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The Galapagos – a Unique and Valuable Resource

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The Setting – Islands of Myth and Magic

Introduction

In the minds of most people, the Galapagos are instantly associated with Charles Darwin and the theory of evolution, land tortoises, and both land and sea iguanas. Scuba divers worldwide associate the Galapagos with schools of hammerhead sharks and other marine life. As such the Galapagos are truly a unique world-renowned destination, and attract a growing number of visitors each year. Few people, however, actually know where the Galapagos are located (1,000 km off the west coast of South America, straddling the equator), whether they are one or many islands (there are about 11 principal islands and many smaller islands totaling 7,970 km²; see Map 1), to which country they belong (the Galapagos are a province of Ecuador), or anything about their population (less than 30,000 people in total, mostly from mainland Ecuador, and mostly recent arrivals since the islands were largely unsettled until the mid-19th century). Although Darwin is well known and world famous, few realize that the old, bearded Darwin of the pictures appears very different from the young, 26 years old British scientist who visited the Galapagos in 1835 for a month on the HMS *Beagle*. Darwin's most famous book, **The Origin of Species**, only appeared some 20 years later in 1859.

From an economic perspective the unique history and character of the Galapagos has meant that there are substantial economic rents associated with tourism in the islands. The combination of a world-famous destination with a high end (i.e. rich) visitor clientele and a largely live-on-board visitor model with stays lasting between 3 days to one week, mean that a sizeable tourism industry has developed around these islands and tourism. When this is combined with the large number of NGOs and research establishments with an interest in the Galapagos, as well as government agencies, the result is substantial economic activity built upon the fame and uniqueness of the islands. This note examines the economic questions associated with the islands, the magnitudes of economic flows, and the distribution of those benefits between residents of the Galapagos, Ecuadorians more generally, and international visitors.

¹ Environmental economist, Kailua, Hawaii. I would like to thank the many individuals whom I met in Quito and in Puerto Ayora, the Galapagos. They are listed in Annex 1 in the full report. Although they all generously shared their time and information the views expressed here are those of the author and should not be ascribed to any individual. I would also like to thank Ms. Alexandra del Castillo of the World Bank office in Quito who help arrange all of the meetings, and Mr. Daniel Proano Bravo of *futuro latinoamericano* who accompanied me in Puerto Ayora and answered many questions about these fascinating islands. Helpful discussions and comments were received, with thanks, from Juan Carlos Belauseguioitia, Renan Poveda and Natalie Giannelli.

Islands born of the sea

The Galapagos are islands born from the sea and are the result of an oceanic tectonic plate moving over a “hot spot” in the earth’s crust and are therefore volcanic in origin. The Galapagos are unique in other ways. Fully 97% of the land area is protected and is included in the Galapagos National Park which was established in 1936 (and surrounding waters are protected by the associated Galapagos Marine Reserve, set up in the 1980s and significantly expanded in the late 1990s.) The Galapagos is the only one of the major ecosystems in the world where reptiles are the apex species – including the famous land and marine iguanas, and land tortoises. The strict limits on human settlement mean that most visitations to the Galapagos (estimated at between 100,000 and 120,000 visitor arrivals per year in recent years) are done via boats or ships (usually carrying from 16 to 96 passengers) and that tourism has evolved into a high-end, quite sophisticated industry. Many visitors proceed directly from the airport to their boats for their multi-day visits and leave the same way. A short visit in Puerto Ayora and the Darwin Research Station may be included in the itinerary but little time is spent on shore other than within the National Park at several of the 60 some approved terrestrial visitor sites. In addition, there are over 60 designated dive sites in the Galapagos Marine Reserve.

The Economic Story – the Division of Economic Rents

Unique resources and economic rents

The Galapagos are a truly unique ecological and economic resource – nowhere else in the world can one see such a diverse and interesting array of land and sea creatures in such an undeveloped and natural setting. Many species are endemic – found nowhere else in the world. There is no natural competitive site. Tourism arrivals, largely international visitors, have increased rapidly in the past 20 years (see Table 1). From less than 17,500 visitors a year as recently as 1985, the current visitor count totals between 120,000 to 140,000 per year. Of these the majority are international visitors (about 85,000 out of 120,000 total visitors in 2005). Basically all non-residents are counted as tourists. One has to read the visitor numbers with some caution, however, since there has been a recent jump in the numbers of Ecuadorians coming to the Galapagos. Although technically counted as “tourists” it is both cheap (\$6 per person) and easy for Ecuadorians to enter the islands as a “tourist” even if one is coming for work or business. In contrast, international visitors pay a \$100 per person entrance fee upon landing. See Table 2.1 for the current fee structure for visitors, as well as Table 2.2 for the fee structure for the annual tour boat license.

