of benefits. Thus, the industry clearly differentiates between tourists by providing different services and tours at a wide range of prices.

The following is an analysis of tourists surveyed, distinguishing between those staying on fixed-itinerary vessels, flexible-itinerary vessels, day boats, and hotels only. The location where arrangements were made to visit the islands (outside of Ecuador, on mainland Ecuador, or in the Galapagos) and nationality (Ecuadorian or foreign) were also found to be significant in characterizing tourists. The daily cost of tours to the islands, broken down in this manner, goes from the most to the least expensive (Table 7). For example, passage for any given time on a fixed-itinerary vessel is generally more expensive than on a flexible-itinerary vessel, which is more costly than a day boat. Similarly, tours booked outside Ecuador tend to be more costly, even when international air fare is excluded, than for the same tours arranged in Ecuador. Foreigners are charged more than Ecuadorians for the same tour.

Tourists that purchased comprehensive (includes the price of all air fares, land transportation, cruises in the Galapagos, meals, etc.), multiple destination (Galapagos and Quito, the Upper Amazon, Macchu Picchu, etc.) package tours outside Ecuador were older (often retired), reported a much higher average annual family income (U.S. $77,000), took shorter vacations (19 days) but spent more money (nearly U.S. $ 4,000) than tourists in other categories. Since this group assigned greater importance to visiting the islands, and given that only 17 percent visited other South American countries during this vacation, one would conclude that the Galapagos was their primary destination.

In contrast, foreign tourists making arrangements with day boats on the islands tend to be in their early 30s with an average income of U.S. $26,000. A few surveyed were students and nearly all reported to be on prolonged vacations (seven weeks on average) through Ecuador and South America, and the ranked importance assigned to visiting the Galapagos was slightly lower than for other categories of tourists.

Foreign tourists—nearly all of whom were from France or Surinam and apparently on the same tour—that stayed in hotels but did not report touring the islands on a vessel, appear to be an anomaly. Their average length of vacation was shorter (16 days) than for all the other classes of tourists, but trends in average family income and ranked importance of visiting the Galapagos are similar to those observed in fixed-itinerary vessels.

There are distinctive economic, social, and environmental implications associated with each of the types of tourism identified above. From the viewpoint of maximizing revenues and reducing human impact on the local environment, tourists that overnight on luxurious and costly vessels, and have minimal impact on the environment are desirable. Broadus (1987) and Edwards (1991) argue that maximizing revenues subject to a constraint on carrying capacity can be achieved by pursuing monopolistic pricing policies. In this instance, the price of visiting the islands would increase substantially, and economic benefits would be concentrated in those companies that offer luxury tours. In theory, the government would then tax away "excess profits" and use these revenues to fund domestic programs. However, if the social well-being of the local population is a consideration, day boats and small hotels produce a wider stream of benefits to a poorer segment of society. The disadvantages are that this class of tourist spends much less per day, so a greater number of visitor days are required to generate the same amount of revenues. Also, stimulating the local economy and employment creates immigration, and ultimately results in greater stress on resources and the environment. Garbage, wastewater disposal, and accidental and purposeful introduction of exotic species become larger problems as the population increases. On the other hand, failure to recognize and address the needs of local inhabitants will produce inequalities in income, along with social unrest, and conflict. Tension has already surfaced in conflicts between local auxiliary guides and naturalist guides, most of whom come from the mainland or abroad.

Economic Impacts Outside the Galapagos

The data collected by the survey are generally not sufficient to estimate the amount spent by all classes of foreign tourists on their entire vacations, in mainland Ecuador or in other South American countries visited in conjunction with the Galapagos.

Information required to identify the distribution of vacation time by foreign tourists visiting major geographic areas of Ecuador and other South American countries as part of their vacation to the Galapagos was, however, available (Table 8).

For each day in the Galapagos, foreign tourists, depending on their category, spent between one and three days in mainland Ecuador. Quito, the principal staging area for trips to the Galapagos, and the Sierra are the most popular destinations. The Oriente (upper Amazon) ranked third and was frequented more often by those traveling on package tours. With the exception of some day boat users and foreign hotel users that again deviated from the norm by spending one-third of their time on the coast and in Guayaquil, foreigners spent less than 11 percent of their time on the continent visiting the coast, including Guayaquil.

The number of foreign tourists visiting other South American countries was surprisingly low: 15 percent. This is a marked contrast to the situation in the early 1980s, when Peru was less dangerous and tour packages featured the Galapagos in combination with Macchu Picchu.

Table 7. Characteristics of Tourists (by Class) Visiting the Galapagos: August/September, 1991.

	Foreigners			Ecuadorians		Overall		Every-one
Location Where Tour Arranged:	Outside Ecuador	Mainland Ecuador	Galapagos	Mainland Ecuador	Galapagos	Foreigners	Ecuadorians	Total
FIXED-ITINERARY TOURISTS								
Average Total Length of Vacation Days	18.6	22.6		7.8		19.6	7.8	16.8
Average Number of Days Traveling Between Destinations	4.4	4.1		2.6		4.3	2.6	3.9
Average Number of Days Spent in Mainland Ecuador	7.5	14.5				9.2		
Percent That Visit Other South American Countries	18	26				21		
Ranked Importance of the Galapagos (-2 to +2)[1]	1.97	1.78				1.92		N/A
Average Age	47	44		35		45.9	35	43.5
Average Number of Hours Worked Per Week								
Average Number of Persons Paid For On This Vacation	1.8	1.9		2		1.8	2	1.9
Average Family Income (in U.S. Dollars)	76,998	63,121		11,600		73,466	11,600	56,968
FLEXIBLE-ITINERARY TOURISTS								
Average Total Length of Vacation Days	4	33	59	8	8	32	8	42.7
Average Number of Days Traveling Between Destinations	6	7	17.5	2		7.8	2	6.9
Average Number of Days Spent In Mainland Ecuador	10	15.7	21.1			13.3		
Percent That Visit Other South American Countries	14	27	35	0	0	22.5	0	21.5
Ranked Importance of the Galapagos (-2 to +2)[1]	1.7	1.5	1.8			1.7		
Average Age	41	34	29	34	50	37	37.4	37.3
Average Number of Hours Worked Per Week	42	43	37	51	38	41	48	41.8
Average Number of Persons Paid for on This Vacation	1.4	1.4	1.3	2.0	2	1	2	1.4
Average Family Income (in U.S. Dollars)	64288	33891	32280	9833	2500	50275	8000	48309
DAY BOAT TOURISTS								
Average Total Length of Vacation Days		34	45.4	8.3	8	37	8.24	21.93
Average Number of Days Traveling Between Destinations		6.5	9.3	2.7	2	6.9	2.62	3.1

Table 7. continued.

