

## Rainforest Expeditions: Combining Tourism, Education, and Research in Southeastern Amazonian Peru

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### ABSTRACT

To establish some of the parameters by which the success of an ecotourism venture can be measured, we examine the Rainforest Expeditions lodge in southeastern Peru, the Tambopata Research Center (TRC). Rainforest Expeditions (RFE) is a private ecotourism company founded in 1992 by Peruvian conservationists to promote the conservation of the natural destinations where it operates. TRC was built with the double purpose of protecting the adjacent macaw clay lick, and of lodging nature tourist and researchers. TRC has developed innovative programs integrating tourism with education and research, and has played an increasingly important role in the conservation and sustainable development of the region. All Rainforest Expeditions' activities are promoted by the private, for-profit operation of nature tours to the TRC. Success in the traditional aspects of the ecotourism business maximizes the additional benefits generated by ecotourism towards conservation (research, local development, environmental education, support for the reserve administration, etc), although these benefits are harder to measure. However, we can comparatively gauge the success of an ecotourism enterprise by listing the benefits generated directly or indirectly. We show that by investing in the above areas, we assure success in the traditional aspects of ecotourism business, thus assuring the stability of our own company.

### INTRODUCTION

Rainforest Expeditions is a for-profit ecotourism company founded in 1992 by the authors of this paper with the purpose of combining tourism with education and research to support the conservation of the natural destinations in which it operates. In order to establish some of the parameters of success for an ecotourism venture, we will examine the case of Rainforest Expeditions on the assumption that the criteria by which we evaluate success are as strict as those applied elsewhere.

We will attempt to gauge our success as an ecotour operator and lodge as objectively as possible. First, we will analyze and list company data, activities, and policies in the following areas: visitation, customer satisfaction, marketing, research, education, local development, and support for park administration. Then, for each area, we will compare activities and data from other Amazonian ecotourism ventures that have published results. Wherever possible, we will compare our standards for measuring success with those suggested in ecotourism publications.

There are three important points that should be kept in mind

when reading this paper. First, a successful ecotourism venture is hard to define. It depends almost entirely on the objectives of the people or institutions supporting the venture. In some cases, profit may be an obvious, bottom-line parameter of success. In others, when the primary goals are environmental education or local empowerment, the operation of the venture may even be justifiable at a cost, and therefore the definition of economic success quite different. Likewise, in certain cases, an ecotourism operation may be allowed to operate at certain environmental or social "costs," because it may be required to turn out "profits."

It is difficult, if not impossible, therefore, to define absolute parameters that will allow us to qualify ecotourism ventures as successful. It is more important, and probably useful, to think comparatively when defining the success of ecotourism ventures. One generalization that can be made about ecotourism is that, like any other industry, it is dependent upon market forces. As such, the public's perception of the ecotourism venture will be of utmost interest to the organization's decision-makers.

A second important generalization, when defining success in ecotourism ventures, is that it is easy to overlook many of the indicators of the impacts, both negative and positive. By examining and elucidating many of the offshoots stemming from the for-profit operation of Rainforest Expeditions tours, it will be possible to search for similar signs elsewhere and judge whether they are indicators of success.

Finally, a third point we attempt to prove in this paper is that by investing in scientific research, local development, and environmental education we are assuring success in the traditional aspects of the ecotourism business (profit, customer satisfaction, marketing, etc). Unlike other businesses in the industry, we believe spending in these areas is a necessary investment rather than a cost which must be undertaken in order to be perceived as environmentally responsible. Therefore, by proving this point, we are in effect stating that customers will eventually *require* these investments from top quality ecotour operators, rather than merely favoring operators who invest in these areas.

### RAINFOREST EXPEDITIONS

Rainforest Expeditions (RFE) is a private ecotourism company founded in 1992 by Peruvian conservationists. Its objective is to promote the conservation of the natural destinations where it operates. The means used to achieve this goal combine tourism, research, and education.