The rapid growth in tourism is linked to the rapid population growth in the islands – largely through in migration. Whereas the resident population of the Galapagos was less than 1,000 as recently as the 1940s, it grew to 2,000 people in the mid-1960s, to more than 15,000 in the 1980s, and is close to 30,000 people today. A number of the present populations are non-residents who are technically there for short, time-bound periods of time to provide specific services. Non-residents of the islands can come in

legally on temporary work permits that are valid from 3 to 6 months. These “short-term” workers staff many service sector jobs.

The Galapagos do not offer the usual “sun/ sand/ sea” package found in the Caribbean or many other vacation destinations, and those who come (and pay the large expenses associated with visitation) are motivated by the unique nature of the islands and its varied ecosystems, flora and fauna, all protected by the National Park (which includes both the land and the marine areas). The very uniqueness of the islands allows tourism operators to charge a premium and offer premium services. It is felt that even with the high prices charged, and the considerable travel costs associated with getting there, the Galapagos still generates considerable consumer’s surplus for visitors and that part of the economic rent associated with the unique nature of the islands is not being captured. One way to think about an economic rent is that it is the premium that people would be willing to pay for something but that they are not usually charged. Rents are created by uniqueness and scarcity. Since there are limits on the numbers of visitors (especially on the live-on-board boats) normal market forces of supply and demand do not apply. These create economic rents for both the visitors and the providers of services (tour operators).

A major management question, therefore, is **what are the sizes of the economic rents attributable to the uniqueness of the Galapagos, who captures these rents** (residents? Ecuadorian? others?) and what portion is not captured and leave with international visitors? Also, **what are the other main economic activities** in the islands and what are the impacts of those activities on the ecosystem? Is there **a way to increase the share of economic benefits that goes to residents of the Galapagos?** Finally, is there a **carrying capacity issue with respect to tourism**, and what are the options and **tradeoffs between sea-based and land-based tourism?**

Gross economic flows in the Galapagos

It is estimated that **gross revenues** directly associated with tourism in the Galapagos total from \$285 to \$391 million per year. Table 3 brings the various estimates/ “guesstimates” together in one place. Not a great deal of economic analysis has been done on the Galapagos. An excellent recent paper by Taylor et al. (2006) presents some interesting work on economic multipliers and the impacts of local spending, and a just completed (but not yet released) study by Bruce Epler (2007) should provide considerable detail on economic impacts once it is available. The estimates presented in Table 3 are my own “back of the envelope” calculations based on general information on visitor numbers, expenditures, and reasonable assumptions. While not an exact estimate, the orders of magnitude of the different sectors are probably quite realistic.

Tourism (both international and national) is the biggest contributor to the Galapagos-associated economy. The estimate of a gross expenditure of \$260 to \$360 million includes international and national airfares, boats and hotels, meals and other expenditures, guide fees and tips, and park admission fees. Although a sizeable portion of this money never enters Ecuador (especially international airfares, and payments to international tour wholesalers) other parts, including domestic airfares (from either

Guayaquil or Quito), wages to Ecuadorians, within-Ecuador visitor expenditures, other fees and expenses, plus add-on trips within Ecuador, do stay within the country.

Taylor and colleagues (2006) have produced an interesting paper estimating the economic impacts of visitor spending via the economic multiplier effect. That is, for each dollar spent in the Galapagos (or paid to residents who live and work there) increased demand is created in the economy. Of note in Taylor's paper is the fact that the multiplier for national tourism (largely land-based) of about 1.4 is actually larger than for international tourism (largely sea-based) of about 1.2 since a larger share of national tourist expenditures are spent locally and generate economic activity in the islands. However, since international visitors spend much more per person per day, their cumulative impact is much more important. Nevertheless, this does illustrate why island residents view land-based tourism quite favorably – it leaves more dollars in the Galapagos per tourism dollar spent.

Fishing within the Galapagos is a small but vocal sector, employs several hundreds of people on a full or part time basis, and produces gross revenues of several million dollars per year. The number of boats registered has more than doubled since 1998 -- from 218 boats in 1998, to 446 in 2005 according to National Park figures – and there are about 1,000 registered “fishermen” in the islands. The actual value of the catch varies from year to year, and there have been shifts between fin fish and the lobster and sea cucumber catch (and continuing problems with illegal shark fining). A “guesstimate” of the size of the fishing industry is from \$3 million to \$6 million per year, and is not clear what portion of this stays in the Galapagos and what portion accrues to others – either on the mainland or internationally.

Conflicts continue between the fishermen and the regulations of the Galapagos Marine Park (part of the broader protection system of the Galapagos National Park) with the usual issues of fishing zones, closed seasons, permitted catch, and other issues. One prediction is that with the growth in land-based tourism there will be increased attraction for fishermen to conduct sport fishing trips and to run day trips to areas within the Park. An additional factor is the growth in the local market for fresh fish due to growth in both population and income and the growing demands from visitors for fresh fish. Recently there has been some friction between the Navy and fishing within Park waters – President Correa referred to this in his recent statements on the Galapagos.