	Foreigners			Ecuadorians		Overall		Every-one
Location Where Tour Arranged:	Outside Ecuador	Mainland Ecuador	Galapagos	Mainland Ecuador	Galapagos	Foreigners	Ecuadorians	Total
Average Number of Days Spent in Mainland Ecuador		18.8	20.6			17.7		
Percent That Visit Other South American Countries		3.7	4.5			31.6		
Ranked Importance of the Galapagos (-2 to +2)[1]		1.57	1.86	N/A	N/A	1.65	N/A	N/A
Average Age		34	31	36.3	52	34.6	37.8	38.9
Average Number of Hours Worked Per Week								
Average Number of Persons Paid For On This Vacation		1.71	1.00	3.13	3.5	1.33	3.17	2.25
Average Family Income (in U.S. Dollars)		52,200	25,880	3,816	N/A	38,740	N/A	
HOTEL USERS ONLY								
Average Total Length of Vacation Days	16	13.4	17.5	7.4	8.7	15.3	7.6	11.2
Average Number of Days Traveling Between Destinations	5.6	2.1	3.5	2.6	2	3.8	2.5	3.1
Average Number of Days Spent in Mainland Ecuador	3.3	9.8	4.8			5.7		
Percent That Visited Other South American Countries	25	0	0			0		
Ranked Importance of the Galapagos (-2 to +2)[1]	1.38	1.17	1.75	N/A	N/A	1.4	N/A	N/A
Average Age	41	42	30	36	31	39	35	37
Average Number of Hours Worked Per Week								
Average Number of Persons Paid for on This Vacation	2	1.7	1	3.1	2.7	1.8	3.05	2.5
Average Family Income (in U.S. Dollars)	78890	59000	19333	6600	1150	53067	4964	33260

NA = Not Applicable or insufficient data.
Source: 380 Tourist Surveys, August/September, 1991.

The data required to estimate the total amount spent by foreigners to visit the Galapagos and associated destinations are available only for tourists that made arrangements outside of Ecuador to tour the islands on fixed- or flexible-itinerary vessels (Table 9). Visitors in this category represent approximately 55 percent of all foreign tourists. Ecuadorians are omitted from this analysis, as 96 percent reported that the islands were their sole vacation destination.

[1] Not applicable to Ecuadorians, as the Galapagos was their sole destination and thus cannot be ranked against other vacation destinations.

Table 8. Distribution of Vacation Time by Category of Foreign Tourist Visiting the Galapagos: August/September, 1991

TRAVEL ARRANGED	Outside Ecuador	Mainland Ecuador	In Galapagos	Overall
FIXED-ITINERARY VESSELS				
Total Number of Vacation Days	18.5	22.7	N/A	19.5
Days in Travel	4.5	4.1	N/A	4.4
Days in Galapagos	6.5	5.4	N/A	6.3
Days in Mainland Ecuador	7.5	13.5	N/A	8.8
Distribution of Time in Mainland Ecuador:				
1. Quito	48%	51%	N/A	50%
2. Sierra (excluding Quito)	23%	19%	N/A	22%
3. Coast (excluding Guayaquil)	3%	7%	N/A	4%
4. Guayaquil	5%	12%	N/A	7%
5. Oriente	21%	11%	N/A	17%
FLEXIBLE-ITINERARY TOURISTS				
Total Vacation Days	28	32	58	44
Days in Travel	6	7	17.5	7.5
Days in Galapagos	7.5	8.5	11	8.7
Days in Mainland Ecuador	10.5	16	11	8.7
Distribution of Time in Mainland Ecuador:				
1. Quito	31%	33%	53%	37%
2. Sierra	42%	32%	32%	36%
3. Coast	4%	9%	2%	5%
4. Guayaquil	3%	6%	1%	4%
5. Oriente	20%	20%	12%	18%
DAY BOATS				
Total Vacation Days	N/A	34	45	37
Days in Travel	N/A	6.5	9.3	6.4
Days in Galapagos	N/A	7.9	9.9[1]	8.9
Days in Mainland Ecuador	N/A	19	20.6	17.7
Distribution of Time in Mainland Ecuador				
1. Quito	N/A	49%	16%	33%
2. Sierra	N/A	18%	32%	24%
3. Coast	N/A	14%	30%	19%
4. Guayaquil	N/A	4%	0%	3%
5. Oriente	N/A	15%	22%	21%
HOTELS				
Total Vacation Days	16	13.5	17.5	15
Days in Travel	5.5	2.1	3.5	4
Days in Galapagos	3.5	4.5	5	4
Days in Mainland Ecuador	7.5	18.5	N/A	11.7
Distribution of Time in Mainland Ecuador:				
1. Quito	25%	55%	N/A	38%
2. Sierra	34%	17%	N/A	39%
3. Coast	20%	28%	N/A	27%
4. Guayaquil	0%	0%	N/A	8%
5. Oriente	21%	0%	N/A	6%

N/A = Not Applicable
Source: 380 Tourist Surveys, August/September, 1991.

[1] This may be slightly overstated, as there is duplication in the time spent on day boats and in hotels.

Table 9. Breakdown of the Average Expenditure per Vacation (in U.S. Dollars) According to Vessel Category Reported by Tourists that Made Travel Arrangements Outside Ecuador: August/September, 1991.

Fixed-Itinerary Tourists

	U.S. Dollars	Percent
Average Total Expenditure/Vacation	3800	100
International Air Fare	720	19
Air Fare (Ecu./Galap./Ecu.)	342	9
Average Cost of Tour	1196	31
Expenditures Outside Galapagos	1542	41

Flexible-Itinerary Tourists

	U.S. Dollars	Percent
Average Total Expenditure/Vacation	3520	100
International Air Fare	910	31
Air Fare (Ecu./Galap./Ecu.)	342	10
Average Cost of Tour	885	25
Expenditures Outside Galapagos	1383	34

Source: Tourist Survey, August/September, 1991.