Although Rainforest Expeditions operates two destinations in Peru and Bolivia, and will begin promoting others within the next year, it has concentrated its efforts in the Tambopata Research Center in southeastern Peru. Tambopata Research Center is located within the 1.5 million hectare Tambopata-Candamo Reserved Zone (TCRZ) in southeastern Amazonian Peru. This reserve protects pristine sections of the most biologically diverse ecosystem in the world—the extreme western Amazon (Gentry 1988). Tambopata Research Center was built in 1989 by the owners of Rainforest Expeditions with the double purpose of protecting the adjacent macaw clay lick (where 15 species of psittacines regularly descend to eat clay), and of lodging nature tourists and researchers. The macaw was being illegally hunted at the time. Since then, Tambopata Research Center has survived and grown as a top quality nature tour destination, developed innovative programs relating tourism to education and research, and played an increasingly important role in the conservation and sustainable development of the region.

*Rainforest Expeditions' most successful combination of tourism with education and research is the Rainforest Biology Workshops.*

#### ECONOMIC INDICATORS OF SUCCESS

All of Rainforest Expeditions activities, including those which are complementary to the conservation effort at the TCRZ, are promoted by the private, for-profit operation of nature tours to the Tambopata Research Center. Therefore, the fundamental criteria by which RFE measures its success are those applicable to any business: income and customer satisfaction. The amount of income spent or reinvested locally or in conservation is an important indicator of the positive impacts generated by Rainforest Expeditions. Additionally, success in marketing efforts assures the possibility of medium to long term success according to the above criteria. We will not spend much time discussing any of these three points, as their importance is fairly obvious and the mechanisms to measure them are standard and can be studied from traditional business ventures. Failure to meet the bottom line in finances, inability to satisfy customer expectations, or persistently erroneous marketing strategies will certainly disqualify any ecotourism venture from the possibility of generating positive environmental or social impacts. Nevertheless, there is still a surprising number of ecotourism ventures out there which fail to realize this point.

#### ENVIRONMENTAL AND SOCIAL INDICATORS OF SUCCESS

By definition, ecotourism ventures must meet several standards in their relation to nature and the environment. Numerous governmental and non-governmental institutions and private for-profit

companies have published guidelines for the different sectors of the tourism industry: hotels and lodges, tour operators, travelers, etc. (World Wildlife Fund 1992, The Ecotourism Society, Wildland Adventures, International Expeditions, Tourism Industry Association of Canada, Preece, van Osterzee and James 1995, UNEP 1995) .

Essentially, these codes of conduct can be used to not only identify conscientious ecotourism ventures but also to identify those who excel in their commitment to conservation by not only taking action to avoid damage to the environment but also by playing an active, dedicated role to the conservation effort in their area of operation. For nature tour operators and ecolodges these codes of conduct can be broken down to three very broad categories: education (providing extensive pre-departure guidelines; providing intensive learning experiences for visitors, providing staff and guide training), local development (preventing cultural impacts, employing and consuming locally, assuring sensitive interaction between visitors and local communities), and prevention of environmental damage (operating small groups, minimizing visitor impact on environment, avoiding wasteful practices).

These guidelines are fairly easy to satisfy for small-scale operations because they have minimal impact on the environment. However, Rainforest Expeditions, founded with the mission to support the conservation of the natural destinations where it operates, actively executes several education, research and local development projects that aggressively seek to promote conservation. We do so because we believe in these projects as sound business investments that will pay off in customer satisfaction and marketing because they form a fundamental part of the tourism product the modern ecotraveler seeks. Also, by developing strategic alliances we have been able to minimize the costs of these investments and multiply their positive impacts.

#### PREVENTION OF NEGATIVE IMPACTS

Although quantitative studies on the negative impacts of our activities have just begun, we are convinced they are minimal. The clearing for infrastructure is less than 0.5 hectares. Infrastructure was designed and built by Nycander following what he learned in two years of studying traditional Machiguenga architecture in nearby Manu National Park. Visitation to TRC over the past few years has been limited to a maximum of 800 people a year. Including lodge staff, guides and researchers, an average of 10 people a day have used the facilities and trails. Guides are trained and tourist activities are designed once a year in combination with scientists,

assuring we minimize wildlife disturbance. Furthermore, a 5:1 tourist to guide ratio guarantees not only high quality nature interpretation but also strict monitoring of tourist activities. Finally, in order to measure our impact on wildlife, our scientific research program has recently been designed to include tourism monitoring methodologies on a regular basis.