Research and conservation is a major economic activity in the Galapagos, and few if any other national parks anywhere in the world have such a concentration of international staff. Although the actual expenditures will vary from year to year depending on discrete programs and activities, one “guesstimate” of expenditures is about \$10 million per year, a substantial amount given the small population of the Galapagos. Many major bilateral and international agencies have programs in the Galapagos. The Charles Darwin Foundation, for example, had a 2005 budget of over \$4 million (much of it spent at the Research Station in Puerto Ayora). In addition, since most of the money for research and conservation activities is spent on salaries and goods and services in the

islands, the economic multiplier impact is substantial. Taylor estimates the economic multiplier for conservation activities at 1.8 (Taylor et al. 2006).

Government expenditures are also substantial and Taylor estimates these expenditures at about \$12.8 million per year for the 2004-2005 fiscal year. (Others put the total at considerably more.) Although over half of this money is for the National Park of the Galapagos (\$7.6 million of the total) many Ecuadorian ministries are represented in the Galapagos with both provincial and municipal level representation. A major source of income to the National Park and numerous local agencies is the division of the Park admission fees – their total value is about \$8 million or \$9 million per year, and the total is divided between the National Park (both terrestrial – 40%, and marine areas – 5%), local *municipios*, and even the Navy! (see Table 4) Since international tourists largely pay these admission fees, they may also be reported in gross tourism expenditures (but actually are a financial transfer from the visitors to the different agencies that divide up this steady source of income). The estimates in Table 3 have tried to avoid double counting.

Of great interest is the question of the **size of the economic rents** associated with these different sectors. Without more detailed analysis all that I can present here are some very rough “guesstimates” based on conversations with individuals there, looking at the statistics, and casual empiricism. The estimates are based on conservative assumptions about economic rents. As seen in Table 3 economic rents total as much as \$26-\$37 million per year, largely associated with tourism. Part of these rents goes to tourism operators as producers’ surplus; another sizeable portion goes to visitors as consumer surplus. The fishing sector probably produces very few economic rents, and they may even be negative given different subsidies and distortions in the market. Economic rents are not a bad thing – they are part of total welfare. When the rents remain in the Galapagos or Ecuador they increase national well-being. When they leave the country with international visitors, they are “lost” to Ecuador and increase the well-being of the foreign countries that the visitors come from.

Since rents from the environment are produced by nature (and not by direct investment) there is always competition to “capture” these rents for oneself – and thereby gain an extra profit. This is a very active process in the Galapagos.

Capturing economic rents -- and the two “Gold Cards” in the Galapagos

Economic rents are generated whenever there is scarcity and some break in the supply-demand relationship. The “break” can be caused by uniqueness of a location – such as the fauna found in the Galapagos -- or can be caused by government created institutional restrictions such as the creation of a class of Galapagos residents that are different than other Ecuadorians. In the Galapagos both nature and institutions have created two very valuable forms of entitlements or rights: the system of *cupos* used to control the total number of sea-based berths for visitors, and the residency system that restricts certain rights to those who have a Galapagos residency card. Both the *cupos* and the residency cards have value and denote special rights. Just as the premium cards from

credit card companies or airlines are frequently called their Gold Cards, these two Galapagos “Gold Cards” reflect entitlements that create the possibility of capturing economic rents. Access to these “Gold Cards” is restricted; normal forces of supply and demand are not in effect.

Cupos and patentes. All of the live-on-board boats that operate the normal tours in the Galapagos have to have a **cupo**, or permit/ quota, for a certain number of berths. There is some debate over whether or not *cupos* are “*para siempre* – forever” or if they can be taken back by the issuing authority (and it is not entirely clear yet how the *cupos* were initially allocated). Those who hold the *cupos* believe that they are issued “*para siempre*” and are an entitlement that can be bought and sold. Some Government officials believe that they are not issued forever. Since the holding of a *cupo* is so essential to operating a tourism business in the Park, they are both very valuable and closely guarded. (The number of places/ berths authorized by the *cupos* has increased from 1657 in the year 1998, to 1897 in the year 2005; Taylor et al 2006). The *patente* is merely the annual operating permit (approved by the National Park) and plan of action but is entirely dependent on holding the *cupo*. The issuing and “status” of *cupos* needs to be clarified.

The total number of *cupos* issued at present is over 1800 (estimated as 1897 in 2005), so this effectively limits the total number of boat-based visitor nights available each year in the Galapagos. Some “back of the envelope” math confirms this. If the average boat operated for 11 months (with a month off for maintenance and repairs), this would mean that 1800 *cupos* results in about 594,000 potential berth-nights (1800 *cupos* x 11 months x 30 days in a month). If the average boat tour lasts from 3 to 7 days, this is equivalent to 198,000 visitors per year if all visitors came for a 3 day trips, or 84,857 visitors per year if all went on 7 day trips. Since actual visitor numbers at present (and these include land-based visitors) is in the 105,000 to 115,000 range one sees that the boats would appear to be operating at reasonably high occupancy rate, with most visitors on longer trips.