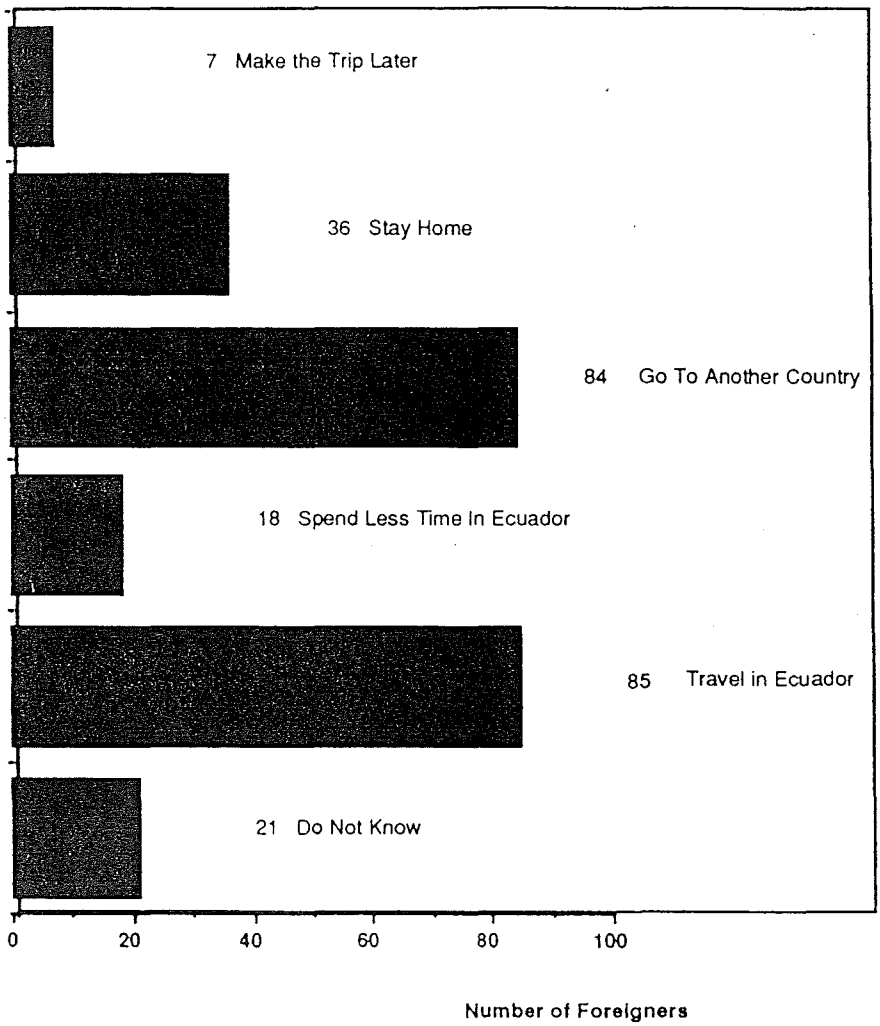
Passengers on fixed-itinerary vessels tended to spend slightly more on their vacations than those on flexible-itinerary vessels. International air fare was lower for fixed-itinerary passengers, and may be attributed to the fact that these passengers travel in large, organized tours that receive discount air fares. Both groups spent nearly the same amount of money in and outside of the Galapagos. The majority of expenditures outside the Galapagos were spent in mainland Ecuador.

A cursory analysis of data provided by day boat and hotel users indicates that these groups spend between three to five times more days in mainland Ecuador than in the Galapagos. Air fares, travel, and hotel expenses on the continent tend to be less than in the Galapagos, but given the period of time spent by these groups on the continent, it is reasonable to assume that their expenditures exceeded those on the islands by at least a factor of two.

The evidence presented above provides a strong indication that foreigners are spending equivalent sums of money in the Galapagos and on the continent. Hard currency expenditures by foreigners in the Galapagos during 1990 have been shown to be approximately U.S. $27.5 million, so the total revenues from foreign tourists visiting the islands and mainland Ecuador are in the vicinity of U.S. $55 million per year.

To ascertain the importance of the islands to tourism at the national level, the survey requested that visitors stated what they would have done had they not been able to visit the Galapagos. Approximatly half of the foreign tourists (Figure 6) responded that they would have traveled to another country[1] or stayed at home. It is therefore possible to argue that at least 50 percent of the revenues, $27.5 million, would not have been spent in the country of Ecuador had these tourists not be able to visit the islands. It is worth noting that 15 percent of the Ecuadorians stated that they would have traveled to another country.

Figure 6. Alternatives Chosen by Foreigners if They Could Not Have Visited the Galapagos.



Source: Tourist Survey, August/September, 1991.

[1] The most commonly mentioned alternative vacation destinations were Alaska, the Great Barrier Reef, and Africa.

VI. Visitor Satisfaction with the Galapagos Experience

Ecotourism cannot be viewed simply as the interaction of visitors and nature. It is in fact a holistic experience that also entails passive and active interaction between tourists, the crew and host, naturalist guides and, in some instances, local communities. To ascertain visitor satisfaction with the overall Galapagos experience, tourists were asked to rank their satisfaction with the nature they saw, sites visited, and how they felt about encountering other groups at visitor sites. Additional inquiries were made to assess the services they received and what could have been done to improve their visit.

Satisfaction with Nature and Visitor Sites

The vast majority, 99 percent, of the tourists surveyed responded that they were very satisfied or satisfied with the nature they observed in the islands (Figure 7). Only one percent indicated that the nature they saw failed to live up to their expectations.

There are 45 designated visitor sites, each of which has a unique natural endowment, within the Galapagos National Park. Of these, approximately 20 have been designated as intensive-use sites, meaning that large groups of passengers (i.e., 90-passenger fixed-itinerary vessels) are permitted to visit. Data on site visitation compiled by the Galapagos National Park Service (Table 10) indicate a significant disparity in the intensity of site usage.

Table 10. Number of Tourists Visiting the 25 Most Utilized Visitor Sites Within the Galapagos National Park: 1989.

Visitor Site	Number of Tourists
Plaza Sur	25,251
Seymour Norte	24,050
Bartolome	21,334
Punta Suarez	17,331
Punta Cormorant	15,001
Rabida	14,130
Santa Fe	12,769
Puerto Egas	12,001
Punta Espinoza	10,379
Caleta Tagus	10,272
Bahia Sullivan	8,151
Playa Las Bachas	7,915
Bahia Darwin	7,673
Caleta Tortuga	7,068
Bahia Gardner	5,401
Bahia Del Correo	5,231
Sombrero Chino	3,532
El Barranco	3,450
Daphne	1,252
Isla Mosquera	1,150
Playa Espumilla	729
Volcan Alcedo	685
Caleta Bucanero	629
Punta Garcia	132
Cerro Tijeretas	117

Given that 41,889 tourists reportedly visited the Galapagos National Park in 1989, the average tourist visited at least five sites.