Social and economic negative impacts are much harder to measure. There are no evident negative social impacts, particularly since TRC is located in the middle of a completely uninhabited conservation unit. Economically, there is little or no cost to the unit's administration from our operations. We maintain the trails we use, clean-up the beaches after informal operators use them, present trip reports for every visiting group at the Puerto Maldonado office, and have even denounced a couple of illegal sport and commercial hunters. Although there is no obvious cost generated from our activities in Puerto Maldonado, there is an evident and measurable income. At the moment, however, since these issues have not been studied extensively, it is impossible to quantify the environmental, social, and economic costs of our ecotourism operations, or to even guarantee that there are no subtle costs which we have failed to identify.

## EDUCATION

Environmental education is one of the most obvious benefits to conservation generated by ecotourism (Boo 1992, Ceballos-Lascurain 1993, Whelan 1991). The potential of the industry to educate tourists in order to later involve them in active conservation efforts is well documented (Boo 1992, Ceballos-Lascurain 1993, Whelan 1991).

Rainforest Expeditions, through the Director of Education, Vanessa Frias, Mario Napravnik and with the aid of the Conservation Data Center, has developed education mechanisms for five different target groups: environmental education for visitors through an intensive learning experience in the field; environmental education for high school students through their participation in the rainforest biology workshops; training in field biology techniques for our naturalist staff; the development of local capacity to generate conservation through their participation in workshops and field training programs; environmental education for the general public on a regional, national and international level through the production of materials for distribution in the media and the participation and organization of presentations and events related to the conservation effort at Tambopata.

## VISITORS

In order to maximize the quality of our nature interpretation services, we provide one guide for every five or six tourists. Guides are really young Peruvian biologists who have just finished college and are beginning their field work in one of six areas of our research program (see below). Visitors are exposed to a program combining wildlife observation with mild participation in research activities and informal in-the-field "lectures" given by each specialist in his or her area. At night, between dinner and night walks, thematic slide shows are presented. Finally visitors are exposed to written information on the rain forest not only in our library but upon receiving their pre-departure materials. The TRC travelers' information manual not only includes practical travel information, but also has extensive information on the ecological characteristics of each trail system and summaries of the research conducted at TRC.

The combination of personal relations with the guides, exposure to scientific documents, and the utilization of educational materials of different formats to educate visitors constitute valid techniques (Ham 1992). When visitors leave TRC, they do so knowing the basics of tropical ecology, herpetology, mammology, ornithology, ichthyology, botany, and entomology.

## HIGH SCHOOL STUDENTS

Rainforest Expeditions' most successful combination of tourism with education and research is the Rainforest Biology Workshops. This workshop was offered for the first time in 1993. Since then over 250 students, of which more than 90 per cent were Peruvian, have participated in the workshops. Workshops were operated at considerable discounts to Peruvians. In 1995, with the program well-established, students from local Puerto Maldonado high schools were invited, with excellent results.

Positive effects from this intensive learning experience surpass the merely academic. Many of the students returned to voluntarily help conservation projects at Tambopata Research Center and elsewhere. Others have, after a first trip, returned one or two times to design and execute research projects that could be expected of university undergraduates. Students have involved their families, some of whom have even traveled to the TRC. Others have merely stayed in touch to aid the conservation effort at Tambopata. Academically, students who showed little or no interest in biology have returned to the classroom to excel for a period of time. The effect has been so strong on some students that they have gone on to enroll in biology or related careers at universities. The workshops are an eye-opener. Many of the students, coming from sheltered backgrounds, where

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they have had little chance to explore rural or natural environments, increase their self confidence after the workshops. Adventuring into a week-long learning experience in one of the world's most remote and pristine regions, where they routinely count macaws on a clay lick or follow a key to identify mist netted bats, changes their personality dramatically and creates bonds which persist years after the trip. Tambopata jokes are still told frequently when members of the first expedition meet—two and one half years after they traveled to the forest.