New entrants into the sea-based tourism market are restricted to those who can secure *cupos*. Usually this means buying *cupos* from an existing *cupo* holder. For operators who want to operate a larger vessel (and the largest vessels in use at present have about 96 berths) it is necessary to buy several smaller *cupos* and aggregate them into the total needed for the larger capacity vessel. It is reported that there has been a process of consolidation in the sea-based tourism industry – both with respect to ownership and capacity. An increasing share of the multi-day trips are on larger capacity vessels. The yearly *patente*, issued by the National Park is important and a small fee is paid per berth per year based on the number of *cupos*/ berths for each boat. Table 1 lists the current fee structure, which on average are less than 1 dollar per berth per night

The real “Gold Card” in the tourism industry is the *cupo*. No *cupos*, no *patente*, no visitors. Although it is difficult to estimate the value of a *cupo* (since no transparent market or auction has been used to allocate them), their value is large and can only grow since demand for visitation will increase in the future and the number of *cupos* is fixed at

present. Figure 1 presents a stylized version of the supply of and demand for sea-based tourism in the Galapagos with the cupo system in place.

Residency cards (and the Ley Especial para la Provincia de Galapagos, 1998). The second Gold Card that exists in the Galapagos is the Residency Cards that were issued to all residents when the Ley de Galapagos of 1998 went into affect. This law required a special amendment to the National Constitution to allow the restrictions on residency, property rights and business rights included in the Special Law. Since the Galapagos is a province of Ecuador and has two *deputados*, deputies, in the National Congress, the residency card allows one to vote in the Galapagos, work there, buy cheap air tickets to Guayaquil or Quito², and invest in the Galapagos. Others, such as individuals from the mainland of Ecuador (referred to as the *continente*), do not have these rights. They can obtain short –term work permits (usually valid for 3 to 6 months), but cannot legally stay in the Galapagos forever to work or invest. Hence the identify cards, especially when joint investments are concerned (residents plus non-residents), are a very valuable entitlement and an excellent way to capture some extra economic rents.

At present the only way to become a Resident of the Galapagos is through birth (to a resident) or marriage. There may be some other ways to obtain a resident card but I was not able to find out how this could be done (or if it was even legal). As with any artificial restriction (including the *cupos*) the Residency Card creates a failure in the market and the possibility of capturing extra economic rents by those who hold the entitlement.

Sharing the gold: A better division of the economic benefits?

A set of recurring themes during my brief visit to Ecuador and the Galapagos in March 2007 was the need to maintain the ecological stability of the Galapagos, to prevent the introduction of invasive species, and to increase the generation of economic benefits from the Galapagos and to retain more of those benefits within Ecuador and especially within the Islands themselves. One person even referred to the potential conflict between conservation and economic development as “tortuga o gente” – people versus land tortoises!

Although a few people have suggested a “no-growth” policy for the Galapagos, and a decrease in either visitor numbers or the resident population living there, neither of these options is probably feasible or desirable. There are, however, very real questions about the nature of growth, the direction it will take, and how growth can be both economically equitable and ecologically sensible, and therefore more sustainable. Although this goal is a difficult one, the unique characteristics of the Galapagos and the large economic rents associated with demand by tourism and research, means that it may just be possible to achieve such a goal.

² Residents of the Galapagos enjoy some of the cheapest airfares in the world: a roundtrip ticket to Quito costs about \$110 for a resident, about \$220 for other Ecuadorians, and close the \$400 for a foreigner.

Increasing Visitor Number and Increasing Local Benefits. There are three dimensions that need to be taken into account is considering management options for the Galapagos: increasing visitor numbers, increasing economic rent capture, and increasing the share of benefits going to residents of the Islands.

Several main options exist concerning visitor numbers: no increase in overall numbers, increase in visitor numbers with shorter average trips (and no increase in the *cupos*), increase in visitor numbers with an increase in *cupos* and live-on-board spaces, or increase in numbers with increased land-based tourism. Each has different implications with respect to revenues (entrance fees, trip costs, other expenditures) and the distribution of those revenues.

If the goal is to increase the amount of benefits (and employment) created in the Galapagos then there is a strong preference for increased land-based visitation and /or linked boat plus land packages. At present the land-based visitors spend much less per person per day (maybe in the range of \$50 to \$75 on average vs. some \$250 to \$400 for boat-based visitors) but potentially much more of the money is spent in the Galapagos and stays behind.

Increasing Revenues/ Rents Captured. The present admission fee of \$100 for foreigners and \$6 for Ecuadorians (with reduced fees for children) is an important source of dependable income to the Galapagos. Among the highest admission fees to a national park anywhere in the world, the present fee seems to have no measurable impact on demand. Unique resources can command unique fees. The present collection (along with *patente* fees?) is about \$8-9 million per year and is divided among a number of parties: See Table 4 for more details.