Source: Galapagos National Park Service, 1991.

For example, the small island of Plaza Sur receives over 50 percent of all visitors, which has prompted concern that this site is being abused while other sites are little used.

To obtain insight into preferences for various sites, tourists were asked to rank the importance of each of the 15 most-utilized sites that they had visited. An analysis of responses indicates that tourists do not differentiate between sites. Similarly, attempts to regress mean rankings against levels of visitation recorded by the Park Service showed no correlation. The majority of tourists were not bothered by seeing other groups at visitor sites. Some tourists expressed displeasure with seeing large numbers of visitors from the larger ships, but there were about an equal number that stated that seeing other groups added to their enjoyment. The level of visitor site usage may consequently be more a function of strategic location than natural endowment. For example, the six most-visited sites, and eight of the top 10, are located near towns or the airport on Baltra and are quickly accessible from these focal points of human activity. It could be argued that these sites are important because they provide convenient stops that minimize travel time at sea.

Services

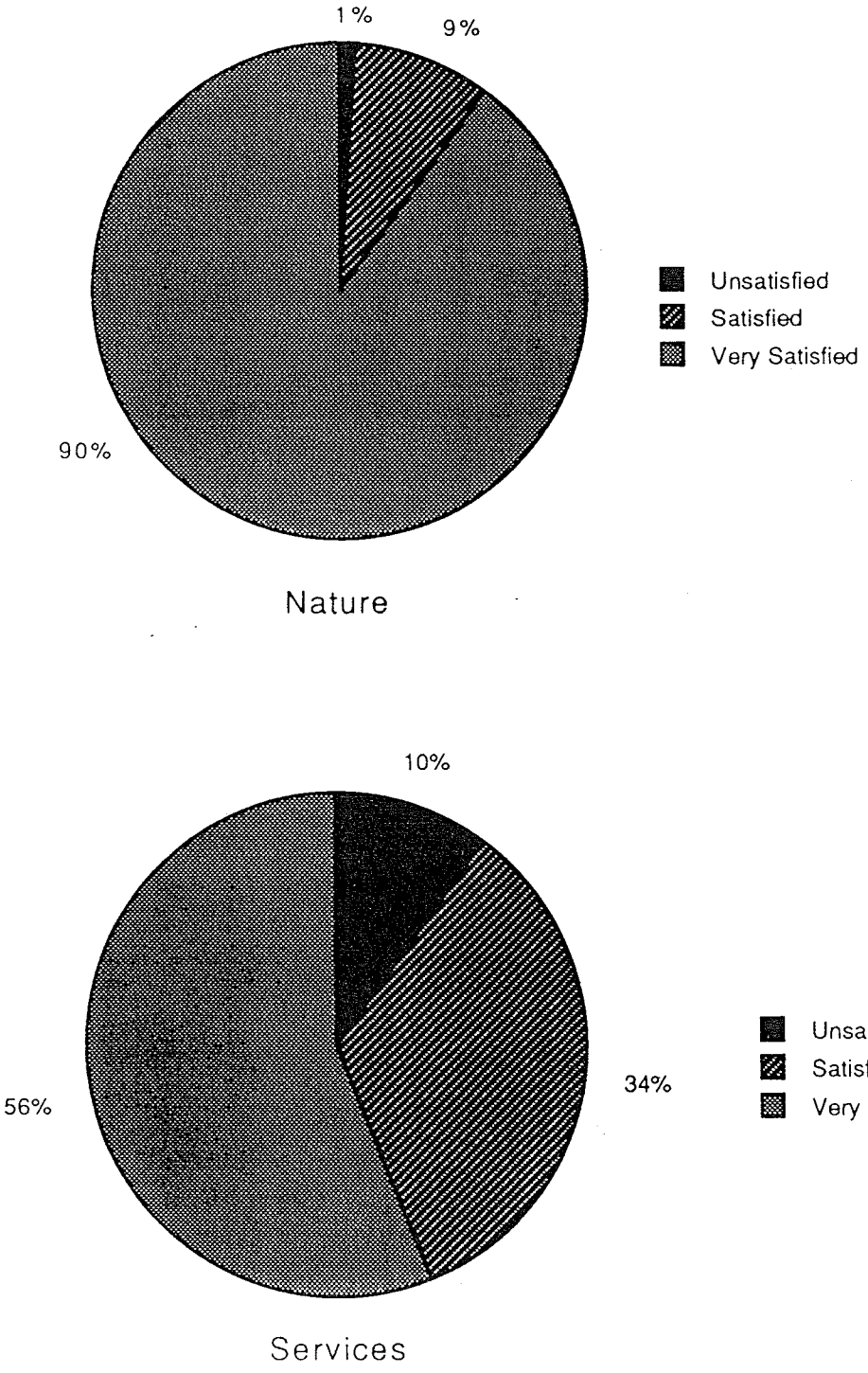
Tourists responding to the open-ended question, "What could have been done to improve your visit to the Galapagos?" stressed that they were very satisfied with the nature that they saw, but that services could be greatly improved (Figure 7). The most common responses, in descending order, were:

- provide better organization, personal services (in particular, knowledgeable guides that are fluent in several languages), and accommodations (more comfortable boats, beds and seats, clean bathrooms);
- provide more accurate and less expensive information on tour options, natural history, etc;
- improve basic infrastructure and services (i.e., better landing sites, transportation, roads, electricity, and water);
- place more control on number of tourists that visit the park; and
- that all was fine or they would have liked to extend their visit, and that tours to the interior of the islands were needed.

Complaints about information provided by tour agents in mainland Ecuador were also common. The fact that 85 percent of the Ecuadorians and 29 percent of all foreigners made arrangements to visit the islands through agents in mainland Ecuador (Figure 8) highlights the importance of working with these agencies to make certain that they accurately portray the tours they market. In the process of collecting information for this study, tour agencies in Quito and Guayaquil were visited. On three occasions, agents erroneously described tours. For example, Tortuga Bay was said to be a small island with colonies of nesting birds that would be visited by boat when, in fact, it is a beach, with no bird colonies, roughly one hour's walking time from Puerto Ayora. Misrepresentation of tours does not appear to be deliberate, as most salespersons have never been to the islands and rarely had pamphlets that described a given tour, and were therefore unintentionally misinforming clientele. Vessel operators and the Association of Armadores in the islands, who must deal with irate tourists, confirmed that this was a problem.