On the other hand, the results from a purely scientific point of view have been beyond our initial expectations. The workshops are designed to rotate the students through a selection of experiential activities covering most of the forest's major taxonomic groups. Each activity is designed so that as the students learn the ecological function and natural history of the taxonomic group they are studying, they are also physically collecting data that will be replicated by other groups to produce statistically significant results on one or more questions of relevance from a scientific or conservation perspective. Findings range from the discovery of a new orchid species during an inventory of a two hectare plot to finding surprising mechanisms by which freshwater fish survive in seasonal ponds.

The expeditions serve two additional purposes of value to the conservation effort at TRC. The first purpose is a social one. Each workshop normally has a few vacant seats. Those spaces are occupied by a number of selected students from the Puerto Maldonado high schools that could not otherwise afford a visit to TRC. These students could pass their entire lives less than 100 miles from pristine, wildlife-rich rain forest and never see a troop of wild howler monkeys. Thus they may never have a chance to develop an understanding and respect for the rain forest. Being invited to the workshops gives them this chance. Furthermore, their presence assures an enriching cultural exchange with international workshop participants.

The second purpose is training. In order to assure a quality learning experience, so that information is passed on in an effective manner and noise on the trails is kept at a minimum, we maintain, during all our expeditions, a five-to-one tourist-to-guide ratio. Nevertheless, in workshops on which the focus is principally academic, we increase the number of instructors per student. For each activity, we hire one principal instructor and an assistant. Principal instructors are generally Peruvian biologists with many years of field experience in the specialty relevant to the activity they are overseeing during the workshop. Assistant instructors are generally Peruvian biology students or recent graduates who have demonstrated ability in the specialty relevant to the activity they are assisting. The design

of the activity and the collection of data is usually a combined effort, but the analysis and discussion of the results is the responsibility of the assistants. In many cases, these results have been used by assistants as their undergraduate thesis research paper. In this manner, the workshops serve to train Peruvian biology students in field research techniques and finance their introductory research, which is many times difficult to fund. Participation in the workshop as either an assistant or principal instructor forms part of our standard field biology training program.

#### TRAINING IN FIELD BIOLOGY

In 1995, Rainforest Expeditions designed and implemented a three year training program to develop field techniques for university graduates interested in conducting research in the tropical rain forest. Peruvian undergraduate biology programs offer limited possibilities to obtain field experience or conduct field research. Vacancies for field training programs offered by international conservation organizations, positions as field assistants for research or conservation projects, and spaces for graduate programs are all usually limited to people who have had different degrees of field experience. Thus, beginning a career in field biology becomes a Catch-22 of sorts.

The Field Biology Training Program, which Rainforest Expeditions is in the process of implementing, is designed to alleviate this problem. Applicants are asked to send curriculum vitae and are interviewed in their junior year of college. They are required to have a working knowledge of English. Once accepted, a participant's first exposure to TRC comes during his or her senior year through assisting a principal instructor in one of the biology workshop as explained above. Later in the year, they return for a month to assist in one of TRC's research projects and interact with tourists on an informal basis. The second year of training begins with a three week course on field research techniques and tour guiding. Course instructors are the heads of each of TRC's six research areas. The first few days of the course are invested in giving participants a general overlook of each area. The next ten days, participants split up into their specialty groups and learn field techniques from the area heads. They are specifically trained to correctly execute the methodologies for TRC's research projects in their area. They also receive counseling on their own individual projects. The third week participants are instructed on guiding and nature interpretation techniques. For the remainder of the second year, participants guide and conduct the methodologies established for the TRC research projects in their area. Third year participants guide and conduct the field work for

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their own individual projects with the counsel of the area heads. At the end of three years, the objective is that participants should be accepted at an internationally recognized graduate biology program of their choice.