Given the pattern of demand the fees could probably be doubled (to \$200 per person for foreigners) with no measurable impact on demand. Since Galapagos tourism is already a quite high-end product, and constrained more by capacity than demand, normal supply and demand curves do not apply. The present situation is illustrated in **Figure 1** where an increase in admission fees has basically no impact on demand – it is merely extracting some of the consumers’ surplus that would normally go home with the visitor (or be extracted by the tour operators). Figure 1 also has a notional supply curve, but with the capacity restrictions in place now we really do not know what a market-clearing equilibrium of price and demand / visitation would be.

Increasing local benefits. There are three main options for increasing local benefits: improved training; increasing local hires; and expanded land-based tourism. All three of these are linked, but the need for improved training is probably the core need. Time and again I was told that it was necessary to import labor since local residents did not have the needed training. This argument, of course, is somewhat circular and self-serving. If proper training is not available in the Galapagos it is always easier (and cheaper) to bring in non-residents to perform need jobs. In addition, the local income level, and salary expectations, are both higher in the Galapagos than on mainland

Ecuador. The result is the large number of both legal and illegal workers, even though their residency in the Galapagos is temporary.

A related, and more difficult, issue is the extent to which land-based tourism should be promoted (*tourismo con base local*). Land-based tourism, much of it lower cost than the ship-based variety, has expanded rapidly. It does create local jobs and income from both construction and services, and caters to a different clientele. One important impact on the Park, however, is that day-trips (the predominant form of Park use by land-based tourism) tend to be concentrated in certain areas because of the time available. If this sector grows quickly there may well be congestion issues at certain locations within the Park. The economic tradeoff between sea-based and land-based tourism is interesting. There is no question that boat-based tourists spend MUCH more per person per day, but the impact on the local economy is much less per dollar spent. Land-based visitors, on the other hand, tend to be more budget-constrained but they do purchase goods and services from the local economy and this is seen as very desirable.

Invasive species and links to increasing numbers of people and inputs. A major concern of the conservation community is the introduction of invasive species that will threaten the fauna and flora of the Galapagos. This is a legitimate concern and even with the quarantine measures now in place it is increasingly likely that increased visitor numbers, and increased imports of almost everything consumed by both residents and visitors, will result in more introduced, invasive species. After having evolved in complete isolation for hundreds of thousands of years, the fauna and flora of the Galapagos is sensitive to new species and there have already been a number of major ecological disasters as a result of invasive species – feral goats and cats being only two notable examples. There is no question that increased economic activity will mean increased imports of goods and more visitors. This issue is being addressed by a number of projects and is a topic that requires constant investment and vigilance.

Summary

Conservation and Development: Key Policy Questions:

It would perhaps be easier to discuss the need for change if the current economic/environmental system in the Galapagos were clearly flawed and failing. This is not the case. Many parts of the Galapagos work quite well, and many people are making a living within the present system. In fact money *per se* is not the main problem in the Galapagos, but meaningful involvement in the economy and ecosystem are problems. Even the natural environment appears, at first glance, to be fairly well protected (with the important exception of invasive species, and over fishing of selected fish species). It should be noted, however, that there are differing views on how well the Galapagos ecosystem is being protected – and that various international agencies and NGOs have raised important cautionary flags.

Nevertheless, the functioning of the Galapagos as an ecological and economic system could be improved. Any improvement, however, is part of a complicated set of

social and economic decisions that are closely interlinked. As already mentioned there is also the clear need for a “champion” who will bring the political will and public support together to affect changes.

The very uniqueness of the Galapagos both generates the economic surplus or rents that are a focus of this report, and the same uniqueness is threatened by unwise development. However the existence of the strong tourism and scientific demand for the Galapagos makes it possible to consider future scenarios where both economic and ecological objectives can be met. People from around the world will continue to come to the Galapagos to see this very unique ecosystem.

Among the points to consider are the following:

1. **Carrying capacity of the Galapagos.** Although localized over-use may happen, the National Park as a whole is probably still below its maximum carrying capacity, especially at many more distant landing sites. A major management issue, however, is the impact of trends to increased land-based tourism and shorter boat-based visits. Both trends may put increased pressure on the more accessible sites, thereby leading to localized carrying-capacity issues. This is an important management issue that needs to be explicitly considered when one examines the total number of annual visitors, the average length of boat-based trips, and the division between boat-based and land-based visitation. One person speculated that an annual visitor count of 150,000 was sustainable. Although the actual carrying capacity depends on many variables (including length of stay and locations visited) it is probable that a sustainable level is probably less than 200,000 visitors per year, and not the millions of visitors received by some island destinations
2. **Growth versus no-Growth.** . If there is a maximum carrying capacity then one needs to plan how to maximize economic benefits without counting on continuing rapid growth in visitor numbers. It is unrealistic to call for no growth in either visitor numbers or economic activity. The issue is what increase in land-based tourism should be allowed, and, even with no increase in *cupos*, what should be the trend in average length of trip. More land-based tourism and shorter average boat trips will both lead to more visitors per year. The strong pressures for increased land-based tourism (and consequently more economic benefits for the resident population) is a major policy and management issue. And given present visitor numbers, there is still some room for increased numbers – but preferably with each visitor leaving more economic benefits behind.
3. **Increasing use fees.** Two main opportunities exist for directly capturing more of the economic rents (both consumers’ and producers’ surplus) from tourism in the Galapagos. The first is increasing the admission fee (especially for foreigners) perhaps to as much as \$200 per person. The proposed increase

would be labeled as a special “conservation fee” and would go to a special fund. (A graduated fee could also be introduced with a basic flat fee, and additional charges per day for longer stays, so that length of visit, and use of the natural resources, is reflected in the fees paid.) A \$100 per person increase would capture part of the consumers’ surplus of visitors and would generate about \$10 million per year. A second opportunity is to capture part of the producers’ surplus of tour operators by increasing the annual *patente* per berth fee. Since there is a strong sense that the *cupos* are entitlements, a fee increase would capture part of the economic rents that clearly go along with holding a *cupo*. If the present very low fees were increased 5 to 10 times, this would generate another \$2 million or more per year. These monies would also go to the new conservation fund. (Note that this increased “rent capture” would still leave considerable economic rents for both visitors and tour operators.) Using any new monies wisely is another matter, and a suggested mechanism (a Galapagos Conservation Fund) is discussed later.

4. **Increasing local benefits.** In addition to increased rent capture from tourism, a major thrust in recent discussions has been how to increase the share of economic benefits that go to the residents of the Galapagos. This means increasing local “content” in the various services offered, and increasing the skill mix of the local population so that more of the higher paying jobs go to residents. Training is a key component and training opportunities will need to be re-thought and strengthened. Perhaps a Galapagos Academy could be established to train residents in needed skills.

A second component is a stronger institutional commitment to requiring a larger local “content” in staffing of all commercial activities. This cannot happen instantly but can be put in place over a period of a few years (and in step with increased training opportunities). Increasing local benefits does not have to favor either land-based or sea-based tourism. Both can evolve in a way that provides more local economic benefits – but this will not happen without active government and private sector involvement and commitment.

A related and very delicate issue is that of residency, work permits, and immigration. As mentioned earlier the Special Law of the Galapagos creates important rents for those who have resident cards. Although one can use this “gold card” to capture economic rents by being a “silent partner” in business or investments, it is preferable if residents had meaningful and well-paid productive jobs within the Galapagos economy. Training and specialized skill development will be an important part of this process.

5. **The location of future development.** Although the main focal point of tourism is on Santa Cruz (and the airport on Baltra), there are competing centers in San Cristobal and, to a lesser extent, Isabela. Similar development versus conservation issues occur in all locations and planning needs to consider the benefits and costs of dispersing tourist arrivals and boat

departures among different sites. A change in the present pattern would also have an impact on congestion and carrying –capacity issues in certain locations.

6. **A new conservation fund.** If increased rents are extracted from both visitors and the tourism industry, it is proposed that these monies go to a newly created **Galapagos Conservation Fund**. This Fund would be separate from the present fund receiving admission fees and would be managed in an open and transparent manner by a Board with representatives of the public and private sector. The monies in the Fund would be used to support various activities that promote the long term economic and sustainability of the Galapagos as an ecosystem. Uses can include such activities as quarantine and invasive species control, training and education for residents and visitors, or habitat conservation and management. (It is important to note that the present institutional structure in the islands and strong positions of various vested interests will make implementing this suggestion very challenging.)
7. **Invasive species.** Perhaps the biggest threat from increased tourism and increased economic activity is that of invasive species. The present system of quarantine is not perfect and invasive species have become a major issue. Goats, dogs, pigs, cats, rats, blackberry and guava are just a few of the aggressive invasive species that have been introduced to the islands. Although not considered in this note, the style and size of tourism and economic development will have a major impact on the threat of invasive species and must be planned accordingly.
8. **Ecological sustainability.** A fundamental underlying issue that is not addressed in this note is the ecological sustainability (and both local and overall carrying capacity) of the Galapagos and how future development will affect the very thing that attracts so much interest and visitation. The Galapagos National Park, the Charles Darwin Research Station, and various government agencies and NGOs are all concerned with the sustainability of the island ecosystem and need to be part of the discussion of future options since they are such important stakeholders in the Galapagos. There is also substantial international financial support from both multi-lateral and bi-lateral agencies for these programs.
9. **Subsidy reduction.** A final important economic issue, although one not addressed in this note, are subsidies. Economic subsidies distort markets and they should be reduced or eliminated. This is especially true for commercial users of the Galapagos who should pay the full costs of resource use. If energy (fuel) subsidies are reduced this will lead to some price increases, but there is enough money flowing through the system (and willingness to pay on the part of visitors) that subsidy removal should not affect longer-term demand and profitability. It is realized that price adjustments (whether for admission fees, *patente* fees, or energy costs) are never easy or popular to implement but these

changes will help capture more of the rents generated by the unique resource that is the Galapagos. There is no justification for mainland Ecuadorian tax payers to subsidize visitors to the Galapagos.