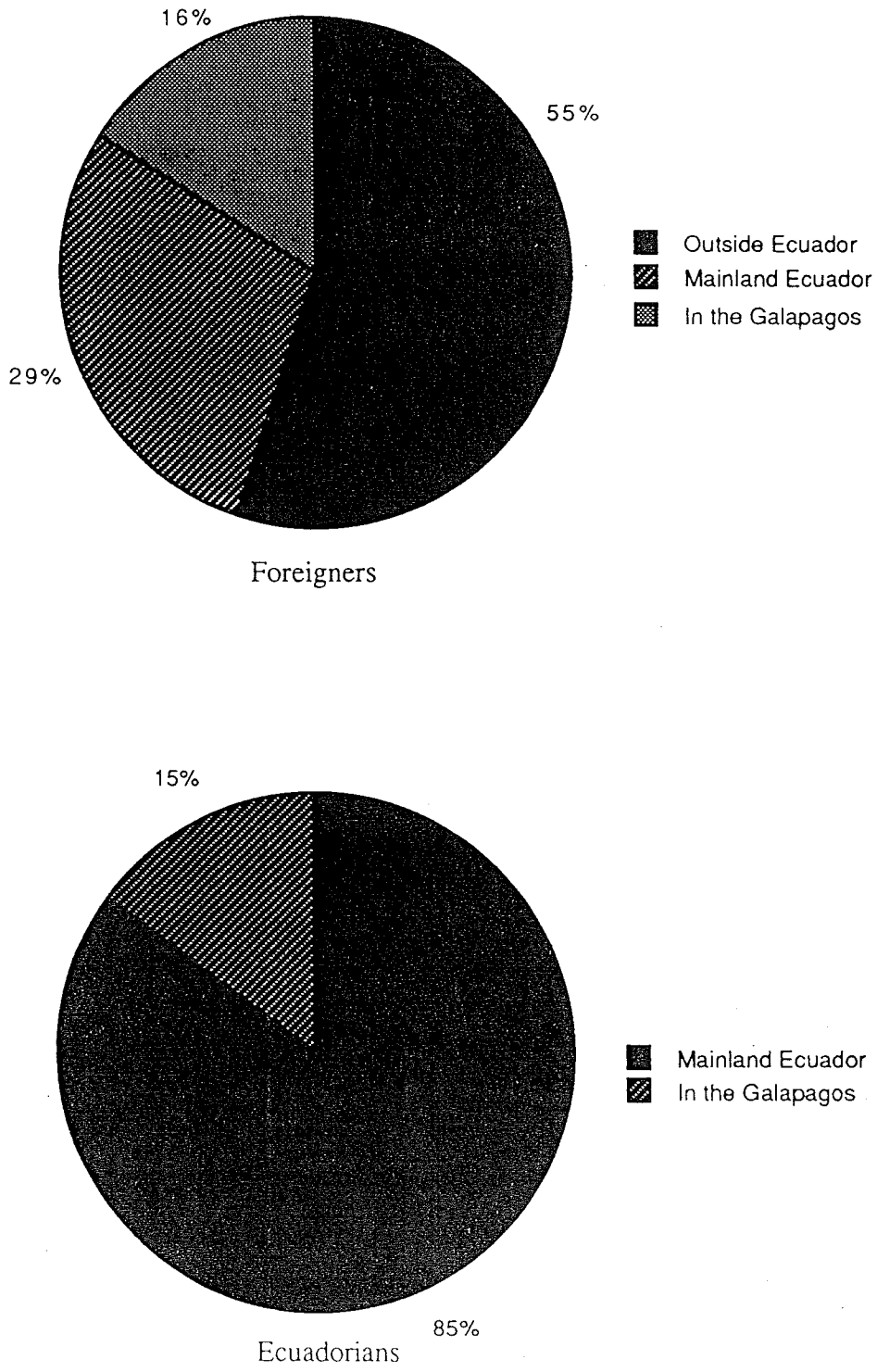
Maintenance of a good reputation is paramount in guaranteeing the future of tourism in the islands. The importance of credibility is highlighted by the fact that 68 percent of the Ecuadorians and 23 percent of the foreigners reported they had visited the Galapagos before. Fifty-six percent of all tourists expected to visit the islands again.

Figure 7. Visitor Satisfaction (All Tourists) with the Nature and Services on the Galapagos Islands.



Source: Tourist Survey, August/September, 1991.

Figure 8. Where Travel Arrangements to Visit the Galapagos Were Made.



Source: Tourist Survey, August/September, 1991.

The Social Setting

Tourists were not asked their opinion of the communities they encountered in the Galapagos. However, tourists indirectly stressed the need to improve the social setting, basic infrastructure, and services. The quality of life, level of employment, and economy enjoyed by the residents of the Galapagos are generally superior to similar communities on mainland Ecuador, but it is worth noting that when tourists ranked the sites they visited, Puerto Ayora received, by far, the lowest ranking. Admittedly, many tourists are surprised, and some disappointed, to find settlements on the islands. These responses provide an indication that towns either detract from their enjoyment or fail to meet their expectations. Based on the low ranking given to Puerto Ayora, it is obvious that there is a demand by tourists to improve the socio-economic situation.

VII. Economic and Social Issues Posed by Tourism

Tourism in developing countries has been likened to an export good, as it generates a flow of hard currency that is sorely needed to pay the balance-of-trade deficit; to promote economic stability; to finance domestic programs; and to create employment, income and capital investment. The boom in nature tourism, particularly in developing countries, is generating billions of dollars in hard currency revenues each year and, if properly managed, is a promising vehicle for promoting and financing sustainable development and conservation. This can only be achieved if some of the economic benefits are reinvested to maintain the environment which comprises the natural and cultural, including man-made, surroundings. Tourism in the Galapagos is the agent of environmental change, and should bear some of the burden for mitigating negative industry impacts. As demonstrated below, this is not currently the case. The government of Ecuador is assigning minimal value to the resource; tour operators are receiving the majority of the economic benefits, and most of the revenues generated never enter, or quickly leak out of, the local economy.