#### LOCAL POPULATION

By inviting local community members, be they students in the local high school, prominent community leaders, native community members or local friends, to participate in a combination of high school workshops, regular visitor programs, or field biology courses, we have in effect stimulated the development of the local population's capacity to generate conservation, research, and ecotourism. Members from the Infierno Native Community, after assisting with several of these events, expressed interest in developing their own ecotourism, an interest which is rapidly materializing into an association with RFE to operate a short cultural/natural history program in their community .

#### GENERAL PUBLIC

Materials produced by Rainforest Expeditions for the mass media have a notable educational content. We have assisted film crews and photographers produce 6 documentaries and 27 articles in 12 countries. The principal subject of these productions has been the biology and conservation problems of macaws. In the minority of cases, they have been about the tropical rain forest. These productions have reached millions of viewers and readers through the likes of the BBC, National Geographic magazine, and International Wildlife magazine.

#### RESEARCH

Although guidelines and codes of ethics are mostly limited to avoiding a negative impact on the environment, they generally include the possibility of scientific research on the site's ecosystems as one of the potential benefits stemming from ecotourism. RFE believes that scientific research on the surrounding ecosystems and wildlife is a sound business investment: the more we know about wildlife behavior and ecology, the better we will be able to use it as a tourism resource. Not only that, but we also believe that today's nature traveler finds on-site research a compelling reason to travel to a particular destination.

At the Tambopata Candamo Reserved Zone, Explorers Inn ran a successful naturalist program in the 1970s and 1980s. It has produced important scientific information to the point where it is

considered one of the Amazon's best studied locations (CDC 1995). A similar site exists near Iquitos, in northern Peru, the Amazon Center for Environmental Education and Research.

At Tambopata Research Center we have developed several important lines of research. The research program is directed by RFE's Director of Research, Mario Napravnik, and is designed in conjunction with the Conservation Data Center. TRC has six areas of research (Botany, Entomology, Ichthyology, Herpetology, Ornithology, and Mammalogy) and three mechanisms for promoting it: research projects which TRC designs, implements, and executes; research projects which are designed and executed by individuals participating in the training program described above and are implemented in combination; and research projects which are designed, executed, and implemented by outside individuals or institutions which pay RFE a reduced fee for transportation, food and lodging.

Attention to relevant scientific issues, and consistency over the long term is ensured by the fact that experienced field biologists voluntarily head each area of research. The heads then design each area's specific research objectives and methodologies for the TRC research projects, train the young biologists who will execute the field work (see above), advise them in their individual projects, and periodically supervise the ongoing research in their area.

The Tambopata Macaw Project deserves special mention because it is a clear example of the interaction between research and ecotourism. Rainforest Expeditions founders, in collaboration with other institutions, designed the project, helped collect the funds for the project, provided extensive help in logistics, such as food and lodging to project personnel, executed the field work, analyzed the results, and wrote and published the final results. The project results have been widely recognized and have generated a series of international macaw conservation projects that may help solve the plight of threatened macaw populations. Finally, this project has received ample coverage from the media, generating extensive interest in Tambopata as a destination, thus benefiting the business aspect of Rainforest Expeditions.

#### LOCAL DEVELOPMENT

One of ecotourism's reputed benefits is its ability to generate local development. However, there are few cases where this idea is put to practice. Many times ecotourism ventures cause negative social and economic impacts on a local scale (Brandon 1993, Whelan 1991, Boo 1991). In the Tambopata Candamo Reserved Zone, the case over the past two decades has been similar.

Rainforest Expeditions considers local development to be fundamental to our long term success in ecotourism. Our strategy to

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involve the local population as partakers in the benefits of ecotourism is based on the contracting of competitive local services and on the empowerment of those sectors of the local society that are more closely related to the forest.