Map 1. The Galapagos Islands

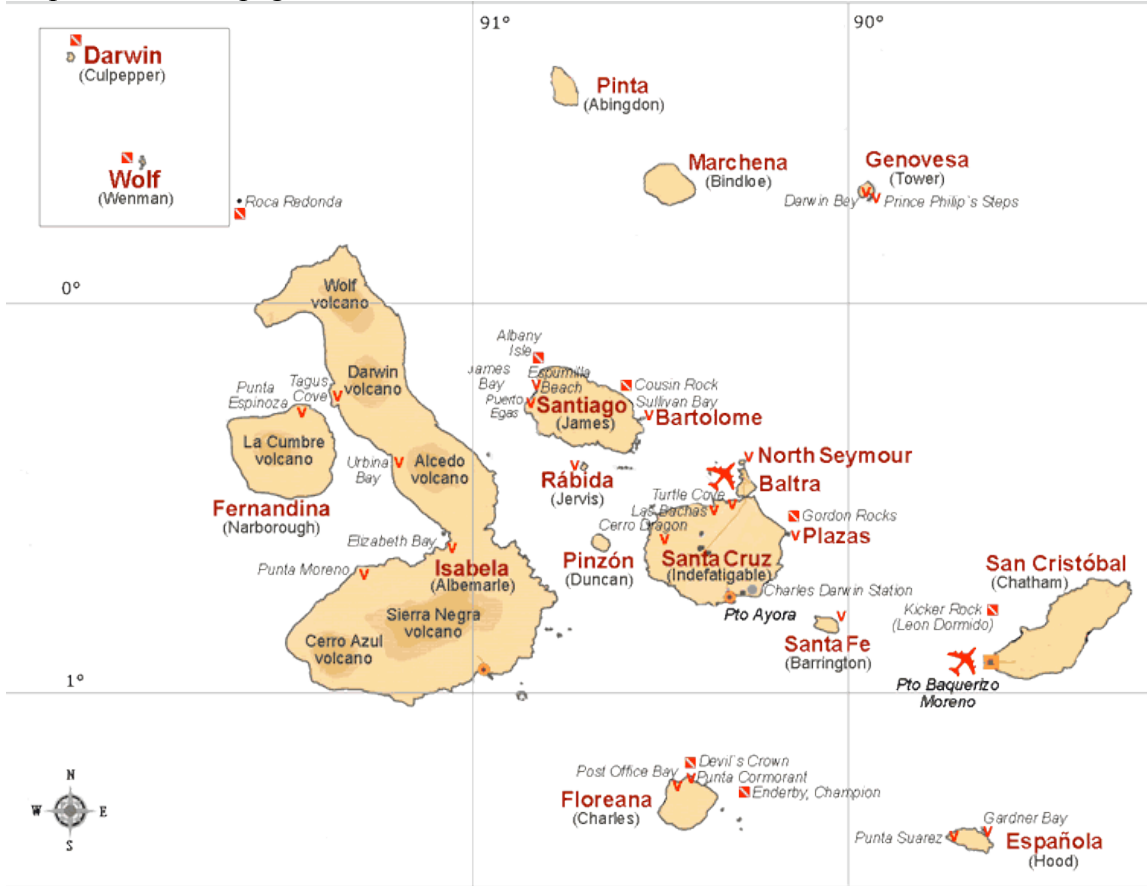


Figure 1 Supply and demand for Park admission and impact of increasing the Entrance Fee