Economic Issues

Undervaluation of the Galapagos Resource and Loss of Government Revenues

The government of Ecuador must seek to balance its need for hard currency and its mandate to enhance the well-being of citizens on both the mainland and the islands with its obligation to maintain the islands' rich natural heritage for future generations. Despite a series of management plans prepared by various high-level commissions, a comprehensive, clearly articulated, and generally accepted set of policies that is required to achieve this goal does not, as yet, exist.

Before discussing the present situation and some of the economic tools that can be employed by the government to pursue this objective, it may be helpful to briefly review some economic concepts.

Resource Rent

Resource rent is defined as the difference between the price of a product or service produced using a natural resource and the cost of turning that natural resource into the product or service. The cost includes the value of labor, capital, materials, energy, etc. that are used to convert a resource into a good. The revenues which remain after these costs are factored out are considered the value, or rent, attributable to the resource, whether it be

agricultural land, minerals, forests, fisheries, or, as in the case of the Galapagos, a unique environment with an unusual array of flora and fauna that provide a tourist attraction. Rents can also be considered as a reflection of the future value of a resource or the future opportunity costs of current use. If the user fee or cost of a resource is low, there are economic incentives for entrepreneurs to accelerate exploitation and exhaust the resource. This is one of the reasons that marine fisheries in most of the world have been overexploited. As the cost of the resource increases, exploitation slows as there is less profit and fewer incentives to make the additional investment required to expand production. In other words, the greater the profit, the greater the level of exploitation. The amount of rent charged may be adjusted over time to promote various management or use scenarios. In the case of the Galapagos, the decision to employ fiscal policy to raise the expense to visit or conduct tours in the islands would be less discouraging to higher-income tourists and tour operators, and would generate a much higher stream of revenues than currently exists (Edwards, 1991). Lower-income groups, such as those that tour on day boats, would be hard-pressed to afford the additional cost of the trip. Similarly, mandating that tour operators pay a high fee to conduct business in the islands would decrease their profits and, consequently, discourage industry growth. The impact of the latter will be greater on day boat operators who will find it more difficult to pass on the additional cost to low-income tourists. Rent is consequently an important concept in understanding and influencing the efficient, "optimal" level and type of resource exploitation.

The government of Ecuador, as the steward of the Galapagos, has the option of determining the type(s) and amount(s) of rent that it feels will lead to desirable use. For example, the decision to directly tax tourists by charging park entrance fees produces a flow of revenues and influences the types and numbers of tourists that visit the islands. Another option is to mandate that tour operators pay to conduct business in the park. The fee may be fixed or graduated to reflect the earnings generated by various vessels and/or vessel categories. If the fee is low, part of the resource rent is captured by entrepreneurs as profit which encourages the industry's expansion. In general, higher fees will reduce the number of tourists visiting the island and will produce greater revenues. The intensity of use of visitor sites within the national park may also be influenced by a government decision to charge access fees for specific sites. Conditions (for instance, the hiring of locals, having one guide for a given number of tourists, etc.) may also be attached to the concession. Each of these options can be used separately or in combination, and each alternative will have different economic, social, and environmental results.

Park Entrance Fees

At the time of this study, the government of Ecuador was collecting two types of resource rent. The first was a nominal park entrance fee of $40 for foreign tourists and 600 sucres (U.S. 60 cents)[1] for Ecuadorians. These fees generated slightly over a million dollars in government revenues. The second is a concession fee, "patente," paid by vessel owners for the right to conduct tours within the National Park.

Edwards (1991) explored how the government of Ecuador, as steward of the Galapagos National Park and the surrounding Marine Resources Reserve, could utilize fiscal policy to maximize tax revenues to satisfy the allegedly incompatible goals of wilderness preservation and economic growth. Using a hedonic model to estimate tourist demand to visit the Galapagos, he argues that the government might act as a monopoly to maximize tax revenues constrained by the recommended carrying capacity of 125,000 visitor days. His analysis revealed that the implicit price for a vacation day in the Galapagos, in 1986,

[1] Proposed Park entrance fees would increase amount to $80 for foreigners and 12,000 sucres for Ecuadorians.

was U.S. $312, that the daily fee which maximized tax revenues per tourist was $214 and that, at this price, the average length of stay would be 3.6 days. Total revenues, under this optimal price scenario, would amount to $65.7 million, of which $26.7 million would be in the form of taxes. Edwards goes on to state that use of these fiscal measures would tend to exclude low- to moderate-income tourists, but this impact could be mitigated by a price discrimination policy, similar to that currently used by the Park Service.

Vessel Concession Fees

The formula utilized to calculate the price a vessel pays the government for its "patente," as of September 1991, was to multiply the number of authorized berths by 25 percent of the minimum monthly salary established by the government. Based on the minimum monthly wage of 44,000 sucres (U.S. $43 in August, 1991), vessels paid approximately 10,000 sucres (U.S. $9.75) for each authorized passenger berth. The appropriateness of resource rent fees is normally gauged against pre-tax earnings, but data to assess costs and earnings are not available, so such calculations are not possible. Measured against the total revenues estimated earlier in this study, the tourist fleet pays an overall rate of $0.00054, or $5.40 per $10,000. By vessel category, fixed-itinerary vessels pay $3.60 per $10,000 of gross income, flexible-itinerary vessels pay $5.85 per $10,000 of gross income, and day boats pay $35.80 per $10,000. Day boats, due to lower revenues, pay a rate that is about ten times more than the fixed-itinerary vessels. The total amount collected for "patentes" during 1991 was negligible at about $10,800. The existing system is not socially equitable, as it places a much greater burden on lower-income groups.

It is obvious that profit is the motivating force behind expansion of the tourist industry in the Galapagos, that economic and fiscal policies can contribute to formulating policies to direct development, and that the amount the government collects in resource rents can be significantly increased. It is also clear that taxing vessels is less obtrusive to visitors than collecting entrance fees. The amount charged for "patentes" assigns little value to the fragile natural resource base on the Galapagos, and can be interpreted as a pro-development policy. Selecting the "economically" optimal type and amount of tax is a complex task with social implications, and is not addressed in this study. Nevertheless, efforts should be made to increase the flow of revenues into the government coffers by increasing the price charged for "patentes."

Implementing a limited-entry scheme, similar to those advocated to regulate open access fisheries, with transferable rights, should also be considered. The analysis and information required to assess the validity and impact of this sort of regulation have not been conducted and are beyond the scope of this study.