When we arrived at Tambopata in 1989, one of our first actions was to invite the Ese' eja Native Community to initiate their own ecotourism venture. Their location midway between Puerto Maldonado and the fledgling Tambopata Research Center was ideal for a night stop on the way to and from TRC. They were also close enough to TRC to design competitive itineraries with a cultural focus in the three or four day range. They would complement our week-long, natural history, expeditions. Understandably, they rejected the proposal because it came from young foreigners without any history in the region. The community's experience with other foreigners involved in local tourism had, at best, been neutral. There was no reason why Rainforest Expeditions had to be different.

In the following years, we developed close relationships with those sectors of the local society that either lived off the land or were involved in tourism. We hired most of our staff from the local communities and contracted local services where possible. Eight of nine staffed employees are long-time regional residents, including the Director of Field Operations. About 90 per cent of our temporary contracts are for members of the native community or settlers. We contract local transportation, restaurant and lodging services in Puerto Maldonado and buy almost all of our food locally. We have also stimulated the interest of local inhabitants in ecotourism ventures by inviting them to participate in a variety of activities at TRC, as already noted. After three or four years, these actions earned RFE local respect, which soon became friendship.

In 1995, RFE signed a formal cooperation agreement with the Native Federation of Madre de Dios with the objective of undertaking joint initiatives in areas of common interest: conservation and ecotourism. A few months later, RFE presented the Ese' eja Native Community with essentially the same project it had suggested five or six years ago. This time it was presented in far more detail, and with a more profound knowledge of what it would take to succeed. The communal meeting that RFE summoned to discuss the project in detail was the first one in this decade at which quorum to make it official was present. During the meeting, we also conditioned our participation in the project on the formation of a commercial, for-profit association between the Community and RFE. This association would pertain only to tourism-related activities, and would allow RFE to share the decisions and the profits generated by the tourism project for a number of years, justifying our investment. At

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the end of those years the community is expected to fully manage and operate a competitive cultural tourism operation on its own. At the end of the meeting, the community approved the project proposal almost unanimously and allowed us to go ahead with the contract, refine the project proposal, and search for funding. Conservation International and other local NGOs will assist us with social and economic aspects, assuring that tourism is integrated into the community with minimal disruption.

## CONCLUSIONS

Rainforest Expeditions is demonstrating both to the conservation and tourism communities in Puerto Maldonado that investing in research, education, and local development is a good business decision. These investments pay off in customer satisfaction, value of the final tourist product, long term economic sustainability, and appeal to mass media.

Rainforest Expeditions is also demonstrating the importance of creative alliances and collaborative agreements between businesses, conservation organizations, and sectors of the local community. By aggressively involving ourselves in local sustainable development projects, we are redefining the role of for-profit ecotourism companies in conservation.

From this viewpoint, our innovative activities in the regional ecotourism industry will probably result in an overall improvement of the regional product and a more committed involvement from the sector in local conservation and sustainable development. Those will be the unequivocal signs of a successful ecotourism venture.

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#### EDUARDO NYCANDER

Eduardo Nycander began working as a photographer and field assistant to research programs in southeastern Peru's rainforest in 1985. Since then he has graduated in architecture, produced a 439 page manuscript research paper on traditional Machiguenga architecture, used his studies in native architecture to build Tambopata Research Center and used Tambopata Research Center to direct the widely publicized Tambopata Macaw Project. He co-founded Rainforest Expeditions in 1992 to operate and market tours to TRC. His most notable achievements include photographing the first wild blue-throated macaws in Bolivia, designing highly successful artificial nests, and pioneering macaw ecotourism.

#### KURT HOLLE

Kurt Holle used his college degree in forest management toward conservation when he began working as Macaw Project Field Assistant and eventually Director in Tambopata. With Eduardo Nycander, he co-founded Rainforest Expeditions in 1992 and since then has led numerous groups into Tambopata Research Center. He has co-authored a chapter on Macaw conservation and ecology for a book on macaws and has written articles on the Macaw Project, TRC, and Rainforest Expeditions for *Bird Talk*, *Escala* and other magazines. He also was the first to design and organize RFE's field ecology courses. Whenever he's not guiding groups he markets RFE's tours to Tambopata and manages the RFE's headquarters in Lima.

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