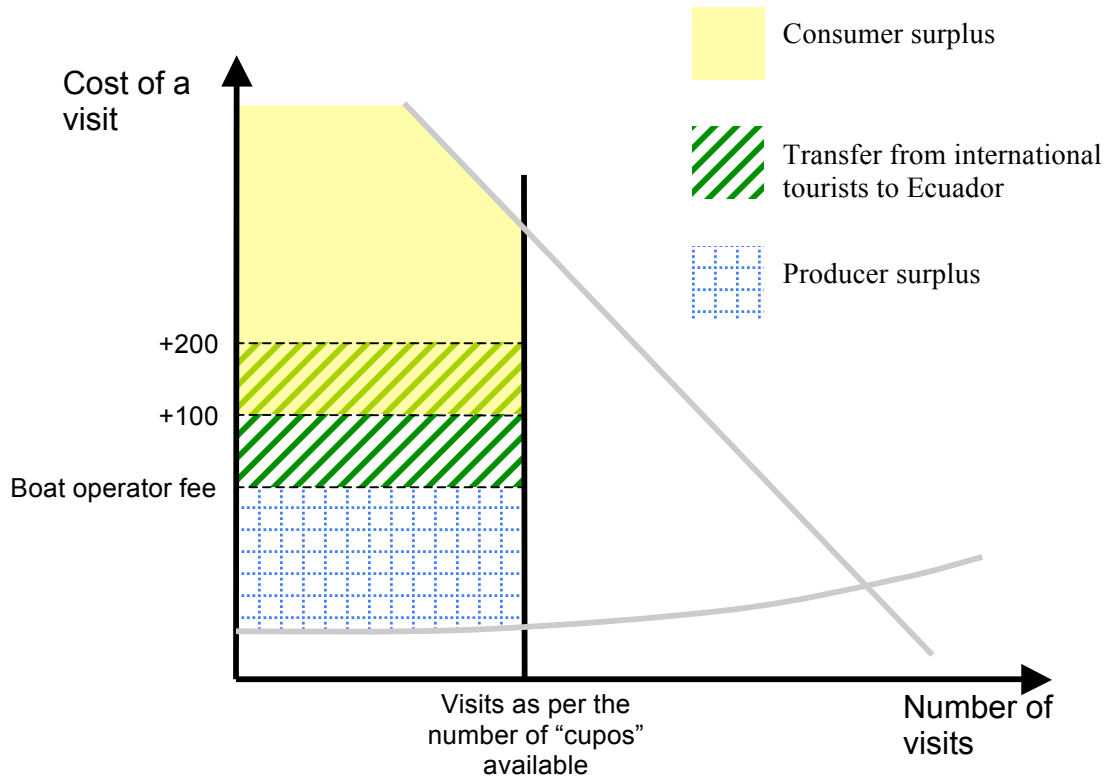


Table 1. Tourist Arrivals to the Galapagos

Year	National visitors (‘000)	Foreign visitors (‘000)	Total (‘000)
1980	4.0	13.5	17.4
1985	6.3	11.6	17.8
1990	15.5	25.6	41.2
1995	15.5	40.3	55.8
2000	12.6	54.3	66.9
2001	19.8	57.9	77.7
2005 (est)			115-120
2006 (est)			120-130

Source: Unidad de Turismo, GNP in Informe Galapagos, 2001-2002 (2002); informed sources.

Table 2. Entrance and Concession Fees – Galapagos Natural Park

Table 2.1 Visitor Entrance Fees – Galapagos Natural Park

Category	Amount (US Dollars)
Foreign tourists	100
Foreign tourists (under 12 years old)	50
Foreign tourists from Andean Community or Mercosur countries	50
Foreign tourists from Andean Community or Mercosur countries (under 12 years old)	25
Citizen or resident of Ecuador	6
Citizen or resident of Ecuador (under 12 years old)	3
Foreign tourists (non-resident) attending a national academic institution	25
National or foreign children under 2 years old	No fee

Source: TNC, Andrew Drumm (200X)

Table 2.2 Boats: Annual Concession Fees (patentes) per berth based on cupos

Type of Boat	Category/Class	Amount per berth (US Dollars)
Cruise	A	250
Cruise	B	200
Cruise	C	150
Day Tour	R	250
Day Tour	E	50

Source: TNC, Andrew Drumm (200X)

Table 3. Estimated Annual Gross Economic Flows associated with the Galapagos

Sector or activity creating the economic flow	“Guesstimate” of the gross economic flow (millions of dollars per year, ca. 2005)	“Guesstimate” of present economic rents in the sector (millions of dollars per year)	Where the money is predominately spent – international level (I), national level (N), or local level (L)
Tourism			
International tourism	\$250 - \$350	\$25 to \$35	N, I, L
National tourism	\$10	\$1 to \$2	L, N
Fishing	\$3-6	Probably zero or negative	L, N?
Research and conservation *	\$10	??	L, N, I
Public expenditures *	\$12-\$15	--	L, N
TOTAL	\$285 - \$391	\$26 - \$37	

* These ‘guesstimates’ have tried to net out the impact of revenues from tourism fees thereby trying to avoid double counting

Source: author’s “guesstimates”

Table 4. Distributions of Revenues from Entrance Fees

Recipient	Distribution of total fees collected
Galapagos National Park	40%
Galapagos Marine Reserve	5%
Galapagos municipalities (<i>municipios</i>)	20%
Galapagos provincial government	10%
Ministry of the Environment	5%
Galapagos National Institute (INGALA)	10%
Quarantine and control system (SICGAL)	5%
Ecuador National Navy	5%
TOTAL	100%

Source: TNC, Andrew Drumm (2006?)

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