Social Issues

Protecting the natural ecosystems of the Galapagos is of paramount importance but is not the sole measure of successful management, as the ultimate objective of conserving ecosystems should be to improve the quality of life for humans. This is easier said than done; the development and regulation of an industry that is dependent on exploiting and accessing a fragile, unique, and world-renowned common property resource such as the Galapagos, evokes emotion as it pits the rich and powerful against the poor, and conservationists against developers and townspeople, with each group competing to promote their interests and to improve their economic well-being. The local and national interests are often very different. One has only to look to Hawaii, areas of Florida, and major tourist resorts in Mexico and Kenya to see the conflicts that tourism has brought to local ecosystems, economies, and cultural heritage. There are already strong indications that this process is well advanced in the Galapagos, where subsistence farming and fishing

are being abandoned, and the population has shifted from the highlands to the urban centers of Puerto Ayora and Puerto Baquerizo Moreno. Gunther Reck, former Director of the Charles Darwin Station, (in Emory, 1989) states that social problems are going to increase. This decline is already apparent in the types of buildings in the back of the villages. They are getting poorer and poorer. Local municipalities are ill-equipped to meet demands placed on them by a rapidly growing population and increased numbers of tourists. Infrastructure is rudimentary in comparison to that of other popular tourist destinations. Emory (1989) relies on interviews from long-term residents and scientists to show that the quality of life in general, and services and education in particular, have deteriorated over the last 20 years. Residents acknowledge that most have benefited materially (e.g., higher incomes, access to a wider range of goods and products, etc.) from tourism, but are quick to point out that they have paid for these gains. Included in these costs are increases in social stratification, crime, conflicts, noise levels, and prices of basic staples.

VIII. An Economic Perspective on Tourism Policy in the Galapagos Islands

The Role of the Galapagos in National Ecotourism Development

The Galapagos is a unique and world-renowned common property resource which provides economic benefits to island residents and to continental Ecuador. It is clear from the analysis presented in this report that tourism in the Galapagos also has a significant economic impact on continental Ecuador. Decisions on how development takes place in the Galapagos will have an impact on its value as a living laboratory, as well as its attractiveness as both a place to live and as a tourist destination. In addition, Ecuador is already using the islands as a platform to launch tourism development on the mainland, as illustrated by the recent decision to grant permits to visit the Galapagos to trans-oceanic cruise ships if they visit a port on the mainland.

The creation of the Fundacion Ecuatoriana de Promocion Turistica (FEPROTOUR) to plan and promote tourism within Ecuador demonstrates the government commitment to a major ecotourism development campaign. Mainland Ecuador, with its temperate valleys, tropical rain forests, coastal desert, and snow-capped peaks, has the natural endowments to justify such an initiative. The country boasts 1,400 species of birds, more than twice the number found in the United States and Canada; plant species, which are comparable in number to those found in all of Central America (Fundacion Natura, 1981); colorful Indian markets; and a rich cultural heritage.

The Galapagos are already the country's main attraction for ecotourism. Survey results indicate that 98 percent of all foreign tourists surveyed ranked the Galapagos as more important than the other areas visited on their vacation, and 44 percent expressed a desire to visit the islands again. It has also been shown that foreigners visiting the islands spend at least as much time and money in mainland Ecuador.

The Galapagos is at risk of losing the natural characteristics which give it value for tourism, yet it is fully capable of generating sufficient revenues to cover the costs of proper management as well as a significant additional income. The archipelago can sustain a diverse set of economic activities, but is will not be efficiently utilized without government intervention. Unregulated, private companies will act in their own interests to maximize profits and will not internalize the social and environmental costs associated with their actions.

Tourism Policy for the Galapagos

A number of initiatives have been taken by the Government of Ecuador to develop natural resources management and tourism development policies for the Galapagos Islands, including the Master Plan for Conservation and Development prepared in 1988, and the National Commission

on Tourism Management in the Galapagos created in 1990. The National Coastal Resources Management Commission has also been charged with developing a special area management plan for the Galapagos, following the participatory methods and the integrated perspective employed to formulate the five plans already adopted for segments of the continental coast.

In 1990 and 1991, the Coastal Resources Management Program conducted an extensive consultation process, initiated planning activities focusing on the use and development of non-park lands, including a workshop at Punta Carnero in June 1990, and prepared a discussion draft of policy proposals for integrated resource management in the islands.

These included the following major concepts:

- It is in the national interest to define and achieve a balance between man and nature in Galapagos province that preserves and protects the archipelago as a unique ecosystem. Development in non-park areas must provide for a sustainable and diversified economy and a quality of life that is compatible with the long-term integrity of the National Park and Marine Reserve.

- Achieving such a balance requires:
  -controlling the growth of the resident population of the province by regulating immigration and the number of tourists;
  -regulating the process of development through a comprehensive zoning scheme that defines the desired type and intensity of use within all non-park areas; and
  -regulating human activities within the National Park and Marine Reserve so that the impacts do not threaten the condition and character of these areas as defined by their respective management plans.

- The national policy for development in areas of the province outside the Park should be guided by the following principles:
  -to develop an economy that as far as practical is self-sufficient in food, fuel, and water, and sufficiently diversified to withstand fluctuations in tourism that may be caused by fluctuations in the world economy or by other external forces.
  -to optimize the long-term economic, cultural, and environmental benefits that Galapagos province brings to the nation as one of the world's most attractive sites for research, environmental education, and ecotourism.
  -to provide for an infrastructure that complements and supports the land use zoning scheme and does not promote intensities and types of development that adversely impact the National Park and Marine Reserve.

This study of the economic and social dimensions of Galapagos tourism underscores the necessity of active management of the growth and nature of tourism on the islands for the benefit of their unique resources, the people of the islands, and the national economy.

1. Galapagos tourism can easily generate the financial revenues needed to pay for the required management initiatives.

Unlike protected areas in many developing countries, the Galapagos National Park is not a financial burden to the government of Ecuador. Overall, Galapagos tourism generated about U.S. $60 million per year, excluding international air fares, between 1991 and 1992. Approximately U.S. $32.6 million was spent on air travel between Ecuador and the islands, on park entrance fees and on tours and hotels on the islands. Foreign tourists spent an additional U.S. $27.5 million visiting mainland Ecuador in connection to their vacation to the Galapagos. Hard currency earnings amounted to U.S. $55 million. Total tourism revenues attributed to the islands exceed the amount spent on administering the park by 240-fold.

The government of Ecuador and residents of the Galapagos are receiving only a small fraction of the economic benefits accrued by tourism in the Galapagos. Comprehensive management and development efforts can be financed by government initiatives to capture a greater share of the resource rents that are currently being taken as profit by tour operators. Subsidies which promote inefficient or undesirable resource use, immigration, and entry into the tourism industry should be controlled or phased out.

2. Economic and visitor-use data can be used to establish appropriate use fees, to broaden the economic benefits of tourism, and to match use levels to environmental sensitivity.

Better data on the industry's costs and earnings and on the socio-economic impacts of tourism would constitute a strong step toward better understanding of the industry and of the appropriateness of alternative management strategies, in particular the types and amounts of resource rents that can be charged.

Research is also needed to identify the attributes of specific sites that determine the level of visitor site usage. If acceptable visitation limits can be determined, various options should be considered for regulating the flow of tourists, while capturing resource rent. For example, one option would be to ask vessel operators to bid for the permits to take tourists to given visitor sites. Site access fees could also be tailored to reflect the ecological importance or fragility of sites. The importance of sites to various types of tours should be assessed. Sites within a short traveling time from population centers are obviously more important to the town than to fixed-itinerary vessels.

A centralized data base should be created to facilitate access to information by investigators, policy makers, and officials. Pertinent data are currently being collected (e.g., the port captain and Park Service collect information on vessel movement, occupancy, etc.), but are often discarded or not available to the public. Cooperation between government agencies would cut costs and reduce duplication of effort.

3. Steps should be taken to diversify tourism.

It is evident that tourism is and will continue to provide the economic base for the islands, as there are few other viable alternatives. Tourism should also be favored, as it is more compatible with conservation than economic activities that physically transform or exploit the resource base. The Galapagos Master Plan calls for the diversification of tourism, and recommends that compatible activities be encouraged. Many of the tourists surveyed mentioned that tours to the interior of inhabited islands, possibly combined with horseback riding and overnight accommodations, would be desirable. These types of activities would assist in alleviating pressure on park visitor sites and provide additional sources of income to residents in the interior.

The government of Ecuador can influence the ecological and socio-economic impacts associated with tourism by catering to specific classes of tourists and employing a variety of management measures to regulate the intensity of use.

4. Steps should be taken to diversify the economic base of the Galapagos Islands.

Enhancing the social and services component of tourism will translate directly into increased visitor satisfaction and willingness to pay, and will widen the distribution of economic and social benefits. This can be achieved by investment in local human capital, and by better utilization and enhancement of existing infrastructure. Diversifying the economy by creating linkages with existing sectors, such as fisheries and agriculture, will also promote stability in land use and contribute to the maintenance of traditional lifestyles.

Economic, social, and environmental degradation are closely linked, as are the actions of existing groups such as small vessel and/or hotel owners, farmers, cattle ranchers, and fishermen. The emphasis should be to improve the quality and value of existing services and products that do not lead to environmental degradation. It is unrealistic to expect impoverished segments of a population to give priority to sustainable resource use. Improving the quality and supply of existing produce (i.e., agricultural and fisheries) and services by creating linkages between various productive sectors and the tourist industry will enhance the value of current activities, increase the multiplier effect of dollars entering the island economy, stem the migration from rural to urban areas, and reduce the dependency on imported foods which often arrive carrying undesired exotic species. If these opportunities are not seized by local residents, they will be taken by outsiders.

5. Positive actions must be taken to build local capacity to control growth in the use of the islands.

Tourism, whether it be land- or ocean-based, is expanding at an alarming rate and, given the existing trend, will double in nine years. The future of the islands is contingent on managing this growth to satisfy conservation and social goals.

The capacity of local institutions to take a more active role in directing and regulating the course of development must be strengthened. This is essential if improvements to the social setting and visitor satisfaction with populated areas are to be achieved and sustained. This can only be achieved by strengthening the credibility and competence of civil servants, through the provision of long-term technical assistance, reasonable salaries, and education. The central theme should be community planning with an emphasis on:

- zoning and land use regulation, particularly in relation to expanding urban centers and key habitats such as beaches, scenic areas, watersheds, and buffer zones between the park and towns

- introduction of appropriate, environmentally sensitive technologies and infrastructure to provide energy, water, and disposal of solid and liquid waste

Community planning and participation in decision making, which has historically been made outside the islands, is essential if policies and plans are to be accepted and implemented.

6. Educational training of island residents is crucial if the needed economic, social, and governance reforms are to be successfully implemented.

Existing efforts to balance conservation and socio-economic development can be fortified by incorporating economic and social criteria into regulating and directing the tourism industry and the development process. Several thousand studies have been conducted on the Galapagos Islands, yet very few address the economic or social implications of tourism. It would be naive to believe that the islands can be managed solely on the basis of biological and geological information. The breadth of the existing excellent biological research should be expanded to embrace the social sciences.

Education and training are necessary if Galapaqueños are to provide the variety and quality of services for which tourists are willing and able to pay. Currently a large portion of the population is ill-equipped to compete with educated nationals and foreigners who are drawn to the islands by the prospect of working in a position or starting a business while earning wages that are high relative to those received elsewhere in Ecuador or South America. Many long-term residents are relegated to lesser-paying and often menial labor, which adds to their growing sense of frustration and resentment.

Public education should provide formal and informal courses. Formal education implies strengthening the public school system by improving or adding courses in such areas as foreign languages, natural history, tourism, and hotel management. Scholarships and financial assistance should be made available to promising students that do not possess the financial means to advance their education. Informal education should target the adult population by providing short courses in such areas as vessel maintenance and safety, food and beverage administration, small business administration, marketing, organic gardening, etc. All courses should be based on need, oriented toward improving the quality and value of existing services, and should target appropriate and needy user groups.

Education is also vital in order for island residents to participate effectively in the local and regional planning and management projects which must be completed in order to avert the coming crisis of the degradation of Ecuador's tourism base.

Human intervention in the Galapagos has been both a bane and a blessing. The growing international awareness and understanding of this unique environment has stimulated the tourism sector in Ecuador, and made it possible to organize expertise, political will, and financial resources to protect the islands. A process of local empowerment is now needed if the economic benefits of tourism are to be better distributed, growth management policies created and implemented, and human quality of life improved and sustained. Measures to enhance revenues must be accompanied by increased local capacity to participate both in the tourism sector and in the governance of the islands. There must be a national commitment to insure that by the year 2000, the Galapagos Islands are successfully fulfilling the multiple roles of a World Heritage Site, a source of livelihood for a limited resident population, and the cornerstone of a flourishing, ecologically-sound ecotourism industry for Ecuador.

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